Retirement Design Study

4/1/2011

Minnesota Public Retirement Systems

Research summary and key findings

This report is in preliminary DRAFT form. It is being circulated to stakeholders and other interested parties in advance of the June 1, 2011 due date in order to gather feedback and comments before it is finalized

Retirement Plan Design Study

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Table of Contents

Executive Summary

2010 Legislation required the three statewide retirement plans to complete a benefit design study. This study analyzes alternative designs including defined benefit, defined contribution, and hybrid plans, comparing features such as overall plan design, costs, portability, income security/adequacy, investment performance, and recruitment and retention. This study provides actuarial analysis of the costs associated with transitioning from the current defined benefit (DB) structure to a defined contribution (DC) plan. The study is intended to illustrate the proponent and opponent views of design options. It does not make plan design recommendations.

While reviewing the various options, the study provides membership, funding history and statistical data on the three largest retirement plans; specifically the Minnesota State Retirement System (MSRS) General Plan, the Public Employees Retirement Association (PERA) General Plan and the Teachers Retirement Association (TRA). In addition, information regarding the Minnesota State Board of Investment (SBI) investment policy, standards and performance are summarized. As the organization responsible for managing the retirement plan assets of the statewide retirement plans, SBI has a reputation for a financially successful, long-term investment program.

Clearly, the 2008-2009 economic downturn adversely impacted the overall funding of public pension plans throughout the country. Minnesota responded quickly to the decline in funding with a "sustainability" package during the 2010 Legislative Session that modified future benefits for all members—active, retired, and deferred. Historically, Minnesota has been disciplined in properly funding and managing pension liabilities to prevent long-term adverse impacts. This recent legislation is a continuing example of the bi-partisan, long-term, responsible approach that legislators and governors have modeled to maintain the financial security of Minnesota's public pension plans. Both taxpayers and workers have a vested interest to ensure that public pension plans are funded appropriately and are sustainable for the future.

Overall, retirement savings plans -- both public pensions and personal retirement savings-- have all been impacted by these severe economic conditions. Americans are facing a retirement crisis, mainly due to the dwindling pension coverage provided by the private sector. This crisis should be of concern for all citizens, the communities in which they live, as well as state and federal governments. Without adequate retirement income, retirees may not be able to afford basic living expenses, pay for health care or taxes, purchase goods and services, and remain a vital, contributing part of their communities. Taxpayers and workers have much at stake in this retirement crisis because, without adequate retirement income, there is an increased risk of higher elder poverty and rising public assistance costs over the long-term.

Key Findings - Costs

- According to actuarial analysis completed by Mercer Consulting, there are high costs to transitioning from the existing DB to a DC for new hires. The costs would be approximately $2.76 billion over the next decade for all three systems. The costs are detailed in the table below. Costs increase during a transition period because once a plan is closed to new members any unfunded liabilities remaining in the existing DB plan must be paid off over a shorter timeframe. This is very similar to what the Minnesota Legislature faced recently in funding the costs of the Minneapolis Employees Retirement Fund (MERF) which was closed to new members in 1978.

Change in Total Required Contributions ($millions)

Years	PERA	TRA	MSRS	Total
1-5	$573	$653	$276	$1,502
6-10	$529	$433	$298	$1,260
11-15	$302	($57)	$238	$483
16-20	$58	($610)	$161	($391)

- While there are significant transition costs in the next two decades, paying off the unfunded liability of the existing DB in a shorter timeframe would eventually lower future costs because the accelerated funding has the opportunity to generate investment earnings. For example, savings start to accumulate after year 12 for TRA and after year 19 for PERA.

- Once the unfunded liability of the existing DB is fully paid off, however, there are no longer savings. For the long-term, the Mercer analysis shows that ongoing "normal cost" of the existing DB plan is less than the cost of a future DC plan that has a contribution structure of 5 percent employer and 5 percent employee as modeled in this study.

- Mercer's analysis regarding transition costs is consistent with similar studies recently conducted in other states such as Nevada and Missouri. Due to the costs of multiple actuarial studies, the analysis in this study is limited to one DC design which is similar in structure to a Senate amendment offered last year to the 2010 pension reform bill. That amendment would have placed all newly-hired employees in a DC plan with a 5 percent employee and 6 percent employer contribution rate. For this study, Mercer analyzed a lower-cost DC plan of 5 percent employee and 5 percent employer contribution rates. The Legislative Commission on Pensions and Retirement may wish to explore additional options for analysis.

- Relative to an open ongoing DB plan, a closed DB requires higher cash outflow. As a result, plan assets must be invested in a lower risk investment allocation. The financial impact of these investment changes would be significant and are not included in the cost estimates. Mercer estimates that if the investment earnings and interest assumption for the closed DB were lowered from 8.5 percent to 6 percent to reflect a more conservative asset allocation, the actuarial accrued liabilities would increase by approximately 30 to 40 percent and the unfunded actuarial accrued liabilities would more than double.

Key Findings – Plan Design Comparison

The study has a comprehensive overview of both proponent and opponent views of defined benefit, defined contribution and hybrid plans. Several examples of alternative benefit designs utilized by other state retirement systems are also described in each section. The key arguments regarding defined benefit and defined contribution plans can be summed up as follows:

- DBs run the risk of having unfunded liabilities and less predictable costs, but DCs run the risk of providing inadequately funded retirement incomes that may lead to higher public assistance costs.
- DCs grant the individual employee more control over investments, but individuals usually incur higher investment fees and lower returns relative to DBs.
- DCs can be more attractive and beneficial to younger, mobile employees, but recent surveys show DBs are gaining in popularity as employees have become more aware of investment risks.
- While the short-term costs to transition from a DB to a DC are high, a DC can provide the opportunity to lower government costs over the longer term depending on the contribution rate level established.
- DBs can provide the same level of income at roughly half the costs of a DC plan due to DB's superior investment returns and the ability to pool longevity risk. DC plans, however, are more flexible for the employer, allowing the employer to scale back contributions/benefits during difficult economic times.
- Hybrid plans spread the risk between the employees and employers while mitigating but not eliminating unfunded liabilities and longevity risk.

Study Recommendations

The three retirement systems recommend that the Legislative Commission on Pensions and Retirement (LCPR):

- Carefully analyze the financial impacts of transitioning to an alternative plan structure. Modifying plan design in the future can have complex financial implications with unintended consequences. The appropriate design should be reviewed by the LCPR and a specific long-term funding strategy should be in place prior to implementing any changes.
- Consider the potential negative effect which closing the DB will have on future investment returns. It is probable that the SBI's investment strategy would need to become more conservative after the plan is closed, thereby lowering expected future returns.
- Analyze benefit adequacy and the impact which decisions regarding plan design have on Minnesota public employees, retirees, state and local governments, and the state and local economies.

Introduction

STUDY PURPOSE & SCOPE

This study of retirement plan designs for Minnesota public employees is conducted to fulfill a mandate of Laws of Minnesota, Chapter 359 which states, in part:

> The executive directors of the Minnesota State Retirement System, the Public Employees Retirement Association, and the Teachers Retirement Association shall jointly conduct a study of defined benefit, defined contribution, and other alternative retirement plans for Minnesota public employees. The study must include analysis of the feasibility, sustainability, financial impacts, and other design considerations of these retirement plans. The report must be provided no later than June 1, 2011, to the chair, the vice-chair, and the executive director of the Legislative Commission on Pensions and Retirement.

The study is structured to identify retirement plan design options for Minnesota's over one-half million public employees and retirees. To guide decision making, the views of potential proponents and opponents of each option are described along with potential financial and actuarial impacts. The retirement systems relied upon their actuary, Mercer HR Consulting, to perform an actuarial study of a proposal to convert the current defined benefit plans into a defined contribution plan. The authors draw upon numerous secondary sources for this study. Those secondary sources are noted briefly in the study text with complete citations in the References section of the study. Rather than provide plan design recommendations, the study is intended to present options and analysis to assist policymakers in decision making.

In preparing the study, the retirement systems sought input and guidance from outside sources and interested parties. On July 8, 2010, the retirement system directors provided the Legislative Commission on Pensions and Retirement with an outline of the study and a description of the process to be used in conducting the study. At that hearing, the Commission provided helpful guidance which was incorporated into the study.

In addition, the retirement systems sought input and comments from various stakeholder groups representing active public workers, public retirees, public employers, and other interested parties. The systems presented information about the study at stakeholder group meetings on September 23, 2010 and February 1, 2011. The systems will forward to the Legislative Commission on Pensions and Retirement all written comments pertaining to the study that have been submitted by various groups and individuals.

Pensions and Retirement Security

A RETIREMENT CRISIS MAY BE LOOMING

Recently, much attention has been raised regarding public pension plan funding and long-term sustainability. While conducting research for this study, it became apparent that retirement funding is a broader issue and both public and private workers are facing a retirement income shortfall. A study conducted by The Center for Retirement Research at Boston College reveals that Americans have a $6.6 trillion retirement income deficit. A retirement crisis may be looming, which should be of concern for all citizens, the communities in which they live, as well as all levels of government. Without adequate retirement income, retirees may not be able to afford basic living expenses, pay for health care or taxes, purchase goods and services, and remain a vital part of their community.

