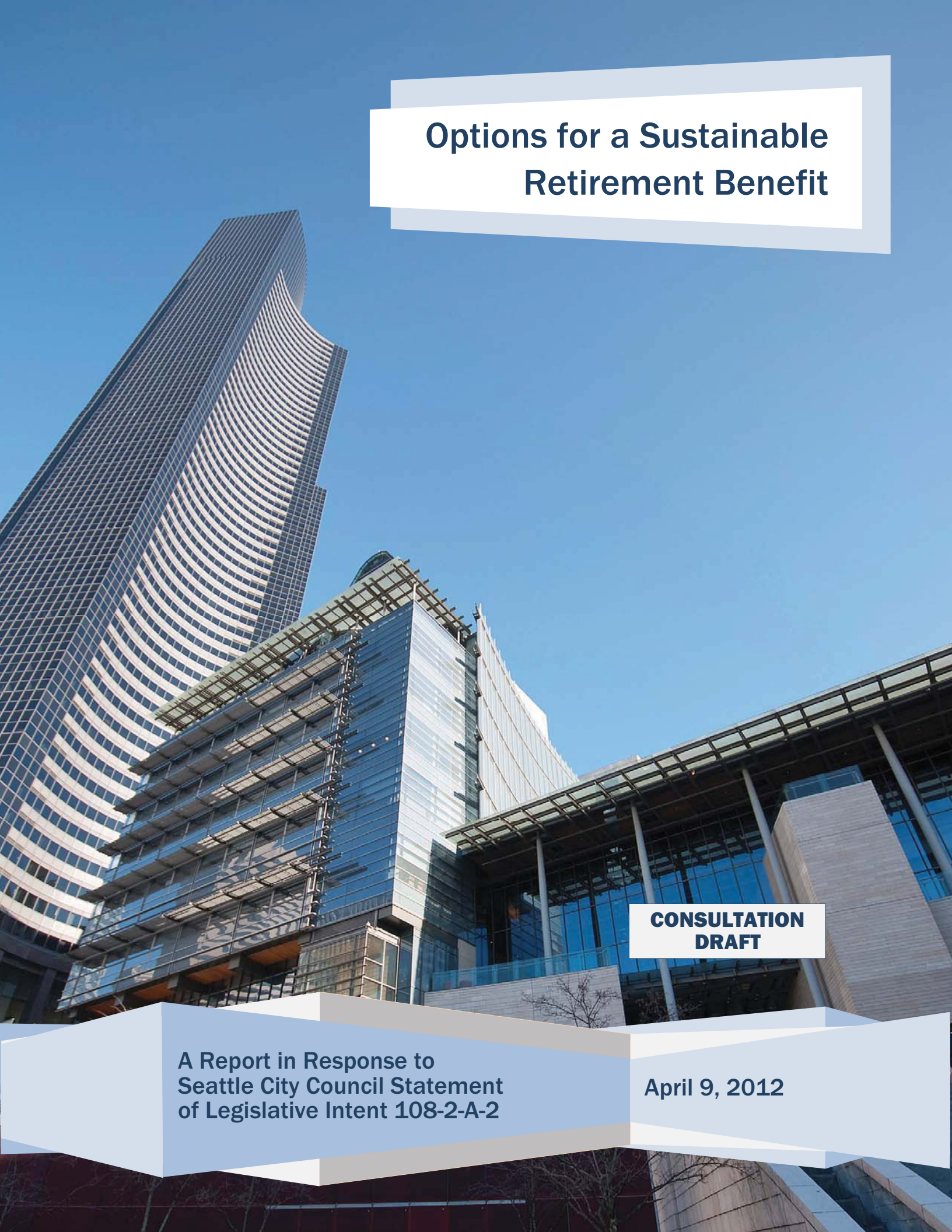
Options for a Sustainable Retirement Benefit



CONSULTATION DRAFT

A Report in Response to
Seattle City Council Statement
of Legislative Intent 108-2-A-2

April 9, 2012

LEGAL DISCLAIMERS:

This report describes the general features of various pension plans for the City of Seattle and other jurisdictions and is meant to be descriptive, not legally binding. No statement in this report should be construed to describe or create any legal right or any expectation of a benefit. In the event that any statement contained in these pages contradicts or is inconsistent with the Seattle Municipal Code, the Revised Code of Washington, or any other SCERS policy or procedure, then the law, policy, or procedure takes precedence.

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This report discusses investments and retirement planning in a general way to illustrate policy choices. It should not be construed as individual financial or investment advice.

This report discusses some pension policies while omitting others for brevity and clarity. It should not be relied on for retirement planning. For a complete listing of SCERS policies, see Seattle Municipal Code Section 4.36 and the SCERS Employee Handbook.

Options for a Sustainable Retirement Benefit

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Consulting actuaries from **Gabriel, Roeder, Smith & Company** performed all financial estimates for the plan options. They also made substantial contributions to the IDT research process and assisted in the preparation of the study. The GRS team included actuaries Mark Randall, Dana Woolfrey, Diane Hunt, Joe Newton, and research director Paul Zorn.

With thanks to Paul Fronstin from the Employee Benefit Research Institute for sharing health care cost estimate data, and to former Finance Director Dwight Dively for sharing his recollections of the City's pension policy history.

Cover photo by John McCoy

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Executive Summary

Founded in 1929, the Seattle City Employees' Retirement System (SCERS) has provided comfortable retirements to several generations of City workers. It is a defined benefit pension plan for general government employees that grants 2% of salary in retirement for each year of City service. In this way, an employee who works for 30 years may retire with a 60% pension that is guaranteed for life. The plan is designed to work in conjunction with Social Security, so that a member's total retirement income is the sum of the two benefits, plus whatever private savings he or she has accumulated. Together, these sources are projected to replace between 87% and 109% of working income in retirement. By standard retirement planning measures, this is considered more than adequate to maintain employees' standard of living once they leave work.

SCERS entered 2008 with 92% of its required funding, which is considered a relatively healthy level. The plan is funded by City and employee contributions each pay period, plus earnings on SCERS' $1.8 billion investment portfolio. SCERS was significantly impacted by the market crises of 2008, a year in which the plan booked a $616 million investment loss that erased 30% of its funding ratio. The portfolio has still not returned to its pre-2008 value even as costs have grown. As a result, the City and its employees must pay higher contribution rates to cover the system's approximately $1 billion in unfunded costs over the next 30 years. And this liability could grow if the plan's investments continue to lag their 7.75% annual return target, which they are currently projected to do for at least the next 10 years. In this context, the Seattle City Council asked staff to form an Interdepartmental Team (IDT) and look at potential changes to the pension system for new hires. The goal was to design a system that still provides ample retirement income but at lower cost for both the City and employees. The Council appropriated $250,000 for consulting resources for this effort, and in 2011, the Legislative Department hired the national actuarial firm Gabriel, Roeder, Smith & Company to advise the IDT on plan design and to perform cost estimates.

Financial Findings

Over the last 40 years, the City and its employees have nearly doubled the share of payroll that goes to the retirement benefit, from 12% in 1972 to nearly 24% projected for 2014. In dollar terms, this means the City and employees will spend about $64 million more annually to fund employee retirements than they would have at the old rate. These costs are borne by the City's General Fund and its other operating funds, including Seattle Public Utilities and Seattle City Light. Several factors have driven this rise:

- Investment losses in 2008 meant that the system has lost 30% of its funding and must replace approximately $1 billion over time. It is unlikely that even strong investment returns could make up this lost value without substantial additional contributions.

- The City increased benefits in 1975, 1998 and again in 2001, the latter two changes happening at a time of strong stock market performance when the system was briefly at or above 100% funding. These benefit changes permanently increased the cost level.

- Employees are living longer. Although this is a good thing, increased longevity raises retirement costs, since SCERS must pay the guaranteed benefit over more years.

SCERS Compared to Other Retirement Plans: *High Benefit and High Cost*

Private sector employers since about 1978 have largely abandoned the defined benefit pension model in favor of defined contribution plans, such as the 401(k) plan. These carry no benefit guarantee but allow employees to invest their own contributions (and often an employer match) in portable individual accounts. Most employers with defined contribution plans provide a maximum match worth between 3% and 6% of salary.

Public sector employers (including states, cities, counties, and school districts) generally still provide defined benefit plans, but their benefits are less rich on average than Seattle's SCERS benefit.

- Seattle's 2.0% benefit multiplier is higher than the 1.85% average for public plans with Social Security. This translates to a 30-year pension that is about 5% higher (60% of salary vs. 55%).

- Seattle's normal retirement ages are also younger than the average for public plans. Normal retirement is the age at which a member may begin benefits without any reduction for early retirement. Many SCERS members may retire with full benefits while still in their 50s. Most public plans have now moved to 60 or 65 as a normal retirement age.

- SCERS' benefit table also subsidizes early retirement. Benefits are reduced either 3% or 5% for each year early that a member retires. It takes a factor of about 7% to ensure that the plan's costs are not increased when a member retires early.

For this richer-than-average pension benefit, Seattle employees pay about twice as much as the average public sector employee. Seattle's current employee contributions are 10.03% of salary, compared to a national median rate of about 5%. So in general, the City and its employees are in a high-benefit, high-cost part of the spectrum.

State and local jurisdictions across the country have implemented pension changes in the wake of 2008 to lower their costs. Their approaches have included reducing benefits (either for new hires or for existing employees as well), suspending cost of living adjustments, increasing contributions, and enacting new limits on so-called "spiking" and "double dipping" practices. Several states have also recently closed their defined benefit plans and replaced them with defined contribution plans for new hires, or hybrid plans that mix the features of both.

Five Plan Options to Consider for New Hires

With the assistance of GRS, the team has crafted five retirement plan options for the City and its employees to consider. They include three plans that keep the current SCERS defined benefit (DB) structure, but adjust the benefit multiplier and normal retirement ages, among other provisions. The fourth plan is a hybrid, similar to the State of Washington's PERS 3 plan and the FERS system for federal employees. It features half-sized DB pension coupled with a defined contribution (DC) account that together provide similar amounts of retirement income. The final plan is a defined contribution plan, with mandatory contributions from the City and employees, similar to 401(k) plans found in the private sector.

All five plan designs presented in this report meet or exceed the test of providing adequate retirement income, defined as the level that will allow employees to maintain their standard of living. For example, for a middle-income employee with 30 years of service who retires at age 65, the plans are projected to provide between 80% and 92% of the member's previous income, in conjunction with Social Security. If the employee also has private savings (through the City's deferred compensation plan or a Traditional or Roth IRA) the replacement ratio would be even higher.

Table 1 – Summary of the Five Plan Options' Major Features and Normal Cost Savings

Normal cost is the amount needed to finance benefits that are earned today.
It does not include any unfunded costs of previously earned benefits.

Defined Benefit (DB) Provision	**Current Plan**	**Modest Change DB #1**	**Modest Change DB #2**	**Substantial Change DB**	**Hybrid DB + DC**	**DC only**
Multiplier: *Earned benefit per year of service*	2.0%	1.83%	2.0%	1.66%	1.0%	n/a
Maximum Years *to earn service credit*	30	33	30	36	35	
Maximum Pension *as a % of salary*	60%*	60.5%	60%	60%	35%	
Final Average Salary *calculation period (in months)*	24	36	36	36	36	
Normal Retirement Age *Lesser of 65, or when age + years of service equals rule*	Rule of 80	Rule of 85	Rule of 90	Rule of 90	Rule of 85	
Early Retirement Reduction *each year before normal age*	3% or 5%	7%	7%	7%	7%	
Normal Cost *Contribution as a % of salary*	15.0%	11.8%	11.5%	10.0%	6.4%	
Defined Contribution (DC) Provision *Contribution as a % of salary*	n/a				6.5%	12.0%

** May be higher under alternative minimum benefit annuity formula.*

Total Normal Cost *% of salary*	15.0%	11.8%	11.5%	10.0%	12.9%	12.0%
Savings Relative to Current Plan: *% of new hires' covered payroll*		3.2%	3.5%	5.0%	2.1%	3.0%
5-year savings (in millions)		$19	$20	$31	$15	$15
30-year savings (in millions)		$1,751	$1,863	$2,764	$1,123	$1,601

Income Replacement** *% of working income replaced by pension + Social Security*	94%	85%	90%	80%	82% to 92%	70% to 87%

** Middle-income earner with 30 years of service who takes Social Security at age 65 and has 6.25% to 7.75% average investment returns on the DC account.

The plans would save between 2.1% and 5.0% of covered payroll for new hires. At today's staffing levels, each 1% of covered payroll is worth about $5.6 million per year. However, these savings would accrue gradually over a generation as new employees enter the system. The actuaries project that adopting one of the new plans would reduce total pension costs between $15 million and $31 million in the first five years after implementation. It would save between $1.1 billion and $2.8 billion over 30 years. These savings will leave more money available in the City's budget for other pressing needs, including services to residents, new hiring, staff salaries, and potentially other employee benefits.

The plans each make different choices on how to share key risks, which may be as important a factor to consider as the current cost projections. This includes investment risk, which is the possibility that the investment returns will fall short of their targets and generate less money to support employees' retirements. Under the DB plans, the City bears this risk. The Hybrid plan shares it roughly equally between the City and the employees, and under the DC plan, the employees bear the risk.

The City may also wish to consider options for how it implements the plans presented here. In acting on this report, the City could:

- Join the State of Washington's open PERS 2 and/or PERS 3 plans instead of creating a new plan for Seattle. The Modest DB Plan #2 is very similar in design to PERS 2, and the Hybrid Plan is fairly similar to PERS 3. Opting in to the state's plan may lower costs and boost investment performance. It would also require a negotiation with the Legislature to address who pays the unfunded costs of the state's closed PERS 1 plan.

- Allow current employees to voluntarily opt in to one of the new plan designs in exchange for a lower contribution rate. This may appeal to some current employees who expect lengthy careers with the City and want to take home more of their paychecks in the meantime. The actuaries project rather low take-up rates on this offer, but it may accelerate the savings to the City somewhat.

- Offer two plan choices to new hires, a DB plan plus either a Hybrid or a DC option. This would be more complex and costly to administer but may aid recruitment and retention by appealing to prospective employees with different retirement preferences.

The IDT thanks the Mayor, the City Council, and the reader for the opportunity to present this work and hopes that the City and its employees will give it their careful consideration.

Introduction: Study Purpose and Scope

The Retirement Benefit Interdepartmental Team (IDT) was created to satisfy Statement of Legislative Intent 108-2-A-2, which the Seattle City Council passed unanimously during budget deliberations in November 2010. With pension costs rising substantially due to 2008 investment losses, the Council directed the IDT to explore alternative benefit options that the City might offer to new hires, potentially as early as January 1, 2013. The goal was to design plans that still provide ample retirement income, but at a lower cost to both employees and the City. Those options were to include:

- Modest changes to the current SCERS defined benefit (DB) plan
- More substantial policy changes to the SCERS DB plan
- One or more hybrid plans with a DB component and a defined contribution (DC) component
- A DC-only plan with a City match on employee contributions

These plans were to be rated on several factors including cost, benefit adequacy, risk sharing, and sensitivity to the performance of the City's pension investments. Short-term transition costs were to be identified, and short- and long-term savings projections presented. In addition, the IDT was asked to compare Seattle's plan and experience to other public and private employers and identify any key human resources needs and trends that decision makers should consider. For the complete SLI text, see Appendix 1.

The IDT's Workplan

The IDT first convened in January 2011, with representation from multiple City departments, including the Retirement Office, Council Staff, Finance & Administrative Services, the Law Department, the Personnel Department, the Mayor's Office, and the City Budget Office. The IDT created subgroups to conduct original research and begin mapping out alternative benefit designs, and these groups met regularly throughout 2011. The Legislative Department hired consulting actuaries Gabriel, Roeder, Smith & Co. (GRS) to estimate the costs and benefits of the alternative benefit designs, as well as provide additional research and expert guidance on pension issues and re-design processes. GRS has extensive actuarial and research resources at its disposal, and considerable experience in guiding state and local jurisdictions through pension plan changes. In 2011 and 2012, IDT representatives conducted several briefings with key stakeholders, including the City's labor unions, the SCERS Board of Administration, and the Association of Retired City Employees. This consultation draft is intended to guide further stakeholder conversation before the report is fully finalized.

SCERS Facts

Founded in 1929, the Seattle City Employees' Retirement System (SCERS) is a City-sponsored defined benefit pension plan that provides retirement income to most City employees who are not in the separate police and fire plans. Seattle is one of only three Washington localities that maintain their own pension systems, the others being Tacoma and Spokane. Other City, County, and school jurisdictions place their employees in one of several retirement plans run by the State of Washington. The City's pension is an earned benefit for service, part of the employees' total compensation package. However, the employees themselves contribute a substantial share of the plan's costs through a pre-tax payroll deduction.

Current Benefit Provisions

The main feature of the current SCERS pension benefit is that members earn credit worth 2% of salary for each year of full-time City employment. In this way, a member who works for 30 years receives a monthly pension equal to 60% of his or her final average salary. The pension is guaranteed for life and features a 1.5% automatic annual cost-of-living adjustment (COLA). Employees who work less than 30 years may also retire with a smaller pension, and their benefit may be reduced somewhat for early retirement, depending on their age at retirement. The various possible age and length-of-service combinations are described below in Table 2. The green shaded areas represent the "normal retirement" age with unreduced pensions. Areas in white are reduced for each year of early retirement.

Table 2 – SCERS Pension Benefit as a Percentage of Compensation, by Age and Length of Service

Years of Retirement Credit	Any	52	53	54	55	56	57	58	59	60	61	62	63	64	65	Years of Retirement Credit
							Age									
30	60.00	60.00	60.00	60.00	60.00	60.00	60.00	60.00	60.00	60.00	60.00	60.00	60.00	60.00	60.00	30
29		58.00	58.00	58.00	58.00	58.00	58.00	58.00	58.00	58.00	58.00	58.00	58.00	58.00	58.00	29
28		56.00	56.00	56.00	56.00	56.00	56.00	56.00	56.00	56.00	56.00	56.00	56.00	56.00	56.00	28
27		51.30	54.00	54.00	54.00	54.00	54.00	54.00	54.00	54.00	54.00	54.00	54.00	54.00	54.00	27
26		46.80	49.40	52.00	52.00	52.00	52.00	52.00	52.00	52.00	52.00	52.00	52.00	52.00	52.00	26
25		42.50	45.00	47.50	50.00	50.00	50.00	50.00	50.00	50.00	50.00	50.00	50.00	50.00	50.00	25
24		38.40	40.80	43.20	45.60	48.00	48.00	48.00	48.00	48.00	48.00	48.00	48.00	48.00	48.00	24
23		34.50	36.80	39.10	41.40	43.70	46.00	46.00	46.00	46.00	46.00	46.00	46.00	46.00	46.00	23
22		30.80	33.00	35.20	37.40	39.60	41.80	44.00	44.00	44.00	44.00	44.00	44.00	44.00	44.00	22
21		27.30	29.40	31.50	33.60	35.70	37.80	39.90	42.00	42.00	42.00	42.00	42.00	42.00	42.00	21
20		24.00	26.00	28.00	30.00	32.00	34.00	36.00	38.00	40.00	40.00	40.00	40.00	40.00	40.00	20
19							28.88	30.02	31.16	32.30	33.44	34.58	35.72	36.86	38.00	19
18							27.36	28.44	29.52	30.60	31.68	32.76	33.84	34.92	36.00	18
17							25.84	26.86	27.88	28.90	29.92	30.94	31.96	32.98	34.00	17
16							24.32	25.28	26.24	27.20	28.16	29.12	30.08	31.04	32.00	16
15							22.80	23.70	24.60	25.50	26.40	27.30	28.20	29.10	30.00	15
14							21.28	22.12	22.96	23.80	24.64	25.48	26.32	27.16	28.00	14
13				Not Eligible to Retire			19.76	20.54	21.32	22.10	22.88	23.66	24.44	25.22	26.00	13
12							18.24	18.96	19.68	20.40	21.12	21.84	22.56	23.28	24.00	12
11							16.72	17.38	18.04	18.70	19.36	20.02	20.68	21.34	22.00	11
10							15.20	15.80	16.40	17.00	17.60	18.20	18.80	19.40	20.00	10
9												16.38	16.92	17.46	18.00	9
8												14.56	15.04	15.52	16.00	8
7												12.74	13.16	13.58	14.00	7
6												10.92	11.28	11.64	12.00	6
5												9.10	9.40	9.70	10.00	5

White areas are reduced for early retirement. Green areas represent normal (unreduced) retirement

Table 3 – Key Current Provisions

Topic	Provision
Membership	Mandatory for most City and Library employees, except for police officers and firefighters, who are members of the state-run LEOFF system. Optional for elected officials, employees who are exempt from Civil Service, temporary, intermittent, and part-time employees.
Contributions	Members contribute 10.03% of their compensation on a pre-tax basis. The City is required to at least match the employee contribution. In 2012, the City is contributing 11.01%.
Benefit Accrual (Multiplier)	2% per year of service. Percentage is applied to the member's highest average consecutive 24 months of compensation.
Compensation Defined	Only regular (non-overtime) pay counts toward the salary calculation for both contributions and benefits.
Maximum Benefit	60% of highest consecutive 24 months average compensation*
Vesting Period	5 years of City service
Minimum Retirement Age	• 30 years of service – any age • 20-29 years of service – age 52 • 10-19 years of service – age 57 • 5-9 years of service – age 62
Normal Retirement Age (Unreduced Benefit)	• 30 years of service – any age • 20-28 years of service – initially age 60, declining with each year of service to age 52. Like a "Rule of 80". For 29 years of service, age 52. • 5-19 years of service – age 65
Early Retirement Reduction Factors	• 5-19 years of service – 3% reduction per year early • 20-27 years of service – 5% reduction per year early • More than 27 years – n/a
Interest Rate on Member Contributions	5.75% for contributions received on or before 12/31/11, and 4.47% for contributions received after (annual rate and compounded annually). SCERS Board policy is to adjust the contribution rate annually on contributions received after 12/31/11.
Annual Cost of Living Adjustment (COLA)	1.5% automatic, subject to a 65% purchasing power floor, whereby a member receives a full inflation (CPI) adjustment if inflation has eroded the purchasing power of the benefit below 65% of its original level.
Benefit Options	Members have multiple actuarially equivalent ways to receive the retirement benefit, with options including partial lump-sum payments and contingent payments to surviving spouses and partners.
Withdrawal of Contributions	Vested members who leave City service before retirement may withdraw their contributions with interest. Non-vested members who leave City services are required to withdraw their contributions with interest. The City's contributions always remain with the plan.
Minimum Allowance	The annuity value of the member's accumulated contributions with interest times two. The member receives the higher of the annuity value or the benefit calculated under the age and length-of-service table provisions above.

* Subject to minimum allowance. For a complete listing of plan provisions, see Seattle Municipal Code Section 4.36 and the retiree handbook.

Governance

The City, as plan sponsor, has the ultimate responsibility for funding the pension system (along with employee contributions). The City delegates much of the task of governing the Retirement Fund to a seven-member Board of Administration. The Board is chaired by the City Council member who chairs the Council's Finance Committee. Other members include the City's Finance and Personnel Directors, two elected employee representatives (who must be from different City departments) and one elected retiree representative. These six Board members then choose the final seat from the community, someone who is neither a City employee nor a SCERS member.

Table 4 – Current Board of Administration Membership

Position	Current Member
City Council Finance Chair	Tim Burgess, Chair
City Finance Director	Glen Lee, Treasurer
City Personnel Director	David Stewart, Secretary
Elected Retiree Representative	Lou Walter (City Light)
Elected Employee Representative #1	Rod Rich (FAS)
Elected[1] Employee Representative #2	Jean Becker (City Light)
Community Selected Member	Robert Harvey

The Board has the fiduciary duty to invest the plan's assets and administer benefit payments for retirees based on their service history to the City. Per the SMC, the Board has final say with respect to benefit decisions and benefit appeals. Certain other Board powers are subject to City Council approval. These include setting the interest rate that is paid on member accounts and adopting mortality tables and other actuarial measures. The full Board meets monthly to review and approve retirements and other financial transactions, as well as any investment or administrative issues that arise. A subset of the Board meets separately each month as an Investment Committee to review investment performance, recommend investment managers for different segments of the portfolio, and recommend any needed changes. The Board is advised by staff and outside professional investment consultants. In addition, an Investment Advisory Committee, made up of finance and investment professionals from the community, provides periodic input.

System Statistics and Investments

SCERS has more than 10,000 active or vested members and over 5,000 retirees. The average pension is currently about $22,800 per year, and payments to retirees totaled nearly $114 million in 2010. SCERS is considered a mature plan, meaning that it has a full panel of retirees to support with pension payments, relative to current workers.

[1] Jean Becker was appointed by Council to fill a Board vacancy in 2011.

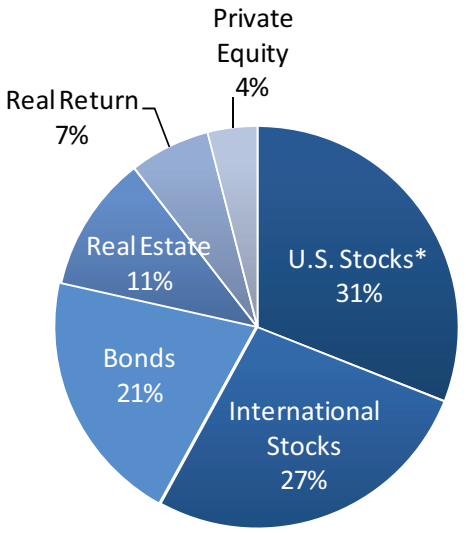
Table 5 – SCERS Key Statistics as of Dec. 31, 2010[2]

Membership	
Active and Vested Members	10,597
Retirees and Other Beneficiaries	5,428
Average Pension per Retiree	About $22,800/yr
Resources	
Net Assets	$ 1,812,754,488
2010 City and Employee Contributions	$ 90,598,411
Expenses	
Benefit Payments	$ 113,650,795
Refunds of Contributions	$ 14,715,000
Administrative Costs	$ 3,295,006
Investment Expenses	$ 4,554,181
Total	$ 136,214,982
Staff	15.5 FTE

SOURCE: SCERS 2010 Annual Report

SCERS has more than $1.8 billion in assets to support its pension costs, accumulated from prior contributions and investment returns. Pension plans that pre-fund their systems rely on asset returns to cover a majority of the total benefit cost, and as a mature plan, SCERS draws on those assets each year. The assets are invested in a variety of stock, bond, real estate and other instruments, and SCERS assumes they will generate a 7.75% average annual return on a 30-year basis. The current allocation targets are shown in Figure 1 at right. In addition, each pay period, the City and employees both make substantial new contributions into the system to support future pension expenses. These contributions totaled almost $91 million in 2010.

Figure 1 – SCERS' Target Investment Allocations



** Includes a 6% allocation to covered calls on the S&P 500*

Beside benefit payments, SCERS' other regular expenses include contribution refunds, which occur when a member leaves City service without retiring and elects to

[2] 2010 is the last year for which audited financial information is currently available. The 2012 Adopted Budget increased authorized staffing to 17.5 FTE.

withdraw his or her contributions. (In the case of non-vested members, this withdrawal is required.) The Retirement Fund also has administrative expenses, which include staff salaries, office expenses, consultants, legal fees, and other services. Finally, SCERS pays a variety of fees to its investment managers, whom the Board selects to handle SCERS' assets. These investment expenses are assumed in SCERS's actuarial reports to run about 0.25% of asset value and are similar in nature to the expense ratio paid by individual investors in mutual funds.

Recent Financial & Benefit History

Since its founding in 1929, SCERS has provided comfortable retirements to several generations of City employees. The City of Seattle has adjusted its pension provisions numerous times. A complete history of these changes is beyond the scope of this report. However, it may be instructive to recount the demographic changes, financial events, and benefit enhancements since about 1970 that are currently impacting the system's finances. The key financial data are summarized in Figure 2 and described below.

Contributions and Benefits from 1972 to 2007

In the early 1970s, the City and employees each contributed 6% of salary to SCERS, for a total contribution of 12%. The retirement fund was also relatively healthy, with an 81% funded ratio at the end of 1973. The funded ratio represents the plan's assets divided by the present value of projected costs. While 100% represents full funding, a ratio of 80% or higher that is also stable or improving is considered generally safe by pension experts.

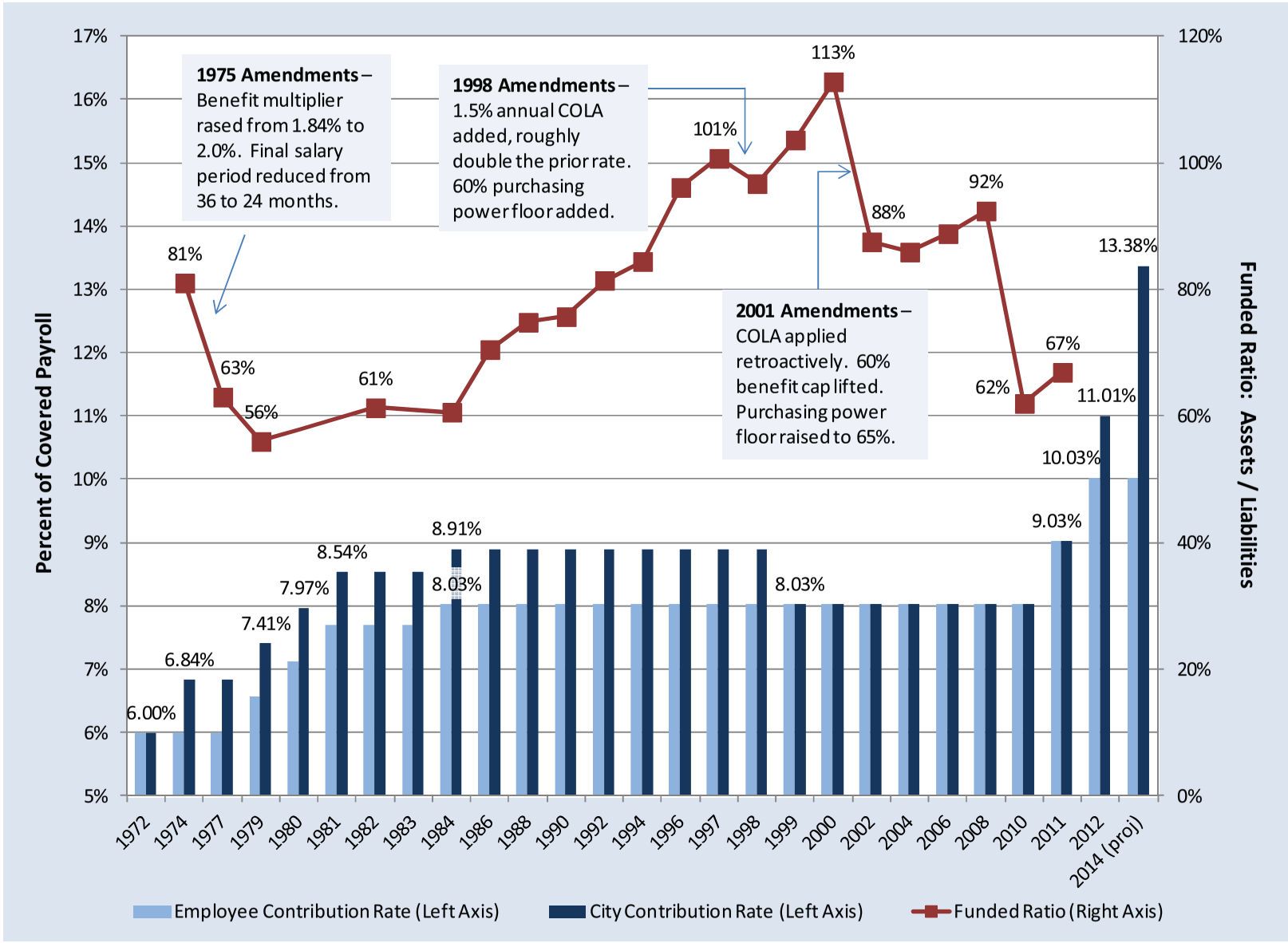
The City substantially increased the value of the SCERS pension in 1975 with several amendments. The largest of the changes involved raising the benefit multiplier from 1.84% to 2.0%. This had the effect of increasing a 30-year pension from 55% of salary to 60%. In addition, the final average salary calculation period shrank from 36 months to 24 months, which tends to raise the salary level on which pensions are based. Both changes raised SCERS' total costs. Coupled with the poor investment climate of the late 1970s, this had a negative impact on system health. The funded ratio fell to just 56% by the end of 1978, a level that indicates a significantly underfunded system. Increased contributions were required to make up the shortfall, and these were implemented in several increments for both employees and the City. By 1984, the total contribution rate was nearly 17% of payroll, with the City contributing almost a percent more than employees.

The 1980s and 1990s brought two decades of very good investment performance, with returns averaging more than 11% per year (see investment outlook section for more detail). This asset growth, along with the higher contribution rates, took the system's funded ratio steadily higher over the two decades. It surpassed 100% during the late 1990s, an era later regarded as having been a "dot-com" stock bubble. It was at this point that the City chose to engage with its employees and retirees to boost the plan's cost of living adjustments (COLA).

Two amendments in 1998 addressed the COLA. The first established a 60% purchasing power floor. This is tied to inflation and ensures that retirees' pension checks are never allowed to fall below 60% of their original purchasing power. The second established a new 1.5% annual COLA for retirees in 1998 and later. This was roughly twice the average rate of the previous formula, which was based on a "13th check" method. As a result of these benefit increases, the system's funded ratio fell 4%, and unfunded liabilities grew by almost $50 million. At the same time the City dialed back its additional contributions, and the total contribution rate fell to just over 16% of payroll, about 8% each for employees and the City.

Continued strong investment performance more than overcame those deficits and took the funded ratio to a peak of nearly 113% by 2000, at which point the City completed another round of benefit enhancements.

Figure 2 – SCERS Contribution Rates, Benefit Enhancements, and Funded Ratios, 1972-Present



- April 2001 – As part of a general re-write of the pension code, the City Council removed the cap that limited pension checks to 60% of salary. The result is that some pension annuities are now in excess of 60%, typically for members who work (and make contributions) for longer than 30 years and/or retire well after age 65.

- November 2001 – The Council applied the 1.5% automatic COLA retroactively to pre-1998 retirees, though this change only affected pension checks going forward.

- December 2001 – The Council raised the purchasing power floor on the COLA from 60% to 65%. That ordinance also adopted a trigger that will raise the floor to 70% the year after SCERS reaches full funding.

These benefit increases were being legislated even as the 9/11 attacks, the dot-com bust, and the resulting recession were sending stock prices sharply lower. The higher costs and asset losses together lowered the funded ratio by 25% in 2002, to 88%. This was a substantial reduction but still a relatively healthy level of funding. Unfunded liabilities grew by $377 million.

SCERS' financial picture improved a bit over the following six years thanks to relatively strong market returns, and the system entered 2008 with 92% funding and $2.1 billion in assets. This relatively strong position, however, was not to last.

2008 and Its Aftermath

The year 2008 saw unprecedented global economic upheaval, with losses in nearly every investment category from stocks to bonds to real estate, and a global recession from which we are still recovering. The story of what went wrong in 2008 has been well chronicled elsewhere. A short summary of the domino effects will suffice for this report.