Traditionally, the three most common sources of retirement income are comprised of an employer-sponsored pension plan, Social Security and personal savings. Two of the sources – a pension plan and Social Security -- are supposed to provide a relatively predictable and secure level of retirement income. Individuals are responsible for determining their personal savings amount to provide adequate retirement income.

Times have changed – many employers have replaced the defined benefit (DB) pension plan with a defined contribution (DC) plan such as a 401(k), while others provide no retirement coverage at all. A study conducted by Employee Benefits Research Institute (EBRI) found that half of all workers surveyed say that they are offered a retirement plan in the work-place (EBRI, April 2010). Unless employees are disciplined and knowledgeable investors, many will be unable to accumulate the 80 to 90 percent retirement-income replacement recommended by financial planners. A recent study found that only about 45 percent of employees are currently saving for retirement (EBRI, November 2010). And although Social Security was meant to be supplemental income for retirees, 23 percent of those 65 and older live in families that depend on Social Security benefits for 90 percent or more of their income. In addition, another 26 percent of families receive at least half of their income from Social Security (U.S. Bureau of the Census, March 2005-2009).

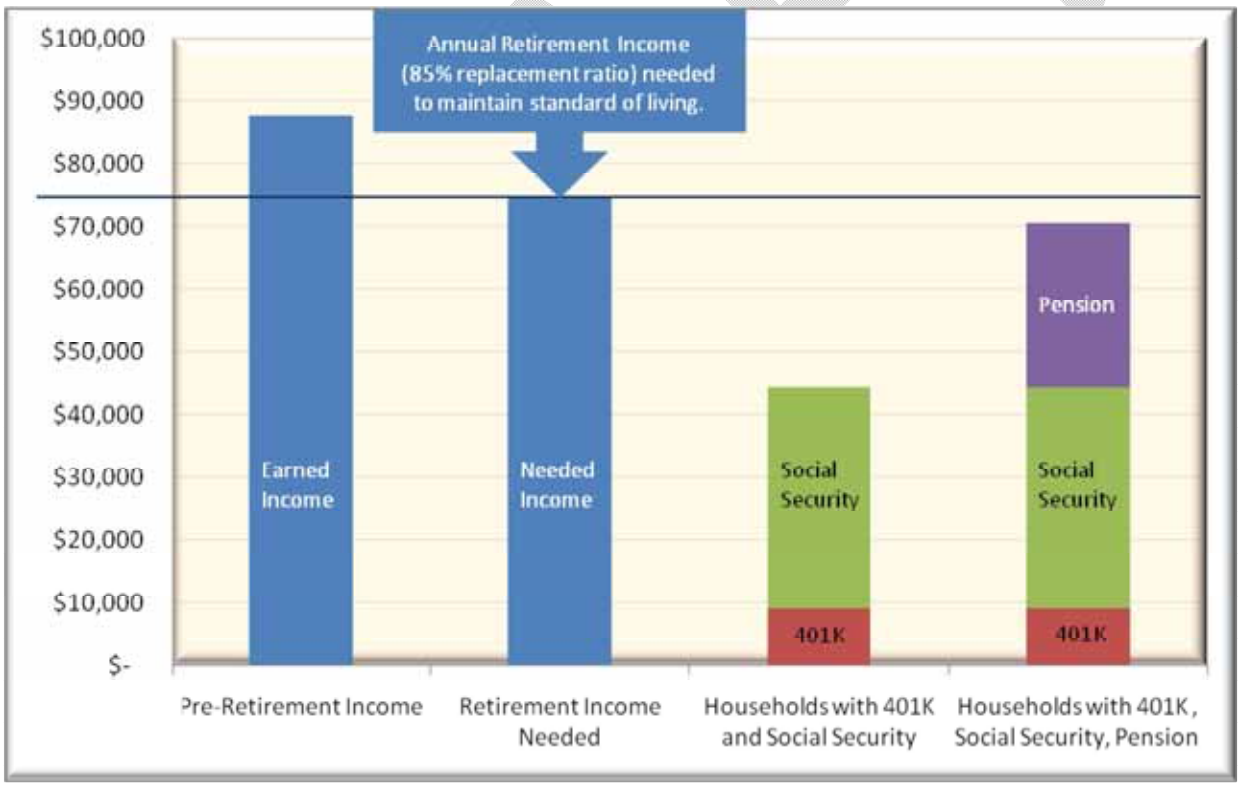
Facing income shortfalls, many retirees may spend less money in their communities, move to cheaper housing, delay medical care, take bigger risks with their investments, re-enter the workplace after retirement, or end up relying on public assistance such as Medicaid (for health care and nursing home care), Supplemental Security Income (SSI) and food stamps.

Households at risk

A recent Wall Street Journal study and analysis shows that median a household headed by a person aged 60 to 62 relying only on social security and a 401(k) account has less than one-quarter of what is needed to maintain its standard of living in retirement, according to data compiled by the Federal Reserve and the Center for Retirement Research at Boston College.

In its analysis, the study used the 2009 median annual income for age 60-62 households of $87,700 and estimated that such households need an annual retirement income of $74,545 (or 85% replacement ratio) to maintain their pre-retirement standard of living. It found that such households have a median 401(k) balance of just $149,400, less than one-quarter of the $636,673 the households need to maintain their pre-retirement standard of living; this balance generates only $9,073 in annual income. Even after counting social security income, these households have a huge income deficit of $30,392 annually.

In order to meet target income goals, these households need a 401(k) balance of $636,673, an amount that only 8% of such households have. In sharp contrast, households approaching retirement with social security, a 401(k) account and a traditional pension have 95% of what they need in retirement income to maintain their living standard (Retiring Boomers, 2011).



Source: "Retiring Boomers Find 401(k) Plans Fall Short," *The Wall Street Journal.* February 19-20, 2011.

Many working Americans will not be able to provide for themselves in retirement. The chart below illustrates that many retirees will be in jeopardy of running short of money in retirement.

Prospects of Running Short of Money in Retirement, by Income Quartile		
Income Level (based on 2006 household income statistics)	10 Years of Retirement	20 Years of Retirement
$0 to $23,999	41%	57%
$24,000 to $45,999	23%	44%
$46,000 to $79,999	13%	29%
$80,000 and over	5%	13%

Source: July 2010 EBRI Fast Facts

Taxpayer funded public assistance costs could rise

If members of society are self sufficient, the need for tax-payer supported public assistance is reduced. An estimated 1.4 million fewer people in the U.S. need public assistance because of the stable retirement income provided by DB plans. Without this pension income, there would be a 40 percent increase to the 3.4 million older households already receiving public assistance (Porell and Almeida, 2009).

The following statistics provided by National Institute on Retirement Security (NIRS) illustrates the importance of both public and private pension plans to maintain a stable household income ensuring financial security and preventing poverty.

	Number of Households (millions)	**Percent of Households with Annual Income**		
		Poor (below $12,201)	**Near Poor (from $12,201 to $24,402**	**Not Poor (above $24,402)**
All Households	31.6	9.0%	25.5%	65.5%
With Own or Spouse Pension Income	15.0	2.4%	16.2%	81.5%
Private Pension	9.4	3.0%	20.9%	76.1%
Public Pension	3.9	1.3%	10.3%	88.4%
Both	1.7	1.4%	3.1%	95.5%
No DB Pension Income	16.6	15.1%	33.9%	51.0%

Source: Porell and Almeida, 2009

Why pensions matter

The National Institute for Retirement Savings (NIRS) research shows that the number of retirees who remain self-sufficient improves markedly for those who have a pension plan.

- Poverty among older households lacking pension income was six times greater than those with pension income.
- Pensions reduce the risk of poverty and public assistance dependence for women and minority populations.
- DB income saved $7.3 billion in public assistance expenditures in 2006 (Porell and Almeida, 2009).

A recent study analyzing public-sector compensation in Minnesota was completed by the Minnesota Taxpayers Association (Milanowski, Twait, Haveman, 2010). The analysis compares the compensation of a private-sector employee who has 30 years of service to a similarly situated state employee; the study determined that the private-sector employee (age 60) has a median retirement account value of $74,000.

The table below illustrates what a 401(k) balance of $74,000 could provide in retirement income compared to a public employee at the same age with 30 years of service.

	Private Sector Employee DC Plan	**State Employee DB Plan**
Median retirement account value at age 60	$74,000	N/A
Term of benefit	22 years, 3 months*	Lifetime
Monthly retirement income	$340.42**	$1700
Social Security benefit starting at 62	$1200	$1200
Total monthly income	$1,540.42*	$2,900
Monthly health/dental insurance premiums	($300)	($300)
Monthly housing (rental or mortgage)	($800)	($800)
Monthly transportation cost	($100)	($100)
Remainder to use for food, clothing, entertainment, misc.	**$340.42**	**$1,700**

*according to the U.S. National Center for Health Statistics, as of 2006 Americans 60 years of age are expected to live 269 months

**calculation assumes 3% inflation and 5% rate of return in retirement

With limited retirement income, the private sector retiree with a median retirement account balance of $74,000 may be at higher risk of relying on public assistance during retirement especially if they live beyond the average life expectancy. In addition, the private sector retiree will likely pay lower taxes and purchase fewer goods, negatively impacting their local economy and state tax revenues.

Minnesota Retirement Plans Described

MEMBERSHIP AND STATISTICAL INFORMATION

Minnesota State Retirement System (MSRS)

Public Employees Retirement Association (PERA)

Teachers Retirement Association (TRA)

Investing Minnesota's statewide public pension assets
State Board of Investment (SBI)

MINNESOTA STATE RETIREMENT SYSTEM

Established by the Minnesota Legislature in 1929, the Minnesota State Retirement System (MSRS) provides retirement benefits to approximately 76,000 state employees, benefit recipients, their survivors, and dependents. MSRS administers four large retirement plans providing defined benefit plan coverage to employees of the State of Minnesota, five smaller defined benefit plans, and one defined contribution pension plan covering elected officials, employees of the Legislative branch, and Governor appointees.

MSRS administers the following retirement plans:

- General Employees Retirement Plan (including Minnesota Department of Transportation Pilots hired before June 1, 2008, Fire Marshals and Military Affairs)
- Correctional Employees Retirement Plan
- State Patrol Retirement Plan
- Judges Retirement Plan
- Legislators Retirement Plan (closed in 1997)
- Elective State Officers Plan (closed in 1997)
- Unclassified Retirement Plan (defined contribution plan)

MSRS also administers the following supplemental retirement plans:

- Minnesota Deferred Compensation Plan (MNDCP), a supplemental, voluntary retirement plan available to all public employees in the State of Minnesota
- Health Care Savings Plan (HCSP), a tax-free savings vehicle for public employees in Minnesota to set aside funds for reimbursement of healthcare-related expenses following separation from employment.

Net Assets

The total net assets of all MSRS administered plans totaled $13 billion ($9.1 billion in defined benefit plans and $3.9 billion in defined contribution plans) as of June 30, 2010.

MSRS Board of Directors

MSRS is governed by an 11-member Board, which consists of four elected members from the General and/or Unclassified Plans, three Governor appointees, one elected State Patrol Plan member, one elected Correctional Plan member, one elected retiree, and one appointee representing the Amalgamated Transit Union.

MSRS General Employees Retirement Plan Membership

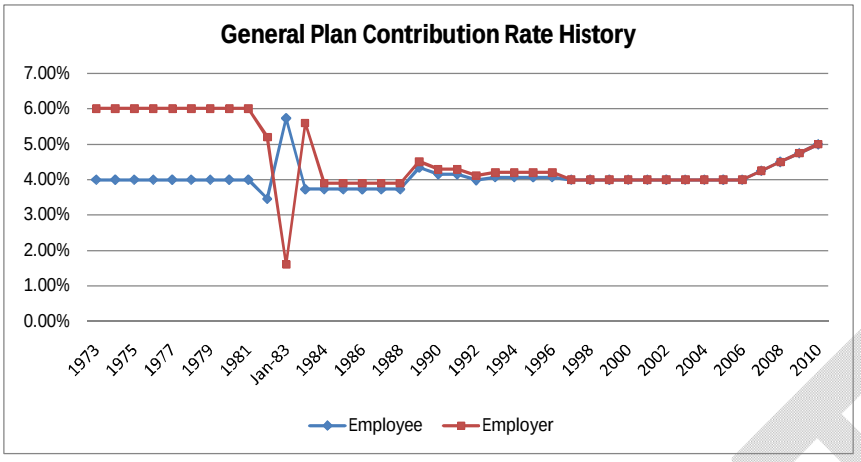
The General Employees Retirement Plan (originally called the State Employees Retirement Plan) was the first plan established in 1929. Membership in the plan includes employees of the State classified and unclassified services, the University of Minnesota civil service employees, MNSCU non-faculty, and certain metropolitan-level government employees.

Active Member Demographics (June 30, 2010)		Retiree/Benefit Recipient Demographics (June 30, 2010)	
Total Active Membership	48,494	**Total Benefit Recipients**	28,435
Average Age	47 years	**Total Benefits Paid (FY 2010)**	$473,447,000
Average Salary	$47,994/year	**Average Benefit**	$16,650/year
Average Length of Service	12.7 years	**Average Retirement Age**	63 years

Plan/Benefit Information

Vesting	Members hired prior to July 1, 2010 must have three years of service to be eligible for a benefit; those hired after June 30, 2010 must have five years of service.	
Normal Retirement Age	Hired Prior to July 1, 1989	• Unreduced benefit at age 65 • Actuarially reduced benefit at age 55 or after 30 years of service • Unreduced benefit at Rule of 90 (when age and years of service equal 90 or more).
	Hired After June 30, 1989*	• Unreduced benefit at age 66 • Actuarially reduced benefit at age 55
Allowable Service	Retirement benefits are based on years and months of service. An employee who works 50% time or more is given full service credit. Employees who work less than 50% receive prorated service credit.	
Formula Multiplier	Hired Prior to July 1, 1989	The higher of: a) 1.7% per year of service; or b) 1.2% per year of service during the first ten years, 1.7% per year of service thereafter (this option may be a higher benefit because of different early retirement reductions such as the Rule of 90)
	Hired After June 30, 1989*	1.7% per year of service

* 80 percent of current state employees were hired after June 30, 1989 and therefore have a retirement age of 66 and no early retirement provisions such as the Rule of 90.



General Plan Funding Summary

June 30, 2010

Breakdown of Required Contributions			Actuarial Value Basis	Market Value Basis
Employee	5%	Normal Cost	8%	8%
Employer	5%	Unfunded %	2.99%	5.9%
Total Required Contributions			10.99%	13.9%
Total Statutory Contributions			10%	10%
Contribution Sufficiency/Deficiency			(0.99%)	(3.9%)
Funded Ratio			87.30%	74.95%

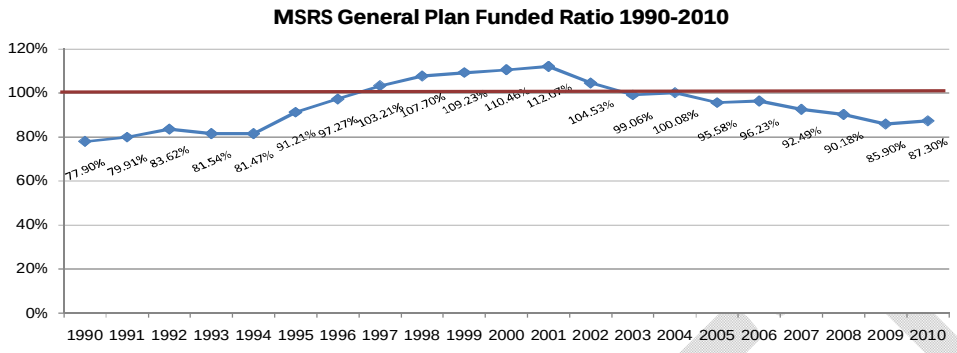


Chart is based on actuarial value of assets.

PUBLIC EMPLOYEES RETIREMENT ASSOCIATION OF MINNESOTA

Established by the Minnesota Legislature in 1931, the Public Employees Retirement Association (PERA) administers pension plans that serve approximately 238,000 county, school and local public employees, benefit recipients, their survivors, and dependents. Under PERA's administration are three traditional defined benefit plans, a lump-sum defined benefit plan, and a defined contribution plan.

PERA administers the following retirement plans:

- **General Employees Retirement Fund**
  - Coordinated Plan (PERA's largest and most encompassing plan)
  - Minneapolis Employees Retirement Fund (PERA assumed administration of this closed plan for Minneapolis employees in 2010)
- **Public Employees Police and Fire Fund** (Covers city and county law enforcement officers and salaried firefighters)
- **Local Government Correctional Service Retirement Fund** (A plan for county and regional adult and juvenile corrections officers)
- **Defined Contribution Plan** (An individual account-type plan covering elected officials, physicians, city/county administrators, and volunteer ambulance service personnel)
- **Statewide Volunteer Firefighter Retirement Plan** (A lump-sum benefit plan for local volunteer fire departments)

Net Assets

Net assets of all PERA-administered plans totaled $16.9 billion as of June 30, 2010.

Board of Trustees

PERA's Board of Trustees is composed of 11 members. The State Auditor is a member by statute. Five trustees are appointed by the Governor. Serving four-year terms, these five trustees represent cities, counties, school boards, retired annuitants, and the general public, respectively.

The remaining five board members are elected by the PERA membership at large to serve four-year terms. Three trustees represent the general active membership, one represents Police and Fire Fund members, and one represents annuitants and benefit recipients.

PERA's General Employees Retirement Fund Membership

The General Employees Retirement Fund (formerly the Public Employees Retirement Fund) was established in 1931. Membership in the Fund includes city, county, township and non-certified school district employees. Most members of the Fund are in PERA's Coordinated Plan where members and employers also participate in Social Security. A small number of members are in the non-coordinated Basic Plan (closed in 1968) and the Minneapolis Employees Retirement Fund (transferred to PERA administration on June 30, 2010).