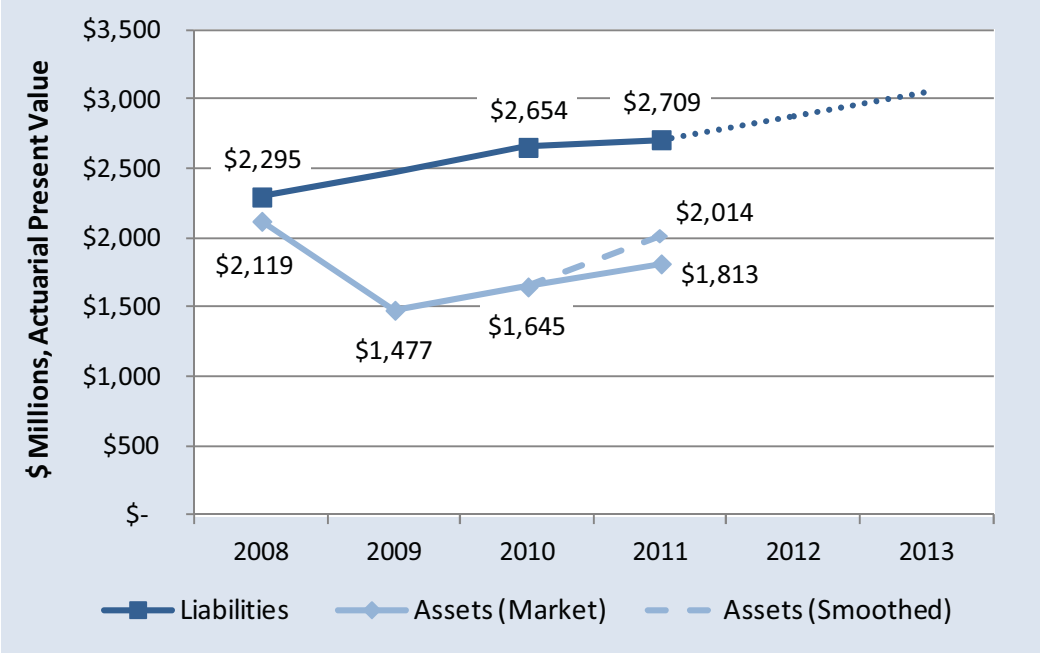
In 2008, the U.S. housing market began a sharp slowdown after years of unsustainable price growth. This exposed widespread abuses in mortgage lending that led to record numbers of defaults, foreclosures, and homes for sale. It also exposed the risks that banks, investment firms, and insurance companies had taken on in the form of mortgage-backed securities and other exotic and highly leveraged derivatives tied to mortgage performance. In many cases, the institutions buying the securities poorly understood the risks involved. Credit rating agencies had given these securities their safest "AAA" ratings despite lack of access to underlying documentation and loan-level data. Their confidence in the housing market was largely based on a thesis that geographic diversity in securities' mortgage pool would protect them from any downturn, which they thought would be regional in scope. The national downturn that did occur proved this thesis to be disastrously wrong, and the rating agencies came under heavy criticism for their practices. Mortgage-backed securities plummeted in value, and the related derivatives multiplied these losses many times over. As a result, major global financial institutions were suddenly exposed to trillions of dollars of losses and payments due. Some firms, like Lehman Brothers – which was founded before the Civil War and had survived many major world events – went immediately out of business. Several banks failed, including Seattle's own Washington Mutual, which was seized by federal regulators and sold to J.P. Morgan Chase, nearly wiping out shareholders. Other firms, like insurance giant American International Group (AIG) raced to receive massive federal bailouts and other assistance that Congress and the Federal Reserve authorized to prevent further damage and keep the global financial system functioning. Lending of all types dried

up as banks and other financial institutions desperately tried to preserve capital and avoid bad risks. The stock market lost half its value in the span of months, and a global economic recession followed, second only to the Great Depression of the 1930s. The legacy of this massive loss of wealth was high U.S. unemployment and lower prospects for future economic growth. And as is often the case for recessions sparked by financial crises, the recovery has proven to be very slow and uneven.

Effect of 2008 on SCERS Finances

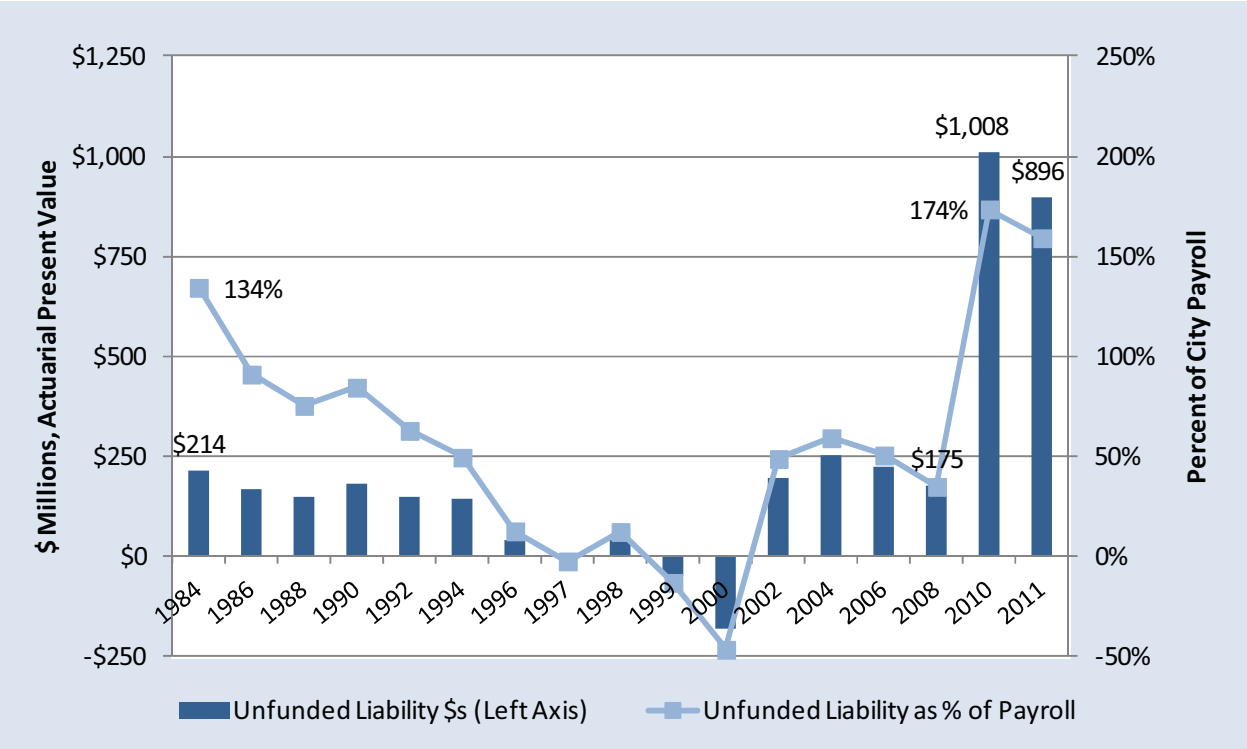
SCERS booked a $616 million investment loss 2008, which amounted to a -26.8% return. Since returns are expected to average 7.75%, this meant that the pension fund was now about 35% further behind its full funding goals than it had been the year before. Figure 3 illustrates the relationship between assets and liabilities that make up the funded ratio.

Figure 3 – SCERS Assets vs. Projected Costs ($ Millions), January 1 of each year



The difference between projected costs and the assets available to support them is also known as the unfunded liability of the plan. Figure 4 shows this unfunded liability on a longer time horizon. At the start of 2008, the plan had unfunded liabilities of $175 million, which represented a modest 35% percent of City's annual payroll. The plan's actuary concluded that at the current contribution rate, the City would be able to pay this cost ("amortize the unfunded liability" in actuarial parlance) within 16 years, which is well under the 30-year time horizon considered safe and appropriate. By the start of 2010, that unfunded liability had grown to just over $1 billion, more than five times larger than before. This liability now represented 174% of payroll, and the actuary concluded that the City would not be able to amortize these costs over *any* period at the current contribution levels.

Figure 4 – SCERS Unfunded Liabilities in Dollars ($ Millions), and as a % of Covered Payroll, 1984-2011[3]



In both percentage and dollar terms, the effect of 2008 was to increase SCERS' unfunded liabilities beyond the plan's prior experience. This spike in unfunded liability, caused primarily by the investment losses, was exacerbated by other factors. With the 60% cap lifted, pension checks under the minimum allowance formula will increasingly exceed 60%. This is due to a bit of a feedback loop in the benefit definition where the minimum allowance annuities are based on employee contributions with interest, much like a cash balance plan. As those contribution rates rise, so do SCERS' costs. The SCERS Board also adopted a new mortality table in 2009 that added a little over two years of life expectancy for plan members. This raised liability estimates as well. And looking forward, the recession may shrink the payroll base on which the City amortizes its unfunded liabilities. Covered payroll shrank in 2011 due to significant layoffs, retirements, and other budget cuts that the City enacted in response to the recession and to lower revenue. The effect of this change will be recognized gradually in future experience studies, but it may cause contribution rates to need to go higher than current projections.

Effect on Contribution Rates

The City's labor agreement with the Coalition of City Unions provided for an equal split of contribution increases between employees and the City in the event that SCERS' unfunded liability could not be amortized in under 30 years. In late 2009, the City negotiated with its labor unions to raise employee

[3] 2011 figures represent market values for consistency. 2011 investment returns are expected to be at or near 0%, missing the return target, so the unfunded liability in the next valuation is expected to be higher.

contributions from 8.03% up to 10.03% of salary, which was implemented in two steps in 2011 and 2012. In 2011, the SCERS Board adopted a smoothing policy under which investment gains and losses are phased in over five years. This policy, common among public pension funds, was intended to provide a gradual path for contribution rate increases over several budget cycles. The City Council passed a resolution setting financial policy for City contributions in accordance with the Board's action. In 2012, the City's contribution rate is 11.01%. The City's contribution is projected to rise to 13.4% of covered payroll by 2014, for a total contribution rate of 23.4%, as shown in Figure 5. Preliminary numbers show the SCERS portfolio essentially flat for 2011, so it appears certain that SCERS will not meet its 7.75% return target. The next contribution projection is likely to be still higher.

Figure 5– Current and Projected Contribution Rates, 2010-2017
(% of Payroll, City and Employee Share Combined)

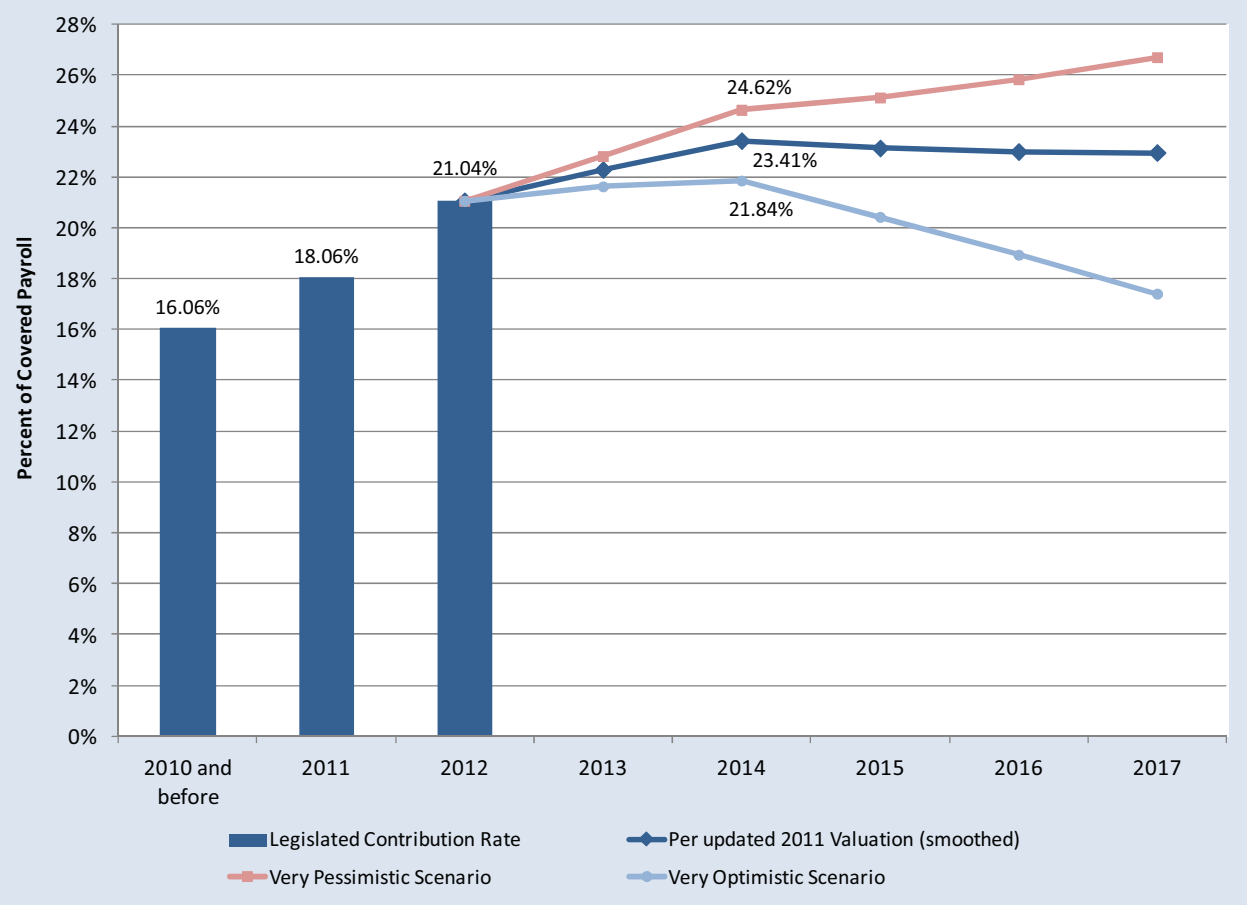


Figure 5 shows the projected contribution path with alternative optimistic or pessimistic views of investment performance.[4] If SCERS meets its investment return targets, then contributions must rise to 23.4% and remain near that level for 30 years to pay off the system's unfunded liabilities. If investment returns continue to lag the target rate, then required contributions will continue to rise. Only if SCERS

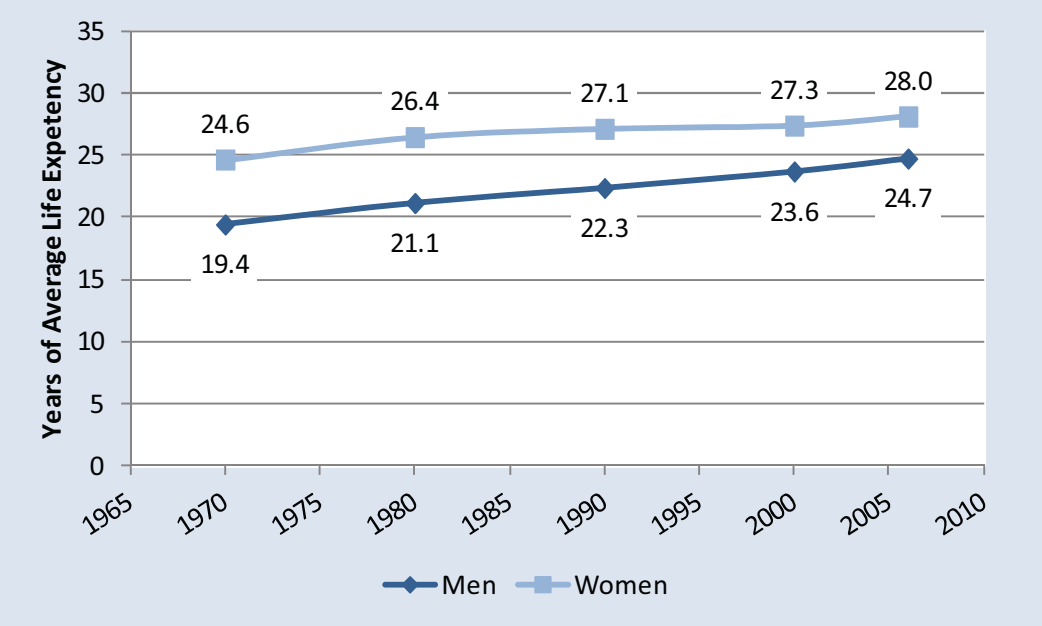
[4] The paths, calculated by Milliman actuaries, show a 90% confidence interval around investment returns.

posts superior investment performance for a sustained period of time will the contribution curve start to bend downward. Indeed, the investment performance would have to be exceptional to avoid further contribution increases. To put the challenge in perspective, after a -26.8% loss, it would take annual returns of over 30% to get back on track within two years; returns over 16% to get back on track in five years, and returns of 12% to do the job in 10 years. Even a return to strong stock market performance of the 1980s may fall short (see investment outlook section for more detail) without substantial additional contributions.

Increasing Life Expectancy

Against the backdrop of the events just described, employee life expectancy has also been on the increase. While this is, of course, a very good thing, it does drive SCERS' costs upward. In 1970, the average City employee retiring at age 55 could expect to live 22 years in retirement. This is a major factor in determining how much in assets SCERS needs to have to make benefit payments over that period. Today, a 55-year-old retiree can expect to live 26 years, an increase of about 4 years (18%). In practice, this means SCERS needs more assets at retirement to cover the cost of the same lifetime benefit. Looking forward, life spans are expected to continue to grow. By 2037, the average 55-year-old member is expected to have 30 years of life expectancy, a 36% increase compared to 1970 and a 15% increase compared to today. This also means that members entering the system today will have, on average, retirements that are at least as long as their career was.

Figure 6 – Average Life Expectancy of a 55-year-old, 1970-2006
National Vital Statistics Reports, Centers for Disease Control



The Seattle Municipal Code tasks the SCERS Board of Administration with making periodic adjustments to mortality assumptions to keep them in line with the plan's experience. In addition to adding life

expectancy, the Board's new mortality table in 2009 built in future expectations of life expectancy gains, as it is a "generational" table that automatically projects longer lives for new entrants each year.

Conclusion

The end result of increasing life spans, benefit increases, and investment losses is that by 2014, employees and the City will pay nearly *double* the share of payroll they devoted to the SCERS pension a generation earlier. In dollar terms, this represents about $64 million more per year over the contribution rate from 1972. It is noteworthy that the City has never adjusted the SCERS normal retirement ages to match higher employee longevity the way Congress in 1983 adjusted the regular Social Security age upward to 67. This benefit and investment history also demonstrates a typical pattern in public pensions. When employees and retirees demand benefit increases, employers tend to grant them after periods of strong investment performance. These have the effect of permanently increasing the cost level. Then, when investment performance takes a dip – or in the case of 2008, a dive – contribution rate increases are the only realistic way to cover the increased costs. As we will see with the survey of recent changes, states and cities across the country are looking for ways to lower their pension costs and reverse this trend.

Key Findings

- SCERS has unfunded liabilities of about $1 billion to pay off over the next 30 years. This represents about 174% of covered payroll.

- Employees and the City will soon be paying nearly *twice* the share of their payroll to the SCERS pension benefit that they did a generation ago. In 1972, contributions to the pension fund totaled 12% of payroll. In 2014, they are projected to approach 24%.

- Three major factors contributed to this doubling of costs:

    - $616 million in investment losses in 2008.

    - Benefit increases to the multiplier, the COLA, and other plan features in 1975, 1998, and 2001; and

    - Longer life expectancy, which has added an average of 4 years in retirement since 1970 and which is projected to add another 4 years by 2037;

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Investment Return Outlook

The rate of return that a pension plan earns on its investments is perhaps the single most important determinant of the plan's financial health, driving its ability to pay the benefits promised. This is because the majority of a retirement plan's income typically comes from investment returns, not contributions. Every pension plan makes an investment return assumption for purposes of setting the plan's funding requirements. SCERS' current assumption is 7.75% on a 30-year average annual basis.

SCERS' investment experience

SCERS has significantly beaten its investment return assumption over the past 30 years, with average annual returns of 8.8% per year. However, most of the best years were in the beginning of that period. As discussed in the previous section, the strong stock market performance of the 1980s and 1990s – which generated average returns over 11% – are what enabled SCERS to improve its funded status from the lows of the late 1970s. Since 2000, the picture has changed radically. The plan's investments averaged only 3.7% in the last decade, a period that included two major recessions, both of which caused major drops in global stock market valuations. The sharpest decline occurred in 2008. Not only did SCERS book an unprecedented 26.8% loss, but the historic pattern of correlations between different investments (stocks, bonds, real estate, etc) shifted, and nearly all the investments lost value together that year. Despite relatively stronger returns in 2009 and 2010, the portfolio value, once $2.1 billion, has yet to return to its previous level.

Figure 7 – SCERS Average Annual Investment Return, by Decade

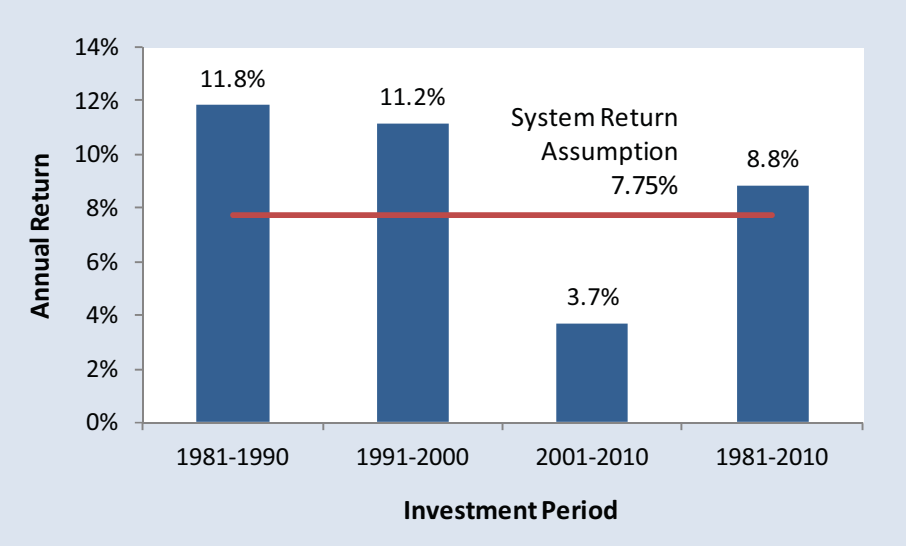
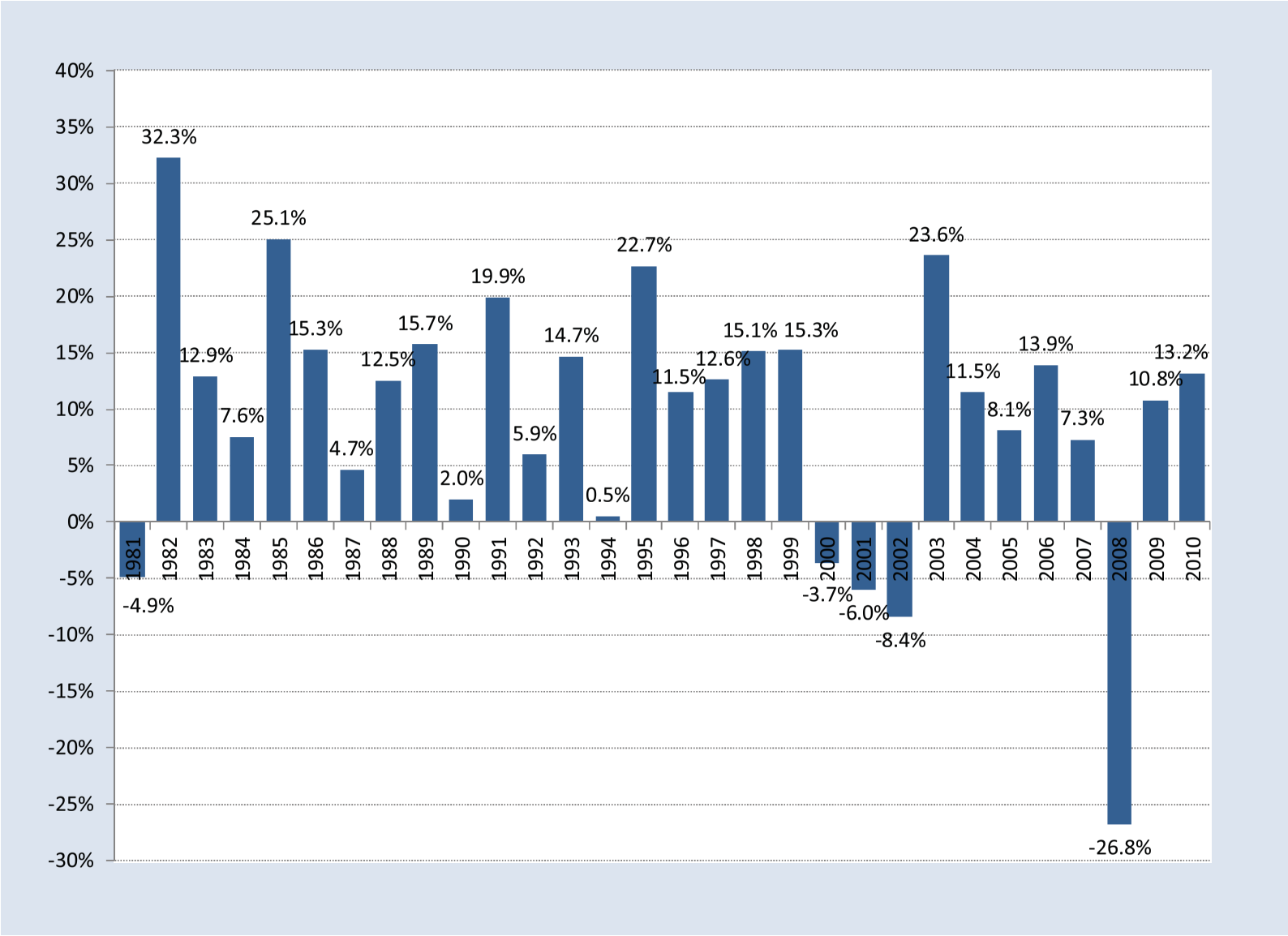


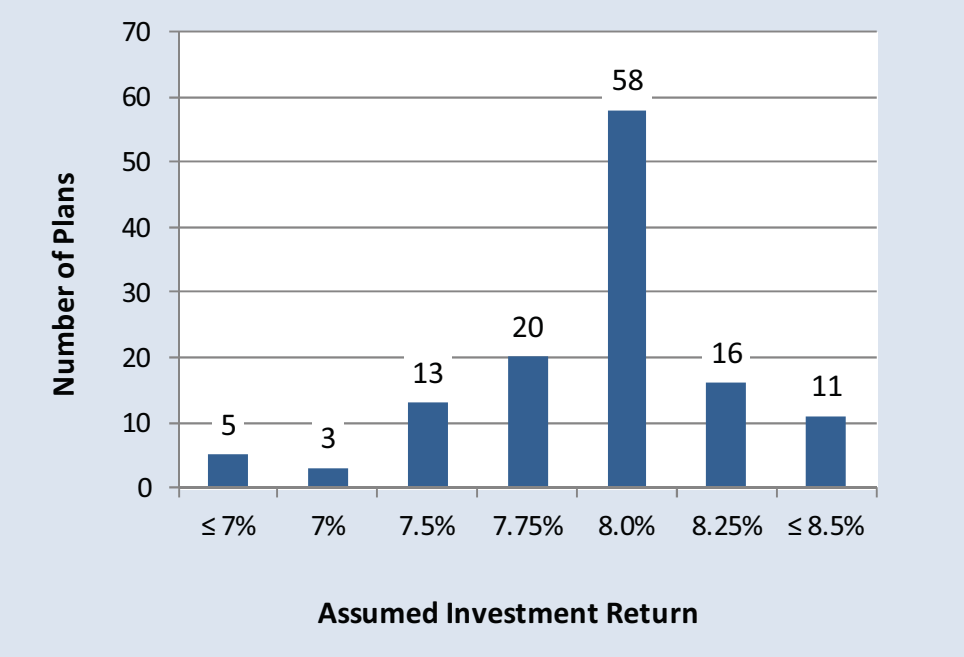
Figure 8 – SCERS' 30-Year Investment Return History, 1981-2010



SCERS compared to other public pension funds

SCERS' investment return expectation is slightly below the median public plan's assumption of 8.0%, according to the Public Fund Survey, which incorporates data from 126 state and local retirement programs. Typically, these return expectations include two components – an expected rate of inflation and an investment return over and above inflation, called the real return. The median public plan's 8.0% is comprised of a 3.50% inflation expectation and a real return assumption of 4.50%. SCERS also assumes a 3.50% inflation rate, with a real return rate of 4.25%. So, both SCERS' nominal and real rates of return are 0.25% below that of the median public fund.

Figure 9 – Investment Return Assumptions for 126 State and Local Pension Plans
(as of January 2012)



The weakness of investment returns over the past decade, along with the severe stock market decline of 2008-09, has led many actuaries and pension funds to question whether their return expectations are too optimistic, and many have responded by lowering their forecasts. Gabriel, Roeder, Smith & Company compiled a list of 28 public pension funds that had changed their investment return recently. All but one of the 28 funds lowered their return assumption, with reductions ranging from 0.10% to 0.75%.

Table 6 – Investment Return Assumption Changes, State and Local Plans, 2009-2011

Plan	Prior Assumpton	New Assumption	Change
Alaska PERS	8.25%	8.00%	-0.25%
Alaska TRS	8.25%	8.00%	-0.25%
Arizona Public Safety	8.50%	8.25%	-0.25%
California STRS	8.00%	7.50%	-0.50%
San Francisco City and County RS	8.00%	7.75%	-0.25%
Los Angeles City ERS	8.00%	7.75%	-0.25%
San Diego County ERS	8.25%	8.00%	-0.25%
Colorado PERA	8.50%	8.00%	-0.50%
Colorado FPPA	8.00%	7.50%	-0.50%
District of Columbia RB	7.50%	7.00%	-0.50%
Hawaii ERS	8.00%	7.75%	-0.25%
Illinois SERS	8.50%	7.75%	-0.75%
Illinois SURS	8.50%	7.75%	-0.75%
Indiana PERF	7.25%	7.00%	-0.25%
Indiana TRS	7.50%	7.00%	-0.50%
Detroit Police and Fire RS	7.50%	8.00%	0.50%
Missouri LAGERS	7.50%	7.25%	-0.25%
New Hampshire RS	8.50%	7.75%	-0.75%
New Mexico ERB	8.00%	7.75%	-0.25%
NY State and Local ERS	8.00%	7.50%	-0.50%
Ohio School Employees RS	8.00%	7.75%	-0.25%
Pennsylvania PSRS	8.50%	8.00%	-0.50%
Pennsylvania SERS	8.50%	8.00%	-0.50%
Rhode Island ERS	8.25%	7.50%	-0.75%
Utah Retirement System	7.75%	7.50%	-0.25%
Virginia Retirement System	7.50%	7.00%	-0.50%
Washington State RS	8.00%	7.90%	-0.10%
Wisconsin Retirement System	7.80%	7.20%	-0.60%

SOURCE: Gabriel, Roeder, Smith & Co. research division

Outlook for future investment returns

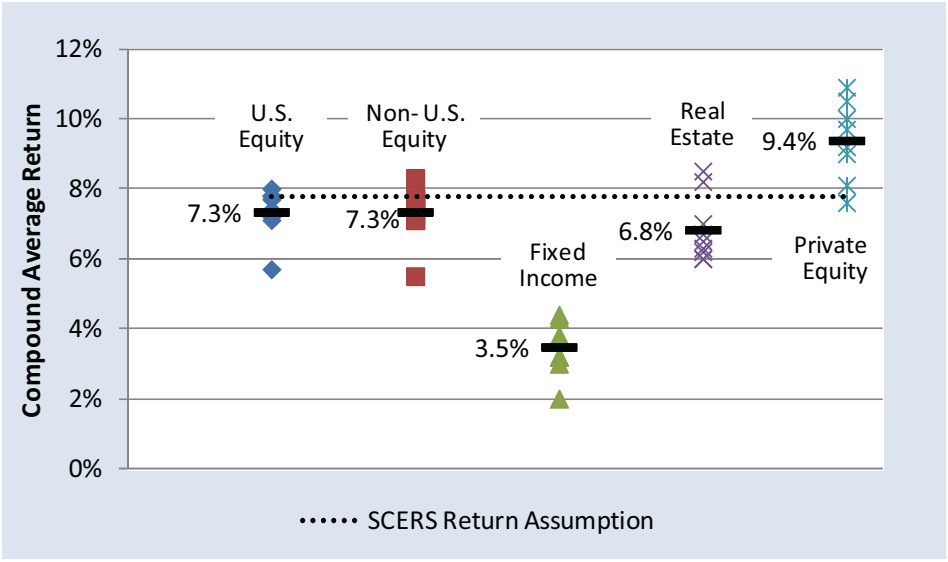
While no one can know the future with certainty, historical data, careful analysis, and current forecasts can help in identifying a range of reasonable expectations for future investment returns. Plan actuaries focus on long-run returns because pension funds invest for at least a 30-year horizon. However, we begin with a discussion of the current investment climate and shorter-term trends because they affect expectations for the long term, and because they are the major source of SCERS' current financial difficulties.

Current investment climate and ten-year outlook

Since 2000, investment returns in equity markets have been unusually weak by historical standards. For example, the average annual return over the past ten years of an S&P 500 stock market index fund was 2.9%. Although bond funds have done better than equity funds in recent years, the average annual return of an index fund tracking the total U.S. bond market was 5.5% over the past 10 years. Thus the returns for both equities and bonds have fallen far short of SCERS' investment return assumption of 7.75%. A key reason that the stock market's performance over the past decade has been so weak is that equity markets were significantly overvalued at the end of the 1990s. The price-earnings ratio for the S&P 500 peaked at around 30 at the beginning of the 2000s decade, compared to a long-run average near 15. This means investors were paying twice as much for a given amount of earnings than they normally do. Over the past ten years, the S&P 500 price-earnings ratio has fallen back to historic levels, suggesting that stocks are no longer overvalued. Also affecting recent performance was the 2008-09 recession, the most severe since the Great Depression of the 1930s.

With investment returns having been weak for more than a decade and the U.S. economy still struggling to recover from the 2008-09 recession, the investment community has become increasingly pessimistic about investment return prospects over the coming decade. For example, SCERS' investment consultant, Pension Consulting Alliance, Inc. (PCA), recently lowered its ten-year capital market return assumptions for all investment classes. PCA lowered the return forecast on fixed income investments (bonds) from 3.90% to 3.20%. Expected rates of return for domestic equity went from 7.80% to 7.40%, and international equity returns were reduced from 7.75% to 7.10%. PCA was not alone in doing this. Figure 10 shows the return assumptions for nine major investment consulting firms, including PCA, Russell Investments, and Wilshire. These firms also typically forecast on a 10-year horizon. All the major investment categories, with the exception of private equity, are projected to be below the SCERS assumption of 7.75%. Consequently, it becomes extremely difficult construct a portfolio that will meet the current investment target. Indeed, some pension funds are increasingly turning to private equity to hit their targets, at the cost of increased volatility and higher potential for large losses.

Figure 10 – Average Investment Return Projections for Nine Major Investment Consulting Firms



In 2010, PCA projected that SCERS' current target portfolio would return 7.7%. This included an assumption of 3.0% inflation. Applying PCA's 2011 return assumptions to the same asset mix reduced the rate of return to 7.0%, albeit with 2.75% inflation. The drop in the nominal return rate was 0.70%, while the real (inflation-adjusted) return declined by 0.45%. PCA and other firms develop their investment return assumptions using a building block approach:

1. Start with expected inflation.
2. Determine the appropriate "risk-free rate," i.e., a return over inflation that one might expect from a money market fund.
3. Determine appropriate "risk premiums" over the risk-free rate for each asset class.

A key reason that PCA's current return assumptions are lower than historical returns is that PCA's current risk-free rate (typically represented by 10-year U.S. Treasury bond yields) is well below historical levels. Adding risk premiums on top of this very low risk-free rate yields relatively weak rates of return for all asset classes. However, risk-free rates are expected to rise over time as the economy improves and the Federal Reserve increases short-term interest rates. Rising risk-free rates should boost the expected rates of return for all other asset classes.

Although it is understandable that capital market assumptions are being lowered for investment planning purposes, one might question whether too much weight is being given to recent experience. A contrarian might argue that the much of the weakness of the past 10 years has resulted from the market working off its 1990s over-valuation to attain a more appropriate valuation level today. If true, that may future returns more in line with historical returns.

Long-term investment return outlook

As discussed in the previous section, the investment community's current expectation for investment returns over the next 10 years is below SCERS' assumption of 7.75% per year for any portfolio that does not rely on an extreme share of private equity. However, since pension plans have a time horizon much greater than 10 years, it is important to keep longer-term perspective in mind. Forces affecting returns in the short run may be less relevant in the medium to long term. That is not to say that the short-term view is unimportant for maintaining system health, especially since plans' funded status can vary dramatically over those 10-year periods. The old saying that "the market can stay irrational longer than you can stay solvent" comes to mind.

A good starting point is to look at the historical record, as economists have collected a wealth of historical data on asset returns. Siegel (2005) complied data on U.S. stock market returns for the period 1802-2003. He found that the average annual real (i.e., inflation-adjusted) rate of return over that 200 year period was between 6.5% and 7.0%. He also found that returns were very consistent over time, averaging between 6.5% and 7.0% over any long periods during those 200 years. Siegel also examined stock market returns in other nations and concluded that the average real return on stocks worldwide has been not far from the U.S. return rate. Real returns on bonds averaged 3.5% over the 200 year period, roughly half the rate of return of stocks.

Given the persistence of equity returns over the past two centuries, what reason do we have to expect future returns to deviate from historical returns? One thesis is that demographic trends may cause a slowdown in economic growth in the U.S. and other developed countries, and since stock market

returns are strongly correlated with economic growth, future returns could be significantly weaker. The U.S. is undergoing a demographic transition to lower birth rates and higher life expectancy. As a result, the working age population will grow more slowly in the future. Also constraining future labor force growth is the fact that women have already substantially increased their participation in the labor force in recent decades. Since this mathematically cannot happen again, this may limit the potential for future labor force growth. Another potential demographic impact on investment returns is the possibility that retiring baby boomers will increasingly sell their assets to fund their retirements. With relatively fewer younger Americans around to buy those assets (and with younger generations having relatively less wealth), the prices of those assets could fall or grow more slowly.