Active Member Demographics (June 30, 2010)		Retiree/Benefit Recipient Demographics (June 30, 2010)	
Total Active Membership	140,389	**Total Benefit Recipients**	68,474
Average Age	47.2 years	**Total Benefits Paid (FY 2010)**	$906 million
Average Salary	$34,224/year	**Average Benefit**	$13,236/year
Average Length of Service	11 Years	**Average Retirement Age**	62 years

Plan/Benefit Information

Vesting	Members hired prior to July 1, 2010 must have three years of service to be eligible for a benefit; those hired after June 30, 2010 must have five years of service.	
Normal Retirement Age	Hired Prior to July 1, 1989	• Full retirement age is 65 • 3% per year reduction for retirement prior to age 65 with retirement as early as age 55 • Retirement at any age with 30 years of service (benefit reduction from age 62) • Unreduced benefit at Rule of 90 (when age and years of service equal 90 or more).
	Hired After June 30, 1989*	• Actuarially reduced benefit between ages 55 and 66 • Unreduced benefit at age 66
Allowable Service	Retirement benefits are based on total months of public service. (Any compensated service in a month results in one month of service credit.)	
Formula Multiplier	Hired Prior to July 1, 1989	The higher of: a) 1.7% per year of service; or b) 1.2% per year of service during the first ten years, 1.7% per year of service thereafter (this option may be a higher benefit because of different early retirement reductions, such as Rule of 90) **Note:** PERA also has a Basic Plan closed to new membership in 1968—only 20 active members remain. This plan has higher multipliers.
	Hired After June 30, 1989*	1.7% per year of service

* 80 percent of current active members were hired after June 30, 1989 and therefore have a retirement age of 66 and no early retirement provision such as the Rule of 90.

General Employees Retirement Fund Contribution Rate History

General Employees Retirement Fund Funding Summary

June 30, 2010

Breakdown of Required Contributions			Actuarial Value Basis	Market Value Basis
Employee	6.125%	Normal Cost	6.50%	6.50%
Employer	7.125%	Unfunded %	5.96%	8.51%
Total Required Contribution			12.46%	15.01%
Total Statutory Contribution			13.25%	13.25%
Contribution Sufficiency/(Deficiency)			1.04% *	(1.51)% *
Funded Ratio			76.4%	66.0%

*Includes full contribution increase effective January 1, 2011

General Employees Retirement Fund Funding Ratio (1990-2010)

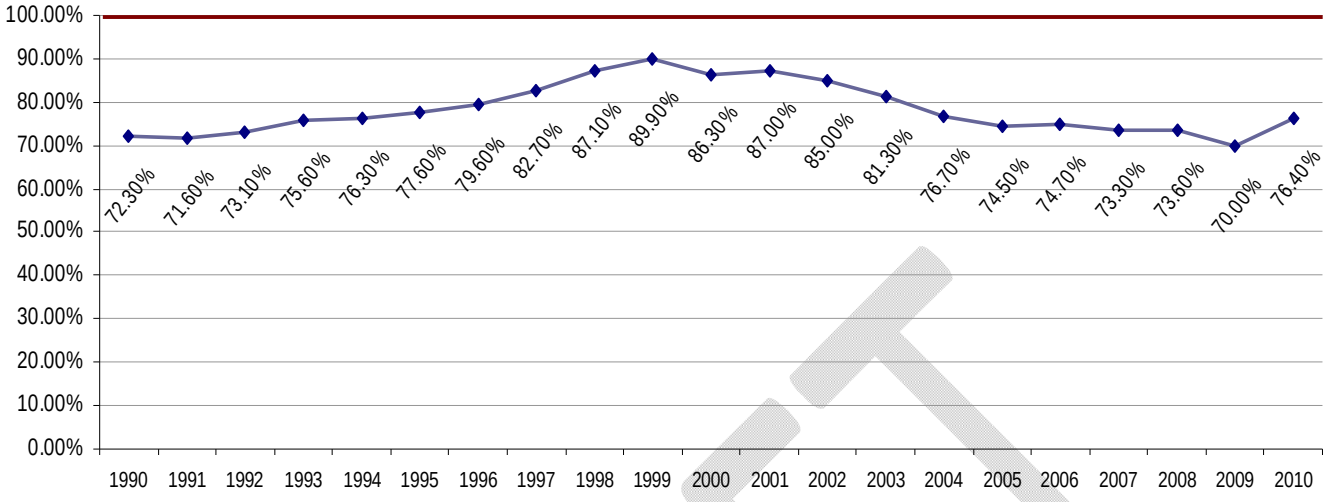


Chart is based on actuarial value of assets.

TEACHERS RETIREMENT ASSOCIATION OF MINNESOTA

Established by the Minnesota Legislature in 1931, the Teachers Retirement Association (TRA) administers a pension plan covering approximately 165,000 Minnesota public educators, benefit recipients, their survivors and dependents, and deferred members. TRA covers all public K-12 teachers and administrators in the state, including those teaching in charter schools. (Teachers in Duluth and St. Paul School Districts are covered by separate systems.) TRA is also available as a retirement plan option for State Universities and Community Colleges faculty through an election process. TRA administers one statewide defined benefit plan.

Net Assets

Net assets of TRA totaled $14.9 billion as of June 30, 2010.

Board of Trustees

TRA's Board of Trustees is composed of eight members, five of whom are elected. Four board members are elected by active employees and one is elected by retirees. Three members are statutory appointments made by the Commissioner of Minnesota Management and Budget, the Commissioner of the Department of Education and the Minnesota School Boards Association.

Teachers Retirement Fund Membership

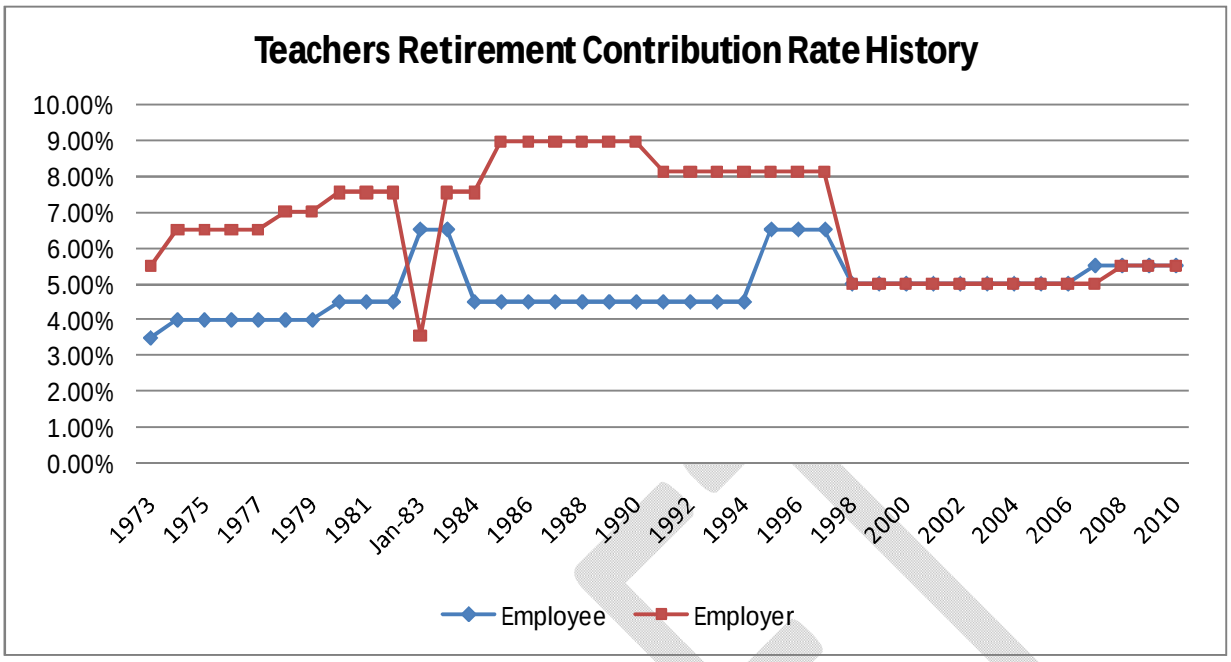
The TRA retirement plan consists of both a Coordinated and Basic Plan. The Coordinated Plan is coordinated with Social Security, while the Basic Plan is not and therefore has higher contribution rates and benefits. Most members of TRA are in the Coordinated Plan (employees and employers also participate in Social Security). The Basic Plan is closed to new members and has approximately 40 active members remaining.

Active Member Demographics (June 30, 2010)		Retiree/Benefit Recipient Demographics (June 30, 2010)	
Total Active Membership	77,356	**Total Benefit Recipients**	51,853
Average Age	43.5 years	**Total Benefits Paid (FY 2010)**	$1.434 billion
Average Salary	$48,966/year	**Average Benefit**	$26,141/year
Average Length of Service	11.9 Years	**Average Retirement Age**	61 years

Plan/Benefit Information

Vesting	Members must have three years of service to be eligible for a benefit.	
Normal Retirement Age	Hired Prior to July 1, 1989	• Full retirement age is age 65 • 3% - 5.5% per year reduction for retirement prior to age 65 with retirement as early as age 55 • Retirement at any age with 30 years of service (benefit reduction from age 62) • Unreduced benefit at Rule of 90 (when age and years of service equal 90 or more).
	Hired After June 30, 1989*	• Full retirement age is age 66 • Actuarially reduced benefit between ages 55 and 66 • Unreduced benefit at age 66
Allowable Service	Retirement benefits are based on service credit. One year of service credit is earned when a teacher teaches at least 5 hours a day for 170 days during the year.	
Formula Multiplier	Hired Prior to July 1, 1989	Higher of Step or Level Formula: • Level Formula Years up to 6/30/06: 1.7%/yr Years after 6/30/06: 1.9%/yr • Step Formula 1st 10 years up to 6/30/06: 1.2%/yr 1st 10 years after 6/30/06: 1.4%/yr Years 11+ up to 6/30/06: 1.7%/yr Years 11+ after 6/30/06: 1.9%/yr
	Hired After June 30, 1989*	• Level Formula Years up to 6/30/06: 1.7%/yr Years after 6/30/06: 1.9%/yr

* 73 percent of current active teachers were hired after June 30, 1989 and therefore have a retirement age of 66 and no early retirement provisions such as the Rule of 90.



Teachers Retirement Fund Funding Summary

June 30, 2010

Breakdown of Required Contributions			Actuarial Value Basis	Market Value Basis
Employee	5.5%	Normal Cost	8.6%	8.6%
Employer	6.21%	Unfunded %	7.11%	10.70%
Total Required Contributions			15.71%	19.30%
Total Statutory Contributions			11.71%	11.71%
Contribution Sufficiency/Deficiency			0*	(3.59%)*
Funded Ratio			78.45%	67.55%

*Note: Includes contribution rate increases scheduled for 2011-2014.

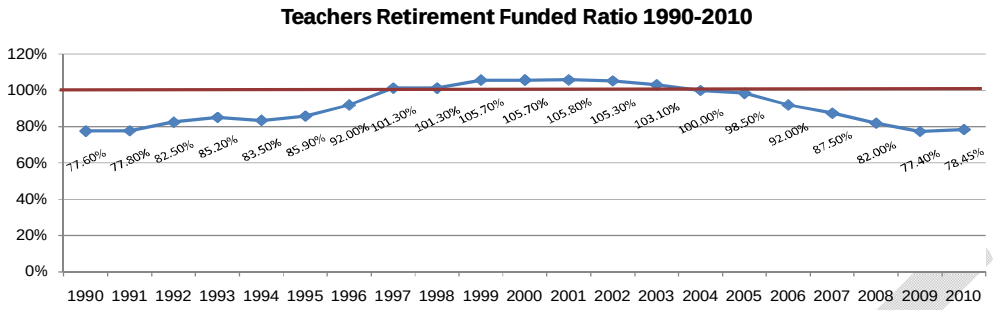


Chart is based on actuarial value of assets.

INVESTING MINNESOTA'S STATEWIDE PUBLIC PENSION ASSETS

The Minnesota State Board of Investment (SBI) is responsible for investing the pension fund assets of the three statewide pension systems. As of June 30, 2010, SBI was responsible for investing $40.5 billion in retirement system assets. Up-to-date investment information is available on the SBI's website, www.sbi.state.mn.us.

SBI's Constitutional and Statutory Authority

SBI is established by Article XI of the Minnesota Constitution to invest all State funds. Its membership, specified in the constitution, is comprised of the Governor (designated as the chair of the board), State Auditor, Secretary of State, and Attorney General.

SBI is assisted by an Investment Advisory Council (IAC), which is created in statute to advise SBI on general investment policy matters, asset allocation, methods to improve the rate of return and risk management. The IAC also monitors and recommends changes in the external managers for the fund. The executive directors of the three statewide systems serve as members of the IAC. Structurally, the 17-member Council is comprised of the following members:

- 10 experienced investment advisors
- MSRS, PERA, TRA executive directors
- Commissioner of Minnesota Management & Budget (MMB)
- Three governor appointees (one retiree and two active employees)

Nuveen Investment Solutions, Inc. of Chicago acts as general investment consultants to the SBI. Pension Consulting Alliance of Studio City, California, serves as a special project consultant. Investment performance methodology is reported in compliance with the mandatory requirements of the Chartered Financial Analyst (CFA) Institute.

Fiduciary Standards and Prudent Person Rule

All investments undertaken by SBI are governed by fiduciary standards and the prudent person rule which are codified in Minnesota Statutes, Section 11A and Section 356A. The prudent person rule, as codified in Minnesota Statutes, Section 11A.09, requires all members of the SBI, IAC, and SBI staff to "...act in good faith and shall exercise that degree of judgment and care, under circumstances then prevailing, which persons of prudence, discretion and intelligence exercise in the management of their own affairs, not for speculation, but for investment, considering the probable safety of their capital as well as the probable income to be derived there from." Minnesota Statutes, Section 356A.04 contains similar codification of the prudent person rule applicable to the investment of pension fund assets.

Authorized Investments

In addition to the prudent person rule, Minnesota Statutes, Section 11 A.24, contains a specific list of asset classes available for investment including common stocks, bonds, short term securities, real estate, private equity, and resource funds. The statutes prescribe the maximum percentage of fund asset classes and contain specific instructions to ensure the quality of the investments.

Investment Policies

Within the requirements defined by State law, SBI, in conjunction with its staff and the IAC, establishes investment policies for all funds under its management. These investment policies are tailored to the particular needs of each fund and specify investment objectives, risk tolerance, asset allocation, investment management structure, and specific performance standards.

Investment of Pension Fund Assets

Investment income is a critical and dominant source of revenue for the statewide pension systems as shown in the chart below. Employer and employee contributions represent just 18 percent and 15 percent, respectively, of total pension fund revenue.

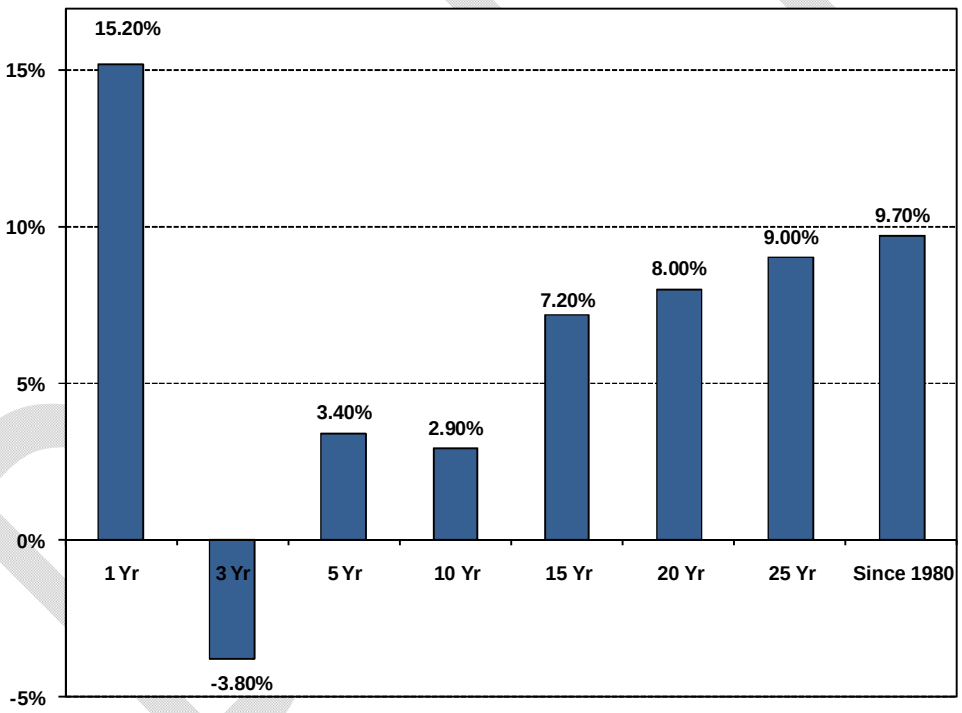
Investment income dominates pension revenue because Minnesota's statewide systems are designed to be pre-funded, meaning assets and contributions are accumulated well in advance of the need to pay benefits. This pre-funded structure allows the funds to leverage accumulated assets and earn investment income on those assets. With this structure, investment income keeps contributions as low as possible.

Revenue Sources of Pension Funds, 1991 - 2010

Investment Objectives

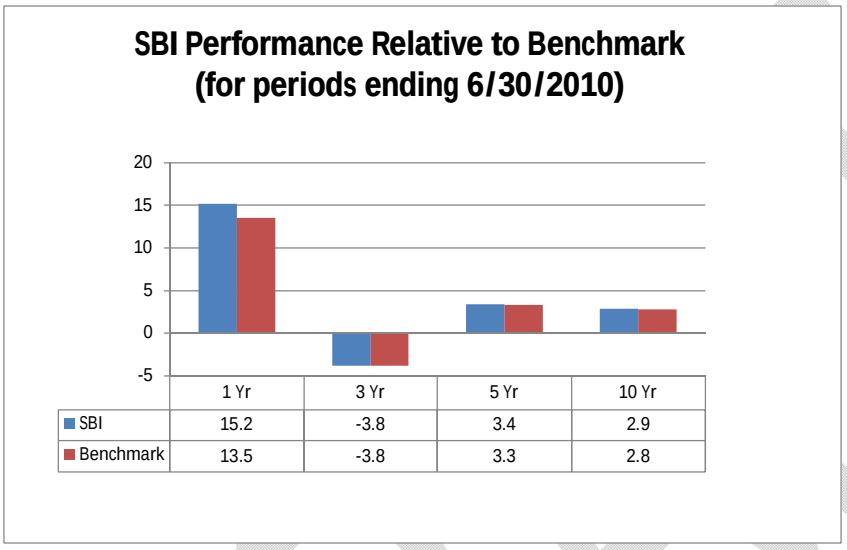
SBI has one overriding responsibility in managing retirement assets: to ensure sufficient funds are available to finance promised benefits. Employee and employer contributions to the pension funds are set aside so that those contributions plus expected investment earnings will cover the projected pension costs.