The major counter-argument to this bleak thesis is increasing globalization. Proponents of this view point out that although the developed world is aging rapidly, the developing world is still relatively young. In addition, much of the developing world is now enjoying a period of very rapid economic growth, and growth prospects for the future are bright. U.S. companies have increased their investments in and sales to other nations, particularly emerging market countries. This makes U.S. stock market returns less dependent on the growth of the U.S. economy and more dependent on world economic growth. In addition, pension funds and other investors, recognizing that the locus of growth is shifting, have been increasing their investment in international assets, thus reducing their dependence on U.S. economy for asset growth. This is true for SCERS as well. Finally, the developing world has substantial trade surpluses and rapidly growing capital reserves. Investors from these countries may well buy assets in U.S. companies that retiring baby boomers will sell.

To conclude, we acknowledge that although we can't predict future returns, there is insufficient evidence to conclude that asset returns will be significantly lower. The current bearishness of the investment community in part reflects the poor performance of the past decade. However, that performance was driven in large part by the overvaluation of stock markets at the beginning of the decade and the severity of the 2008-09 recession. Stock markets no longer appear to be overvalued, so this should provide some support for future returns. If world economic growth does provide significant support for both U.S. and international equities, then we might expect long-run real returns on equities to either match or not fall significantly below the historical rate of 6.5% to 7.0%. At an inflation rate of 2.5%, a real return of 6.5% yields a nominal return of 9.0%. If the real return were to drop by a percentage point to 5.5%, the nominal rate of return would still be 8.0%.

Using a risk-free rate of return to value pension plan liabilities

Standard actuarial practices use the assumed rate of future investment returns to discount future pension liabilities. Recently, an alternative approach to valuing pension liabilities has received considerable attention from economists and the press. This approach would value liabilities at a risk-free interest rate, such as the interest rate on Treasury bonds. The proponents of this approach argue that the discount rate should reflect the risk associated with the liabilities, and since the liabilities are guaranteed by law in most cases, the risk-free rate is the appropriate discount factor. Currently, the interest rate on a 30-year Treasury bond is 3.1%, and yields on shorter-duration treasuries are significantly lower than that. Replacing a discount rate of 7.75% with 3.1% or lower would result in an extremely large increase in the value of SCERS' liabilities. Such an increase would cause the plan's funded ratio to fall substantially, its normal cost to increase, and its required contributions to rise.

Novy-Marx and Rauh (2009) examined how switching to a risk-free discount rate would affect the liabilities of U.S. state pension plans. They estimated that at the end of 2008, accumulated liabilities were $2.87 trillion, using the states' then-current discounting practices, typically 8%. When Novy-Marx and Rauh applied a risk-free rate, the estimate of total liabilities increased by 80% to $5.17 trillion. The proponents of using a risk-free rate of return argue that current practices lead plans to understate their liabilities and causes them to receive inadequate funding. It may also lead them to take on excessive risk with their investment allocations and shift costs to future generations. However, many actuaries who work with public pension plans disagree with this position (Jones, Murphy, and Zorn, 2009). They believe that using a risk-free rate of return would overstate liabilities and plan costs, force current taxpayers to make larger contributions than are necessary, and increase the volatility of contribution requirements, because risk-free interest rates are constantly changing.

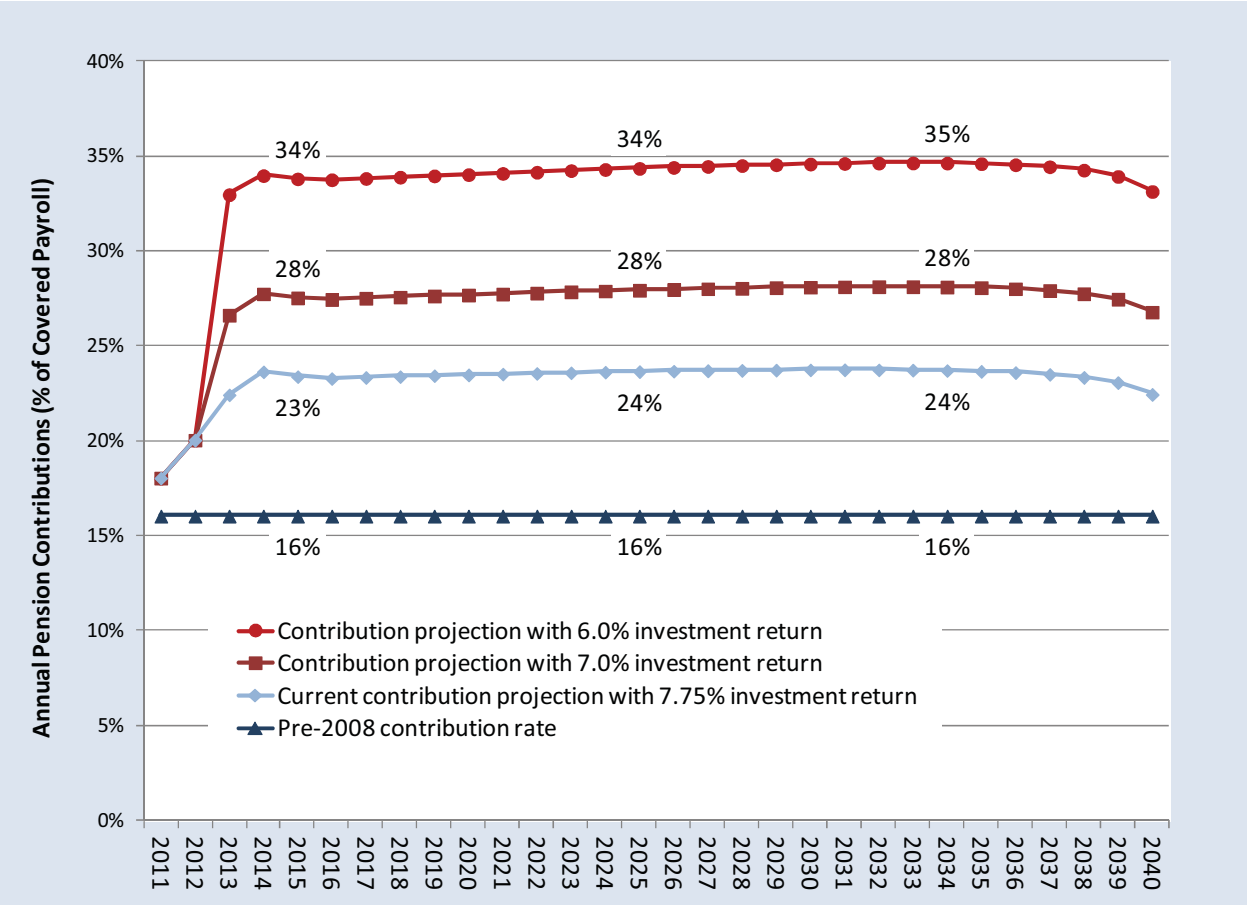
As discussed in the previous section, over the 200-year period from 1802-2003, stocks have dramatically outperformed fixed income investments. Siegel (2005) calculated that a dollar invested in stocks in 1802 would have grown to $597,485 by 2003 in real (inflation-adjusted) terms. That same dollar invested in Treasury bills would have grown to just $301. The magnitude of this difference suggests that it would be foolish for pension funds to invest only in risk-free assets, essentially leaving money on the table in an extreme degree of risk aversion. By investing in riskier assets, pension plans greatly increase the probability of achieving higher returns on their investments. They also increase the uncertainty and volatility of future returns, but the added risk is mitigated in part by the permanent nature of public pension funds. Because pension plans are in business for the long term, they have some ability to smooth their returns over time and to weather periods of weak returns.

Effect of Investment Returns on Pension Contribution Rates

Because the pension fund gets most of its funding from investment earnings, a change to the investment return has a large effect on required contribution rates. Recall that the SCERS portfolio is worth about $1.8 billion, so a 1% difference in the return is worth $18 million today. The covered payroll of SCERS members, on which contributions are based, is about $560 million, so a 1% contribution rate increase only generates about $5.6 million. So the simple, one-year math shows that it would take more than a 3% change in the contribution rate to make up the money lost by a 1% change in the investment return rate. This is simply because the investment base is so much larger than the payroll base.

GRS modeled the current benefit and the new plan options at several investment return levels. Figure 11 shows the effect of investment earnings on contributions for the current benefit. At 7.75% returns, the required contribution rates are projected to rise to around 24% of payroll and remain there for 30 years to amortize the system's unfunded liability. If the portfolio only returns 7.0%, as PCA currently projects it may for the next 10 years, the contribution rate would need to rise to 28% of payroll and remain there for 30 years. Only time will tell whether the current pessimistic assessments of investment returns will prove true.

Figure 11 — Projected Annual Pension Contributions
Current Benefit. Employee + Employer Share. % of Covered Payroll.



SOURCE: IDT Staff graphic based on GRS projection outputs. See optional Appendix 5 for full projections.

Conclusions / Key Findings

- SCERS has beaten its 7.75% investment target over the past 30 years, averaging an 8.8% return, but significantly underperformed the target over the last 10 years, averaging only a 3.7% return.
- The investment return is the most important determinant of a plan's cost as asset growth provides the majority of the value to pay benefits.
- There appears to be consensus among investment firms that returns will be lower than their historical ranges over the next 10 years.
- SCERS' investment consultants now project that the portfolio will return only 7.0%. If this projection is accurate over 10 years or more, contribution rates would need to rise an additional 4% of payroll to 28%.

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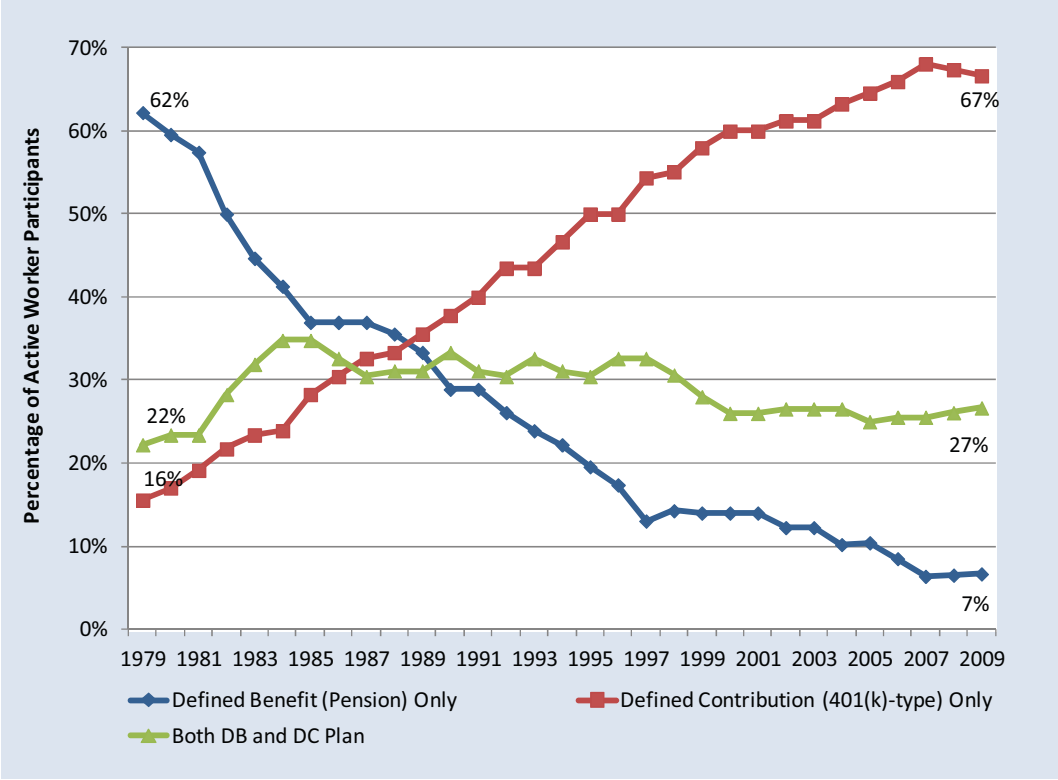
Benefit Comparisons to Other Retirement Plans

There is a wide diversity of designs for public and private sector retirement plans. In contemplating a change for new hires in Seattle, it may be helpful to see how SCERS' current benefit compares.

Private Sector Plans – A Shift to Defined Contribution

A generation ago, most private sector workers had access to the same kind of defined benefit (DB) pension plan that public employees do. In the post-World War II era, employee benefits were often seen as a prime tool to recruit and retain workers, and most workers were expected to have long tenures with their employers. In 1979, as shown in Figure 12 below, 62% of workers had a guaranteed DB pension, and an additional 22% had access to both a DB plan and a defined contribution (DC) plan. Over the last 30 years, private employers have made a pronounced shift away from DB plans, so that today, 67% of workers with retirement plans have only a DC plan option.

Figure 12 – Private Employers' Retirement Plan Offerings, 1979-2009



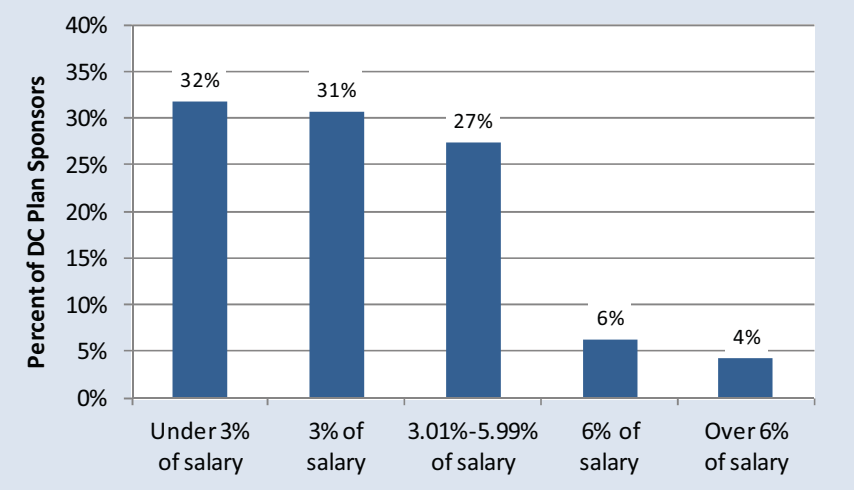
A host of reasons have been cited for this shift. In 1978, Congress created the 401(k) plan, which allows for pre-tax contributions into an individual employee account with an employer match. This design increased in popularity in the 1980s, as more employees sought portability of their retirement accounts while they increasingly changed jobs, and employers sought lower and more predictable benefit and administrative costs. With the strong stock market performance of the 1980s and 1990s, the trade-off between a guaranteed benefit with lengthy tenure requirements versus a portable account that could

be expected to grow at over 10% per year must have appeared attractive to many. Other factors that researchers say contributed to the demise of private DB plans include various tax law changes (ERISA, OBRA '87), accounting standards (FASB 87), and rising pension insurance premiums in the 1980s. Individually, these changes were often intended to strengthen pensions and protect workers. Collectively, they also raised costs and administrative burdens for employers relative to the new 401(k) option, and they decreased design flexibility.

Defined Contribution Plans Today

In 2011, a majority (64%) of private employers who offer a DC plan match employee contributions between 3% and 6% of salary, with 3% of salary being the most common policy. Employee contributions are typically only limited by IRS maximums, which in 2011 were $16,500 for most employees and $5,500 higher for employees over age 50 doing catch-up contributions.

Figure 13 – Maximum Employer Match Offered in Private Sector DC Plans, 2011



The effects of 2008 on private sector employees with defined contribution plans has been much commented on in recent press reports. Many workers suffered the same precipitous drop in account value that public pension plans did. Depending on their investment decisions, they may or may not have participated in the partial recovery in 2009-2011. As a result, many members of the baby boom generation who are fortunate enough to have jobs are postponing retirement and working longer to afford their retirements. And many unemployed workers have needed to prematurely tap their retirement savings to provide income while they look for work. The effects of the recession and this massive loss of wealth on this generation's retirement will play out for years to come.

SCERS Compared to Other Public Defined Benefit Plans

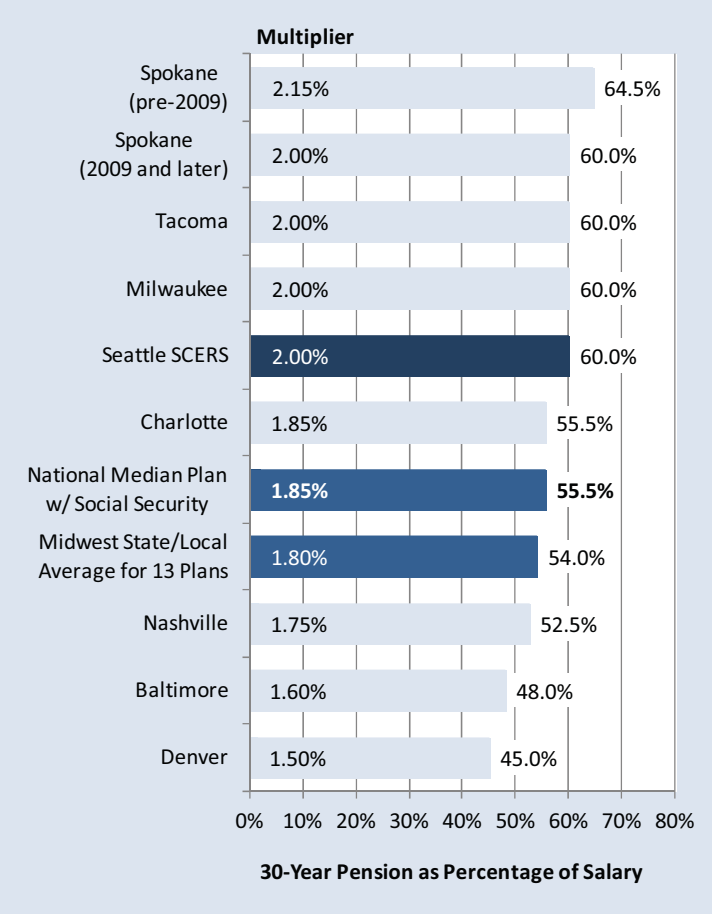
The City's defined benefit plan shares many features with other state and local DB plans. Determining the value of the benefit is complex, as dozens of individual policy features are all important. However, a few key features determine most of the value. Among these are:

1. ***The Multiplier*** – What percentage of salary in retirement does the member earn for each year of service?
2. ***The Normal Retirement Age*** – What combination of age and length of service will allow a member to retire with a full (unreduced) benefit?
3. ***Employee contributions*** – What percentage of salary must employees themselves contribute to the pension plan?

Multiplier

At 2.0% per year of service, SCERS has a multiplier that is higher than the average plan. According to the Public Fund Survey, the median plan has a 1.85% multiplier, which provides a 55.5% pension after 30-years of service, whereas SCERS provides 60%. Interestingly, SCERS was near the median until 1975 when the multiplier was increased. When comparing plans, it is important to note which plans act in concert with Social Security and which do not. Social Security can provide an additional 20% to 50% (depending on income) of salary in retirement. Plans that do not work with Social Security typically have a higher median multiplier of 2.2%, but the pension is meant to provide all of the member's income in retirement. (For more on the role of Social Security, see the income replacement section of this report). As shown in Figure 14, SCERS has some company at 2.0%. Spokane's plan recently reduced its multiplier from 2.15% down to 2.0%. Other cities, like Denver and Nashville, target lower income replacement rates with multipliers between 1.5% and 1.75%.

Figure 14 – Multiplier and 30-Year Pension Amount for Pension Plans with Social Security

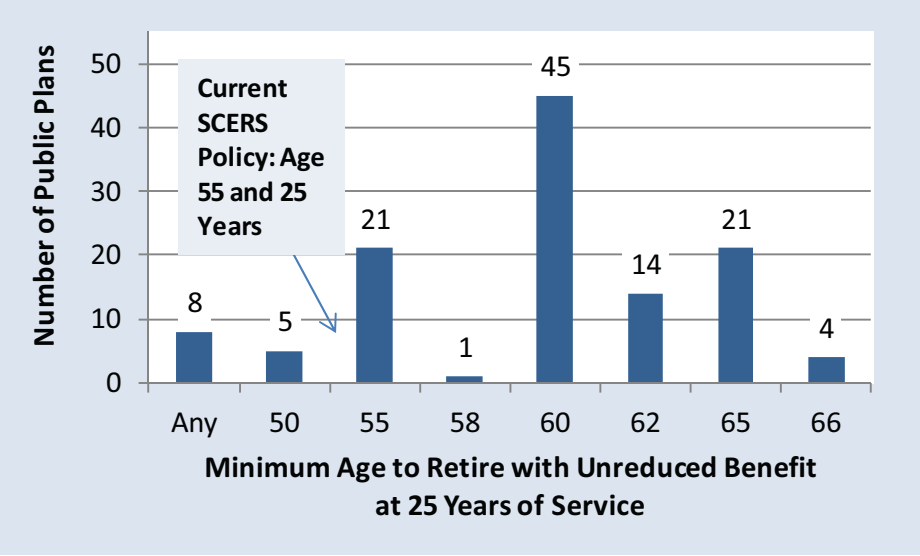


Normal Retirement Age

SCERS' normal retirement age is also younger (more generous) than the average pension plan. Normal retirement is the age at which members' service entitles them to retire with the full unreduced benefit. In SCERS' case, a member with 30 years of service may retire with the full pension at any age. With 28 or 29 years of service, members may retire at age 52. From 20 to 28 years of service, the normal retirement age functions like a rule of 80. That is, the pension check is not reduced for early retirement so long as his or her age plus service equal 80. A member with 25 years of service may retire at age 55 and receive a pension worth 50% of salary. If this same member were age 54, the pension check for the same 25 years of service would only be 47.5% of salary. This reduction reflects the fact that member can be expected, on average, to live and receive benefits for an additional year in retirement.

Normal retirement rules are often complex and difficult to compare in general. Figure 15 compares one representative point in the age/length-of-service table, using data on 119 state and local retirement plans from the Public Fund Survey. The data are for mostly general government and teacher retirement plans only. (Public safety plans typically have lower retirement ages). The data compare the minimum age at which a member may retire with 25 years of service and receive an unreduced benefit. Where plans have recently changed their rules, the table reflects the most recent policy for new hires.

Figure 15 – Normal Retirement Age for Public Pension Plans at 25 Years of Service
(Public Safety Plans Excluded)

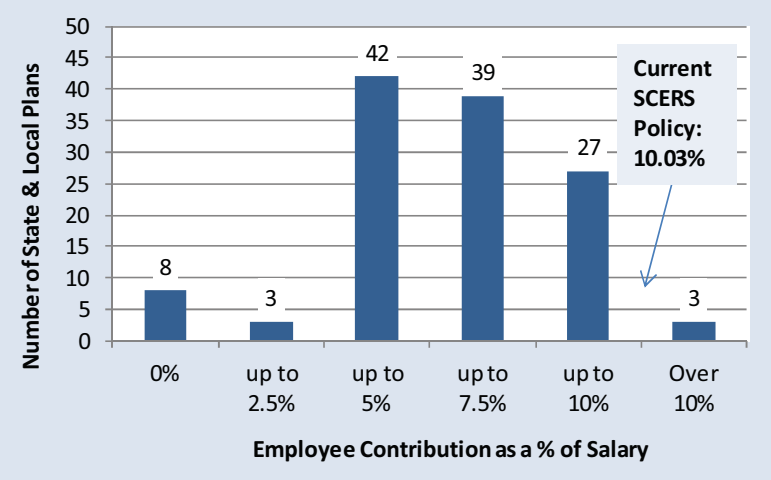


A large majority (71%) of state and local plans encourage members to either work longer or retire at an older age than SCERS. And this age requirement is climbing in response to pension cost increases, as many governments make policy changes for new hires (see next section for more detail). As life spans increase, more plans are moving toward a normal retirement age of 65 (or even Social Security eligibility). This shift suggests a different concept for the traditional DB pension – less like a benefit that begins after 30 years of service and more like a benefit that provides income just in old age.

Employee Contribution Rate

Seattle employees contribute about twice as much of their salary as the median public plan. In 2012, employees are contributing 10.03% of salary, compared with a median rate just over 5% for plans with Social Security, according to data from the Public Fund Survey. Plans without Social Security charge a median rate of 8.5%, but those employees do not pay Social Security taxes. Employee contribution rates can vary from 0% (non-contributory) to over 13% in some jurisdictions. And recently, many plans have increased their employee contribution rates.

Figure 16 – Employee Contribution Rates for Public Pension Plans
(Public Safety Plans Excluded, data as of January 2012)



SCERS Compared to the State of Washington's PERS Plans

The State of Washington operates multiple pension plans aimed at different segments of its workforce from teachers to police officers, firefighters, and judges. Most analogous to SCERS are the state's PERS plans for general government employees in state and local jurisdictions. Appendix 2 summarizes some of the key policies for each of the PERS plans.

- The current SCERS benefit is closest in design to PERS 1, which closed to new membership in 1977. Both feature a 2.0% multiplier per year of service and allow members with 30 years to retire at any age at full benefits. Both also allow full (unreduced) retirements for some members while they are still in their 50s, though on slightly different schedules.

- PERS 2 is also a DB plan with a 2.0% multiplier, but it has much stronger incentives for later retirement than SCERS. The plan's normal retirement age is 65, and members with less than 30 years of service see their benefit reduced about 10% for each year early that they retire. On the other hand, PERS 2 features a more generous COLA than SCERS, which is based on actual inflation (CPI), up to 3%.

- PERS 3 was implemented in 2002 as an alternative option to PERS 2. It is a hybrid plan that features a defined benefit component with a 1.0 multiplier that provides 30% of salary after 30 years of service. Otherwise, the plan is configured much like PERS 2, with a full benefit age of 65 and the same strong incentives for later retirement. It also features a defined contribution component that requires members to place between 5% and 15% of their salary into a retirement account, depending on the option chosen. Members also have the option to self-direct their investments or co-mingle them with a state investment pool.

Conclusion / Key Findings

- The SCERS Benefit is more generous than the average public defined benefit pension plan. Its 2.0% multiplier is higher than the 1.85% average for plans with Social Security. This translates to a 30-year pension that is about 5% of salary more than the average. SCERS retirement ages, are also more favorable than average, with many members eligible for retirement with full benefits in their 50s versus age 60 or 65 for most plans.

- City employees pay about twice as much of their salary for the pension than the median public employee. Seattle's current employee contributions are 10.03% of salary, compared to a national median rate of 5%.

- SCERS is most similar to Washington's PERS 1 plan, which closed to new members in 1977 and was replaced by PERS 2. The main difference is that PERS 2 favors later retirement, with substantial benefit reductions before age 65.

- Private sector employers have largely abandoned the defined benefit pension model in favor of defined contribution plans. Most employers with defined contribution plans provide a match worth between 3% and 6% of salary.

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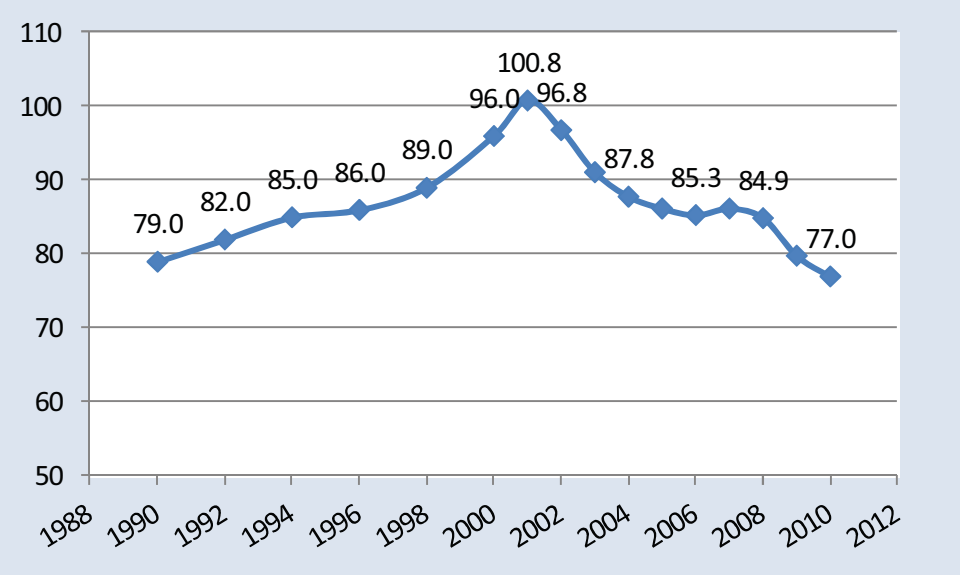
Recent State and Local Pension Changes

Seattle is certainly not alone in facing funding challenges for its defined benefit pension plan. Nationally, public pension funds booked large investment losses in 2008 on a scale similar to SCERS. SCERS' overall funded status has followed the same general course as other plans. Figure 17 shows data from the Pubic Fund Survey. Pension plans in the aggregate peaked in 2001 at just over 100% funded. The recessions of 2001 and 2008, however, saw sharp drops in investment value, taking funded status markedly lower.

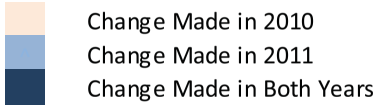
Figure 17 – Change in Aggregate Funding Level for Public Pensions, 1990-2010



It is important to note that most public pension plans employ an asset smoothing technique that averages out the investment performance over five or more years. As a result, national funded ratios are expected to continue falling in 2012 and later based on the investment losses of 2008. SCERS only recently adopted a smoothing technique, so until 2011, its funded ratios were not strictly comparable to other plans. On a market basis, SCERS had 67% funding at the beginning of 2011. On a smoothed basis, SCERS' funded status was 74%, closer to the national average.

2010-2011 State Legislative Pension Changes

Strategies that States used to manage pension costs in the wake of 2008 investment losses and budgetary stresses



	AL	AK	AZ	CA	CO	CT	DE	FL	HI	IL	IN	IA	KS	LA	ME	MD	MA	MI	MN	MS	MO	MT	NE	NH	NJ	NM	NY	NC	ND	OK	PA	RI	SD	TX	UT	VT	VA	WA	WV	WI	WY
Raise employer contributions																																									
Lower, phase-in, or otherwise delay required employer																																								
Raise employee contributions																																								
Lower (at least some) employee contributions																																								
Reduce benefits for current employees (DB plans)*																																								
Reduce benefits for new employees (DB plans)																																								
Create new plan: Hybrid (DB + DC) or DC only																																								
Reduce and/or suspend COLAs																																								
Sell debt to invest in pensions																																								
Enhance benefits / create new benefit structures																																								
Offer early retirement incentives																																								
New "Double Dipping" limits																																								

* In come cases, changes were only applied to non-vested employees.

SOURCE: National Conference of State Legislatures (NCSL) November 2010 and December 2011 Reports,
available at http://www.ncsl.org/issues-research/employment-working-families/pension-and-retirement-legislative-summaries-and-r.aspx

Note: The table is intended as a very general reference and elides many major differences between plans and subtlties of the legislative proposals. For full detail, see the reports.

National Responses

State and local jurisdictions across the country have been faced with budgetary stress from the recession just as their pension costs were increasing, and they have responded with a variety of adjustments to their pension plans, which the National Conference of State Legislatures (NCSL) has chronicled in detail. While each plan in each state has its own particularities, and each legislative change struck various deals in various ways, some common themes emerged in 2010-2011:

- 28 states passed legislation to raise employee contributions. This included several states where employees previously contributed nothing to their pension benefit but must now pay 4%-5% of salary. Some of the contribution increases affected only new employees; others affected all employees.

- 29 states reduced benefits for new employees. The changes included many of the same ideas contained in this report, primarily slightly lower benefit multipliers, later normal retirement ages (i.e. moving from age 55 to age 60 or 65), and steeper reductions for early retirement.

- 14 states reduced benefits for current employees. In some cases, these changes were applied to newer, non-vested employees. In others, they were applied to all current employees.

- 4 states closed their defined benefit plans and created hybrid or defined contribution plans for new employees.

- 13 states passed new restrictions on "spiking" and "double dipping".[5]

    - Spiking typically occurs when a pension plan includes overtime in its salary calculation (which SCERS does not). This may allow members to retire on an inflated salary basis if they work an unusual amount of overtime in their final years. Some states set new limits on what salary increases can apply toward the pension to combat the practice.

    - Double dipping occurs when a member retires with a pension and then continues to work with the same employer, Texas Gov. Rick Perry being a recent public example. Typically, they receive their salary and their benefit check and do not pay additional contributions into the pension system. Several states required pension benefits to be suspended in these cases, or required retirees to restart their contributions into the system.

[5] SCERS already has policies in place designed to combat both practices. SCERS does not include overtime in either its contribution rate or in the benefit calculation, so spiking through the usual method is not possible. Anecdotally, some retirees have reported seeing peers receive out-of-class assignments with higher pay in their final two years of work, which would affect pension amounts. SCERS also has limits on the number of hours a retiree may return to work with the City and still receive the pension benefit, which limits double dipping. The pension is suspended any time a retiree works more than 1080 hours (i.e. half time) with the City. SCERS retirees, like all pension beneficiaries, are free to work for other employers without penalty.

- 18 states either reduced or suspended their cost of living adjustments (COLAs). These changes were applied in some cases to current retirees, in others to future retirees, and in others to new employees.

- Several states have engaged in more questionable pension practices in response to their budgetary stresses, including delaying required contributions and issuing debt to fund pension contributions (Illinois). Use of debt in this way is considered risky, since it is essentially a bet that the investment return will exceed the interest rate on the debt.

- Finally, 9 states called for studies of additional pension changes in 2012. Many of these involved studying the creation of a new plan for new employees, often a hybrid or defined contribution plan. So it appears likely that these pension changes outlined by NCSL will continue into the future legislative sessions.

State of Washington Response

In April 2011, the Washington Legislature 2011 passed House Bill 2021, which eliminated the Uniform COLA for Washington's PERS 1 (general government) and TRS 1 (teacher) plans. The legislature gave itself the authority to rescind the cost of living adjustments for these closed plans when it granted the benefit in 1995. The move was projected to save state and local governments $872 million in the 2011-2013 budget biennium and a total of $7.6 billion over the next 25 years.

Other Washington Cities' Responses

The other two Washington cities with their own defined benefit pension systems are Spokane and Tacoma. Both plans are similar in structure to SCERS, and, like Seattle, both jurisdictions have made several adjustments in the wake of 2008 to control pension costs and restore full funding.

- The City of Spokane raised contribution rates in 2009 from 6.72% each for employees and the City to 7.75% each, a combined increase of just over 2% of salary. The City also made several changes to its pension benefit for new hires in 2009 and later. These included lowering the benefit multiplier from 2.15% per year of service to 2.0%, as well as raising the minimum retirement age. Although the normal retirement age was 62, Spokane had had a particularly generous rule allowing unreduced retirements at age 50. Post-change, new employees may first retire at age 62, or earlier if their age plus their length of service equals 75 (i.e. a "rule of 75"). Spokane also lowered its interest rate on member contributions from 5% to 4% in July 2010.

- The City of Tacoma increased contribution rates for its defined benefit plan by a total of 6% in multiple steps, legislating changes in January 2009 and again in October 2010. And as a cost-saving measure, the increased employee contributions above the older 6.44% rate do not count toward the system's alternative "two times match" formula for calculating pensions. The contribution rate path is summarized in Table 7 below.

Table 7 – City of Tacoma's Contribution Rates as a Percent of Salary

	Employee Rate	Employer Rate	Total
Previous	6.44%	7.56%	14.00%
February 2009	7.36%	8.64%	16.00%
January 2010	8.28%	9.72%	18.00%
January 2011	8.74%	10.26%	19.00%
January 2012	9.20%	10.80%	20.00%

For a more detailed comparison of Seattle's plan provisions with those of Spokane and Tacoma, see Appendix 3.

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Designing the Next Retirement System

Income Replacement and Retirement Benefit Adequacy

One key choice when designing a retirement system is to set the level of income that the plan will provide to its members once they stop working. In this manner, pension income in retirement replaces wage income during the member's working life. For a retirement plan to accomplish its mission, the replacement level should, at a minimum, be adequate to provide for the member's needs. Adequacy could be defined a number of ways, but a common definition of adequate retirement income is the level that allows retirees to maintain the same consumption and standard of living that they enjoyed while working.

Since retirees typically have various sources of income to draw on, adequacy should be evaluated using all available income streams. For Seattle City employees, these include:

1. The SCERS pension benefit,

2. Social Security Old Age, Survivors and Disability Insurance (OASDI), and

3. Private savings that members may have in either the City's Deferred Compensation (457) plan, other retirement accounts (such as Traditional and Roth IRAs), or other savings and investment accounts.

Together, these sources form a "replacement ratio", or percentage of working income that employees can rely on in retirement. The benefit designs in this report will be evaluated on how their replacement ratios compare to the current benefit and how they compare to an adequate level.

Defining adequate income replacement

A common rule of thumb in financial planning states that, to maintain the same standard of living, workers should aim to replace 80% to 90% of their working income in retirement. There are several reasons why the replacement level is less than 100%. The first is taxes: retirees no longer pay FICA taxes on their income to Social Security and Medicare, and federal income taxes on Social Security benefits are lower than those on employment income. Both of these differences allow retirees to take home a larger share of their gross income than workers do. Retirees are also no longer saving for retirement, which means a larger share of their income can to go current consumption. Other major expenses may also be eliminated or reduced, such as housing (if a mortgage is paid off) and children's education costs. And some expenses related to work (such as clothing and transportation) may be lower in retirement, though the expenditure survey data are somewhat mixed on this question.

In the 1980s, Bruce Palmer at Georgia State University developed a model that calculates an adequate replacement ratio at different income levels by estimating the effects of taxes and expenditure changes before and after retirement. Since the original paper, the RETIRE project at Georgia State University has updated the model periodically. The 2008 update found that retirees need income replacement between 76% and 94%, depending on their income, marital status, age, and whether there are one or two wage earners in the household. In general, lower-income workers need a somewhat higher replacement ratio than those with higher incomes.

Critics of the Palmer-type approach find the models to be overly deterministic and argue they may not provide sufficient protection to retirees. Jack VanDerhei at the Employee Benefit Research Institute (EBRI) notes that by quoting average costs, a deterministic model essentially gives retirees a 50% probability of having adequate income. Workers may want a much higher probability of success when planning their retirements to protect themselves against various risks. This would generally require higher replacement ratios. Major areas of risk and uncertainty include investment performance risk and longevity risk, which is the chance that retirees will outlive their resources. Also, the Palmer model does not take into account health care costs, which are a major and growing expense in retirement that can be hard to plan for, since retirees' health status and expenses can vary widely and unpredictably.

With these criticisms duly noted, this report will nonetheless use a deterministic Palmer-type approach to generate a customized replacement ratio for City employees. One reason is that City employees are largely protected from investment performance risk and longevity risk in the current defined benefit pension structure. The SCERS plan (and by extension the City and the taxpayers) bear the investment risk. And both the SCERS benefit and Social Security are guaranteed for life, taking longevity risk off table. Other remaining risks, including inflation and health care costs, are discussed later in this section.

A target replacement ratio for Seattle City employees

For Seattle City employees, a 72%-79% income replacement ratio may be adequate to maintain their standard of living in retirement. This result is generated using the general Palmer model approach adapted by IDT staff for Seattle policies. The model first calculates what percentage of working income City employees are actually taking home today, given the taxes they pay and their mandatory pension contributions. The model then calculates the level of retirement income needed to provide that same amount of disposable income, adjusting for differences in taxes and other expenses.

Table 8 – Income Replacement for Jane Smith, a City employee with $55,000 in gross income
(Detail view using columns from Table 9)

Column		Item		Dollars	Percent
	A	Gross Pay	=	$ 55,000	
less	B	Social Security and Medicare Taxes (FICA)	-	$ 4,208	7.65%
less	C	Federal Income Tax	-	$ 6,040	10.98%
less	D	Required SCERS Contribution	-	$ 5,517	10.03%
less	E	Voluntary Private Retirement Savings	-	$ 1,100	2.00%
equals	F	Disposable Income While Working	=	$ 38,136	**69.34%**

Table 8 shows the RETIRE model process for "Jane Smith", an unmarried, 65-year-old City employee making a gross income of $55,000 per year.[6] After taxes, pension contributions and other pre-tax deductions, Jane has take-home pay of about $38,100, or 69% of gross pay. This supports her standard of living (consumption) while working.

[6] This report will present an unmarried individual case throughout to avoid arbitrary choices on the wage level of a working spouse or partner. Figures for married households may be somewhat higher or lower, depending on multiple factors.

Column		Item		Dollars	Percent
	F	Disposable Income While Working	=	$ 38,136	69.34%
plus	G	Net Change in Expenditures Post Retirement	+	$ 385	0.70%
equals	H	Net Spendable Income Needed in Retirement	=	$ 38,521	70.04%
plus	I	Federal Income Tax Post Retirement	+	$ 3,079	5.60%
equals	K	Gross Necessary Retirement Income	-	$ 41,600	**75.64%**

Next we look at how Jane's expenses will change at retirement to determine how much disposable income she will need. The net change figure is based on expenditure survey data on comparable retirees. Disposable net income is then grossed up by the applicable tax rates on pension and Social Security income to arrive at the required level of gross income in retirement. In this case, Jane would need a gross retirement income of $41,600 (about 76% of her prior salary) to maintain the same standard of living that $55,000 provided her when she was working. Most of the difference stems from the end of FICA payroll tax deductions, lower federal income tax rates on Social Security income, and the end of pension contributions and other private retirement savings. With those costs eliminated or reduced, a lower gross income can support the same consumption.

One of the ironies of the retirement models is that the more you save while working, the less you need in retirement. This is because the models assume that retirees need to replace only what remains of their disposable income, which is essentially what they have been living on their whole working career. The fact that SCERS members contribute 10.03% of salary to the pension system is a major reason that the replacement ratios for Seattle employees come out a bit lower than other published estimates, which tend to assume retirement contributions on the order of 5%.

Table 9 repeats the above exercise at different income levels, from $25,000 to $135,000 per year, a range that accounts for the vast majority of SCERS-eligible City employees. The RETIRE model generates an income replacement adequacy of 72%-79%. The differences across the income range are largely due to federal tax policy, as higher income employees pay a higher effective tax rate while working and thus have a lower percentage of take-home pay that needs replacing. Changes in expenditures play a relatively small role as well.

Some may question the use of the term "adequate income" for lower-income employees, especially in Seattle where the cost of housing and other necessities is higher than the national average. The IDT is certainly not taking any position on whether these salaries are adequate in the first place for living affordably in Seattle. At most, this exercise shows that retirement income of around 80% is as adequate as the working income ever was. It is certainly reasonable to expect that lower-income employees may want, in percentage terms, a greater margin of safety in their retirement planning to cover expenses like health care costs. They may also have the least ability to generate such a financial cushion through private savings. However, the Social Security benefit does work in lower-income employees' favor by providing them with a greater share of income replacement than it does for higher earners. As we will see in the next section, these mildly redistributive features of the Social Security benefit have the effect of providing them with some additional margin of safety.

Table 9 – RETIRE / Georgia State University Method for Determining Income Replacement

Reflects an unmarried individual who retires at age 65 after 30 years of service and starts receiving Social Security immediately

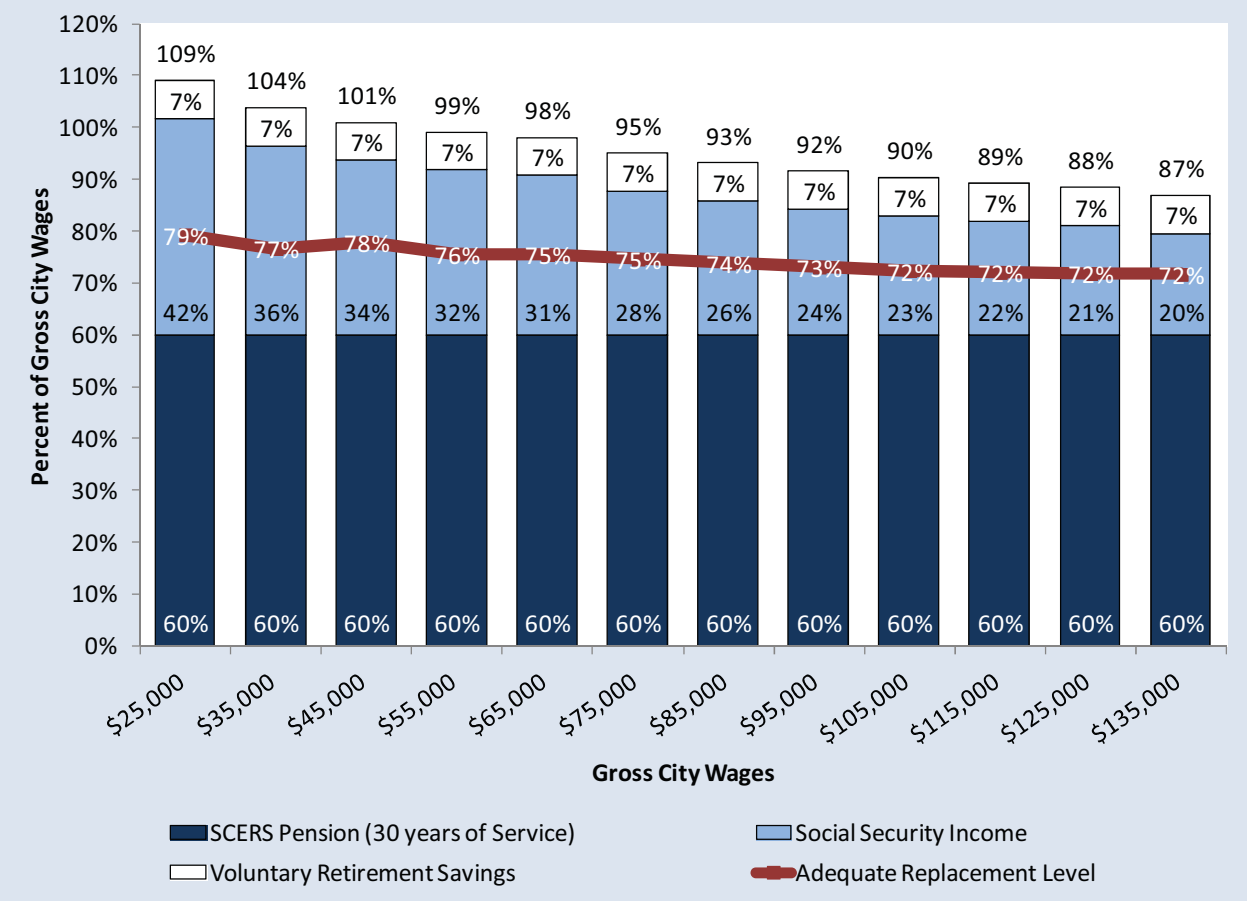
A	B	C	D	E	F	G	H	I	J	
	less	less	less	less	equals	plus	equals	plus	equals	
Gross Wages (City)	**Social Security and Medicare Taxes**	**Federal Income Tax Effective Rate**	**Required SCERS Retirement Contri-butions**	**Voluntary Retirement Savings**	**Disposable Income While Working**	**Net Change in Expend-itures Post Retirement**	**Net Disposable Income Needed at Retirement**	**Federal Income Tax Post Retire-ment**	**Gross Income Required at Retirement (Adequacy)**	**In $s**
$ 25,000	7.65%	5.90%	10.03%	2.00%	74.42%	4.88%	79.30%	0.00%	79.30%	$ 19,825
$ 35,000	7.65%	8.07%	10.03%	2.00%	72.25%	3.10%	75.35%	1.30%	76.65%	$ 26,827
$ 45,000	7.65%	9.28%	10.03%	2.00%	71.04%	1.76%	72.81%	5.05%	77.85%	$ 35,034
$ 55,000	7.65%	10.98%	10.03%	2.00%	69.34%	0.70%	70.04%	5.60%	75.64%	$ 41,600
$ 65,000	7.65%	12.75%	10.03%	2.00%	67.57%	-0.19%	67.38%	8.10%	75.49%	$ 49,066
$ 75,000	7.65%	14.05%	10.03%	2.00%	66.27%	-0.94%	65.33%	9.28%	74.60%	$ 55,952
$ 85,000	7.65%	15.04%	10.03%	2.00%	65.28%	-1.61%	63.67%	10.13%	73.80%	$ 62,730
$ 95,000	7.65%	15.83%	10.03%	2.00%	64.49%	-2.20%	62.30%	10.78%	73.08%	$ 69,424
$ 105,000	7.65%	16.49%	10.03%	2.00%	63.83%	-2.73%	61.10%	11.28%	72.38%	$ 76,002
$ 115,000	7.21%	17.25%	10.03%	2.00%	63.51%	-3.21%	60.30%	11.76%	72.06%	$ 82,872
$ 125,000	6.75%	17.88%	10.03%	2.00%	63.34%	-3.65%	59.69%	12.18%	71.86%	$ 89,829
$ 135,000	6.35%	18.43%	10.03%	2.00%	63.19%	-4.06%	59.13%	12.56%	71.69%	$ 96,782

Adapted by IDT staff for Seattle employees from various sources, including *Palmer, Bruce A. 2008 GSU/Aon RETIRE Project Report* and *Buck Consultants, Benefit Review Study of the Nebraska Retirement Systems, August 2000.* For more detail on calculation methods and assumptions, see Appendix 4.

City Pensions Compared to Adequate Retirement Incomes

Having estimated an adequate income replacement level for City employees, the next task is to see how the current SCERS benefit compares. Figure 18 shows income replacement from all sources for City employees making between $25,000 and $135,000, compared to the adequate level as determined by the RETIRE model.

Figure 18 – Retirement Income (All Sources) Compared with an Adequate Replacement Level
Reflects an unmarried individual who retires at age 65 after 30 years of service and starts receiving Social Security immediately



From this exercise, we conclude that SCERS, coupled with Social Security and private savings, provides a more than adequate income to maintain City employees' standard of living in retirement. Taken together, these income streams replace 87%-109% of working income. The variation across the income scale is largely due to the mildly progressive features of the Social Security benefit, which replaces a larger share of income for lower-income workers than it does for those higher on the income scale. Removing private savings from the mix, SCERS and Social Security together replace 80%-102% of working income, which is again more than adequate across the entire income scale. The outcome shown here could also be improved if City retirees wait until age 67 to start Social Security payments,

which is the full benefit age for all beneficiaries born in 1960 and after. The unreduced benefit would replace between 23% and 48% of working income, for a total replacement rate (SCERS + Social Security) of 83%-108%.

The above projections describe employees who work a full 30 years with the City and retire with the top pension of 60%. However, many employees retire with less service credit, either from a shorter tenure with the City or because they worked part time, and these employees receive less than a 60% pension. They could reach the same income replacement ratio if they also have service credit from employment in another defined benefit pension system, such as Washington PERS. Or, they could achieve comparable results through additional retirement savings if they spent part of their working lives with an employer that did not offer a defined benefit pension.

While SCERS can only be responsible for achieving benefit adequacy over a full career in the system, it may be instructive to know how many years of City service are required to at least reach the adequate replacement level. Recall that members accrue 2% of salary for each year of City service. Table 10 calculates how long employees at different wage levels would need to work for the City to reach the adequate replacement level.

Table 10 – City Tenure Needed to Meet Adequate Retirement Level
Assumes no change to the Social Security benefit amount

Gross City Wages	Years of City service required to reach adequate income replacement level (SCERS + Social Security)	SCERS Pension	Social Security Benefit	Total (Adequate Level)
$25,000	18.8	37.7%	41.6%	79.3%
$35,000	20.1	40.2%	36.5%	76.6%
$45,000	22.1	44.2%	33.6%	77.9%
$55,000	21.9	43.8%	31.8%	75.6%
$65,000	22.4	44.8%	30.7%	75.5%
$75,000	23.4	46.9%	27.7%	74.6%
$85,000	24.0	48.0%	25.8%	73.8%
$95,000	24.4	48.9%	24.2%	73.1%
$105,000	24.7	49.4%	23.0%	72.4%
$115,000	25.1	50.1%	21.9%	72.1%
$125,000	25.4	50.8%	21.1%	71.9%
$135,000	26.1	52.1%	19.5%	71.7%

This calculation assumes no change to the Social Security benefit, which means the employee would need to have similar income from another employer for each year he or she is not with the City. The calculation also does not include other retirement savings, so employees could achieve an adequate retirement with shorter City tenures than shown above to the extent they have private savings or retirement accounts with another employer.

Other Issues

The Palmer approach provides a good first cut at adequate income levels, but other factors such as inflation, health care costs, and longevity risk come into play when forecasting whether that income will be sufficient to provide for City retirees.

Inflation

The previous exercise showed how the various streams of retirement income support Jane Smith's standard of living initially, but price inflation will change the picture over time and tend to erode the purchasing power of her retirement income. Price inflation is a core economic concept and describes the tendency of the same goods and services to cost a bit more each year. A low and predictable level of price inflation – centered on 2% per year and varying from 1% to 3% – is a key goal of Federal Reserve policy makers, though the United States has seen periods of much higher inflation, particularly from the mid-1970s to the early 1980s when 6% to 8% annual inflation was common.

- Social Security is generally protected from inflation since it is adjusted annually using a consumer price index, though there have been Congressional proposals to alter the adjustment mechanism to make it slightly less generous.

- The SCERS pension benefit has some inflation protection, but the purchasing power of the benefit tends to erode over time. SCERS has an automatic 1.5% annual cost of living adjustment (COLA), which is typically a bit lower than the inflation rate. In addition, SCERS has a purchasing power floor of 65%, which means that a member receives a full inflation adjustment once the benefit is eroded to 65% of its original purchasing power.[7] If inflation were to average 3%, a retiree would reach that purchasing power floor in about 29 years. If inflation were a bit higher – say 3.5% – the retiree would reach the floor in 22 years.

Table 11 – Effect of Inflation on the SCERS Pension Benefit

Inflation rate	Years until purchasing power of the SCERS pension is eroded to 65% of its original level	Age that floor is reached, if retired at 65
2.5%	44	109
3.0%	29	94
3.5%	22	87
4.0%	18	83
5.0%	13	78

[7] By City ordinance (120685), the purchasing power floor is set to rise to 70% the year after SCERS' funded status reaches 100%.

- The sensitivity of private savings to inflation is harder to characterize. It would depend both on the types of investments chosen (including, potentially, inflation-protected securities) and the returns that members receive. It also depends on whether and how retirees choose to annuitize their savings, since some annuities include inflation escalators for future years.

Figure 19 – Retirement income with the SCERS benefit fully eroded by inflation

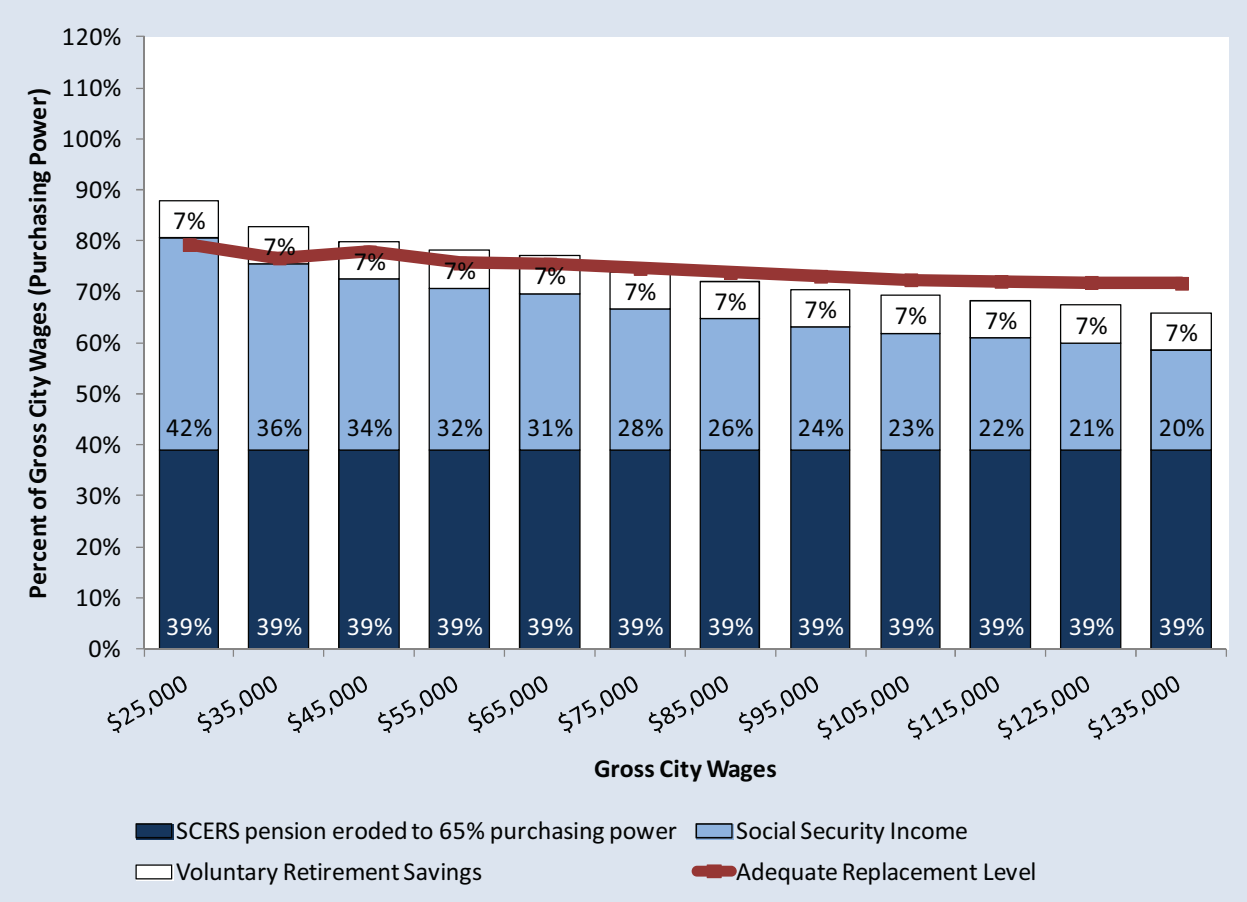


Figure 19 shows City retirees' retirement income after it has been fully eroded to the 65% purchasing power floor by years of inflation. At this point, in real terms, the SCERS pension benefit replaces 39% of retirees' final wages. Along with Social Security, this amounts to 58% -81% of their prior real wages. For lower-income retirees, the benefits still support their previous standard of living, though with less cushion than before. Middle- to higher-income employees would see a reduction in their purchasing power below the level that supports their previous spending patterns. This may require them to rely on private savings to a greater degree or to reduce their spending in retirement.

Health Care Costs

By far, the largest factor not specifically addressed by the Palmer model is health care costs, which are typically a major expense in retirement. While working, City employees are covered by private insurance that the City arranges, and employees pay a share of the premium as a pre-tax payroll deduction. This premium is substantially subsidized by the City. Employees also face out-of-pocket

costs through cost-sharing features like deductibles and co-pays when they utilize the health care system.

At age 65, employees become Medicare beneficiaries, and while the components of their health care costs remain the same (premiums, co-pays, deductibles, etc.), the total cost may change. Medicare requires beneficiaries to pay a premium for Part B outpatient coverage and Part D drug coverage, and both receive about a 75% subsidy from the government. There may also be other premiums for a Medigap supplemental insurance plan or a Medicare Advantage plan, depending on the option chosen. And Medicare plans typically have substantial cost-sharing in the form of deductibles, co-pays and other co-insurance features.

A detailed comparison of health care costs for City employees before and after retirement is beyond the scope of this IDT report, as is a solution to health care inflation, which is widely projected to consume an ever larger share of national income in unsustainable ways. However, from available public research, we can get a rough sense of how much today's retirees can expect to pay on average in premiums and other out-of-pocket costs in the future. With that, we can also see how much of their projected retirement income those costs would consume, which can inform how much of an income cushion City employees may wish to have.

Table 12 – Projected Medicare Costs and the Share of Retirement Income Consumed by Health Care

Projected average Medicare Premiums and Out-of-Pocket Costs for a 2011 retiree

	2011, Age 65		2021, Age 75		2031, Age 85		2041, Age 95	
	$3,978		$6,859		$11,699		$19,856	
Retiring City Wage (2011)	Retirement Income (All Sources)	% to Health Care	Retirement Income (All Sources)	% to Health Care	Retirement Income (All Sources)	% to Health Care	Retirement Income (All Sources)	% to Health Care
$25,000	$ 27,236	15%	$ 33,249	21%	$ 40,748	29%	$ 50,138	40%
$35,000	$ 36,324	11%	$ 44,166	16%	$ 53,907	22%	$ 66,056	30%
$45,000	$ 45,411	9%	$ 55,084	12%	$ 67,067	17%	$ 81,973	24%
$55,000	$ 54,498	7%	$ 66,001	10%	$ 80,227	15%	$ 97,890	20%
$65,000	$ 63,722	6%	$ 77,098	9%	$ 93,623	12%	$ 114,119	17%
$75,000	$ 71,267	6%	$ 85,983	8%	$ 104,103	11%	$ 126,504	16%
$85,000	$ 79,102	5%	$ 95,249	7%	$ 115,087	10%	$ 139,554	14%
$95,000	$ 86,937	5%	$ 104,516	7%	$ 126,071	9%	$ 152,604	13%
$105,000	$ 94,772	4%	$ 113,783	6%	$ 137,055	9%	$ 165,654	12%
$115,000	$ 102,607	4%	$ 123,050	6%	$ 148,039	8%	$ 178,703	11%
$125,000	$ 110,442	4%	$ 132,317	5%	$ 159,023	7%	$ 191,753	10%
$135,000	$ 117,243	3%	$ 140,222	5%	$ 168,211	7%	$ 202,436	10%

Assumes the SCERS pension and private savings income grow at 1.5% annually, and Social Security income grows at 2.8%. Health care cost projections from Fronstin, Salisbury & VanDerhei, 2010. EBRI Issue Brief #351+ personal communication to IDT staff.

The figures in Table 12 show health care consuming an increasing share of City retirees' income in the future, due to age, infirmity, and health care inflation. Jane Smith, our middle-income retiree with $55,000 in final City wages, might need to spend 7% of her retirement income on health care in her first year of retirement (2011), if her utilization is average. By 2041, when she is 95, that share is expected to

rise to 20%, which may cause her to have to reduce her other spending. Health care costs are clearly more of a burden to lower-income retirees, a situation only partially offset by the additional support that Social Security provides to them. These retirees may be forced at some point to rely on Medicaid and other low-income assistance programs for their health care expenses. For "medically needy" seniors, state Medicaid programs often cover health care costs after the beneficiary's income and assets have been spent down to a certain level.

Indeed, health care costs – particularly the potential need for prolonged nursing home care (so-called catastrophic coverage) – can overwhelm practically any retirement income calculation. EBRI's Jack VanDerhei calculated the probability that retirees will have adequate income across a range of health care expenses. A subset of his results is summarized in Figure 20, next page. Some key points:

- For a person with average health-care expenses (50% probability case), the required income replacement ratios are in the general vicinity of the Palmer-type results, though much more profoundly related to income. A lower-income retiree would need around 100% income replacement to maintain her standard of living *and* pay health care costs, whereas a higher-income retiree might only need 50% to 60% replacement.

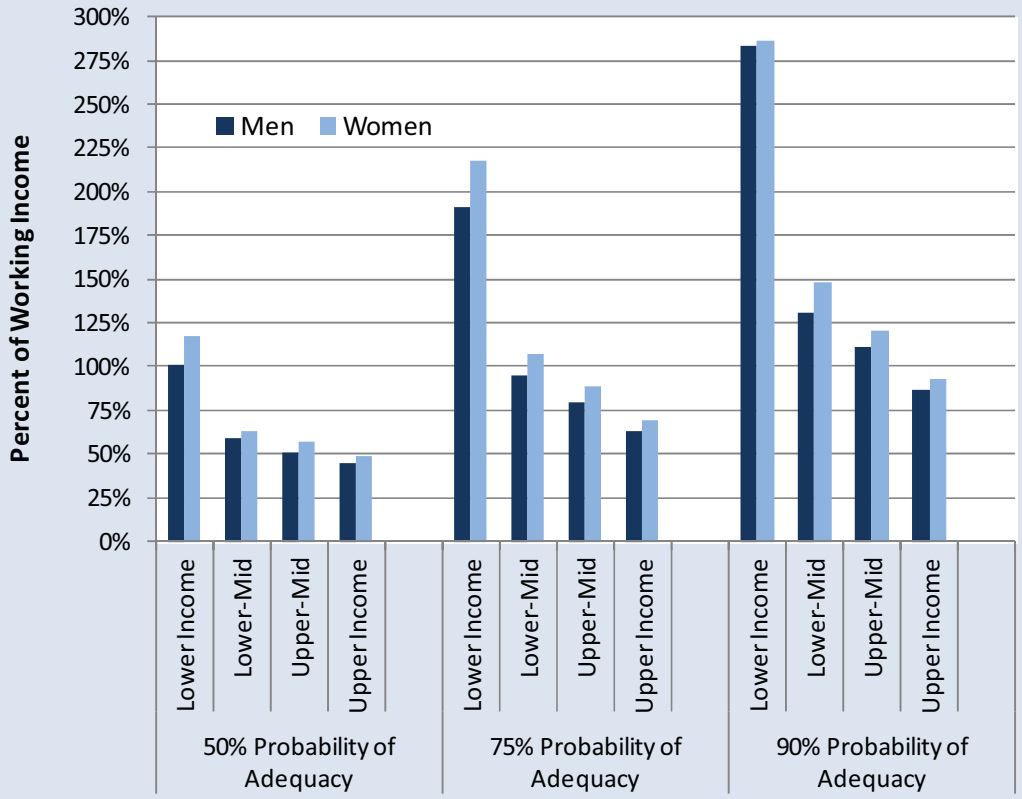
- For a person with very high health-care expenses[8] (90% probability case), the income requirements increase dramatically. A lower-income retiree would need nearly 300% income replacement to cover those costs, which is arguably beyond the ability of a pension system or private retirement savings to provide. Higher-income retirees might need around 90%-150% income replacement, which may be more possible, but would require extraordinary savings rates during their working lives.

The EBRI work on health care costs underscores the fact that health care is a large, highly variable, and growing expense for retirees. While retirement and pension planning should aim to provide a measure of resources to cover these costs, this may not be possible for high utilizers with extremely high medical expenses. Arguably, addressing those costs is beyond the abilities of any retirement plan and requires altogether different interventions through the Medicare and Medicaid programs.

[8] And high longevity and low investment returns in VanDerhei's model.

Figure 20 – Alternative Views of Income Replacement Ratios

Estimate of income needed to maintain a retiree's standard of living while successfully covering investment, longevity, and health care cost risks, including catastrophic (long-term care) costs, with 50%, 75% and 90% probability of success



Values taken from EBRI Issue Brief #297, Figures 25 (Men) and 27 (Women), both age 65 at retirement, with 75% equity investment and 100% annuitization, which approximates current Seattle City pension policy. Probabilities derived from a Monte Carlo simulation with stochastic modeling of investment income, longevity, and health care expense risk, including long-term care (catastrophic) costs. Figures represent income needed to cover expenses in either 50%, 75% or 90% of scenarios. Health care expense projections are applicable to Seattle City retirees, but the replacment rates shown here may be overstated to the extent that City retirees are shielded from investment and longevity risks.

Notes on Longevity Risk and Its Effect on Income Replacement Needs

With today's benefit, City employees are largely protected from longevity risk, which is the possibility that retirees will live longer than their financial resources can support.

- The SCERS pension benefit is guaranteed for the employee's lifetime, and some of the actuarially equivalent retirement options are guaranteed for the lifetime of the employee's spouse or partner as well.[9] In this manner, the longevity risk is borne by the plan and the City. Also, this risk is pooled, so that costs for a beneficiary who lives longer than the average may be offset by savings from another beneficiary who does not. Only when the retiree pool as a whole lives longer than expected do total plan costs increase.

- Social Security is also guaranteed for life. All costs and longevity risks are borne by the federal government and, by extension, the taxpayers.

- Private retirement savings and any defined contribution plan balances are not, in general, protected against longevity risk. A retiree making regular withdrawals from a retirement account may run out of money before he or she runs out of lifespan. However, longevity risk may be managed or mitigated in several ways:

    - One option is to *save more for retirement* to reach a higher probability of having adequate savings.

    - A second strategy is to use the retirement balance to purchase a guaranteed monthly *annuity*. This method also pools longevity risk through an insurance mechanism, and that entails some cost. Also, the investment return rate implicit in the guaranteed annuity may be less than what retirees could achieve on their own.

    - A third strategy is to purchase *longevity insurance*. With this product, the retiree makes an upfront payment at retirement and receives a monthly benefit payment only if he or she lives longer than a certain age, such as 80 or 85.

[9] The "straight benefit" is guaranteed only for the employee's life, but employees have several actuarially equivalent options to choose from at retirement. Several of them provide a lesser monthly amount than the straight benefit, but continue to make some or all of the pension payment for a spouse or partner who outlives the employee. For more information on retirement options A through G, see the SCERS handbook at http://www.seattle.gov/retirement.

Conclusions / Key Findings

- City employees require a 72%-79% income replacement in retirement to maintain the standard of living they enjoyed while working. This is defined as an adequate income replacement level.

- SCERS, in conjunction with Social Security and private savings, provides 82%-109% income replacement, which is more than adequate. This is true across the income scale.

- City retiree income is only partially protected from inflation, which tends to erode the purchasing power of SCERS pension income over time. This may require retirees, particularly higher-income retirees, to reduce their spending somewhat in the future.

- Health care costs are also expected to consume higher shares of retiree income in the future, which may present significant challenges to lower-income City retirees.

- City employees are generally protected from longevity risk through SCERS and Social Security. The level of protection may change to the extent that City employee retirements rely on private savings or defined-contribution plans, though strategies do exist to manage that risk.

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Benefit Design Options for New Hires

Summary of Proposed Plan Options

The following table summarizes the defined benefit (DB) and defined contribution (DC) retirement plans crafted by the Retirement IDT and evaluated by Gabriel, Roeder, Smith & Co.

Defined Benefit (DB) Provisions	**Current SCERS Benefit**	**Modest Change DB #1**	**Modest Change DB #2**	**Substantial Change DB**	**Hybrid DB + DC**	**DC only**
Multiplier: *Earned benefit per year of service*	2.00%	1.83%	2.00%	1.66%	1.00%	n/a
Maximum Years *to earn service credit*	30	33	30	36	35	
Maximum Pension *as a % of salary*	60%*	60.5%	60%	60%	35%	
Final Average Salary *calculation period (in months)*	24	36	36	36	36	
Minimum Retirement Age						
30 years of service:	Any	55	55	55	55	
20-29 years of service:	52					
10-19 years of service:	57	57	57	57	57	
5-9 years of service:	62	60	60	60	60	
Normal Retirement Age *Lesser of 65, or when age + years of service equals:*	Rule of 80	Rule of 85	Rule of 90	Rule of 90	Rule of 85	
Early Retirement Reduction *each year before normal age*						
5-19 years of service:	3%	All years 7%	All years 7%	All years 7%	All years 7%	
20+ years of service:	5%					
Minimum Benefit *Alternative pension calculation if higher than age/length of service table.*	Annuity based on 2X contrib. +interest	None. All pensions based on table.	None. All pensions based on table.	None. All pensions based on table.	None. All pensions based on table.	
Normal Cost** *Contribution as a % of salary*	15.0%	11.8%	11.5%	10.0%	6.4%	
Defined Contribution (DC) Provision: *Contribution as a% of salary*	n/a				6.5%	12.0%

Total Normal Cost** *% of salary*	**15.0%**	**11.8%**	**11.5%**	**10.0%**	**12.9%**	**12.0%**
Savings Relative to Current Plan		3.2%	3.5%	5.0%	2.1%	3.0%

* Subject to Minimum Benefit provision. Pension may be higher than 60% in some cases.
** The employer also pays an amortization rate, projected to rise to about 8.5% of salary by 2014, to cover the unfunded cost of previously earned benefits.

Modest Change Defined Benefit Plan #1

Normal Cost: 11.8% of salary

The Modest Change Defined Benefit Plan #1 keeps the same general structure as the current SCERS benefit, but changes several key features to save money. It features some provisions that the City offered to its employees before 1975. Under this plan, members earn service credit at a rate of 1.83% per year, which is about the average rate for public sector defined benefit plans. That translates to a 30-year pension equal to 55% of salary. Members would have the option of continuing to earn service credit for three more years, at which point they would reach the maximum pension of 60.5%.

The plan also features a normal retirement "rule of 85," which is to say that members are eligible to retire with an unreduced benefit at either age 65 or when their age plus length of service equals 85. In general, this rule, which is also about average for public pension plans, adds five years to the current SCERS normal retirement age. Benefits are reduced by 7% for each year of early retirement, a rate designed to ensure that the total cost of the benefit is the same regardless of when the member retires.

The table below shows the complete age and length-of-service grid for retirements.