In order to meet projected pension costs, SBI must generate average investment returns of 8.5 percent annualized over time. While SBI has exceeded this 8.5 percent return over long periods of time, in recent years returns have fallen below 8.5 percent due to the severe market downturns of 2001-2002 and 2008-2009. SBI's historical rates of return are shown in the following chart.



Investment Performance Relative to Benchmark

In addition to meeting or exceeding the 8.5 percent actuarial return assumption over long periods of time, SBI also aims to exceed its composite benchmark on an annual basis. The composite benchmark is a composite of market indices weighted in a manner that reflects the actual asset allocation of SBI's funds. In other words, the composite benchmark shows what return would have been earned had SBI invested passively in each asset class. Performance results relative to SBI's benchmark are shown in the chart below. SBI has met or exceeded its benchmark for all periods over the past ten years.



	1 Yr	3 Yr	5 Yr	10 Yr
SBI	15.2	-3.8	3.4	2.9
Benchmark	13.5	-3.8	3.3	2.8

Investment Performance Relative to Other Pension Funds

When compared to other large pension funds, SBI's returns have been favorable for most periods. SBI has typically ranked above the median or in the upper quartiles when compared to 161 public and corporate plans with assets over $1 billion. (These large funds report to the Trust Universe Comparison Service (TUCS).) For example, for the one-year period ending June 30, 2010, SBI ranked in the upper 20th percentile, meaning that it was among the top 20 percent of funds for investment performance. SBI and the TUCS rankings among pension funds with over $1 billion in assets are shown below.

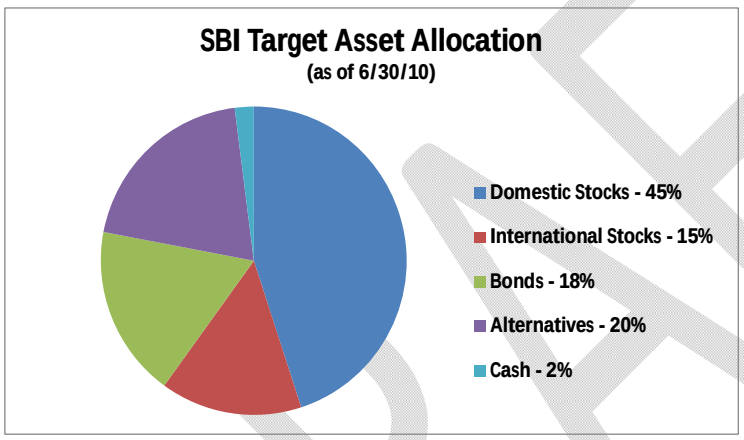
SBI Rankings in TUCS Universe
(for periods ending 6/30/10)

	1 Yr	3 Yr	5 Yr	10 Yr
SBI Pension Fund – Percentile Rank in TUCS	20th	44th	34th	65th

Asset Allocation

Asset allocation is the major determinant of investment returns. Asset allocation has a far more significant impact on returns of the total portfolio than the selection of money managers or the selection of particular stocks or bonds.

Normally, pension assets accumulate in the retirement funds for 30 to 40 years during an employee's years of active service. A typical retiree can be expected to draw benefits for an additional 15 to 20 years. This provides the retirement systems with a very long investment time horizon and permits them to take advantage of long-term opportunities offered by common stocks and other equity investments. Historical evidence strongly indicates that common stocks will provide the greatest opportunity to maximize long-term investment returns. As a result, SBI has invested heavily to common stocks in its asset allocation policy for the retirement funds as shown in the chart below.



A large allocation to common stocks (both domestic and international) is consistent with the investment time horizon of the pension funds and the advantageous long-term, risk-return characteristics of stocks. SBI includes international stocks in the asset mix to diversify its holdings across world markets and reduce the risk/volatility of the total portfolio.

In order to limit stocks' short-run return volatility, SBI invests in other asset classes such as bonds, real estate, private equity and resource investments. These assets serve to diversify the fund and reduce wide fluctuations in investment returns on a year-to-year basis. This diversification improves SBI's ability to meet or exceed the actuarial return targets over the long-term.

Investment Management Structure

Assets of the retirement funds are predominantly managed by external money management firms retained by contract. The structure of each asset pool is described below.

- **Domestic Stock Pool** – SBI uses a three-pronged approach to managing domestic stocks. One-third of the pool is actively managed by external managers, meaning these managers are actively selecting stocks to buy or sell. Another one-third is managed by semi-passive external managers, meaning the managers are actively selecting stocks but with only small deviations from the stocks' weightings within the benchmark. The last one-third is passively managed, meaning it is invested in direct proportion to each stock's weighting in the Russell 3000 Index. The goal of the domestic stock pool is to outperform or add value relative to the Russell 3000 Index, which is the benchmark for this asset class.

- **International Stock Pool** – SBI began its international stock program in 1992. Like the Domestic Stock Pool, SBI uses a three-pronged approach with one-third allocations each to active, semi-passive and passive management. The goal of the international stock pool is to outperform the Morgan Stanley Capital International (MSCI) World ex-US Index.

- **Bond Pool** – SBI uses a two-pronged approach to managing the bond pool. At least one-half of the pool is invested in a semi-passive manner and no more than one-half is actively managed. The goal of the Bond Pool is to outperform the benchmark, which is the Lehman Aggregate Bond Index. Bonds also act as a hedge against a deflationary economic environment. In the event of substantial deflation, high-quality fixed income assets are expected to protect principal and general capital gains. Bonds, like real estate and resource funds help to diversify and control return volatility.

- **Alternative Asset Investment Pools**
  - **Real Estate** – The real estate strategy calls for a broadly diversified portfolio comprised of real estate investments that are diversified by property type and geographic location. The main component of this portfolio is in Real Estate Investment Trusts (REITs), and open- and closed-ended commingled funds. During inflationary periods, real estate investments provide an inflation hedge that other financial assets cannot offer. Under normal financial conditions (low to moderate inflation), real estate returns tend to dampen total portfolio volatility since real estate returns are usually not highly correlated with common stocks.
  - **Private Equity** – The private equity strategy involves investing in limited partnerships that specialize mainly in leveraged buyouts and venture capital. These investments are diversified by industry type, stage of corporate development, location and vintage year.
  - **Resource Funds** – The strategy for resource investments is to provide an inflation hedge and additional diversification for the total portfolio. Resource investments include oil and gas and energy service industry.
  - **Yield-Oriented Pool** – This pool targets funds that typically provide a current return and may have an equity component such as subordinated debt or mezzanine financing.

Portfolio Diversification

As illustrated below, SBI's diversified approach to asset management helps manage volatility. For the 5-year period ending June 30, 2010, domestic stocks declined by 0.8 percent while international stocks, bonds and alternative investments increased, helping to offset some of the losses that occurred in the domestic stock market.

SBI Investment Returns –
5 – year annualized returns
(as of 6/30/10)

Domestic Stocks	- 0.8%
International Stocks	3.8%
Bonds	5.4%
Alternatives	14.1%
Total Combined Funds	3.4%

Retirement Plan Options Described

PROPONENT/OPPONENT VIEW OF PLAN STRUCTURE

SECTION ONE: DEFINED BENEFIT PLAN

In a defined benefit (DB) retirement plan, the benefit payable to the retiree is calculated using a pre-determined formula and is generally paid for the member's lifetime. The benefit is designed to be pre-funded during the working life of the employee if sufficient contributions from the employee, employer, or a combination of sources are made using actuarial assumptions and assumed investment earnings. The basic funding formula for a DB plan is: *Contributions + Investment Earnings = Benefits + Expenses*.

A DB plan pools contributions and the funds are managed by investment professionals. During the member's career, plan contributions and investment earnings on those contributions pre-fund the retirement benefit which is calculated using a formula. In general, the formula is a benefit percentage for each year of service multiplied by the final average salary defined in the plan rules. If the benefit is collected at the plan's full retirement age there is no reduction in benefit; however, if the member collects the benefit prior to full retirement age the benefit is reduced.

Defined Benefit Plan - Proponent View

Overall Plan Design

- DBs provide a benefit that bears an easily understandable relationship to working pay just before retirement and guarantees a monthly annuity payment for the life of the retiree and for a survivor, if that payment option is chosen.
- The benefit structure can be flexible and creative based on the needs of the employer.
- Disability and survivor benefit coverage can be incorporated into the plan design at a lower cost than insurance products available in the private market.
- Full financial disclosure, transparency and understanding of the DB plans are promoted through the development of statements and guidelines from the Governmental Accounting Standards Board (GASB). In addition, the Government Finance Officers Association (GFOA) outlines standards and directions to report the financial status of the DB plans (GASB, Statement 25 as amended by Statement 50).

Costs

- On the basis of "per dollar of benefit," it is less expensive to provide benefits through a DB plan than through a defined contribution (DC) plan. DB plans allow for pooling longevity and investment risk and are therefore more cost efficient than a DC plan when measuring the cost of the same benefit payable at retirement age. The cost to fund the same retirement benefit amount is 46 percent less under a DB plan structure, this assumes a 12.5 percent of payroll contribution to the DB plan compared to 22.9 percent of payroll to fund the same retirement benefit amount under a DC plan arrangement (Gabriel, Roeder, Smith and Company, 2003 and Almeida and Fornia, 2008).

- Public sector employees typically share in the cost of their benefits, paying approximately 50 percent of the annual cost of the plan benefits by contributing a stated percentage each pay period of the employee's salary. Minnesota public employees have always contributed to their pensions.

- In favorable investment periods, the employee or employer contributions to a DB plan can be reduced as any unfunded liability is eliminated through investment gains. For example, TRA employer contribution rates averaged between 8 and 9 percent for most of the 1990s. Due to favorable investment performance, TRA employer rates decreased to 5 percent from 1998 to 2007 and increased to 5.5 percent from 2008 to 2011. Over the 12-year period, 1998–2009, that drop resulted in a cumulative savings of approximately $1 billion to $1.4 billion for local school districts and the state**.**

- Administrative costs are generally lower in DB plans because the costs are shared broadly across the members and contributing employers. The economies of scale typically translate into lower costs to administer the plans (Gabriel Roeder Smith & Company, 2005).

- As institutional investors, DB plan investment managers are able to negotiate lower management fees because of the larger pool of assets available for management, translating to lower investment costs incorporated into the total administrative cost of the plans (Almeida and Fornia, 2008).

- Investment earnings pay for the greatest share of benefits earned in public sector DB plans. Sixty seven percent of the revenue available to the three statewide Minnesota retirement systems, averaged over the ten-year period ending June 30, 2010, came from investment of the employer and employee contributions held in the trust; the other sources of revenue came from employee contributions (15 percent) and from employer contributions (18 percent).

- The U.S. Census Bureau data also shows evidence of lower employer contributions. Public employer contributions in Minnesota represent 1.6 percent of total state and local government spending, compared to an average of 2.9 percent of state and local government spending in other states (U.S. Bureau of Census data, 2005-2009).

- With the exception of a few states that have chronically under funded their DB pension plans, the aggregate cost of funding state and local government pension funds is only 3.8 percent of state and local spending. Researchers estimate that beginning 2014, the cost will only increase to 5 percent using current plan assumptions (Munnell, Aubry and Quinby; October 2010).

Investment Performance/Costs

- Two out of every three dollars of revenue used to pay benefits in Minnesota's statewide retirement plans are the result of investment earnings. According to a Wharton Pension Research Council paper, "Setting aside all the other benefits to employers and employees of DB plans, contributions to public pension plans may be among the best investments a state or local government can make" (Anderson and Brainard, 2004).

- DB plan investors have the time horizons of a large group and can invest more in equities, providing for a more diversified portfolio that can produce better returns over the life of the participant, even while the participant is collecting benefits (American Academy of Actuaries, 2006; Almeida and Fornia, 2008).

- Unlike individual investors, institutional investors have access to alternative asset classes (such as private equity, real estate and venture capital), which provide greater asset diversification and return (American Academy of Actuaries, 2006).

    - DB plans can generate higher average returns over the life of the plan participant.

    - Towers Watson found that DB plans outperformed DC plans by 1 percent per year (Towers Watson, 2009).

    - A Boston College study found that median annual DB plan returns from 1988-2004 were 10.7 percent, 1 percent higher than the 9.7 percent returns for 401(k)s (Munnell, Jan. 2008; Cerling, 2008; and Olleman, 2007 and 2009).

    - A Morningstar study showed that over the 10-year period (1997 to 2006), public sector DB plans outperformed all US retail mutual funds by 1.7 percent annually (Morningstar, 2007).

    - Prior to 2002, Nebraska had a DC-only plan; a study conducted by Nebraska Retirement System found that from 1982 to 2002, state and county workers' average annual returns were 6 to 7 percent versus an 11 percent return for the state's professional investors handling the traditional pension money (Olleman, 2007 and 2009).

    - In West Virginia, the DB plan outperformed the DC plan in both the best and worst markets from 2001-2007 (Olleman, 2007 and 2009).

- Pooling assets under professional management produces returns superior to those achieved by the individual investor due to the lower asset management fees enjoyed by the DB plan investor. Boston College researchers found that asset management fees average 25 basis points for public sector DB plans compared to 60 to 170 basis points for an individual's DC account (Munnell and Sunden, 2004).

- DB plans are designed to allow the funded status to ebb and flow with the ups and downs of the markets, interest rates and other macroeconomic factors and can gradually recover from market losses given their long-term funding horizons (Almeida, Kenneally and Madland, 2008; GAO, 2008).

- Governmental DB plans can keep contributions relatively stable, provided governments consistently make the annual required contributions (GAO, 2008). Minnesota policymakers have proven to be fiscally responsible in making consistent contributions to the state's large general employee plans. At times, the contributions deviated from what was needed, but generally close to what was necessary to adequately fund the plans (MN statewide plans' annual actuarial valuation, 2010).

- In a DC plan, employees who leave their jobs are able to take with them their own contributions plus the matching contributions made by employers. In contrast, in a DB plan, employer contributions remain with the plan when an employee terminates. The terminating employee in a DB is not permitted to cash out employer contributions. Instead, those employer assets must remain with the plan and thereby reduce the costs/contributions needed to maintain the plan.

Recruitment and Retention

- DB plans more readily accommodate workforce management through temporary early retirement offerings to entice retirements of longer service employees or enhancing the benefit formula after a greater number of years of service to encourage retention.

- DB plans are an effective tool for recruitment and retention for employees of all ages. A Towers Watson survey conducted in 2010 found:

    - One-third of employees in organizations that offer a DB plan indicated that these plans are an important reason they decided to work for their current employer compared to only one-fifth of employees working for companies that sponsor DC plans.

    - Of those surveyed, 43 percent of individuals under age 40 indicated the DB plan was an important reason for joining the company, an increase from just 28 percent in 2009.

    - Sixty percent of new employees (those with less than two years of employment) employed at companies that offered a DB plan cited the retirement program as an important reason why they chose to work for that employer, up from 27 percent of new employees asked the same question in 2009; and 72 percent of employees responded that the DB plan was an important reason they intended to stay with the employer (Towers Watson, December 2010).

Portability

- Participants in a DB plan have some portability options since they can withdraw their own contributions, plus interest, at any time after they terminate employment.

- Some public sector plans have included a partial or full withdrawal of employer-matching contributions as part of the plan design to enhance portability.

- Some plans provide for interest on the earned benefit of terminated vested individuals from the time of termination of plan participation until retirement age, if contributions are not withdrawn.

- Most plans generally allow for a repayment of the refund and restoration of rights to retirement benefits if a person returns to a position covered by the plan.

- Minnesota DB public plans provide good portability since the systems have relatively short vesting periods, requiring only 3 to 5 years before benefit eligibility is established. Upon reaching eligibility, Minnesota's deferred augmentation provisions help maintain the value of benefits for some members who terminate and leave their money with a system.

Retirement Income Security/Adequacy

- DB plans provide lifetime income to those who elect to collect their retirement benefit in the form of an annuity. Monthly annuity income distribution plays a vital role in the national economy as well as local economies across the country. In 2007, the statewide retirement systems in Minnesota paid out over $2.5 billion in benefits to 129,000 Minnesota residents, adding $3.3 billion in spending in Minnesota's economy that resulted in the creation of 22,500 jobs statewide (Lubov, 2008).

- The projected value of a monthly annuity payable to a DB plan participant can be estimated throughout a career which can assist the individual in understanding the extent to which the annuity will provide income in retirement. The individual can then determine the additional savings needed to meet their retirement income expectations.

- In adverse markets, DB plans assure income adequacy of benefits, especially to those individuals whose retirement date aligns with the bottoming out of a market cycle. At the end of 2008, the average 401(k) account balance was $45,419, down from an average of $65,454 one year earlier. The 2008 account balance would yield a monthly benefit of only $225 to a person retiring at that point in this latest market decline (Holden, VanDerhei, Alonso, 2009).

- Research at the federal level found that DB income reduces the risk of poverty and public assistance dependence for women and minority populations and saved $7.3 billion in public assistance expenditures in 2006. Lower or inadequate retirement income means more retirees will be dependent upon taxpayer-supported health and welfare programs. Additionally, the research shows that poverty among older households lacking pension income was six times greater than those with pension income (Porell and Almeida, 2009).

- Optional survivor annuity coverage is available for those participants who choose to select that payment form, paid for through a reduction in the amount of the monthly benefit paid to the participant.
- DB plans can be designed to provide for automatic or ad hoc retirement benefit increases to help offset the effect of inflation on the retiree's purchasing power.