Years of Retirement Credit	Age 52	53	54	55	56	57	58	59	60	61	62	63	64	65	Years of Retirement Credit
33				60.50	60.50	60.50	60.50	60.50	60.50	60.50	60.50	60.50	60.50	60.50	33
32				58.67	58.67	58.67	58.67	58.67	58.67	58.67	58.67	58.67	58.67	58.67	32
31				56.83	56.83	56.83	56.83	56.83	56.83	56.83	56.83	56.83	56.83	56.83	31
30				55.00	55.00	55.00	55.00	55.00	55.00	55.00	55.00	55.00	55.00	55.00	30
29				49.45	53.17	53.17	53.17	53.17	53.17	53.17	53.17	53.17	53.17	53.17	29
28				44.15	47.74	51.33	51.33	51.33	51.33	51.33	51.33	51.33	51.33	51.33	28
27				39.11	42.57	46.04	49.50	49.50	49.50	49.50	49.50	49.50	49.50	49.50	27
26				34.32	37.66	40.99	44.33	47.67	47.67	47.67	47.67	47.67	47.67	47.67	26
25				29.79	33.00	36.21	39.42	42.63	45.83	45.83	45.83	45.83	45.83	45.83	25
24				25.52	28.60	31.68	34.76	37.84	40.92	44.00	44.00	44.00	44.00	44.00	24
23				21.51	24.46	27.41	30.36	33.31	36.26	39.22	42.17	42.17	42.17	42.17	23
22				17.75	20.57	23.39	26.22	29.04	31.86	34.69	37.51	40.33	40.33	40.33	22
21				14.25	16.94	19.64	22.33	25.03	27.72	30.42	33.11	35.81	38.50	38.50	21
20				11.00	13.57	16.13	18.70	21.27	23.83	26.40	28.97	31.53	34.10	36.67	20
19						15.33	17.77	20.20	22.64	25.08	27.52	29.96	32.40	34.83	19
18						14.52	16.83	19.14	21.45	23.76	26.07	28.38	30.69	33.00	18
17						13.71	15.90	18.08	20.26	22.44	24.62	26.80	28.99	31.17	17
16						12.91	14.96	17.01	19.07	21.12	23.17	25.23	27.28	29.33	16
15						12.10	14.03	15.95	17.88	19.80	21.73	23.65	25.58	27.50	15
14						11.29	13.09	14.89	16.68	18.48	20.28	22.07	23.87	25.67	14
13	Not Eligible to Retire					10.49	12.16	13.82	15.49	17.16	18.83	20.50	22.17	23.83	13
12						9.68	11.22	12.76	14.30	15.84	17.38	18.92	20.46	22.00	12
11						8.87	10.29	11.70	13.11	14.52	15.93	17.34	18.76	20.17	11
10						8.07	9.35	10.63	11.92	13.20	14.48	15.77	17.05	18.33	10
9									10.73	11.88	13.04	14.19	15.35	16.50	9
8									9.53	10.56	11.59	12.61	13.64	14.67	8
7									8.34	9.24	10.14	11.04	11.94	12.83	7
6									7.15	7.92	8.69	9.46	10.23	11.00	6
5									5.96	6.60	7.24	7.88	8.53	9.17	5

White areas are reduced for early retirement. Green areas represent normal (unreduced) retirement

Key provisions of the Modest Change DB #1 Plan include the following:

Key Provision	Policy
Multiplier	1.83% per year of service (=55/30)
Maximum Pension Allowance	60.5% of salary
Maximum Credit Period	33 years
Final Average Salary Calculation Period	36 months
Minimum Retirement Age	5 to 9 years of service: Age 60 10 to 19 years of service: Age 57 20 or more years of service: Age 55
Full Benefit Age (Normal Retirement)	Lesser of age 65, or Tule of 85 (age + service credit = 85)
Reduction for Early Retirement	7% per year below full benefit age
Minimum Benefit Annuity	None. All pensions are governed by the age/length-of-service table.

All other provisions of the current SCERS system not specifically referenced above would continue, including 5-year vesting, 1.5% automatic cost of living adjustments with the 65% purchasing power floor, rules governing withdrawal and re-deposit of employee contributions, retirement benefit options (straight benefit vs. “A” through “G” option variations), and disability retirement provisions.

Pros & Cons Relative to Current SCERS Benefit

The following table outlines the major pros and cons of the plan, relative to the current SCERS benefit, from the perspective of both new hire employees and the City.

Employee Perspective (New Hires)	Employer Perspective
Pros: • Lower contribution rate* • Provides more than adequate income replacement in conjunction with Social Security • Retains guaranteed benefit for service • No investment risk • No longevity risk • Retains same degree of inflation protection • Employer savings leaves additional funds in the City budget available for hiring, avoiding layoffs, and/or providing other compensation	**Pros:** • Lower contribution rate* • Lower employee contribution helps recruitment and retention • Guaranteed retirement benefit remains an asset for recruitment and retention
Cons: • Slightly slower growth of service credit • 3 more years of service to reach top pension rate of around 60% • 5 more years of age to receive full benefit (up to age 65) • No early retirement subsidy • No “30 years and out” provision with unreduced pension at any age • No minimum annuity based on contributions plus interest • Slightly lower pension value based on 36 month final average salary calculation	**Cons:** • Retains investment risk • Retains longevity risk (pooled) • Retains same modest inflation risk • Remains a relatively costly benefit requiring significant employer contributions

* Subject to negotiation

Modest Change Defined Benefit Plan #2

Normal Cost: 11.5% of salary

The Modest Change Defined Benefit Plan #2 also keeps the same general structure as the current SCERS benefit. It generates a similar level of cost savings as Plan #1, but with a different set of trade-offs. Its features are also very similar to the State of Washington's PERS 2 plan.

Under Modest Change DB Plan #2, members earn service credit at a rate of 2.0% per year, which the same as the current SCERS multiplier. That translates to a 30-year pension of 60% of salary. The normal retirement age features a "rule of 90," which is to say that members may retire with an unreduced benefit at age 65 or when their age plus length of service equals 90. This is, in general, 10 years older than the current SCERS plan. Early retirements are reduced 7% for each year early, a rate designed to ensure that the total cost of the benefit is the same regardless of when the member retires.

The table below shows the complete age and length-of-service grid for retirements.

Years of Retirement Credit	Age 52	53	54	55	56	57	58	59	60	61	62	63	64	65	Years of Retirement Credit
30				39.00	43.20	47.40	51.60	55.80	60.00	60.00	60.00	60.00	60.00	60.00	30
29				33.64	37.70	41.76	45.82	49.88	53.94	58.00	58.00	58.00	58.00	58.00	29
28				28.56	32.48	36.40	40.32	44.24	48.16	52.08	56.00	56.00	56.00	56.00	28
27				23.76	27.54	31.32	35.10	38.88	42.66	46.44	50.22	54.00	54.00	54.00	27
26				19.24	22.88	26.52	30.16	33.80	37.44	41.08	44.72	48.36	52.00	52.00	26
25				15.00	18.50	22.00	25.50	29.00	32.50	36.00	39.50	43.00	46.50	50.00	25
24				14.40	17.76	21.12	24.48	27.84	31.20	34.56	37.92	41.28	44.64	48.00	24
23				13.80	17.02	20.24	23.46	26.68	29.90	33.12	36.34	39.56	42.78	46.00	23
22				13.20	16.28	19.36	22.44	25.52	28.60	31.68	34.76	37.84	40.92	44.00	22
21				12.60	15.54	18.48	21.42	24.36	27.30	30.24	33.18	36.12	39.06	42.00	21
20				12.00	14.80	17.60	20.40	23.20	26.00	28.80	31.60	34.40	37.20	40.00	20
19						16.72	19.38	22.04	24.70	27.36	30.02	32.68	35.34	38.00	19
18						15.84	18.36	20.88	23.40	25.92	28.44	30.96	33.48	36.00	18
17						14.96	17.34	19.72	22.10	24.48	26.86	29.24	31.62	34.00	17
16						14.08	16.32	18.56	20.80	23.04	25.28	27.52	29.76	32.00	16
15						13.20	15.30	17.40	19.50	21.60	23.70	25.80	27.90	30.00	15
14						12.32	14.28	16.24	18.20	20.16	22.12	24.08	26.04	28.00	14
13	Not Eligible to Retire					11.44	13.26	15.08	16.90	18.72	20.54	22.36	24.18	26.00	13
12						10.56	12.24	13.92	15.60	17.28	18.96	20.64	22.32	24.00	12
11						9.68	11.22	12.76	14.30	15.84	17.38	18.92	20.46	22.00	11
10						8.80	10.20	11.60	13.00	14.40	15.80	17.20	18.60	20.00	10
9									11.70	12.96	14.22	15.48	16.74	18.00	9
8									10.40	11.52	12.64	13.76	14.88	16.00	8
7									9.10	10.08	11.06	12.04	13.02	14.00	7
6									7.80	8.64	9.48	10.32	11.16	12.00	6
5									6.50	7.20	7.90	8.60	9.30	10.00	5

White areas are reduced for early retirement. Green areas represent normal (unreduced) retirement

Key provisions of the Modest Change DB #2 Plan include the following:

Key Provision	Policy
Multiplier	2.0% per year of service
Maximum Pension Allowance	60% of salary
Maximum Credit Period	30 years
Final Average Salary Calculation Period	36 months
Minimum Retirement Age	5 to 9 years of service: Age 60 10 to 19 years of service: Age 57 20 or more years of service: Age 55
Full Benefit Age (Normal Retirement)	Lesser of age 65, or Rule of 90 (age + service credit = 90)
Reduction for Early Retirement	7% per year below full benefit age
Minimum Benefit Annuity	None. All pensions are governed by the age/length-of-service table.

All other provisions of the current SCERS system not specifically referenced above would continue, including 5-year vesting, 1.5% automatic cost of living adjustments with the 65% purchasing power floor, withdrawal and re-deposit of employee contributions, retirement benefit options (straight benefit vs. "A" through "G" option variations), and disability retirement provisions.

Pros & Cons Relative to Current SCERS Benefit

The following table outlines the major pros and cons of the plan, relative to the current SCERS benefit, from the perspective of both new hire employees and the City.

Employee Perspective (New Hires)	Employer Perspective
Pros: • Lower contribution rate* • Employee earns service credit at the same rate • Provides more than adequate income replacement in conjunction with Social Security • Retains guaranteed benefit for service • No investment risk • No longevity risk • Retains same degree of inflation protection • Employer savings leaves additional funds in the City budget available for hiring, avoiding layoffs, and/or providing other compensation	**Pros:** • Lower contribution rate* • Lower employee contribution rate helps recruitment and retention • Guaranteed retirement benefit remains an asset for recruitment and retention
Cons: • 10 more years of age to receive unreduced benefit (up to age 65) • No early retirement subsidy • No “30 years and out” provision with unreduced pension at any age • No minimum annuity based on contributions plus interest • Slightly lower pension value based on 36 month final average salary calculation	**Cons:** • Retains investment risk • Retains longevity risk (pooled) • Retains same modest inflation risk • Remains a relatively costly benefit requiring significant employer contributions

* Subject to negotiation

Substantial Change Defined Benefit Plan

Normal Cost: 10.0% of salary

The Substantial Change Defined Benefit Plan also keeps the same general structure as the current SCERS benefit, but makes more pronounced policy changes in some key areas to save money.

Under the Substantial Change DB Plan, members earn service credit at a rate of 1.66% per year. That translates to a 30-year pension of 50% of salary. Members would have the option to continue earning service credit for six more years, at which point they would reach the top pension rate of 60% of salary. The normal retirement age features a "rule of 90," which is to say that members may retire with an unreduced benefit at age 65 or when their age plus length of service equals 90. This is, in general, 10 years older than the current plan. Early retirements are reduced 7% for each year early, a rate designed to ensure that the total cost of the benefit is the same regardless of when the member retires.

The table below shows the complete age and length-of-service grid for retirements.

Years of Retirement Credit	Age 52	53	54	55	56	57	58	59	60	61	62	63	64	65	Years of Retirement Credit
36				60.00	60.00	60.00	60.00	60.00	60.00	60.00	60.00	60.00	60.00	60.00	36
35				58.33	58.33	58.33	58.33	58.33	58.33	58.33	58.33	58.33	58.33	58.33	35
34				52.70	56.67	56.67	56.67	56.67	56.67	56.67	56.67	56.67	56.67	56.67	34
33				47.30	51.15	55.00	55.00	55.00	55.00	55.00	55.00	55.00	55.00	55.00	33
32				42.13	45.87	49.60	53.33	53.33	53.33	53.33	53.33	53.33	53.33	53.33	32
31				37.20	40.82	44.43	48.05	51.67	51.67	51.67	51.67	51.67	51.67	51.67	31
30				32.50	36.00	39.50	43.00	46.50	50.00	50.00	50.00	50.00	50.00	50.00	30
29				28.03	31.42	34.80	38.18	41.57	44.95	48.33	48.33	48.33	48.33	48.33	29
28				23.80	27.07	30.33	33.60	36.87	40.13	43.40	46.67	46.67	46.67	46.67	28
27				19.80	22.95	26.10	29.25	32.40	35.55	38.70	41.85	45.00	45.00	45.00	27
26				16.03	19.07	22.10	25.13	28.17	31.20	34.23	37.27	40.30	43.33	43.33	26
25				12.50	15.42	18.33	21.25	24.17	27.08	30.00	32.92	35.83	38.75	41.67	25
24				12.00	14.80	17.60	20.40	23.20	26.00	28.80	31.60	34.40	37.20	40.00	24
23				11.50	14.18	16.87	19.55	22.23	24.92	27.60	30.28	32.97	35.65	38.33	23
22				11.00	13.57	16.13	18.70	21.27	23.83	26.40	28.97	31.53	34.10	36.67	22
21				10.50	12.95	15.40	17.85	20.30	22.75	25.20	27.65	30.10	32.55	35.00	21
20				10.00	12.33	14.67	17.00	19.33	21.67	24.00	26.33	28.67	31.00	33.33	20
19						13.93	16.15	18.37	20.58	22.80	25.02	27.23	29.45	31.67	19
18						13.20	15.30	17.40	19.50	21.60	23.70	25.80	27.90	30.00	18
17						12.47	14.45	16.43	18.42	20.40	22.38	24.37	26.35	28.33	17
16						11.73	13.60	15.47	17.33	19.20	21.07	22.93	24.80	26.67	16
15						11.00	12.75	14.50	16.25	18.00	19.75	21.50	23.25	25.00	15
14						10.27	11.90	13.53	15.17	16.80	18.43	20.07	21.70	23.33	14
13	Not Eligible to Retire					9.53	11.05	12.57	14.08	15.60	17.12	18.63	20.15	21.67	13
12						8.80	10.20	11.60	13.00	14.40	15.80	17.20	18.60	20.00	12
11						8.07	9.35	10.63	11.92	13.20	14.48	15.77	17.05	18.33	11
10						7.33	8.50	9.67	10.83	12.00	13.17	14.33	15.50	16.67	10
9									9.75	10.80	11.85	12.90	13.95	15.00	9
8									8.67	9.60	10.53	11.47	12.40	13.33	8
7									7.58	8.40	9.22	10.03	10.85	11.67	7
6									6.50	7.20	7.90	8.60	9.30	10.00	6
5									5.42	6.00	6.58	7.17	7.75	8.33	5

White areas are reduced for early retirement. Green areas represent normal (unreduced) retirement

Other major provisions include the following:

Key Provision	Policy
Multiplier	1.66% per year of service
Maximum Pension Allowance	60% of salary
Maximum Credit Period	36 years
Final Average Salary Calculation Period	36 months
Minimum Retirement Age	5 to 9 years of service: Age 60 10 to 19 years of service: Age 57 20 or more years of service: Age 55
Full Benefit Age	Lesser of age 65, or Rule of 90 (age + service credit = 90)
Reduction for Early Retirement	7% per year below full benefit age
Minimum Benefit Annuity	None. All pensions are governed by the age/length-of-service table.

All other provisions of the current SCERS system not specifically referenced above would continue, including 5-year vesting, 1.5% automatic cost of living adjustments with the 65% purchasing power floor, withdrawal and re-deposit of employee contributions, retirement benefit options (straight benefit vs. "A" through "G" option variations), and disability retirement provisions.

Pros & Cons Relative to Current SCERS Benefit

The following table outlines the major pros and cons of the plan, relative to the current SCERS benefit, from the perspective of both new hire employees and the City.

Employee Perspective (New Hires)	Employer Perspective
Pros: • Lower contribution rate* • Provides more than adequate income replacement in conjunction with Social Security, though with less of a margin than the current plan • Retains guaranteed benefit for service • No investment risk • No longevity risk • Retains same degree of inflation protection • Employer savings leaves additional funds in the City budget available for hiring, avoiding layoffs, and/or providing other compensation	**Pros:** • Lower contribution rate* • Lower employee contribution rate helps recruitment and retention • Guaranteed retirement benefit remains an asset for recruitment and retention
Cons: • Slower growth of service credit • 6 more years of service to reach top pension rate of 60% • 10 more years of age to receive unreduced benefit (up to age 65) • No early retirement subsidy • No “30 years and out” provision with unreduced pension at any age • No minimum annuity based on contributions plus interest • Slightly lower pension value based on 36 month final average salary calculation	**Cons:** • Retains investment risk • Retains longevity risk (pooled) • Retains same modest inflation risk • Remains a relatively costly benefit requiring significant employer contributions

* Subject to negotiation

Hybrid Plan: Defined Benefit + Defined Contribution

Normal Cost: 12.9% of salary

The Hybrid Plan makes structural changes to the current SCERS pension benefit. It is similar in concept to the FERS program for federal employees and the State of Washington's PERS 3 plan for State and local employees. The Hybrid Plan combines a Defined Contribution (DC) plan with a Defined Benefit (DB) pension that is roughly half the size of the current SCERS benefit. Together, the two plans replace similar levels of income in retirement but with key differences in contribution strategy, investment risk, and longevity risk.

Defined Benefit (DB) Provisions

Under the DB component, members earn service credit at a rate of 1.0% per year. That translates to a 30% pension after 30 years of service. Members would also have the option to work five additional years to reach the maximum pension of 35%. The normal retirement age features a "rule of 85," which is to say that members may retire with an unreduced benefit at age 65 or when their age plus length of

Years of Retirement Credit	Age 52	53	54	55	56	57	58	59	60	61	62	63	64	65	Years of Retirement Credit
35				35.00	35.00	35.00	35.00	35.00	35.00	35.00	35.00	35.00	35.00	35.00	35
34				34.00	34.00	34.00	34.00	34.00	34.00	34.00	34.00	34.00	34.00	34.00	34
33				33.00	33.00	33.00	33.00	33.00	33.00	33.00	33.00	33.00	33.00	33.00	33
32				32.00	32.00	32.00	32.00	32.00	32.00	32.00	32.00	32.00	32.00	32.00	32
31				31.00	31.00	31.00	31.00	31.00	31.00	31.00	31.00	31.00	31.00	31.00	31
30				30.00	30.00	30.00	30.00	30.00	30.00	30.00	30.00	30.00	30.00	30.00	30
29				26.97	29.00	29.00	29.00	29.00	29.00	29.00	29.00	29.00	29.00	29.00	29
28				24.08	26.04	28.00	28.00	28.00	28.00	28.00	28.00	28.00	28.00	28.00	28
27				21.33	23.22	25.11	27.00	27.00	27.00	27.00	27.00	27.00	27.00	27.00	27
26				18.72	20.54	22.36	24.18	26.00	26.00	26.00	26.00	26.00	26.00	26.00	26
25				16.25	18.00	19.75	21.50	23.25	25.00	25.00	25.00	25.00	25.00	25.00	25
24				13.92	15.60	17.28	18.96	20.64	22.32	24.00	24.00	24.00	24.00	24.00	24
23				11.73	13.34	14.95	16.56	18.17	19.78	21.39	23.00	23.00	23.00	23.00	23
22				9.68	11.22	12.76	14.30	15.84	17.38	18.92	20.46	22.00	22.00	22.00	22
21				7.77	9.24	10.71	12.18	13.65	15.12	16.59	18.06	19.53	21.00	21.00	21
20				6.00	7.40	8.80	10.20	11.60	13.00	14.40	15.80	17.20	18.60	20.00	20
19						8.36	9.69	11.02	12.35	13.68	15.01	16.34	17.67	19.00	19
18						7.92	9.18	10.44	11.70	12.96	14.22	15.48	16.74	18.00	18
17						7.48	8.67	9.86	11.05	12.24	13.43	14.62	15.81	17.00	17
16						7.04	8.16	9.28	10.40	11.52	12.64	13.76	14.88	16.00	16
15						6.60	7.65	8.70	9.75	10.80	11.85	12.90	13.95	15.00	15
14						6.16	7.14	8.12	9.10	10.08	11.06	12.04	13.02	14.00	14
13	Not Eligible to Retire					5.72	6.63	7.54	8.45	9.36	10.27	11.18	12.09	13.00	13
12						5.28	6.12	6.96	7.80	8.64	9.48	10.32	11.16	12.00	12
11						4.84	5.61	6.38	7.15	7.92	8.69	9.46	10.23	11.00	11
10						4.40	5.10	5.80	6.50	7.20	7.90	8.60	9.30	10.00	10
9									5.85	6.48	7.11	7.74	8.37	9.00	9
8									5.20	5.76	6.32	6.88	7.44	8.00	8
7									4.55	5.04	5.53	6.02	6.51	7.00	7
6									3.90	4.32	4.74	5.16	5.58	6.00	6
5									3.25	3.60	3.95	4.30	4.65	5.00	5

White areas are reduced for early retirement. Green areas represent normal (unreduced) retirement

service equals 85. This is, in general, 5 years older than the current SCERS plan. Early retirements are reduced 7% for each year early, a rate designed to ensure that the total cost of the benefit is the same regardless of when the member retires.

Other major provisions of the Defined Benefit portion include the following:

Key Provision	Policy
Multiplier	1.0% per year of service
Maximum Pension Allowance	35% of salary
Maximum Credit Period	35 years
Final Average Salary Calculation Period	36 months
Minimum Retirement Age	5 to 9 years of service: Age 60 10 to 19 years of service: Age 57 20 or more years of service: Age 55
Full Benefit Age (Normal Retirement)	Lesser of age 65, or Rule of 85 (age + service credit = 85)
Reduction for Early Retirement	7% per year below full benefit age
Minimum Benefit Annuity	None. All pensions are governed by the age/length-of-service table.
Disability Retirement	*Pending further review. No specific changes are modeled in this report, but current disability retirement rules and "A" through "G" retirement options may need to be adjusted to conform to the overall size of the DB pension and employee contribution rates.*
Retirement Options	

All other provisions of the current SCERS system not specifically referenced above would continue, including 5-year vesting and 1.5% automatic cost of living adjustments with the 65% purchasing power floor.

Defined Contribution (DC) Provisions

The defined contribution component would be financed through mandatory employee contributions. The money would be invested in a variety of stock, bond, real estate, and other options under the employee's direction. The investment options may include so-called "target date" or "lifecycle" funds, which feature a shifting allocation to equities and bonds that gets more conservative as the member's retirement date approaches. The accounts may also feature default allocations into an appropriate target date fund based on the member's age, but employees would always have the option of re-allocating their investments as they see fit.

Other major provisions of the Defined Contribution portion include the following:

Key Provision	Policy
Total Contribution	6.5% of salary
Investments	Managed by employees from a pre-arranged menu
Portability	Full portability on employee contributions (and, if any, employer contributions) at the end of City service
Vesting Period	Immediate on all contributions

Pros & Cons Relative to Current SCERS Benefit

The following table outlines the major pros and cons of the plan, relative to the current SCERS benefit, from the perspective of both employees and the City.

Employee Perspective	Employer Perspective
Pros: • Lower contribution rate* • Provides adequate income replacement in conjunction with Social Security at expected (6.25%) or weak (4.75%) DC-side investment returns. Provides a more than adequate income replacement with strong (7.75%) returns. • Retains some guaranteed benefit for service • Employee has control over half of retirement investments • Somewhat increased portability and lessening of the "golden handcuffs" where employees feel obliged to have a long tenure with one employer • Employer savings leaves additional funds in the City budget available for avoiding layoffs and/or providing other compensation	**Pros:** • Lower contribution rate* • Lower employee contribution rate helps recruitment and retention • Shifts half of investment risk to employees • Shifts half of longevity risk to employees • Shifts half of inflation risk to employees • Retirement benefit remains an asset for recruitment and retention **Cons:**

Employee Perspective	Employer Perspective
Cons: ***DB side*** • Smaller guaranteed benefit for service • 5 more years of service to reach top pension rate of 35% • 5 more years of age to receive unreduced benefit (up to age 65) • No early retirement subsidy • No "30 years and out" provision with unreduced pension at any age • No minimum annuity based on contributions plus interest • Slightly lower pension value based on 36 month final average salary calculation ***DC side*** • Takes on half of investment risk • Takes on half of longevity risk on an individual basis. • No particular inflation protection • Individual investing expected to provide lower average returns vs. professional management • Individual investors pay higher average investment fees, which diminish returns • Some individual investors may be excessively risk averse or may time their investments poorly, leading to significantly lower returns	• Lower average returns on the DC side may provide employees with lower income replacement for employees at any given contribution level • Two plan components are more complex and expensive to administer • May hinder recruitment and retention somewhat, to the extent that workers considering public sector employment value guaranteed benefits

* Subject to negotiation

Defined Contribution Plan

Normal Cost: 12% of salary

The Defined Contribution plan would resemble retirement plans typically found in the private sector. Under such a plan, the City and employees would contribute a total of 12% of salary into an individual account for the employee. The money would be invested in a variety of stock, bond, real estate, and other options under the employee's management. The investment options may include so-called "target date" or "lifecycle" funds, which feature a shifting allocation to equities and bonds that gets more conservative as the member's retirement date approaches. The accounts may also feature default allocations into an appropriate target date fund based on the member's age, but employees would always have the option of re-allocating their investments as they see fit.

Key Provision	Policy
Total Contribution	12% of salary
Investments	Managed by employees from a pre-arranged menu
Portability	Full portability on employee and employer contributions at the end of City service
Vesting Period	Immediate on all contributions

Pros & Cons Relative to Current SCERS Benefit

The following table outlines the major pros and cons of the plan, relative to the current SCERS benefit, from the perspective of both employees and the City.

Employee Perspective	Employer Perspective
Pros: • Lower contribution rate* • Provides adequate income replacement, in conjunction with Social Security, at expected (6.25%) or strong (7.75%) average investment returns • Employee has control over retirement investments • Increased portability, as employer contributions can be rolled over to another retirement plan when changing jobs. No "golden handcuffs" requiring a long tenure with City. • Employer savings leaves additional funds in the City budget available for hiring,	**Pros:** • Lower contribution rate* • Lower employee contribution rate helps recruitment and retention • Robust retirement benefit remains an asset for recruitment and retention • Shifts investment risk to employees • Shifts longevity risk to employees • Shifts inflation risk to employees

Employee Perspective	Employer Perspective
avoiding layoffs, and/or providing other compensation **Cons:** • No guaranteed benefit level • Income replacement may be somewhat less than adequate if investment returns average lower than 6.25% • Takes on all investment risk • Takes on all longevity risk on an individual basis. *May be managed by purchasing an annuity, at some cost.* • No particular inflation protection. *May be managed through increased savings or by purchasing an annuity with escalation factors.* • Individual investing expected to provide lower average returns than professional management • Individual investors pay higher average investment fees, which diminishes returns • Some individual investors may be excessively risk averse or may time their investments poorly, leading to significantly lower returns	**Cons:** • Lower average returns may provide lower income replacement for employees at any given contribution level • May increase short- to medium-term costs, as the unfunded liabilities for the closed SCERS plan are required to be amortized over a shorter period. *This con may be avoided if the SCERS Board and City Council can work out a plan with the SCERS actuary to determine an amortization rate for the closed plan on the open plan's payroll, much as the State of Washington did for PERS 1.* • May hinder recruitment and retention to the extent that workers considering public sector employment value guaranteed benefits. • May shorten employee tenures to the extent that portability allows more job changes.

* Subject to negotiation

GRS Gabriel Roeder Smith & Company
Consultants & Actuaries

SEATTLE CITY EMPLOYEES' RETIREMENT SYSTEM

PLAN REDESIGN STUDY

APRIL 2012

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April 9, 2012

Mr. John McCoy, MPA
Legislative Analyst, Council Central Staff
Inter-Departmental Team
City of Seattle
Legislative Department
600 Fourth Avenue, 2nd Floor
Seattle, WA 98104

Subject: Seattle City Employees' Retirement System Plan Redesign Study

Dear Mr. McCoy:

In response to rising contribution rates, the City of Seattle has formed an Inter-Departmental Team (IDT) to investigate possible alternative pension plan designs for the Seattle City Employees' Retirement System. The IDT has been charged with developing alternative plan designs for new hires that continue to provide a meaningful benefit for employees at reduced cost to employees, the City and taxpayers. The IDT has identified five alternative plan designs for consideration. This study analyzes the potential short and long-term impact of implementing the five alternatives.

All calculations were based on the member and financial data, and the actuarial assumptions and methods, used in preparing the January 1, 2011 actuarial valuation except where otherwise specifically indicated. All projections were performed on an open group basis assuming the active member population remains stable (rather than grows at one percent per year) and the Retirement System's Board follows an actuarial funding policy (rather than a flat percentage of payroll) using a 30-year closed amortization period. We have assumed that the annual administrative costs of 0.40% of payroll contained within the Defined Benefit normal cost rate continue for all plans (whether Defined Benefit, Hybrid or Defined Contribution only).

Other Comments

Our calculations are based upon assumptions regarding future events, which may or may not materialize. Please bear in mind that actual results could deviate significantly from our projections, depending on actual plan experience.

All of our work conforms with generally accepted actuarial principles and practices, and with the Actuarial Standards of Practice issued by the Actuarial Standards Board. Our work is intended to describe the financial and actuarial effect of the proposed plan changes on the retirement plan only. No statement contained herein is intended to be interpreted as a recommendation in favor of any of the proposed changes or in opposition to them.

The undersigned are members of the American Academy of Actuaries and meet all of the Qualification Standards of the American Academy of Actuaries to render the actuarial opinion contained herein. All of the undersigned are experienced in performing valuations for large public retirement systems. This communication should not be construed to provide tax advice, legal advice or investment advice. Please let us know if we can answer any questions regarding this analysis.

Respectfully submitted,
Gabriel, Roeder, Smith & Company

Mark Randall, FCA, EA, MAAA
Executive Vice President

Diane Hunt, FCA, FSA, EA, MAAA
Consultant

Dana Woolfrey, ASA, EA, MAAA
Consultant

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SECTION A

EXECUTIVE SUMMARY

The five design alternatives developed by the IDT include three standard defined benefit alternatives, one hybrid design which has both defined benefit and defined contribution components, and one purely defined contribution design. For the defined benefit portion, the main design items that were altered were the:

- Benefit Multiplier
- Maximum Years of Service used in calculating Retirement Benefit
- Final Average Salary Calculation Period
- Retirement Eligibility
- Age at Which an Employee Reaches Eligibility for Full Benefit and Corresponding Early Retirement Reductions
- Minimum Benefit
- Employee Contribution Rates

Under the Defined Benefit Alternatives, the employer is assumed to contribute the Annual Required Contribution (ARC), assuming a 30 year closed amortization period.

Under the Defined Contribution Alternative, the employer contributes 4.0% of salary and the employee contributes 8.0% of salary. Employee and employer contributions are deposited in an individual investment account. The balance is used to provide benefits at retirement. The design reduces both employee and employer cost. In addition, the design moves investment risk from the employer to the employee. However, moving the risk from employer to employee may provide less predictable income at retirement.

The projections shown in this report are based upon the following assumptions and methods:

- An open-group 30-year projection method is used with the population count remaining stable
- A 30-year closed amortization funding method is used, assuming 1% population growth.
- Payroll is assumed to grow at 4% per year, per the current valuation assumption.
- Implications to the Annual Required Contribution of closing the defined benefit plan to new entrants have not been included. Therefore, additional studies should be performed prior to implementation to ensure that all other aspects and implications have been considered.

The key components of the benefit design alternatives are summarized on the following page. The benefit multipliers provided at retirement based on age and service are shown in the appendix.

Plan Design	Current Provisions, No Change	Modest Change to Defined Benefit Provisions -	Modest Change to Defined Benefit Provisions -	Substantial Change to Defined Benefit Provisions	Hybrid (Defined Benefit and Defined Contribution)	Defined Contribution Only
Abbreviated Name	**Current**	**Modest DB 1**	**Modest DB 2**	**Substantial DB**	**Hybrid**	**DC**
Defined Benefit Components						
Multiplier	2%	1.83%	2%	1.66%	1%	N/A
Maximum Pension Allowance/ Service	60% / 30 yos	60.5% / 33 yos	60% / 30 yos	60% / 36 yos	35% / 35 yos	N/A
Final Average Salary Calculation Period	24 months	36 months	36 months	36 months	36 months	N/A
Retirement Eligibility	52 and 20 57 and 10 62 and 5 30 and out	55 and 20 57 and 10 60 and 5	55 and 20 57 and 10 60 and 5	55 and 20 57 and 10 60 and 5	55 and 20 57 and 10 60 and 5	N/A
Full Benefit Age	65 or Rule of 80	65 or Rule of 85	65 or Rule of 90	65 or Rule of 90	65 or Rule of 85	N/A
Reduction for Early Retirement	3% from Age 65 or 5% from Rule of 80	7% From Full Benefit Age	7% From Full Benefit Age	7% From Full Benefit Age	7% From Full Benefit Age	N/A
Employer Contributions	ARC	ARC	ARC	ARC	ARC	ARC
Employee Contributions	10.03%	9%	9%	8%	2.50%	N/A
Minimum Benefit	Annuitization of two times contribution balance	N/A	N/A	N/A	N/A	N/A
COLA*	1.50%	1.50%	1.50%	1.50%	1.50%	N/A
Defined Contribution Components						
Employer Contributions	N/A	N/A	N/A	N/A	0.00%	3.60%
Employee Contributions	N/A	N/A	N/A	N/A	6.50%	8.00%

*65% purchasing power minimum maintained for all plans.

A primary concern for the IDT in creating these design alternatives was being able to provide a meaningful benefit to long-service employees. One way to measure this for each design alternative is to determine the percentage of final salary replaced by the benefit at retirement for sample employees. In the exhibits below, we examine the income replacement ratios for a sample member retiring at age 65 with 20 years of service, a sample member retiring at age 65 with 30 years of service and a sample member retiring at age 67 with 36 years of service. Income replacement comes from three sources: the defined benefit annuity, the annuitization of the defined contribution balance available at retirement, and social security. The defined benefit annuity under the current provisions includes the two times contributions annuity in cases where it is higher than the formula benefit.

The benefit provided by the defined contribution balance is dependent upon the investment earnings before and after retirement. Accordingly, we have shown the benefit provided at three different investment earnings rates to show the potential variability in the benefit provided. Similarly, the replacement ratio provided by Social Security varies by pay, so the results have been shown by a low income, middle income and high income wage earner.

The IDT has indicated that a replacement ratio in the range of 72%-79% is an adequate goal.

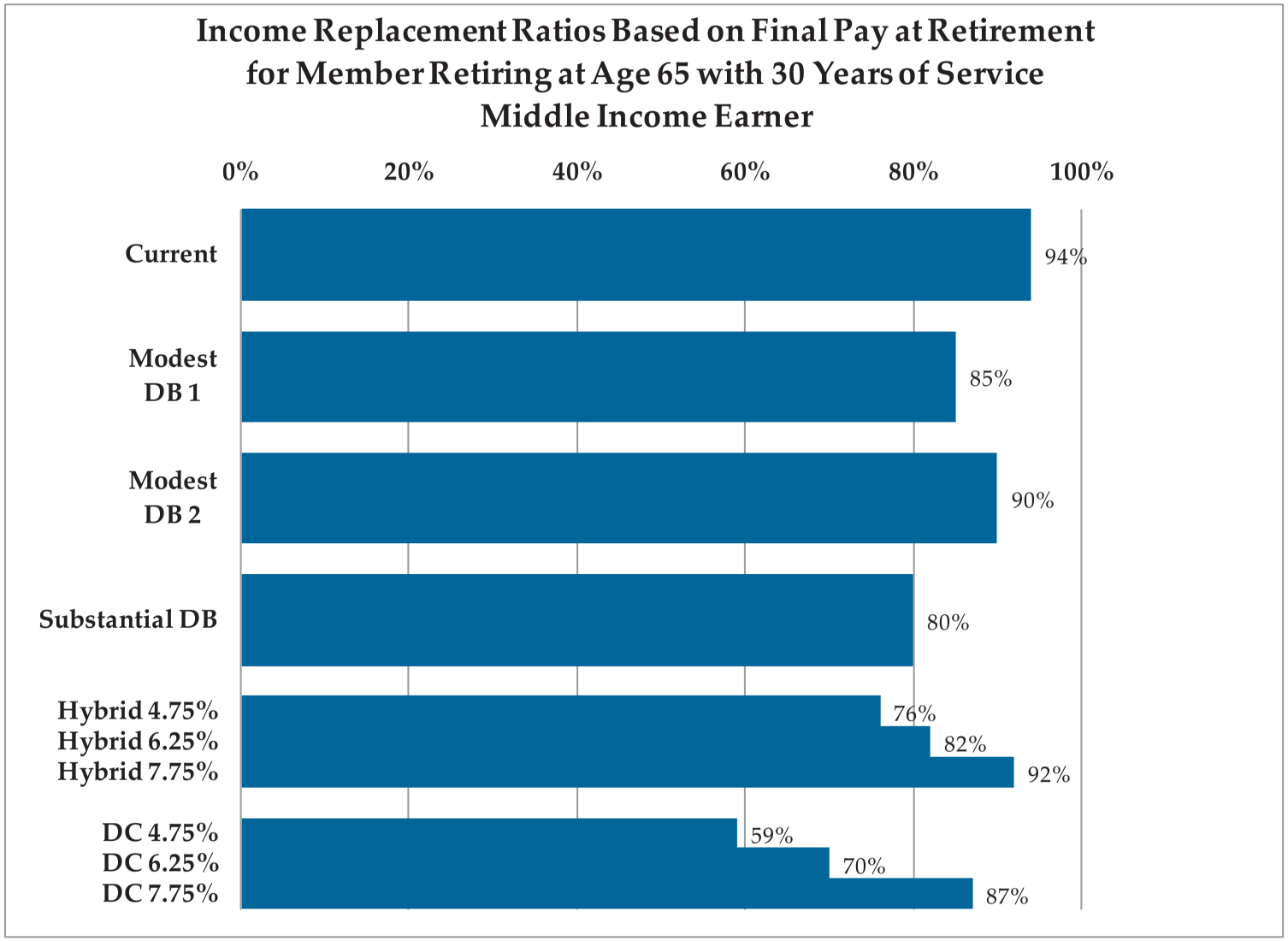
The table and graph below show a summary of the replacement ratio results for an employee age 65 who retires with 30 years of service.

	Income Replacement Ratios Based on Final Pay at Retirement for Member Retiring at Age 65 with 30 Years of Service									
	Current	**Modest DB 1**	**Modest DB 2**	**Substantial DB**	**Hybrid 7.75%**	**Hybrid 6.25%**	**Hybrid 4.75%**	**DC 7.75%**	**DC 6.25%**	**DC 4.75%**
Low Income Earner*										
1. Defined Benefit	62%	53%	58%	48%	29%	29%	29%	0%	0%	0%
2. Defined Contribution	0%	0%	0%	0%	31%	21%	15%	55%	38%	27%
3. Social Security	36%	36%	36%	36%	36%	36%	36%	36%	36%	36%
4. Total	98%	89%	94%	84%	96%	86%	80%	91%	74%	63%
Middle Income Earner*										
1. Defined Benefit	62%	53%	58%	48%	29%	29%	29%	0%	0%	0%
2. Defined Contribution	0%	0%	0%	0%	31%	21%	15%	55%	38%	27%
3. Social Security	32%	32%	32%	32%	32%	32%	32%	32%	32%	32%
4. Total	94%	85%	90%	80%	92%	82%	76%	87%	70%	59%
High Income Earner*										
1. Defined Benefit	62%	53%	58%	48%	29%	29%	29%	0%	0%	0%
2. Defined Contribution	0%	0%	0%	0%	31%	21%	15%	55%	38%	27%
3. Social Security	24%	24%	24%	24%	24%	24%	24%	24%	24%	24%
4. Total	86%	77%	82%	72%	84%	74%	68%	79%	62%	51%

- The Current Plan provides the highest replacement ratios, ranging from 86%-98% across all income brackets
- The Modest DB 2 provides the next highest replacement ratios, ranging from 82%-94% across all income brackets.
- The Hybrid Plans provide a base DB benefit with a replacement ratio of 29%, with total replacement ratios varying from 68%-96% depending upon income and investment performance.**
- The DC Only proposal provides a replacement ratio varying from 51%-91% across all income and investment return brackets.**

* *Low, middle, and high income social security replacement ratio calculations assume income of $35,000, $55,000 and $95,000 at retirement. Calculations performed using 2011 bendpoints.*

***Assuming investment returns are between 4.75 and 7.75 percent.*

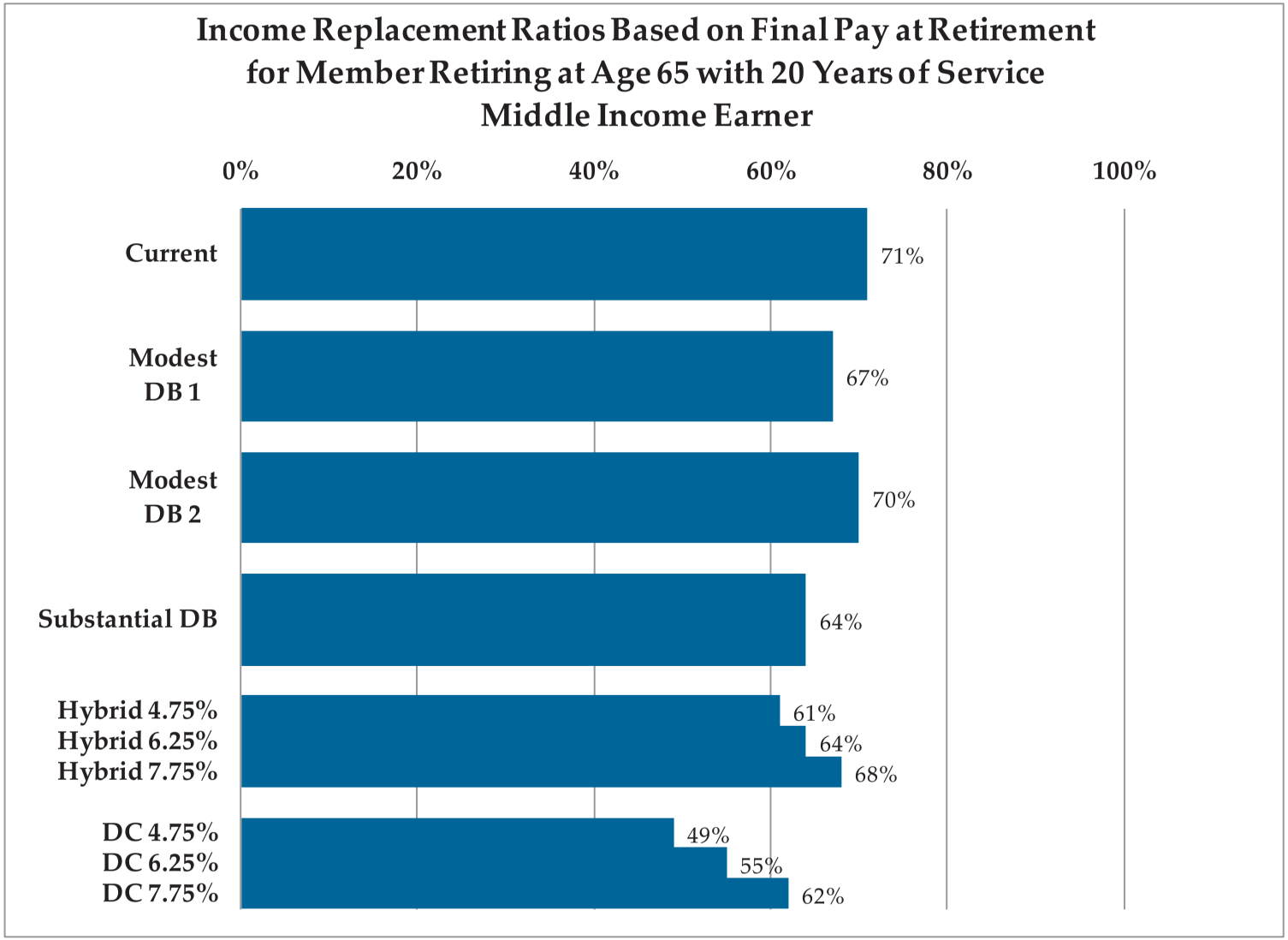

Income Replacement Ratios Based on Final Pay at Retirement
for Member Retiring at Age 65 with 30 Years of Service
Middle Income Earner
0%
20%
40%
60%
80%
100%
Current
94%
Modest DB 1
85%
Modest DB 2
90%
Substantial DB
80%
Hybrid 4.75%
Hybrid 6.25%
Hybrid 7.75%
76%
82%
92%
DC 4.75%
DC 6.25%
DC 7.75%
59%
70%
87%

The table and graph below show a summary of the replacement ratio results for an employee age 65 who retires with 20 years of service.

	Income Replacement Ratios Based on Final Pay at Retirement for Member Retiring at Age 65 with 20 Years of Service									
	Current	**Modest DB 1**	**Modest DB 2**	**Substantial DB**	**Hybrid 7.75%**	**Hybrid 6.25%**	**Hybrid 4.75%**	**DC 7.75%**	**DC 6.25%**	**DC 4.75%**
Low Income Earner*										
1. Defined Benefit	39%	35%	38%	32%	19%	19%	19%	0%	0%	0%
2. Defined Contribution	0%	0%	0%	0%	17%	13%	10%	30%	23%	17%
3. Social Security	36%	36%	36%	36%	36%	36%	36%	36%	36%	36%
4. Total	75%	71%	74%	68%	72%	68%	65%	66%	59%	53%
Middle Income Earner*										
1. Defined Benefit	39%	35%	38%	32%	19%	19%	19%	0%	0%	0%
2. Defined Contribution	0%	0%	0%	0%	17%	13%	10%	30%	23%	17%
3. Social Security	32%	32%	32%	32%	32%	32%	32%	32%	32%	32%
4. Total	71%	67%	70%	64%	68%	64%	61%	62%	55%	49%
High Income Earner*										
1. Defined Benefit	39%	35%	38%	32%	19%	19%	19%	0%	0%	0%
2. Defined Contribution	0%	0%	0%	0%	17%	13%	10%	30%	23%	17%
3. Social Security	24%	24%	24%	24%	24%	24%	24%	24%	24%	24%
4. Total	63%	59%	62%	56%	60%	56%	53%	54%	47%	41%

- The overall replacement ratios are lower on this table than the previous one due to lesser service in the defined benefit formula and the shorter investment horizon for the defined contribution plans.

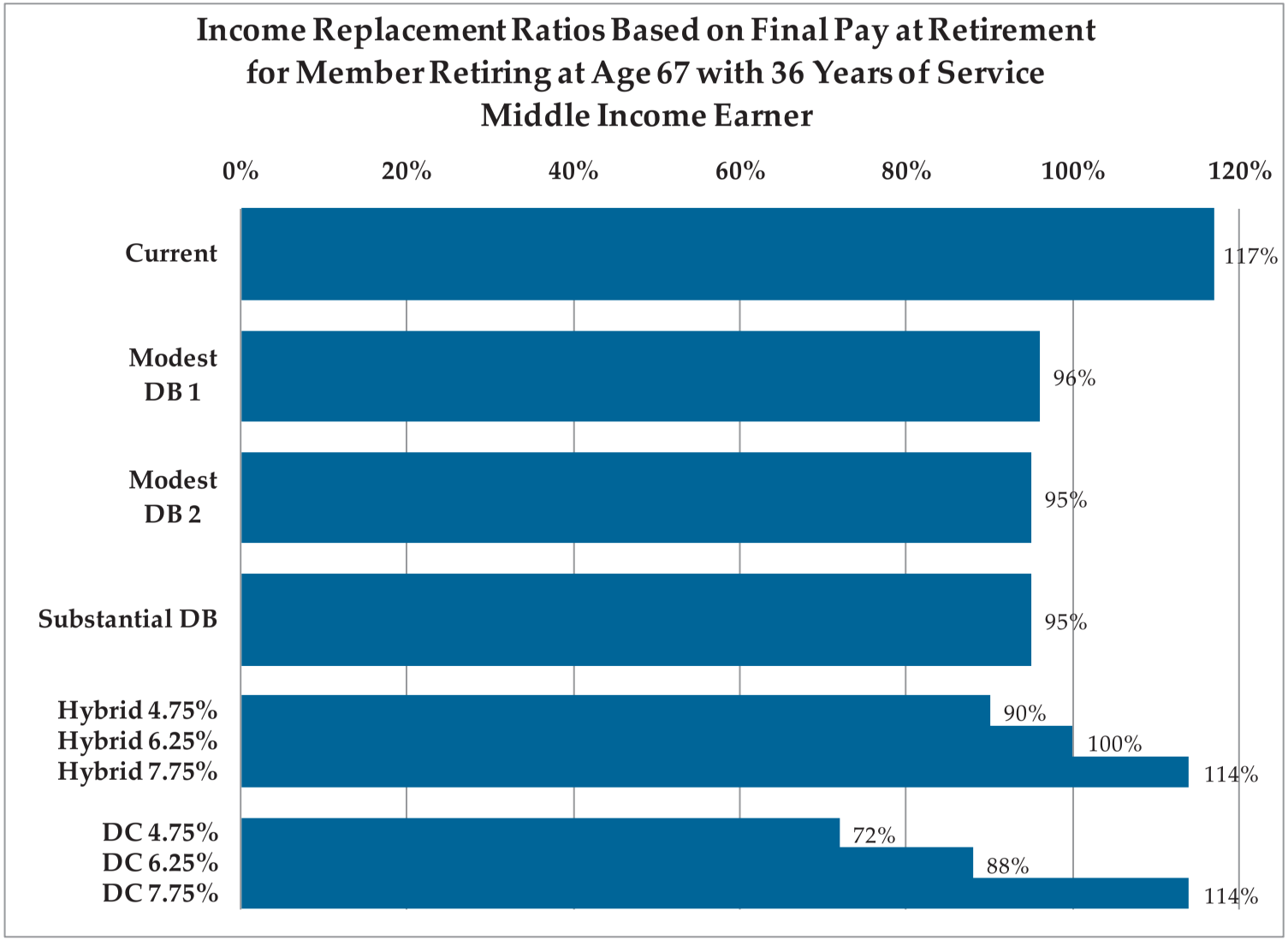
* *Low, middle, and high income social security replacement ratio calculations assume income of $35,000, $55,000 and $95,000 at retirement. Calculations performed using 2011 bendpoints.*


Income Replacement Ratios Based on Final Pay at Retirement
for Member Retiring at Age 65 with 20 Years of Service
Middle Income Earner
0%
20%
40%
60%
80%
100%
Current
71%
Modest DB 1
67%
Modest DB 2
70%
Substantial DB
64%
Hybrid 4.75%
Hybrid 6.25%
Hybrid 7.75%
61%
64%
68%
DC 4.75%
DC 6.25%
DC 7.75%
49%
55%
62%

The table and graph below show a summary of the replacement ratio results for an employee age 67 who retires with 37 years of service.

	Income Replacement Ratios Based on Final Pay at Retirement for Member Retiring at Age 67 with 36 Years of Service									
	Current	**Modest DB 1**	**Modest DB 2**	**Substantial DB**	**Hybrid 7.75%**	**Hybrid 6.25%**	**Hybrid 4.75%**	**DC 7.75%**	**DC 6.25%**	**DC 4.75%**
Low Income Earner*										
1. Defined Benefit	80%	59%	58%	58%	34%	34%	34%	0%	0%	0%
2. Defined Contribution	0%	0%	0%	0%	43%	29%	19%	77%	51%	35%
3. Social Security	42%	42%	42%	42%	42%	42%	42%	42%	42%	42%
4. Total	122%	101%	100%	100%	119%	105%	95%	119%	93%	77%
Middle Income Earner*										
1. Defined Benefit	80%	59%	58%	58%	34%	34%	34%	0%	0%	0%
2. Defined Contribution	0%	0%	0%	0%	43%	29%	19%	77%	51%	35%
3. Social Security	37%	37%	37%	37%	37%	37%	37%	37%	37%	37%
4. Total	117%	96%	95%	95%	114%	100%	90%	114%	88%	72%
High Income Earner*										
1. Defined Benefit	80%	59%	58%	58%	34%	34%	34%	0%	0%	0%
2. Defined Contribution	0%	0%	0%	0%	43%	29%	19%	77%	51%	35%
3. Social Security	28%	28%	28%	28%	28%	28%	28%	28%	28%	28%
4. Total	108%	87%	86%	86%	105%	91%	81%	105%	79%	63%

** Low, middle, and high income social security replacement ratio calculations assume income of $35,000, $55,000 and $95,000 at retirement. Calculations performed using 2011 bendpoints.*


Income Replacement Ratios Based on Final Pay at Retirement
for Member Retiring at Age 67 with 36 Years of Service
Middle Income Earner
0%
20%
40%
60%
80%
100%
120%
Current
117%
Modest DB 1
96%
Modest DB 2
95%
Substantial DB
95%
Hybrid 4.75%
Hybrid 6.25%
Hybrid 7.75%
90%
100%
114%
DC 4.75%
DC 6.25%
DC 7.75%
72%
88%
114%

While replacement ratios are useful in evaluating the adequacy of benefits provided to employees, other factors such as the cost to the employees and employers of funding the benefits and risk-sharing must be considered, as well.

Section B provides a summary of the costs of the alternative plan designs under the current discount and investment return assumption of 7.75% per annum, assuming only new entrants enter the proposed plan while current active members remain in the existing plan.

Section C provides a summary of the costs of the alternative plan designs under the current discount and investment return assumption of 7.75% per annum, assuming new entrants enter the proposed plan and current active members are given a one-time option to enter the new plan. The results show the cost sensitivity of assuming 0%, 5%, and 15% of the current entrants choosing to enter the new plan and contribute at the new plan level. The accrued benefits for current active participants who choose to enter the new plan would be protected and the accrued liability associated with those benefits would be unchanged.

Section D shows the impact of varying the investment return/discount rate assumption on the long-term employer normal cost, the cumulative dollar savings and the ARC on the various plan designs.

The Appendix provides projection details for the proposed plans under various scenarios for the investment/discount rate and current members opting into the new plan.

SECTION B

SCENARIO RESULTS -

7.75% DISCOUNT RATE
PROPOSED BENEFIT PROVISIONS AFFECT NEW ENTRANTS ONLY

The analysis contained in this section is based on the valuation data as of January 1, 2011, and assumes that the alternative benefit provisions affect new entrants only. Active members hired prior to January 1, 2011, continue accruing benefits under the provisions currently in effect. Although an implementation date of January 1, 2011 is not feasible, the results can be translated to an alternative implementation date. The cost savings will be similar based on the number of years from implementation. For example, if the actual implementation date is January 1, 2014, we would expect the cost savings five years after implementation (January 1, 2019) to be similar to the cost savings at January 1, 2016.

All projections are done using an annual discount rate and investment rate of 7.75 percent; the same as the valuation assumption. Although the 1.00 percent population growth assumption was used in the calculation of the amortization payment of the unfunded liabilities, the projection of the population assumed that the active population remained stable. The projections were performed assuming a funding policy of paying the actuarially-determined Annual Required Contribution based on a 30-year closed amortization period.

In looking at the cost of a particular plan design, it is illustrative to look at the long-term normal cost rate. The normal cost rate is the annual cost as a percentage of pay to provide benefits being accrued by active members. The employee contribution rate and the employer long-term normal cost rates shown below represent the normal cost rates in 50 years. At that point, all of the members covered under the current benefit provisions will no longer be in active status and the active population will be entirely covered under the new benefit provisions. If there were no unfunded liabilities at that point and all assumptions were met, these annual rates would cover the cost of benefits.

Currently there is an unfunded liability of roughly $900 million on a market value basis, and this shortfall must be made up through additional contributions. Projections based on a 30-year closed amortization funding policy show that in addition to the normal cost, an additional 8.5-8.7% of payroll must be contributed to pay off the unfunded liability.

	Current	Modest DB 1	Modest DB 2	Substantial DB	Hybrid	DC
Employee Contribution Rate	10.03%	9.00%	9.00%	8.00%	9.00%	8.00%
Employer Long-Term Normal Cost*	4.96%	2.84%	2.53%	2.04%	3.85%	4.00%
Employer Paid Amortization of Unfunded Liability Over 30-Year Funding Period**	8.51%	8.50%	8.49%	8.51%	8.72%	8.73%

**Employer normal costs include the defined benefit normal cost (net of employee contributions), 0.40% for administrative costs, and employer contributions to the defined contribution plan.*

***Excludes initial 2 years during phase in of investment losses. Goes to 0% after 30 years if all actuarial assumptions are met and benefit provisions are unchanged.*

Comparing these results with the replacement ratios in the prior Section shows the trade-offs between cost and benefit adequacy for the various proposals.

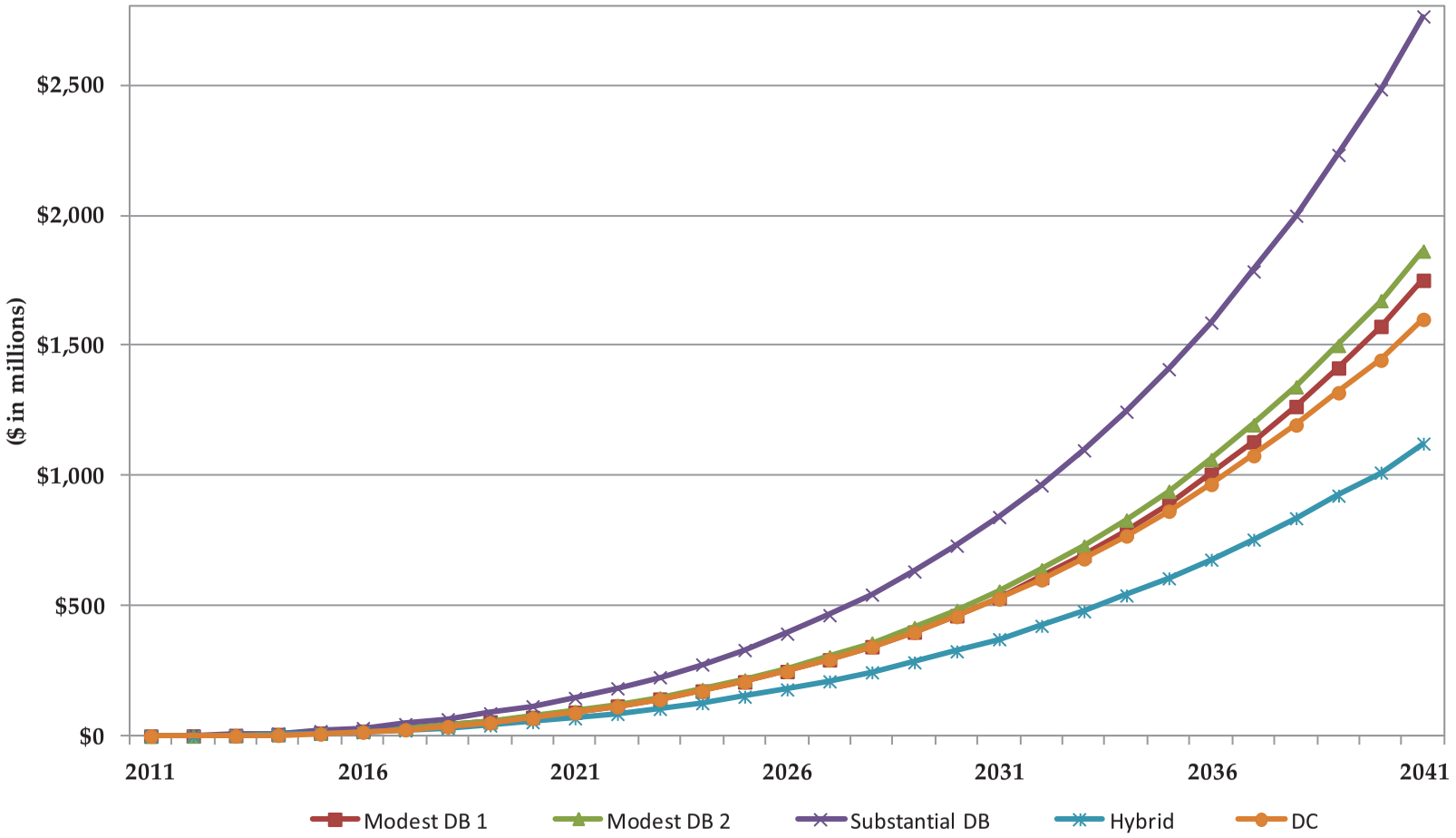
Another measure that was examined in the projections was a cumulative dollar savings which was developed by summing up the required employer (ER) and employee (EE) contributions over time, including investment earnings on those contributions. The two exhibits below show the cumulative contribution requirements and then the cumulative contribution savings as compared to the current plan. All scenarios use a level percent of pay amortization of the unfunded liability on the open group payroll. If the Defined Benefit Plan were closed and the Defined Contribution Plan implemented for new entrants, it may be necessary to use a level dollar amortization. That would accelerate funding into the Defined Benefit Plan and increase the employer's contribution requirement near-term. For the current stages of examining the plan designs, we have used a consistent amortization methodology for all scenarios for an "apples to apples" comparison of the costs of the plan designs.

Years From Implementation	Cumulative Dollar Contribution Amounts ($ in millions)											
	Current		Modest DB 1		Modest DB 2		Substantial DB		Hybrid*		DC*	
	ER	EE	ER	EE	ER	EE	ER	EE	ER	EE	ER	EE
5	$555.9	$461.7	$544.8	$453.8	$544.3	$453.8	$540.6	$446.2	$549.3	$453.7	$556.5	$446.0
10	1,429.2	1,135.5	1,371.3	1,101.7	1,368.4	1,101.7	1,349.3	1,069.0	1,395.7	1,100.9	1,407.9	1,067.9
15	2,841.9	2,214.0	2,681.3	2,126.4	2,671.9	2,126.4	2,620.8	2,041.6	2,752.8	2,124.0	2,769.5	2,038.6
20	5,066.6	3,902.3	4,718.4	3,718.5	4,693.6	3,718.5	4,587.3	3,540.4	4,883.6	3,713.0	4,908.7	3,533.7
25	8,497.8	6,502.9	7,836.1	6,158.8	7,779.7	6,158.8	7,587.1	5,825.3	8,174.1	6,148.8	8,221.0	5,812.9
30	13,501.9	10,460.5	12,350.1	9,861.4	12,237.9	9,861.4	11,918.5	9,279.7	12,993.8	9,845.1	13,102.0	9,259.6

Years From Implementation	Cumulative Dollar Savings Over Current Plan Provisions ($ in millions)									
	Modest DB 1		Modest DB 2		Substantial DB		Hybrid*		DC*	
	ER	EE	ER	EE	ER	EE	ER	EE	ER	EE
5	$11.1	$7.9	$11.6	$7.9	$15.3	$15.5	$6.6	$8.0	-$0.6	$15.7
10	58.0	33.8	60.8	33.8	79.9	66.5	33.6	34.6	21.4	67.6
15	160.6	87.5	170.0	87.5	221.1	172.4	89.1	90.0	72.4	175.4
20	348.2	183.8	373.0	183.8	479.3	362.0	183.0	189.3	157.9	368.7
25	661.7	344.1	718.1	344.1	910.7	677.7	323.7	354.1	276.8	690.0
30	1,151.7	599.1	1,263.9	599.1	1,583.4	1,180.9	508.0	615.4	399.8	1,200.9

**Employee contribution savings under the two Modest Change Defined Benefit Plans and Hybrid Plan Benefit would be the same (all assume 9% employee contribution rates). Similarly, the employee contribution savings under the Substantial Change Defined Benefit Plan and the Defined Contribution would be the same (all assume 8% employee contribution rates). Minor differences in the timing of the pay used in the defined benefit and defined contribution portion of the projection result in the differences shown.*

Cumulative Total Dollar Savings (EE and ER) Relative to Current Plan

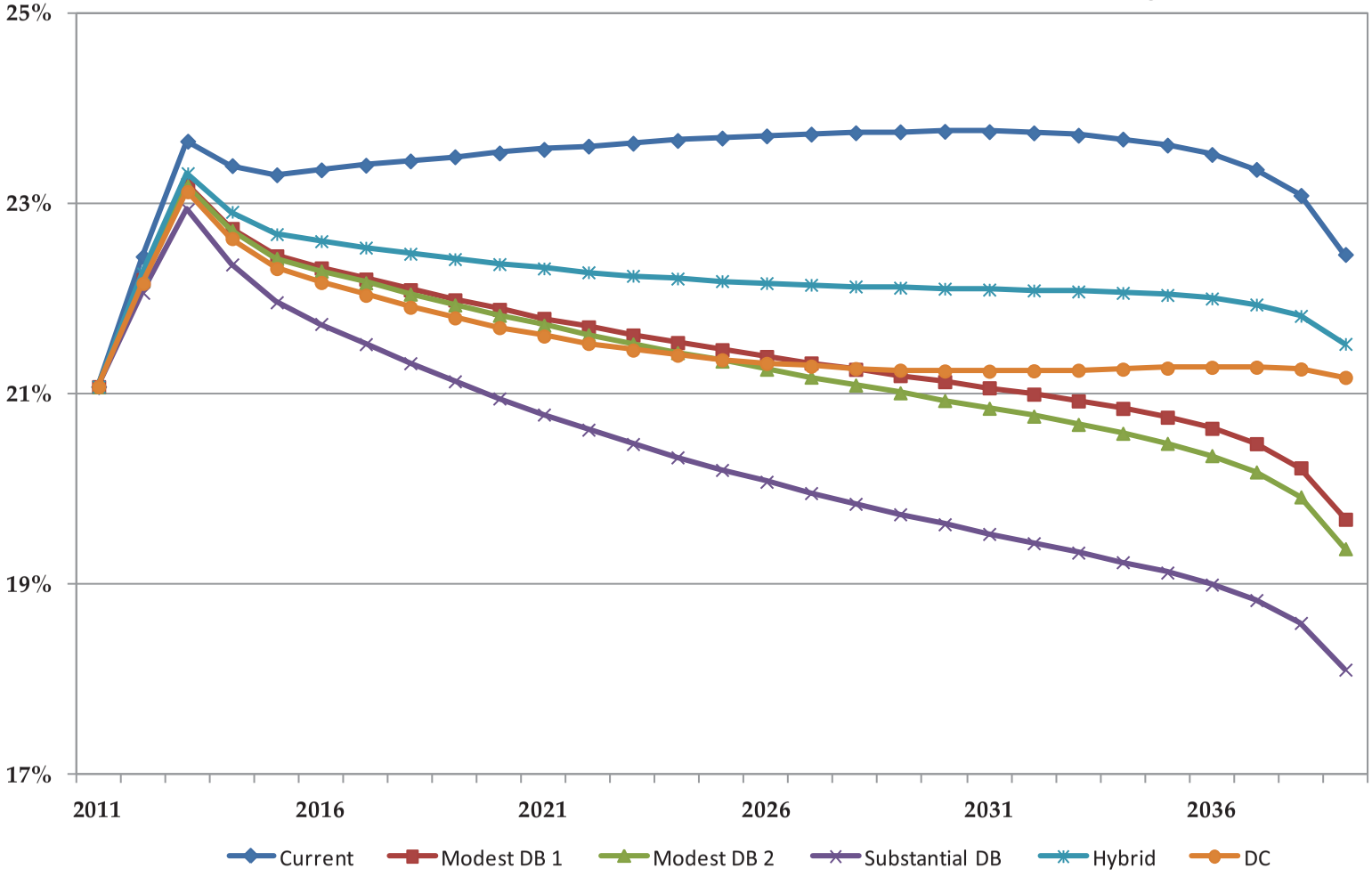


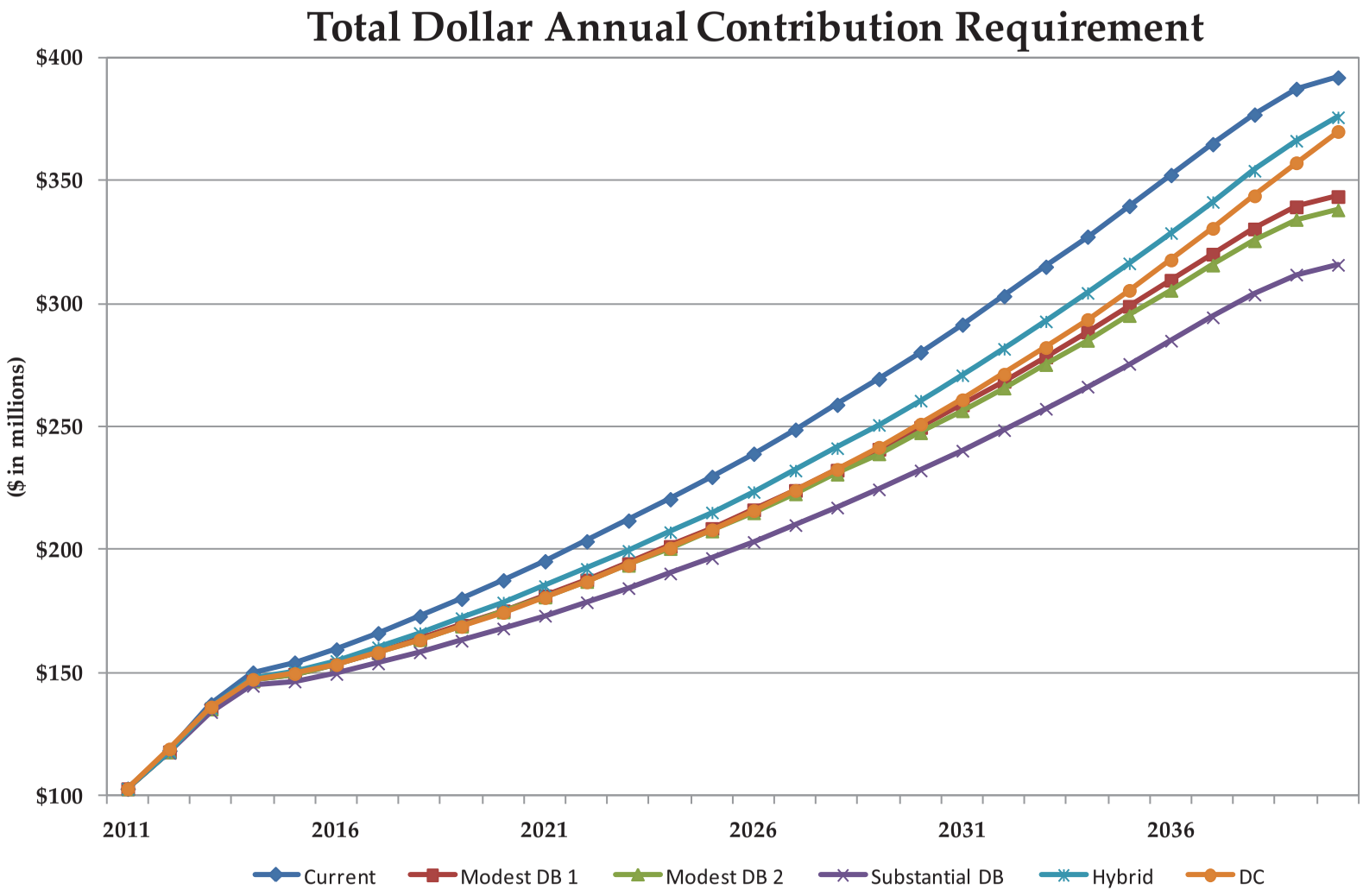
The following exhibit shows the actuarially-determined Annual Required Contribution based on the 30-year closed amortization policy, both as a percent of payroll and a dollar amount. Since we are assuming only new entrants are affected by the new plan designs, all plans start at the same contribution requirement at January 1, 2011. Over time, as the lower new entrant normal costs and liabilities become a bigger portion of total costs, the effect of the new plan designs becomes more apparent. In valuation year 2041, it is estimated that the unfunded liabilities have been paid off and the observed drop in the required contribution rate from 2036 to 2041 is due to the elimination of the amortization payment.

	Annual Required Contribution as a Percent of Total Payroll (DB and DC Components Combined)					
Valuation Year	**Current**	**Modest DB 1**	**Modest DB 2**	**Substantial DB**	**Hybrid**	**DC**
2011	21.1%	21.1%	21.1%	21.1%	21.1%	21.1%
2016	23.4	22.3	22.3	21.7	22.6	22.2
2021	23.6	21.8	21.7	20.8	22.3	21.6
2026	23.7	21.4	21.3	20.1	22.2	21.3
2031	23.8	21.1	20.9	19.5	22.1	21.2
2036	23.5	20.6	20.4	19.0	22.0	21.3
2041	14.3	11.3	11.0	9.6	12.5	11.9

	Annual Required Contribution ($ in millions) (DB and DC Components Combined)					
Valuation Year	**Current**	**Modest DB 1**	**Modest DB 2**	**Substantial DB**	**Hybrid**	**DC**
2011	$102.8	$102.8	$102.8	$102.8	$102.8	$102.8
2016	159.5	153.2	153.1	149.5	154.8	153.3
2021	195.4	181.3	180.8	173.2	185.3	180.6
2026	239.1	216.3	215.1	203.2	223.6	216.0
2031	291.6	259.0	256.6	240.4	271.0	261.1
2036	352.5	309.7	305.6	285.1	328.9	317.9
2041	259.3	206.3	200.9	175.3	227.6	216.0

Total Annual Required Contribution as a Percent of Payroll




Total Dollar Annual Contribution Requirement
$400
$350
$300
$250
$200
$150
$100
($ in millions)
2011
2016
2021
2026
2031
2036
Current
Modest DB 1
Modest DB 2
Substantial DB
Hybrid
DC

Under the assumed contribution policy (annual required contribution is contributed, 30-year-closed amortization), the funded ratio projection shown below does not provide a lot of information on which to distinguish the plans. All designs trend to 100% in 30 years in a similar manner. The exhibits above, which show the cost of getting to 100% funded, are more illustrative.

	Funded Ratio of Defined Benefit Plan					
Valuation Year	**Current**	**Modest DB 1**	**Modest DB 2**	**Substantial DB**	**Hybrid**	**DC**
2011	74.8%	74.8%	74.8%	74.8%	74.8%	74.8%
2016	70.7	70.6	70.6	70.6	70.4	70.3
2021	75.1	74.8	74.8	74.6	73.8	73.1
2026	79.9	79.2	79.2	78.8	77.5	75.6
2031	85.7	84.7	84.6	84.0	82.3	79.0
2036	92.5	91.7	91.6	91.0	89.5	85.5
2041	100.3	100.2	100.2	100.2	100.2	100.1

SECTION C

SENSITIVITY ANALYSIS -

7.75% DISCOUNT RATE
PROPOSED BENEFIT PROVISIONS AFFECT NEW ENTRANTS
CURRENT MEMBERS ALLOWED ELECTION INTO NEW PLAN

In addition to covering new hires under the alternative benefit designs, the IDT would consider allowing a one-time election for current active members into the new plan. The benefits accrued to date under the current provisions would be protected, and they would accrue benefits under the new plan, prospectively. The members electing the lower benefits under the new DB plan provisions would do so in order to contribute the lower employee rate, or in the case of the Hybrid or DC options, to be able to invest their contributions and receive a portable benefit. At the request of the IDT, we have analyzed the impact to the plans if 5% or 15% of current active members opt into the new plans. It is our opinion that 5% election into the plan is the more likely scenario. It may be the case that very few members opt into the new plans, and that the costs would be very similar to the "Only New Entrants Affected Scenario".

We have shown the cumulative dollar savings and projected annual required contribution rates assuming the various election percents (0%/5%/15%). The long-term normal cost rates would not change from the current active member election.

Years From Implementation	Cumulative Dollar Savings Over Current Plan Provisions Only New Entrants Affected ($ in millions)									
	Modest DB 1		Modest DB 2		Substantial DB		Hybrid		DC	
	ER	EE	ER	EE	ER	EE	ER	EE	ER	EE
5	$11.1	$7.9	$11.6	$7.9	$15.3	$15.5	$6.6	$8.0	-$0.6	$15.7
10	58.0	33.8	60.8	33.8	79.9	66.5	33.6	34.6	21.4	67.6
15	160.6	87.5	170.0	87.5	221.1	172.4	89.1	90.0	72.4	175.4
20	348.2	183.8	373.0	183.8	479.3	362.0	183.0	189.3	157.9	368.7
25	661.7	344.1	718.1	344.1	910.7	677.7	323.7	354.1	276.8	690.0
30	1,151.7	599.1	1,263.9	599.1	1,583.4	1,180.9	508.0	615.4	399.8	1,200.9

Years From Implementation	Cumulative Dollar Savings Over Current Plan Provisions if 5% of Current Active Members Elect Into New Plan ($ in millions)									
	Modest DB 1		Modest DB 2		Substantial DB		Hybrid		DC	
	ER	EE	ER	EE	ER	EE	ER	EE	ER	EE
5	$15.6	$9.5	$17.6	$9.5	$21.8	$19.1	$9.8	$9.6	$1.0	$19.3
10	70.4	37.3	77.7	37.3	97.7	74.1	42.4	38.1	29.6	75.1
15	184.5	93.6	203.0	93.6	255.3	185.3	106.2	96.0	90.5	188.2
20	388.8	193.3	430.1	193.3	537.5	382.1	212.4	198.5	190.9	388.5
25	727.0	358.3	810.8	358.3	1,004.4	707.9	371.6	367.8	332.3	719.6
30	1,252.4	620.1	1,407.8	620.1	1,727.6	1,225.2	582.5	635.5	487.5	1,244.2

Years From Implementation	Cumulative Dollar Savings Over Current Plan Provisions if 15% of Current Active Members Elect Into New Plan ($ in millions)									
	Modest DB 1		Modest DB 2		Substantial DB		Hybrid		DC	
	ER	EE	ER	EE	ER	EE	ER	EE	ER	EE
5	$24.8	$12.6	$29.8	$12.6	$34.8	$26.2	$16.3	$12.8	$4.2	$26.3
10	95.3	44.4	111.6	44.4	133.2	89.4	60.1	45.1	46.0	90.3
15	232.2	105.8	269.1	105.8	323.6	211.3	140.5	107.9	126.7	213.9
20	470.1	212.3	544.1	212.3	653.8	422.5	271.4	217.0	256.9	428.3
25	857.7	386.8	996.3	386.8	1,191.7	768.3	467.6	395.3	443.5	778.7
30	1,453.8	662.0	1,695.5	662.0	2,016.2	1,313.8	731.5	675.8	662.8	1,330.8

	Annual Required Contribution as a Percent of Total Payroll Only New Entrants Affected (DB and DC Components Combined)					
Valuation Year	**Current**	**Modest DB 1**	**Modest DB 2**	**Substantial DB**	**Hybrid**	**DC**
2011	21.1%	21.1%	21.1%	21.1%	21.1%	21.1%
2016	23.4	22.3	22.3	21.7	22.6	22.2
2021	23.6	21.8	21.7	20.8	22.3	21.6
2026	23.7	21.4	21.3	20.1	22.2	21.3
2031	23.8	21.1	20.9	19.5	22.1	21.2
2036	23.5	20.6	20.4	19.0	22.0	21.3
2041	14.3	11.3	11.0	9.6	12.5	11.9

	Annual Required Contribution as a Percent of Total Payroll If 5% of Current Active Members Elect Into New Plan (DB and DC Components Combined)					
Valuation Year	**Current**	**Modest DB 1**	**Modest DB 2**	**Substantial DB**	**Hybrid**	**DC**
2011	21.1%	20.9%	20.8%	20.7%	20.9%	20.8%
2016	23.4	22.2	22.1	21.5	22.5	22.0
2021	23.6	21.7	21.5	20.6	22.2	21.5
2026	23.7	21.3	21.1	19.9	22.1	21.2
2031	23.8	21.0	20.7	19.4	22.0	21.1
2036	23.5	20.6	20.2	18.9	21.9	21.2
2041	14.3	11.3	11.0	9.6	12.5	11.9

	Annual Required Contribution as a Percent of Total Payroll If 15% of Current Active Members Elect Into New Plan (DB and DC Components Combined)					
Valuation Year	**Current**	**Modest DB 1**	**Modest DB 2**	**Substantial DB**	**Hybrid**	**DC**
2011	21.1%	20.4%	20.3%	20.1%	20.6%	20.4%
2016	23.4	21.8	21.6	21.0	22.2	21.6
2021	23.6	21.4	21.2	20.2	22.0	21.2
2026	23.7	21.1	20.8	19.6	21.9	21.0
2031	23.8	20.8	20.5	19.1	21.9	20.9
2036	23.5	20.4	20.0	18.7	21.8	21.0
2041	14.3	11.3	11.0	9.6	12.5	11.9

SECTION D

SENSITIVITY ANALYSIS -

ALTERNATIVE DISCOUNT RATE AND INVESTMENT RETURN ASSUMPTIONS

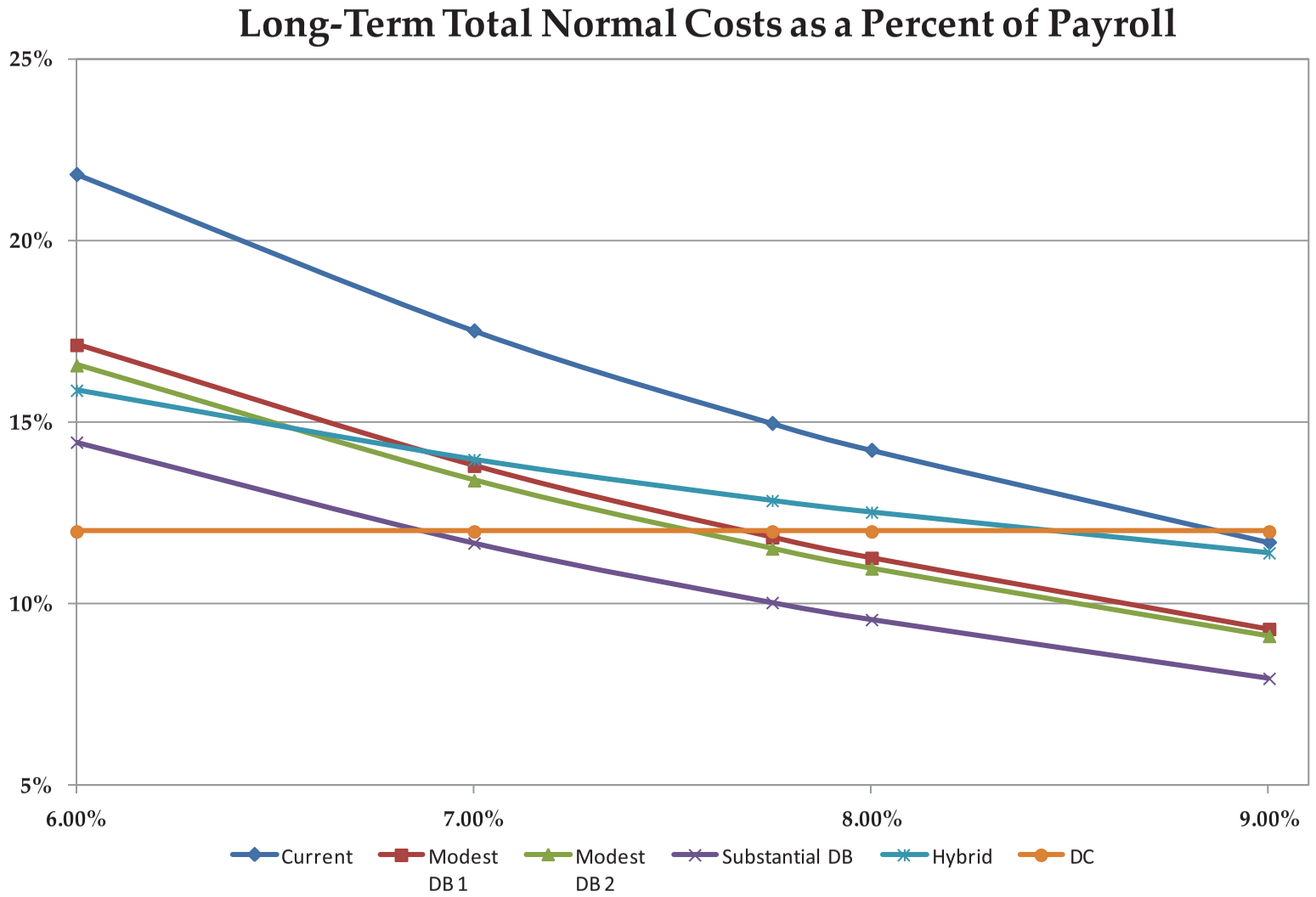
The analyses shown in sections B and C assume a discount rate and investment earnings of 7.75 percent. The 7.75 percent return is based on the expected long-term return on plan assets. However, if the assets earn more or less than the assumptions, then the actual cost to provide benefits will vary accordingly. In addition, if the discount rate is increased or decreased from the current assumption, the DB plan liabilities will decrease or increase, respectively, impacting the ARC and therefore, the timing of the defined contributions into the plans. At the request of the IDT, we have performed similar analyses assuming alternative discount rate and investment earnings assumptions:

- 7.75% (same as those results shown in Section B)
- 4.00%
- 6.00%
- 7.00%
- 8.00%
- 9.00%

At lower investment earnings rate assumptions, the plans containing a Defined Contribution component will look more attractive from an employer cost perspective. However, the tradeoff comes in the form of lower benefits to employees at retirement.

	Long-Term Total Normal Costs*					
Discount Rate	**Current**	**Modest DB 1**	**Modest DB 2**	**Substantial DB**	**Hybrid**	**DC**
4.00%	35.02%	27.34%	26.32%	23.00%	21.73%	12.00%
6.00%	21.85%	17.14%	16.58%	14.46%	15.89%	12.00%
7.00%	17.54%	13.81%	13.41%	11.68%	13.98%	12.00%
7.75%	14.99%	11.84%	11.53%	10.04%	12.85%	12.00%
8.00%	14.25%	11.27%	10.98%	9.57%	12.53%	12.00%
9.00%	11.71%	9.31%	9.12%	7.95%	11.41%	12.00%

**Includes employer normal cost and employee contributions.*


Long-Term Total Normal Costs as a Percent of Payroll
25%
20%
15%
10%
5%
6.00%
7.00%
8.00%
9.00%
Current
Modest DB 1
Modest DB 2
Substantial DB
Hybrid
DC

Years From Implementation	Cumulative Dollar Savings Over Current Plan Provisions Using 7.75% Discount Rate ($ in millions)									
	Modest DB 1		Modest DB 2		Substantial DB		Hybrid		DC	
	ER	EE	ER	EE	ER	EE	ER	EE	ER	EE
5	$11.1	$7.9	$11.6	$7.9	$15.3	$15.5	$6.6	$8.0	-$0.6	$15.7
10	58.0	33.8	60.8	33.8	79.9	66.5	33.6	34.6	21.4	67.6
15	160.6	87.5	170.0	87.5	221.1	172.4	89.1	90.0	72.4	175.4
20	348.2	183.8	373.0	183.8	479.3	362.0	183.0	189.3	157.9	368.7
25	661.7	344.1	718.1	344.1	910.7	677.7	323.7	354.1	276.8	690.0
30	1,151.7	599.1	1,263.9	599.1	1,583.4	1,180.9	508.0	615.4	399.8	1,200.9

Years From Implementation	Cumulative Dollar Savings Over Current Plan Provisions Using 4% Discount Rate ($ in millions)									
	Modest DB 1		Modest DB 2		Substantial DB		Hybrid		DC	
	ER	EE	ER	EE	ER	EE	ER	EE	ER	EE
5	$31.2	$7.4	$34.0	$7.4	$47.0	$14.5	$58.6	$7.5	$93.5	$14.7
10	153.8	29.5	167.6	29.5	231.4	58.1	287.4	30.3	481.8	59.0
15	398.9	71.2	437.4	71.2	600.3	140.2	741.9	73.3	1,259.8	142.8
20	808.1	138.6	893.6	138.6	1,216.9	272.8	1,493.6	142.8	2,549.1	278.0
25	1,430.9	239.1	1,597.6	239.1	2,156.7	471.0	2,626.3	246.2	4,494.6	479.7
30	2,306.9	381.8	2,598.7	381.8	3,479.2	752.9	4,202.2	392.0	7,204.3	765.5

Years From Implementation	Cumulative Dollar Savings Over Current Plan Provisions Using 6% Discount Rate ($ in millions)									
	Modest DB 1		Modest DB 2		Substantial DB		Hybrid		DC	
	ER	EE	ER	EE	ER	EE	ER	EE	ER	EE
5	$18.2	$7.6	$19.5	$7.6	$26.6	$15.0	$25.3	$7.8	$33.3	$15.2
10	92.8	31.7	99.7	31.7	135.5	62.4	127.8	32.5	192.7	63.4
15	249.3	79.4	269.6	79.4	363.7	156.3	339.6	81.7	529.6	159.1
20	523.1	160.7	571.4	160.7	763.6	316.3	703.5	165.5	1,112.0	322.3
25	960.3	289.0	1,060.8	289.0	1,403.0	569.2	1,272.2	297.5	2,023.8	579.6
30	1,609.7	482.1	1,795.7	482.1	2,352.0	950.3	2,091.2	495.1	3,334.8	966.3

Years From Implementation	Cumulative Dollar Savings Over Current Plan Provisions Using 7% Discount Rate ($ in millions)									
	Modest DB 1		Modest DB 2		Substantial DB		Hybrid		DC	
	ER	EE	ER	EE	ER	EE	ER	EE	ER	EE
5	$13.8	$7.8	$14.6	$7.8	$19.6	$15.3	$13.7	$7.9	$12.3	$15.5
10	71.3	32.9	75.7	32.9	101.3	64.7	70.1	33.7	87.8	65.7
15	195.0	83.9	208.6	83.9	276.7	165.3	187.9	86.3	253.0	168.2
20	416.8	173.4	450.8	173.4	591.4	341.4	392.1	178.6	541.9	347.8
25	780.2	319.0	854.1	319.0	1,107.6	628.2	712.4	328.3	994.5	639.7
30	1,335.8	545.0	1,477.7	545.0	1,895.5	1,074.2	1,171.4	559.8	1,633.1	1,092.4

Years From Implementation	Cumulative Dollar Savings Over Current Plan Provisions Using 8% Discount Rate ($ in millions)									
	Modest DB 1		Modest DB 2		Substantial DB		Hybrid		DC	
	ER	EE	ER	EE	ER	EE	ER	EE	ER	EE
5	$10.2	$7.9	$10.7	$7.9	$14.0	$15.6	$4.5	$8.1	-$4.5	$15.8
10	54.0	34.1	56.3	34.1	73.4	67.1	22.5	34.9	1.1	68.2
15	150.2	88.8	158.3	88.8	204.2	174.8	58.6	91.3	16.5	177.9
20	327.1	187.5	349.1	187.5	444.5	369.1	117.0	193.0	36.5	376.0
25	624.6	353.0	675.8	353.0	848.7	695.3	198.4	363.3	44.9	707.9
30	1,093.3	618.7	1,196.4	618.7	1,483.2	1,219.3	289.1	635.5	-8.3	1,240.0

Years From Implementation	Cumulative Dollar Savings Over Current Plan Provisions Using 9% Discount Rate ($ in millions)									
	Modest DB 1		Modest DB 2		Substantial DB		Hybrid		DC	
	ER	EE	ER	EE	ER	EE	ER	EE	ER	EE
5	$7.4	$8.0	$7.5	$8.0	$9.5	$15.9	-$3.0	$8.2	-$18.1	$16.1
10	39.7	35.3	40.5	35.3	50.5	69.6	-17.4	36.2	-71.7	70.7
15	112.5	94.0	116.1	94.0	142.8	185.1	-53.9	96.6	-189.8	188.3
20	249.7	203.0	261.5	203.0	316.5	399.7	-132.2	209.0	-423.0	407.0
25	486.5	391.7	517.4	391.7	615.8	771.5	-288.5	403.0	-858.5	785.4
30	871.0	705.1	938.2	705.1	1,098.2	1,389.5	-589.2	724.3	-1,650.3	1,413.2

	Annual Required Contribution as a Percent of Total Payroll Only New Entrants Affected - 7.75% Discount Rate and Investment Return (DB and DC Components Combined)					
Valuation Year	**Current**	**Modest DB 1**	**Modest DB 2**	**Substantial DB**	**Hybrid**	**DC**
2011	21.1%	21.1%	21.1%	21.1%	21.1%	21.1%
2016	23.4	22.3	22.3	21.7	22.6	22.2
2021	23.6	21.8	21.7	20.8	22.3	21.6
2026	23.7	21.4	21.3	20.1	22.2	21.3
2031	23.8	21.1	20.9	19.5	22.1	21.2
2036	23.5	20.6	20.4	19.0	22.0	21.3
2041	14.3	11.3	11.0	9.6	12.5	11.9

	Annual Required Contribution as a Percent of Total Payroll Only New Entrants Affected - 4.00% Discount Rate and Investment Return (DB and DC Components Combined)					
Valuation Year	**Current**	**Modest DB 1**	**Modest DB 2**	**Substantial DB**	**Hybrid**	**DC**
2011	48.2%	48.2%	48.2%	48.2%	48.2%	48.2%
2016	50.5	48.1	47.9	46.7	46.2	43.0
2021	50.8	46.6	46.3	44.2	43.5	38.0
2026	51.2	45.7	45.1	42.5	41.6	34.4
2031	51.4	44.9	44.2	41.2	40.3	31.9
2036	51.1	44.0	43.1	40.0	39.2	30.2
2041	33.7	26.5	25.5	22.3	21.4	12.3

	Annual Required Contribution as a Percent of Total Payroll Only New Entrants Affected - 6.00% Discount Rate and Investment Return (DB and DC Components Combined)					
Valuation Year	**Current**	**Modest DB 1**	**Modest DB 2**	**Substantial DB**	**Hybrid**	**DC**
2011	31.5%	31.5%	31.5%	31.5%	31.5%	31.5%
2016	33.8	32.3	32.2	31.5	31.9	30.5
2021	34.2	31.6	31.4	30.1	30.8	28.4
2026	34.5	31.0	30.8	29.1	30.1	27.1
2031	34.7	30.6	30.2	28.3	29.7	26.2
2036	34.5	30.1	29.6	27.6	29.3	25.8
2041	20.9	16.5	16.0	14.0	15.6	12.0

	Annual Required Contribution as a Percent of Total Payroll Only New Entrants Affected - 7.00% Discount Rate and Investment Return (DB and DC Components Combined)					
Valuation Year	**Current**	**Modest DB 1**	**Modest DB 2**	**Substantial DB**	**Hybrid**	**DC**
2011	25.2%	25.2%	25.2%	25.2%	25.2%	25.2%
2016	27.5	26.3	26.3	25.6	26.3	25.5
2021	27.8	25.7	25.6	24.5	25.8	24.4
2026	28.0	25.3	25.1	23.7	25.4	23.8
2031	28.1	24.9	24.7	23.1	25.2	23.4
2036	27.9	24.5	24.1	22.5	25.1	23.3
2041	16.8	13.3	12.9	11.2	13.6	11.9

	Annual Required Contribution as a Percent of Total Payroll Only New Entrants Affected - 8.00% Discount Rate and Investment Return (DB and DC Components Combined)					
Valuation Year	**Current**	**Modest DB 1**	**Modest DB 2**	**Substantial DB**	**Hybrid**	**DC**
2011	19.8%	19.8%	19.8%	19.8%	19.8%	19.8%
2016	22.0	21.1	21.0	20.5	21.4	21.1
2021	22.2	20.6	20.5	19.6	21.2	20.7
2026	22.4	20.2	20.0	18.9	21.1	20.5
2031	22.4	19.8	19.6	18.4	21.1	20.5
2036	22.1	19.4	19.1	17.8	21.0	20.6
2041	13.6	10.8	10.5	9.2	12.2	11.9

	Annual Required Contribution as a Percent of Total Payroll Only New Entrants Affected - 9.00% Discount Rate and Investment Return (DB and DC Components Combined)					
Valuation Year	**Current**	**Modest DB 1**	**Modest DB 2**	**Substantial DB**	**Hybrid**	**DC**
2011	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%
2016	17.1	16.3	16.3	15.9	17.0	17.0
2021	17.2	15.9	15.8	15.1	17.0	17.1
2026	17.2	15.4	15.4	14.4	17.0	17.2
2031	17.1	15.1	14.9	13.9	17.1	17.5
2036	16.8	14.6	14.4	13.4	17.0	17.7
2041	11.1	8.9	8.7	7.6	11.1	11.8

Risk Characteristics of the Proposed Plans

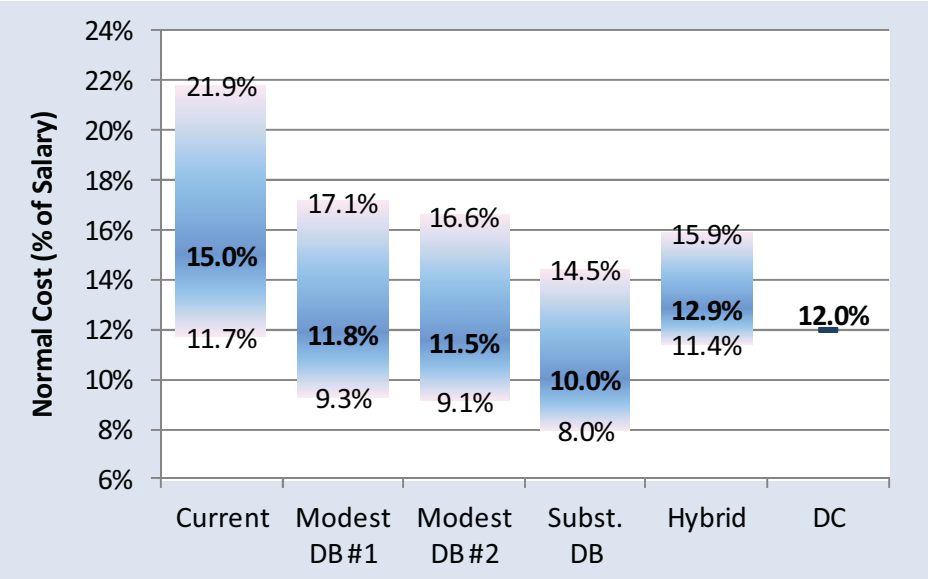
The plans designs in this report vary on important dimensions besides just their total cost and contribution rates. Individuals and plan sponsors face a variety of risks in retirement, and each plan apportions and manages those risks in different ways. The following table summarizes these risk arrangements. Social Security is shown for comparison, and because retirement support for City employees' is the sum of their City-sponsored benefit and their Social Security Old-Age, Survivors, and Disability Insurance (OASDI) benefit.

Risk Category	Defined Benefit Plans	Hybrid Plan	Defined Contribution Plan	Social Security (OASDI)
Investment Risk *Who bears the consequences if the investments return more or less than expected?*	The City / taxpayers bear the risk. Per the Seattle Municipal Code, the City must make whatever additional contributions are needed to guarantee benefits. Employees participate partially through negotiated contribution rate changes.	The risk is shared equally between the City and employees.	The employee bears the risk. Retirement income may be lower than planned in the event of poor investment performance requiring either additional savings or lower spending in retirement.	n/a
Longevity Risk *Who bears the consequences if a member lives longer than expected, requiring additional funds?*	The City / taxpayers bear the risk on a pooled basis. One member's extra longevity may be offset by another's shortened longevity. Only when the group as a whole lives longer than expected do expenses increase.	About 50% City (pooled risk) and about 50% employee (individual risk).	The employee bears the risk on an individual or household basis. *This may be managed through additional savings or by purchasing longevity insurance at some additional cost.*	The Federal Government / taxpayers bear the risk on a pooled basis.

Risk Category	Defined Benefit Plans	Hybrid Plan	Defined Contribution Plan	Social Security (OASDI)
Investment Management Responsibility *Who has the fiduciary responsibility and makes the investment decisions for the plan?*	The SMC gives the SCERS Board of Administration this fiduciary responsibility. The Board retains professional advisors and managers to plan and carry out the investment strategy.	About half of the investment management would be done by the SCERS Board of Administration, with professional advisors and managers. About half would be done by the employee, with general advice available and automatic investing options.	The employee, with general advice available and automatic investing options.	n/a
Investment Time Horizon and Risk Tolerance *How much risk can the plan bear in order to maximize expected returns, and does the risk tolerance change over time?*	The City and the plan have an ongoing / infinite time horizon. Their risk tolerance is constant and relatively high based on a pooled, ongoing need to use the assets.	About half: ongoing, constant, relatively high risk tolerance. About half: Limited time horizon. Initially high risk tolerance becomes increasingly conservative with member age.	The employee has a limited time horizon based on an individual time-specific use of the assets. An initially high risk tolerance becomes increasingly conservative with age.	n/a
Inflation Risk *How protected is the member's income stream from general price inflation?*	Members have partial protection, with a 1.5% automatic COLA and a 65% purchasing power floor. A slow erosion of purchasing power expected over time, if inflation exceeds 1.5%.	About half: partial protection with 1.5% automatic COLA and purchasing power floor. About half: No particular inflation protection.	Members have no particular protection. This risk can be managed with additional saving, by investing in inflation-protected investments (e.g. TIPS), or by purchasing an annuity with escalating payments.	Fully protected from general inflation with CPI-W-based COLA.

Another way to show the different risk characteristics of the proposed plans is to show how the cost varies with investment return. Figure 21 plots the long-term normal cost for the proposed plans across a range of investment returns.

Figure 21 – Long-Term Normal Cost of Proposed Plans at Various Investment Returns
6% (upper figure), 7.75% (middle figure in bold), and 9% (lower figure)



SOURCE: IDT staff graphic summarized from GRS estimates

All five of the proposed plan costs are less sensitive to investment returns than the current SCERS benefit. The current plan's cost varies by over 10% of salary across the investment return spectrum (varying from a 6% to a 9% return). The three proposed DB plans not only lower the main estimate, but they also reduce the range around that cost by about a quarter to a third. The hybrid plan reduces the sensitivity by slightly more than half. And the DC plan is not sensitive at all to the investment return. Rather, for the DC plan (and the DC component of the hybrid) it's the level of benefits that varies when the return is higher or lower than projected.

Other Implementation Issues

Start-Up Costs

The transition to a new retirement plan would involve one-time costs and may change SCERS' ongoing administrative costs as well. Cost categories would include:

- Systems and recordkeeping changes
- Retirement office staff training
- Additional retirement office staff (potentially)
- Development of plan materials and operating documents
- Employee communication and education
- Ongoing administration of the old and new plan designs

Detailed estimates would vary by the option chosen. Start-up costs are probably lower to extent that the changes involve setting up a new tier within the existing SCERS system. They are probably higher to the extent that the changes involve setting up an entirely new plan, including a defined contribution plan. All start-up costs may be eligible for amortization over time as plan expenses.

Voluntary Switch for Current SCERS Members

The plans in this report are proposed for new hires, and the savings from those plans accrue slowly over a generation as new hires enter the system. Current employees and the City would both save money if they are allowed to opt in to one of the new plans on a voluntary basis. The general deal would be to pay a little less and get a little less, operating generally as follows:

1. Members retain all of the service credit they have earned to date. So, for example, if the member has worked for the City for 10 years already, he or she would be entitled to a pension worth 20% of salary, at a certain age.

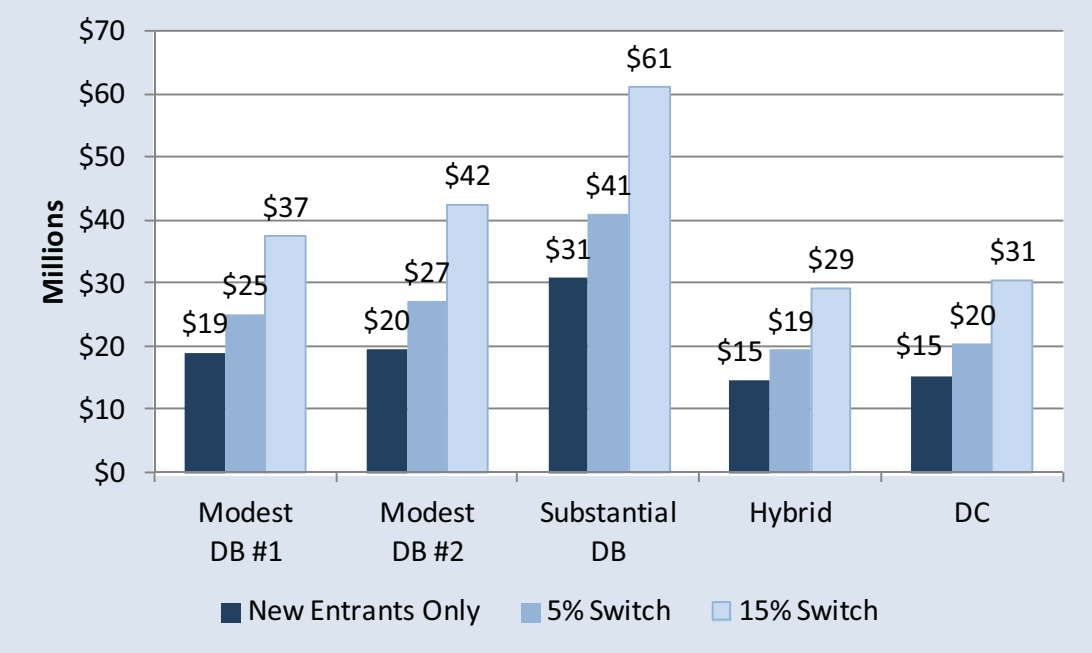
2. Members pay the lower contribution rate going forward that is also applied to new hires. (How much lower this rate would be is subject to negotiation, but the plans modeled in this report generally feature employee savings worth 1%-2% of salary.)

3. Members earn service credit under the new plan's rules going forward. The effect of this would vary by the plan ultimately adopted by the City. For the Modest Change DB Plan #1 and the Substantial Change DB plan, this would mean a bit slower growth of service credit. For the Hybrid plan, this would mean service credit growing at half the previous rate, but supplemented by contributions into the DC account. And for the Defined Contribution plan, this would mean no additional service credit, but full employer and employee contributions into the DC account.

If a portion of today's City employees opt in to the deal (in exchange for a lower contribution rate), it would accelerate savings to both employees and the City. As shown in Figure 22, which is summarized from GRS's analysis, a take-up rate of 15% would about double the five-year savings for the three DB plans. In the case of the Modest Change DB plan #2, for example, it could increase five-year savings

from $20 million to $42 million. However, the actuaries project relatively low take-up rates for this deal, so a 15% switch may be unrealistic.

Figure 22 – Five-Year Savings (in Millions) if Some Current Employees Voluntary Switch into One of the New Plans, in Exchange for a Lower Contribution Rate



Note: The savings projections above assume that a randomly distributed set of employees take the deal. Actual savings may be higher or lower to the extent that disproportionately older or younger employees, respectively, opt into the new plan. Also, the defined contribution plan may have additional adverse selection risk that could raise total plan cost under some conditions. If the City chooses to offer a defined contribution plan, these adverse selection issues should be explored more fully before offering this voluntary switch deal.

Choice of Two Plans

One option would be to allow new hires the choice between two different pension plans, much as the State of Washington does. Typically, jurisdictions that provide multiple options have a defined benefit plan plus either a hybrid plan or a defined contribution plan. Some of the key advantages and disadvantages of such a move are summarized below:

Advantages	Disadvantages
• May aid recruitment and retention if different pension products are attractive to different potential employees. For example, people may have different preferences for: o Expected duration of City employment o Probability of a job change or a move in the future o Risk tolerance o Control over investments	• Two systems (in addition to the current SCERS plan) would be more complex and costly to administer, with a greater chance for error. • The City of Seattle may not have enough scale to run multiple plans efficiently. • Employee education would be more complex and difficult.

Available research on public employee preferences suggests that most City employees would opt for the defined benefit plan if it were offered. About two thirds of State and local general government employees with access to Washington's PERS 2 (defined benefit) and PERS 3 (Hybrid) plan choose PERS 2, despite the default election being PERS 3. This is consistent with the experience of other states (Colorado, Florida, Montana, North Dakota, Ohio, and South Carolina), which have seen 75% to 98% of their members elect their defined benefit option in recent years. Survey research suggests that public sector workers are more risk averse than their counterparts in the private sector, which makes the guarantees of a defined benefit plan more attractive.

"Make or Buy?" Joining the State of Washington Plans

Instead of creating a new plan, the City could choose to get out of the pension business altogether and place its employees in the State's open PERS 2 and PERS 3 plans. There is recent precedent for this move. The City has its own pension plans for police officers and firefighters, which were open to new members until the 1970s, at which point new hires were placed in one of the State's LEOFF plans. The City's legacy plans continue to operate today, but will wind down over the next several decades as membership dwindles.

Indeed, the State of Washington's open plans are very similar to two of the options in this report. The Modest Change DB #2 plan is quite close in design to PERS 2, with both featuring a defined benefit structure, a 2.0% multiplier, and a normal retirement age of 65 in most cases. The Hybrid plan is similar to PERS 3, with both featuring a defined benefit component that has a 1.0% multiplier and again a normal retirement age of 65 in many cases, plus a defined contribution component with mandatory employee contributions of 5% or more, and similar investment options. Opting into the state's plans would require legislation in both the City Council and the State Legislature. It would place Seattle in the company of King County and most other Washington localities. Some of the key advantages and disadvantages of such a move are summarized below:

Advantages	Disadvantages
• The Washington State Investment Board would invest the City's contributions. As a nearly $60 billion fund, the state's much larger scale may allow for greater investment efficiencies and better returns than the SCERS portfolio. The Commingled Trust Fund has averaged an 8.2% calendar-year return since it was started in 1993, compared with 6.4% for the SCERS portfolio over those same years. With compounding, a dollar invested with WSIB in 1993 would be worth 37% more today than the same dollar invested with SCERS. • Washington State's plans have much larger scale, which may allow for greater administrative efficiencies. The state currently charges employers 0.16% of covered payroll for administration. SCERS' administrative costs currently run 0.40% of payroll. At today's covered payroll amount, the	• The City would give up control over contribution rates and funding policy to the State Legislature. Some localities (e.g. King County) have in recent years publicly disagreed with the Legislature's contribution rate choices. • The City would give up control over customer service and member education to the State Department of Retirement Systems. (*This may be an advantage to the extent that the State office can provide better service due to its larger scale or other strengths*). • Closing the SCERS plan may require increased contributions to amortize the system's unfunded liabilities, unless alternative arrangements can be worked out with the plan's actuary. • The City may lose an edge on recruitment and retention to the extent that employees value Seattle's plan

Advantages	Disadvantages
0.24% difference would save $1.3 million per year. • Employees would see increased, "frictionless" portability when they change jobs between more cities, counties or the State. This may aid recruitment and retention. • Employees would have the choice of two plans, the PERS 2 defined benefit or the PERS 3 hybrid plan. • The City may save money on employer contributions. This savings may be more or less than the plans proposed in this report, depending on multiple factors. • Employees may save money with lower contributions, which may aid recruitment and retention. This savings may be more or less than the plans proposed in this report, depending on multiple factors.	over the state's alternatives. • The State actuary is projecting substantial contribution rate increases for Plan 2 and Plan 3 in the coming years. • New City entrants to the State plan would be furthest from retirement and therefore lower cost than the average current member. This may mean that City and employee contributions would subsidize other jurisdictions, unless a special "entry rate" contribution is established.

The exact nature of the deal struck between the City and the Legislature would be key to this proposal. Any legislation would have to address the issue of the unfunded liabilities in the PERS 1 plan and in the current Seattle SCERS plan. Currently, employers with members in PERS 2 and PERS 3 pay a contribution toward the unfunded liabilities in PERS 1. The state actuary projects that cost will be 3.53% of payroll in 2013. Since Seattle never had members in PERS 1 and has its own unfunded liabilities for SCERS to pay off (projected to be 8.4% of payroll by 2014), a different arrangement would need to be made with the State before Seattle would be interested in joining. Also, the City may wish to negotiate a special contribution rate for a period of time. Seattle's new plan entrants would be furthest from retirement, and therefore lower in cost than the average PERS member. If the City and its employees were to contribute the average rate to PERS, they would, in effect, be subsidizing members in other jurisdictions. The City may wish to negotiate a special "entry rate" for the first 10 to 20 years, or until its member characteristics approach the plan average.

Effect on SCERS

If the current SCERS plan is closed entirely, the City would also need to seek an arrangement with its actuaries to structure the amortization of SCERS' unfunded liabilities in such a way that it included the

payroll of the open plans. This would be similar to the structure set up by the State of Washington for PERS 1. Typically, accounting and actuarial guidelines for closed pension plans require that the liabilities be amortized at a much faster rate than for open plans, since the payroll base of the closed plan is declining. Those additional costs would probably be prohibitive for the City unless an alternative amortization schedule could be worked out.

This proposal would also make SCERS less cost efficient, slowly, over a period of decades. Currently, investment costs are estimated to run 0.25% of plan assets each year, and administrative costs are estimated to run 0.40% of covered payroll. As the plan wound down, these relatively fixed costs would consume larger and larger shares of each. Investment costs may also increase in absolute terms due to the plan's smaller size and increasing inability to secure volume pricing.

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Stakeholder Consultation to Date

This report is a "Consultation Draft" and is intended to be used as a basis for ongoing talks with key stakeholders, which include the City's labor unions, other City employees, current retirees, the SCERS Board of Administration, the Mayor, the City Council, and the public. A final report may be released when the consultation phase is complete. Retirement IDT staff had preliminary consultations with some stakeholders in the research phase of this report. The meetings are summarized below.

SCERS Board of Administration

May 4, 2011, 9 a.m. SCERS Offices on 3rd Avenue

John McCoy presented an outline of the IDT mission and process to the SCERS Board of Administration and audience at the May 4 regular SCERS Full Board meeting. Chair Jean Godden, and members Glen Lee, Mary Norris, Rod Rich, and Lou Walter were present. Members Darwyn Anderson and Robert Harvey were absent, though copies of the presentation were sent to them by e-mail on 5/3/2011. Board Chair Jean Godden expressed support for the effort, as did Board Member Glen Lee. Rod Rich asked how the IDT intended to consult with general public / taxpayer stakeholders, and John reported that it would likely be at an open public meeting. Lou Walters expressed concern about the effect that the creation of a new plan may have on the current system's finances. In response, SCERS Executive Director Cecelia Carter and John McCoy agreed this was a major concern, pointing out that the consultants would model transition costs and system impacts, that the results of such work would be included in the final report, and that they would likely feature prominently in the final recommendations.

Coalition of City Unions

June 1, 2011, 12:30 p.m. Coalition offices on Eastlake Avenue

John McCoy, with Patricia Lee and a representative from City Labor Relations attending, presented preliminary research findings to a regular monthly meeting of the Coalition of City Unions, which consists of leadership from the majority of unionized employees. The presentation included the elements presented to the SCERS Board in May, plus some comparative research and details on changes that states have recently made to their plans. In addition, the presentation outlined some potential benefit changes that the IDT will consider, including a slightly lower service multiplier and a later normal retirement age.

Coalition leaders expressed a desire to maintain a strong defined benefit pension system for their members in the face of cutbacks elsewhere. They were particularly concerned with the possibility of switching to a defined contribution system, as the retirement income it generates is not guaranteed, and their members might be subject to potential large investment losses during extreme market events, as was seen widely in 2008. In response, John noted that three of the benefit options the IDT was considering for new hires would continue a defined benefit pension system in some form. In addition, the IDT was very cognizant of the fact that 1) a defined contribution system transfers the investment risk to the individual employees, and 2) such a switch may involve significant transition costs for the employer. Both of these factors will be detailed in the report.

Coalition leaders also voiced several other concerns, including:

- The level of employee contributions, currently set to rise to about 10% of member pay, and the prospect that the City could ask the members to go higher still in the future.
- The investment performance of the SCERS endowment, including some of the impaired assets that have been the subject of recent litigation and newspaper articles.
- The difficulty of representing some members with one benefit and other, newer hires with a different benefit.
- Whether a change in benefits was strictly necessary in reaction to the bad investment performance of 2008, and whether an upturn in the markets could make up the lost financial ground without adjusting benefits.

One participant raised an interesting possibility of a performance trigger. That is, a benefit for new hires that would increase if and when the retirement system reached a certain funded ratio. This is similar to COLA provisions currently in the Seattle Municipal Code.

Association of Retired Seattle City Employees (ARSCE)

September 20, 2011, 11 a.m. Greenwood Library

At ARSCE's request, John McCoy made essentially the same presentation to the Board of ARSCE as was given to the Coalition of City Unions. The main message was that the IDT is not contemplating any benefit changes that would affect retirees in any way, instead focusing on changes to new hires and potential voluntary changes for current employees. ARSCE members still had concerns about the viability of the pension fund, on which they depend for retirement income. Some members were also concerned about the stability of the COLA payment for retirees, since the State of Washington had recently rescinded its COLA for PERS 1. Several members questioned the use of the highest average 24 months salary for to determine benefits, since they had seen examples of "spiking" where some co-workers were able to secure either out-of-class assignments or promotions for their last two years of City work. They recommended using the highest 36 months or even 60 months to combat the practice. Some members requested that ARSCE be allowed to participate in IDT deliberations, and John invited them to comment on draft of the report when the process was further along.

Conclusions / Recommendations

The IDT has presented a range of pension designs that are intended to satisfy different preferences on such factors as cost reduction, risk sharing, and normal retirement age. As the IDT consists of City staff doing technical analysis, the group is not in a position to recommend one plan over another. That is a subject for negotiation between the City's elected leaders, officers, and employees. However, the IDT can draw some general conclusions and recommend that the options presented here be vigorously explored at the negotiating table.

- Seattle's current pension design is high benefit and high cost, for both the City and its employees. It is very feasible and potentially advantageous for both parties to pick a different point on the cost-benefit curve.

- People are living longer. Many employers have recognized this and adjusted their pension designs to raise normal retirement ages to 60 or 65. The City and its employees should consider whether normal retirement ages in their 50s are still reasonable and worth the cost.

- The City of Seattle, like many jurisdictions, has increased benefits in good times when investment returns were strong. The City and its employees should consider these carefully crafted reductions in more challenging times when investment returns have been weaker.

- The City has about $1 billion worth of unfunded pension costs to pay off over the next 30 years. This drain on the budget will mean fewer services, less hiring, and fewer dollars available for other benefits. And SCERS' costs could go still higher if the investments continue to underperform the target.

- The five plans presented in this report will save between 2% and 5% of covered payroll for new hires. In the first 5 years, the options can lower pension costs by between $15 million and $31 million. Over 30 years, they can lower costs between $1.1 billion and $2.8 billion.

- Savings on retirement costs will allow the City more resources to spend on other pressing needs. This may include services to residents, capital improvements, additional hiring, cost of living adjustments for City employees, or other employee benefits.

- All five plans presented in this report will provide, in conjunction with Social Security, enough income to maintain employees' standard of living in retirement.

Appendices

2011 - 2012 Statement of Legislative Intent

Approved

Tab	Action	Option	Version
108	2	A	2

Budget Action Title: Develop a Sustainable Retirement Benefit

Councilmembers: Budget Committee; Godden

Staff Analyst: John McCoy

Budget Committee Vote:

Date	Result	SB	BH	SC	TR	JG	NL	RC	TB	MO
11/12/2010	**Pass 9-**	**Y**	**Y**	**Y**	**Y**	**Y**	**Y**	**Y**	**Y**	**Y**

Statement of Legislative Intent:

The City of Seattle needs to find ways to make its employee retirement benefits more sustainable and affordable to the taxpayers and to employees themselves. The 2011-2012 Budget raises contributions from 16.06% of regular payroll to 20.06%, a dollar increase of nearly $24 million per year across all City funds. Employees will pay half of this, contributing 10.03% of their pay. The increase, while necessary, is probably insufficient to amortize the Retirement Fund's long-term shortfall, and future budgets are likely to require further increases.

In 2011, the City Council wishes to develop alternative policy options for the Seattle City Employees' Retirement System (SCERS). These policies will involve benefit changes for new hires and other system improvements designed to bring down the cost of the retirement benefit while maintaining the City's competitiveness as an employer. To that end:

- Council requests the creation of an Inter-Departmental Team (IDT), with representation from Council Central Staff, the City Budget Office, the Retirement Office, Finance and Administrative Services, and the Personnel Department.

- The IDT is directed to consult with relevant stakeholders in 2011, including the Mayor, the City Council, employees, labor unions, the SCERS Board of Administration and taxpayers about the cost and features of the retirement benefit.

- The IDT is directed to deliver a report to the Mayor, City Council, and SCERS Board of Administration no later than February 15, 2012 outlining system improvements and possible policy changes for new hires, along with the potential cost savings they would bring.

- The SCERS Board of Administration is requested to deliver its recommendations for policy changes by March 15, 2012.

- The report's findings and Board policy recommendations will be considered for legislation in 2012 and implementation effective January 1, 2013.

- A related budget action adds $250,000 of General Subfund appropriation to the Finance General Reserves Budget Control Level in 2011. These funds are for the IDT's costs of developing the report, including specialized consulting resources that may be required, such as actuarial scoring of alternate benefit designs. The Retirement Office is requested to devote whatever staff resources are necessary to participate actively in the process. A future budget supplemental may allocate these or additional costs to other City funds, such as the utilities, which have the largest share of SCERS enrollment.

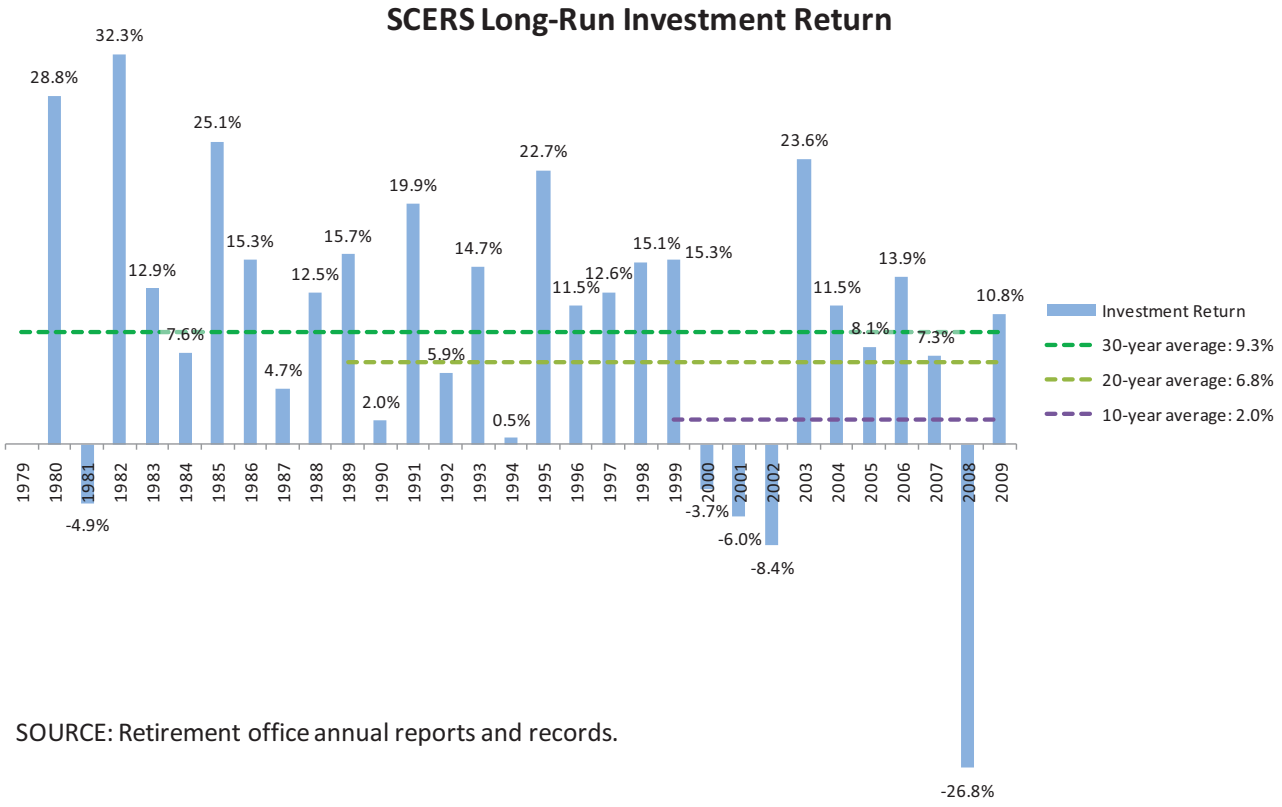
Background

SCERS provides retirement and disability benefits to most City employees who are not in a separate Police or Firefighter pension system. The Retirement Fund is supplied by City contributions and payroll deductions from City employees. These funds are invested by the SCERS Board of Administration in a variety of stock, bond, real estate and other instruments in order to grow and provide sufficient resources to pay the promised benefits. The Retirement Fund currently has about $1.7 billion in assets invested.

Following the market dislocations of 2008 and the recent economic recession, state and local jurisdictions across the country are finding that their retirement funds are not as well capitalized as they should be. SCERS is no exception, having fallen from a 92% funding ratio at the beginning of 2008 to a 62% funding ratio at the beginning of 2010.[1] As a result of these market losses and longer employee lifespans, the system's unfunded liabilities for already-earned benefits total about $1 billion. While there is no near-term risk of running out of money to pay promised benefits, the City must take steps to address these long-run liabilities. The 2011-2012 Proposed Budget raises contributions to the Retirement Fund from the current 16.06% of regular payroll to 20.06% over the biennium, an increase of nearly $24 million per year over 2010 contribution rates. This contribution is currently paid in equal shares by employees and the City.

Actuarial projections show that this proposed increase will not amortize the system's unfunded liabilities over 30 years.[2] To do that, contributions would need to increase to over 25% of payroll. And even that calculation assumes that the SCERS investment portfolio will earn average annual returns of 7.75% going forward. Nationally, analysts are questioning the return rates that retirement systems can realistically achieve in the current market.

[1] To put this statistic in context, retirement analysts regard a funding ratio above 80% and stable or improving as a "safe" level. SCERS is still better capitalized than many comparable major city systems. Also, SCERS faced a similar funding ratio coming out of the early 1980s recession. Contribution rates were increased at that time, and the funding ratio improved slowly over more than a decade, buoyed by strong investment performance, eventually surpassing 100%.
[2] A 30-year amortization is not a requirement. Rather, it is one possible accounting standard recommended by the SCERS Actuary.



SOURCE: Retirement office annual reports and records.

Over the past 30 years, the Retirement Fund has earned an annual average return of 9.3%. However, most of the strongest years were back in the 1980s. Over the past 20 years, the average return was just 6.8%, and over the past 10 years, which saw two major market downturns, the return has averaged just 2.0%, lower even than the inflation rate over the same period. In the wake of 2008, the SCERS Board of Administration is redesigning its investment allocation strategy to improve returns and reduce risk. It is noteworthy that all of the potential portfolios that the Board had to choose from at a recent Investment Committee meeting were projected to earn slightly less than the actuarial assumption of 7.75% on a 30-year compounded basis.

A sensitivity analysis in the 2010 Actuarial Report showed that the investment return is by far the most important factor driving the City's retirement costs. Should the investment portfolio continue to fall short of 7.75% to a significant degree and over a significant length of time, it is not unrealistic to expect that the SCERS pension contributions would rise to more than 25% of payroll. At today's staffing levels, each 1% of payroll requires about $12 million per year in combined contributions from employees and the City.

CONCLUSION: The contribution rate increases in the 2011-2012 Proposed Budget take a significant step toward amortizing the City's unfunded pension liabilities, but they do not guarantee success. Significant risks remain that the City's unfunded retirement liabilities will increase, placing additional burden on City budgets. A new approach is needed.

Cost Containment Study Workplan

As the IDT conducts its research and consults with stakeholders, the City Council is interested in answering the following questions and generating the following analyses:

- How does Seattle's retirement benefit compare to those offered by other public and private entities? What level of benefits is necessary to make the City competitive as an employer?

- What market return can SCERS reasonably expect to earn going forward, and what implications does that have for the affordability of retirement benefits? Essentially, how much are employees, the City, and the taxpayers willing to pay for retirement benefits?

- Since any changes made now are likely to endure for future generations, what employment patterns are young people entering the workforce today likely to experience, and what style of retirement benefit would serve them best? How can the City optimize any tradeoffs between flexibility/portability and retirement security?

- What percentage of pre-retirement income should the City's retirement benefit aim to replace? Given increasing employee lifespans, what is a reasonable age to begin receiving retirement benefits?

- What alternate plan designs appear promising? The City Council would like to approach plan design holistically, taking into account the multiple sources of retirement income (pension, Social Security, and other retirement accounts) available to employees as part of a complete retirement package. Among the alternatives, Council would like see presented:

    1. An option with modest changes to the current SCERS defined benefit (DB) plan on such policy dimensions as:

        - The minimum retirement age and length-of-service combinations at which employees are eligible to begin receiving benefits, perhaps including incentives for later retirement;
        - The percentage of pay provided in retirement;
        - The interest rate paid on employee contributions;
        - Adjustments to annual cost-of-living updates.

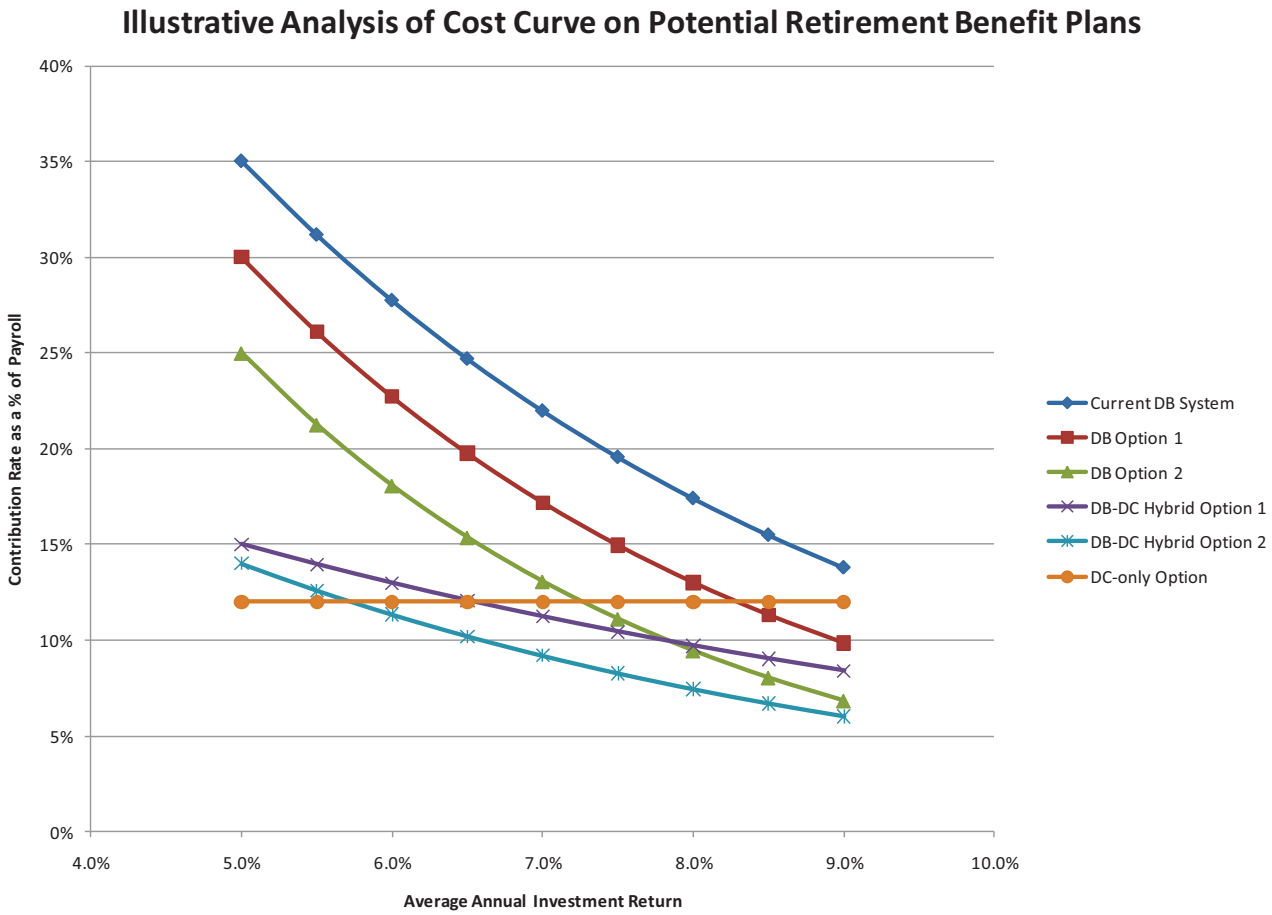
    2. An option with more substantial policy changes to the SCERS defined benefit plan.

    3. One or more hybrid plans such as the one available to Federal employees. These would feature both a defined benefit pension and a defined contribution (DC) account, like the Thrift Savings Plan, possibly with a City match on employee contributions. The guaranteed pension component would replace a lower level of pre-retirement income than SCERS currently does, to be supplemented by the DC account, which would provide employees with more control over their savings level and desired retirement income.

    4. A defined contribution-only plan with a City match on employee contributions. The report should present the likely investment options that would be available to employees, a discussion of how this plan shifts the burden of investment performance

risk, and a discussion of the added portability/flexibility that such plans bring.

- What savings could be achieved by changing the retirement policy? What transition costs must be planned for? For each plan design, the report should present actuarial analyses that project the City's required total contribution rate as a percentage of regular payroll over a range of investment performance scenarios. The result would be a chart in the following style (the figures below are for illustrative purposes only): [3]



- Should some employees (particularly newer members of SCERS who are not yet vested) have the option to choose between the old and new systems?

The Council expects that the IDT will have convened stakeholders and selected its consultants for this report by June 1, 2011. The report to Mayor and Council is due February 15, 2012. The SCERS Board of Administration should make its recommendations to Mayor and Council by March 15, 2012. Mayor and Council will consider legislative proposals in Spring-Summer 2012, with a potential effective date on or about January 1, 2013.

[3] The chart is meant to represent the future "normal" cost of various retirement benefit designs over a range of investment performance scenarios. Such plan changes, if implemented for new hires, would not change the costs associated with unfunded liabilities on already-earned benefits for current SCERS members and retirees. Any overall savings to the City would be gradual and incremental, as a generation of employees cycles through the new benefit.

Appendix 2 – Comparison of SCERS to Washington State Plans – Key Features

	Seattle SCERS	Washington State Plans		
		PERS 1	PERS 2	PERS 3
Pension Type	Defined Benefit	Defined Benefit	Defined Benefit	Hybrid (Defined Benefit + Defined Contribution)
Plan Start Date	1929	1947 (Closed 1977)	1977	2002
Multiplier (% of salary per year of service)	2.0	2.0	2.0	1.0
Top % of Salary Paid	Greater of 60% or annuity based on accumulated contributions with interest	60%	Any	Any
Final Average Salary Calculation Period	24 months	24 months	60 months	60 months
Vesting Period	5 years	5 years	5 years	10 years (5 for some)
Normal Retirement Age (Unreduced Benefit)	30 years: any age 29 years: age 52 20-28 years: sliding scale from age 60 to age 52 ("rule of 80") 5-19 years: age 65	30 years; any age 25-29 years: age 55 5-24 years: age 60	Age 65	Age 65
Minimum Retirement Age	30 years; any age 20-29 years: age 52 10-19 years: age 57 5-9 years: age 62	N/A. Same as full benefit age	55 at 20 years of service	55 at 10 years of service

	Seattle SCERS	Washington State Plans		
		PERS 1	PERS 2	PERS 3
Reductions for Early Retirement	28+ years: none 20-27 years: 5% lower each year before normal retirement age (subtraction) 5-19 years: 3% lower each year before age 65 (subtraction)	None	30 years of service: 3% lower each year before age 65 (subtraction) 20-29 years of service: actuarial reduction, about 10% lower each year before age 65 (compounded)	30 years of service: 3% lower each year before age 65 (subtraction) 20-29 years of service: actuarial reduction, about 10% lower each year before age 65 (compounded)
Post-retirement COLA	Greater of 1.5% annually or 65% purchasing power floor	Optional COLA: lesser of CPI or 3%, with initial reduction based on age at retirement	Lesser of CPI or 3%	Lesser of CPI or 3%
Defined Contribution Features	None	None	None	Employee contribution options from 5% to 15% of salary. Self-directed or professional investments. options.
Plan Choice	None (for most employees)	N/A (Closed)	New members have 90 days from start of employment to elect PERS 2 or PERS 3. Default is PERS 3.	
2012 Employee Contribution Rate	10.03%	6.00%	4.64%	0% DB 5%-15% options for DC
2012 Employer Contribution Rate	11.01%	7.25%*	7.25%*	7.25%*

* The State Actuary projects that contributions will need to rise to over 10% in the coming years based on the state's 8-year smoothing policy.

Appendix 3 – Comparison of SCERS to Tacoma and Spokane Plans

	Seattle SCERS	Spokane SERS (pre-2009)	Spokane (2009 and later)	Tacoma TERS
Pension Type	Defined Benefit	Defined Benefit	*blank if same as pre-2009*	Defined Benefit
Membership	All City employees except for uniformed police and fire.	All City employees except uniformed police and fire.		All City employees except for uniformed police and fire.
Mandatory?	Yes for most. Optional for exempt, elected, intermittent, part-time.	Yes. Temporary, intermittent and some others excluded. Optional for electeds.		Yes. Some temporary categories excluded Optional for electeds and some project employees.
Vesting Period	5 years	5 years		5 years
Multiplier (% of salary per year of service)	2.0	2.15 up to 30 years, 2.0 (alt. formula for 30-35 years)	2.0	2.0
Top % of Salary Paid	greater of 60% or annuity amount equal to 2X contributions plus interest	64.5% up to 30 years, 70% by alt formula. up to 35 years	70% with max 35 years	greater of 60% or annuity amount equal to 2X contributions plus interest
Minimum Retirement Age	30 years: any age 20-29 years: age 52 10-19 years: age 57 5-9 years: age 62	5 years: age 50	any years: age 62, otherwise, age 50 and "rule of 75" (e.g. >=25 years: age 50 or 14-24 years: ages 61-51)	30 years; any age 20-29 years: age 40 10-19 years: age 55 less than 10 years: age 60
Normal Retirement Age	30 years: any age 29 years: age 52 20-28 years: sliding scale from age 60 to age 52 ("rule of 80") 5-19 years: age 65	62. However, lack of early retirement reduction factors makes it *de facto* 50.	Same as minimum retirement age.	30 years: any age 20-29 years: sliding scale from age 60 to age 51 ("rule of 80") any years: age 60

	Seattle SCERS	Spokane SERS (pre-2009)	Spokane (2009 and later)	Tacoma TERS
Reductions for Early Retirement	28 + years: none 20-27 years: 5% reduction for every year before normal retirement age. 5-19 years: 3% reduction for every year before age 65	None	None	Escalating reduction factor for every year before normal retirement age (1.8% for first two years early, 3% for next two, 6% for next six, and 8% thereafter)
Post-retirement COLA or other adjustment	1.5% annually or 65% purchasing power floor (Seattle CPI).	Rare. Ad hoc by board vote. Up to 3% in any year. Non-compounding. By board policy, only if funding ratio >90% after adjustment.		Up to 2.125% or 50% purchasing power floor (Seattle CPI).
Employer Contribution (% of pay)	9.03% in 2011 11.01% in 2012	7.75%		10.26% in 2011 10.8% in 2012
Employee Contribution (% of pay)	9.03% in 2011 10.03% in 2012	7.75%		8.74% in 2011 9.2% in 2012
Overtime included in contributions and benefits?	No	Yes		No
Participate in Social Security?	Yes	Yes		Yes
Interest on Employee Contributions	For 2012, 4.47% annual rate, compounded annually.	4% annual rate, compounded quarterly. Adjusted downward from 5% in July, 2010.		1.5% quarterly rate, compounded quarterly (= 6.136% annually).
Withdrawal of Employee Contributions	Mandatory withdrawal at 100% plus interest if terminate <5 years (vested). Optional withdrawal if terminate >5 years service.	Optional withdrawal of employee contributions plus interest if balance >$1000. Mandatory if balance <$1000.		Mandatory withdrawal at 100% plus interest if terminate <5 years service. Optional withdrawal at 150% plus interest if >5 years.

Appendix 4 – Further Detail on the Income Replacement Calculation

The following table provides more detail on how the Palmer model of income replacement was adapted for Seattle City employees.

Column	Factor	Calculation Notes
A	Gross Wages	Reflects regular (non-overtime) wages, per SCERS definition for both contributions and benefits.
B	Social Security and Medicare Taxes	Medicare payroll deduction of 1.45% on all wage income plus Social Security payroll deduction of 6.2% on the first $106,800 of income (2011 threshold). Does not factor in the temporary reduction to the payroll tax rate due to Federal stimulus efforts.
C	Federal Income Tax Effective Rate	Effective tax rate is the tax owed divided by the gross wage. Single filer. Assumes standard deduction, one exemption and IRS tax brackets for 2011. Other pre-tax deductions include SCERS mandatory contribution and City healthcare premium. No other deductions or credits.
D	Required SCERS Retirement Contributions	10.03% of regular (non-overtime) wages, the rate in 2012 and later.
E	Voluntary Retirement Savings	Percent of salary contributed to another savings vehicle such as the City's Deferred Compensation (457) plans, or a personal Roth IRA or Traditional IRA. May or may not be pre-tax. Modeled as an after-tax contribution.
F	Disposable Income While Working	Gross wages minus columns B, C, D, and E.
G	Net Change in Expenditures Post Retirement	Derived from a curve fitted from values taken from Palmer 2008, Table 1, p. 12 line 7. That study derived values from expenditure survey data pre- and post-retirement.
H	Net Disposable Income Needed at Retirement	Column F plus Column G
I	Federal Income Tax Post Retirement	Column J minus Column H
J	Gross Income Required at Retirement (Adequacy)	Solved using iterative (recursive) methods. Takes into account the effective tax rate on retirement income, which depends on the share of Social Security benefits subject to federal income tax (0%, 50% or 85%, depending on total income), and the level of other income. Assumes Social Security income as described below plus additional pension and private savings income until the disposable reaches the level required by column H.
Retirement Income Calculation Definitions		
SCERS Pension Benefit		Set at 60% of final average salary. Reflects 30 years of service and retirement under the age / length-of-service table.
Social Security Benefit		Calculated by Social Security Administration guidelines, using 2011 bend points. Assumes that the average indexed monthly earnings (AIME) for the 35-year calculation period equals 85% of the employee's final average City salary, up to earnings cap

	($106,800). Benefit is reduced for 24 months of early retirement. Benefit would be approximately 15% higher than shown if employee waits until the full benefit age (67) to begin receiving Social Security payments.
Private Savings	Reflects the annuity value at retirement if employee saves 2% annually for 30 years and receives a 6.25% average annual investment return. Calculated by MagValPlus retirement model supplied by consulting actuaries Gabriel, Roeder, Smith & Co.

Comparison of SCERS and Social Security Provisions

When Social Security was created, public employers, including states and localities, had the option of either including or excluding their employees from the Social Security OASDI system. Those who remained outside Social Security typically sized their pension systems to provide *all* of their employees' retirement income, whereas those that entered structured their pensions to work in tandem with Social Security. Seattle City employees are included in the program, and they pay the 6.2% tax rate[10] on their wages up to the income limit ($106,800 in 2011). This payroll tax deduction is matched by the City. Consequently, when City employees retire, they are generally eligible to receive Social Security benefits in addition to their City pension.

There are, however, significant differences between the two programs' benefit provisions. Whereas City employees can currently retire with full benefits at any age once they have earned 30 years of service credit, Social Security is currently in the process of raising its full benefit age from 65 to 67 for all beneficiaries born after 1960. The earliest a beneficiary may receive the Social Security old age benefit is 62, and the checks are reduced for every month between the start of benefits and the full benefit age. In addition, whereas the City pension amount is based on the highest consecutive 24 months of compensation[11], Social Security aims to replace more of a lifetime average and is based on the highest 35 years of wages, which are then indexed for inflation to present-day values. Another important feature of OASDI is that the system has "mildly redistributive" features that replace greater share of income for low-income beneficiaries than it does for those with higher incomes. In this way, a lower-income worker may get a monthly check worth over 50% of his or her indexed average wages, whereas a higher-income worker near the income limit may only get a check worth about 30%. The Social Security benefit is indexed each year based on inflation (CPI-W), whereas the SCERS pension benefit currently has a 1.5% automatic COLA[12]. And finally, Social Security benefits are treated differently for federal income tax purposes, with less of the benefit subject to taxation.

[10] Federal stimulus laws lowered the employee rate to 4.2% for 2011 and the first two months of 2012.
[11] For service retirements, which are the majority of cases. Retirements under the "two times match" annuity feature are based on accumulated contributions and the member's age.
[12] This COLA is subject to a 65% purchasing power floor such that if inflation erodes the purchasing power of the benefit below 65%, the benefit is then indexed to inflation to maintain that level.

Table 13 – Comparison of Key Provisions, SCERS vs. Social Security

Provision	SCERS	Social Security OASDI
Contribution Rate	10.03% Employee 11.01% Employer, On regular (non-overtime) wages	6.2% Employee* 6.2% Employer On all wages up to $106,800
Minimum benefit age	Any age with 30 years of service. Either 52, 57, or 62 depending on length of service for those with less than 30 years.	62
Full benefit age	Any age with 30 years of service. Various ages (max 65) depending on length of service.	67 (if born in 1960 or later)
Benefit amount based on	Highest consecutive 24 months regular (non-overtime) wages	Highest 35 years of all wages up to cap, indexed to present day
Redistributive features	None. Benefit scales directly proportional to income.	Mild. Benefit pays a higher percentage of wages for lower-income workers than for higher-income.
Range of income replacement	10%-60% depending on age, length of service	Around 30%-50% varying inversely with income. Less if wages exceed Social Security limit.
Cost of living adjustment (COLA)	1.5% automatic with 65% purchasing power floor	Inflation (CPI-W), minimum 0%
Federal income tax treatment	Taxed as regular income	Either 0%, 50% or 85% subject to tax, depending on total income

*Does not reflect the temporary lower rates from economic stimulus laws.

Optional Appendix 5 – Expanded Actuarial Projection Tables from GRS

96 pages. Available as a separate file.

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