Defined Benefit Plan - Opponent View

Overall Plan Design

- Private sector companies have increasingly moved to DC plan designs, so it is appropriate to do so for the public sector.
- Continuing DB plans, providing lifetime income for public employees is creating a privileged class of persons whose benefits are being supported by taxpayers who are being asked to contribute more to maintain traditional pensions while they themselves do not enjoy the same security.
- Plan participants have no authority over the investment of their own accounts and cannot transfer wealth accumulation to heirs.
- Funding and reporting are complicated and do not always provide transparency regarding potential future DB plan costs to employees, employers and taxpayers.

Costs

- The cost of market declines that erode the funded status of public DB plans transfer costs of the plan to taxpayers and current employees through higher plan contributions.
- Overly optimistic assumptions about salaries, retirement ages, and life expectancies can unrealistically lower the employee and employer contributions collected to support defined benefits plans in the public sector, ultimately understating the true cost of the plan.
- Improving life expectancies of the beneficiaries of DB plans add to plan costs that then must be covered at the expense of current contributing participants and sponsors, eroding the funds being collected to cover their future benefit costs.
- History shows that as public pension plans become well funded, pressure from the stakeholders is exerted to improve the benefits and/or to lower employer costs through contribution holidays, without sufficient consideration of the long-term impact on the total liabilities and finances of the plan.
- The gains associated with favorable experience relative to actuarial assumptions are kept by the plan instead of transferring to the individual plan participants or their beneficiaries.

Investment Performance

- As the markets correct, lower than expected returns compared to those experienced during the 1980s and 1990s will require public pension plans to reset (lower) their expectations about long-term returns. Lower than expected rates of investment return mean higher contributions.

- DC account investment performance could improve if the public sector copies the experience of the private sector which has improved its education of DC plan participants so that more individuals understand what level of contributions are needed to fully fund their expected retirement lifestyles, how to manage their assets and minimize the fees they pay for the DC plan administrative and investment costs.

Portability

- Fewer people stay in one job for an entire career and most DB plans are not designed to allow for transfer of the accumulated employer contributions made on behalf of an individual to an account outside the DB plan.

- "Vesting," which means an individual must participate in a plan for a certain period of time before being eligible for benefits, is generally five to ten years – longer than in DC plans.

- DB plans do not provide for the direct transfer of the wealth accumulation in the account of an individual who hasn't named a survivor and dies early. Wealth accumulation through retirement savings and distribution to heirs of the account holder should be an option for all persons as they save for retirement.

Income Security/Adequacy

- With adequate education and discipline, individuals can save enough through DC individual accounts to provide income throughout their retirement. The increased use of automatic enrollment in DC plans will help increase 401(k) balances.

- With the passage of automatic enrollment in the Pension Protection Act of 2006, saving for retirement is easier and more automatic than in the past. A 2010 EBRI study found that for current workers aged 25 to 29, the median 401(k) balances can increase from approximately 1.5 times final earnings under voluntary enrollment to more than 6.0 times final earnings under auto-enrollment (VanDerhei, November 2010).

- With increased prevalence of DC plans as the means of saving for retirement in the private sector, DC plan administrators are creating annuity options to ensure that plan participants have an option for converting account values into lifetime monthly income. Annuities guarantee retirees do not outlive their money and provide more monthly income than other withdrawal options. In lieu of annuities, account holders can choose to draw down their own assets, typically using the 4 percent draw down rule recommended by financial advisors or living off the interest that their assets generate (NRRI Fact Sheet, October 2010).

Miscellaneous

- A recent study shows that employers are not closing DB plans due to inherent costs, but because of the volatility which federal ERISA law and regulations have caused in their DB funding requirements. In particular, federal ERISA law was amended by the 2006 Pension Protection Act which increased volatility of funding and decreased predictability of contributions for private DBs. The study suggested that it is possible to bring back DB coverage to the private sector through amending federal law and regulations to decrease funding volatility and by incorporating employee contributions into the funding sources for employers. (Currently employees do not make contributions to private sector DBs.) A GAO study showed that 26% of plan sponsors would consider forming a new DB plan if funding requirements were more predictable and less volatile (Bovie, March 2011).

SECTION TWO: DEFINED CONTRIBUTION PLAN

A defined contribution (DC) retirement plan has a defined contribution amount that is invested at the direction of the member to achieve retirement income. Benefits payable vary depending on the value of the individual's account at retirement; the basic funding formula for a DC plan is: *Benefit = Contributions + Investment Earnings – Expenses*.

During a DC plan participant's career, the employee contributes a defined amount to an individual account and the employer may contribute a "matching" amount to an employee's account. The participant chooses how to invest the money in the account. At the time of retirement, the account balance can be converted into retirement income. Generally, individuals have a variety of payment options including a lump sum payout, annuity, partial lump sum or installment payments. Income is not guaranteed for a lifetime unless the individual uses the account balance to purchase a lifetime annuity.

There are a variety of DC plan arrangements including 401(a), 401(k), 403(b) and 457(b); these plans can be tax-deferred or Roth after-tax plans.

Defined Contributions Plan - Proponent View

Overall Plan Design

- DC plans are easy to understand. Employees can see their account balances accumulate over the years and may have a greater appreciation for their retirement benefits and cost.
- Employees have virtually total control over the management and investment of their accounts once enrolled.
- Loans or hardship withdrawals from individual accounts may be allowed while the person is still working and participating in the plan, which is viewed favorably by plan participants.
- Disability and survivor benefit options can be added through independent insurance products so individuals can choose to accommodate their specific additional protections rather than having to automatically pay the cost of those benefit protections as in a DB plan design.
- With the passage of automatic enrollment in the Pension Protection Act of 2006, saving for retirement is easier and more automatic than in the past. A 2010 EBRI study found that for current workers aged 25 to 29, the median 401(k) balances can increase from approximately 1.5 times final earnings under voluntary enrollment to more than 6.0 times final earnings under auto-enrollment (VanDerhei, November 2010).

Costs

- Employer contributions to a DC plan are stable from year-to-year. Typically, employer contributions are set as a percentage of employees' salary, and may add a matching percentage up to a specified amount of the employees' contributions.
    - Accounts are always fully funded because the employer's stated contribution is the only measure for determining whether an account is funded under the terms of the plan.
    - Employers have no additional financial liability to plan participants after employees retire.
    - Taxpayers' financial responsibility is transparent and they are protected against increased contributions to the retirement plan because there is no unfunded liability associated with individual account plans.
- A survey of profit sharing and 401(k) plans found that the average employer contribution to a profit sharing plan is 8.1 percent of pay, the average employer contribution to a 401(k) plan is 2.1 percent of pay and the average employer contribution to a combination of the two types of plans is 4.7 percent of pay (PSCA, Annual Survey, 2010).
- During tough economic times, employers can save money by lowering or eliminating their contribution to employees' DC accounts. The employer must communicate this to plan participants before the start of the next plan year (American Academy of Actuaries, 2006).

Investment Performance

- Individuals have control over the account's asset allocation and can readily change allocation to maximize investment returns. A survey shows that half of workers prefer the freedom to make their own investment decisions and are willing to accept the investment risks for an opportunity to earn higher returns (Watson Wyatt, 2009).
- The introduction of target date funds as an investment option takes the guess work out of how to allocate funds. Target date funds assist individuals in taking on the appropriate level of risk for their age and reduces the concern that individuals do not have sufficient investment expertise to invest their own funds.
- Individual control of investing DC account balances has the potential to generate wealth beyond the participant's retirement needs.

Portability

- DC plan "Vesting," (meeting a specified number of months or years of participation to qualify to withdraw the employer's contribution to an individual account), is typically a shorter period of time than in a DB plan.

- Account balances can be transferred to another retirement plan when the participant terminates employment. A survey shows that 53 percent of workers prefer a plan that participants can take with them when they change jobs (Watson Wyatt, 2009).

- Mobile employees receive greater benefits from a DC plan because with shorter vesting, they can take their employer contribution with them when they leave covered employment.

Income Security/Adequacy

- Plan participants have the potential of accumulating more than sufficient account assets to fund their retirement and provide wealth transfer to heirs upon their death.

- Individuals can personally determine how best to fund desired lifestyle and income needs in retirement. It should be the individual participant, not the plan sponsor, who determines the adequacy of the income sources to fund one's own retirement.

Defined Contributions Plan - Opponent View

Overall Plan Design

- Accounts are more like a temporary savings account for individuals, especially those who frequently change jobs and borrow against or spend the account values rather than transferring them. Data suggests that many workers, particularly younger ones, do not understand that a small amount of savings can make a significant impact on retirement assets through the compounding of interest (EBRI, January 2009).
- DC plans typically are not structured to provide disability coverage, and survivor benefits are limited to the value of the deceased participant's account.
- The benefit generated from account balance bears no relationship to pre-retirement earnings (Gabriel, Roeder, Smith and Company, 2003).
- Without adequate education or even with repeated educational opportunities, many plan participants will not understand their personal responsibility for using the features of the plan to generate adequate retirement income.
- When employees are aware of the plan design differences, many prefer the DB lifetime income over DC plans. A 2010 survey found that 60 percent of new employees (those employed for less than two years) at employers with DB plans said that the retirement program was an important reason they chose to work there, up from 27 percent in 2009, with 72 percent stating the DB plan was an important reason to stay with the employer (Towers Watson, December 2010).

Costs

- Administrative and investment costs can be more than four times higher for DC plans than for DB plans and those higher costs are borne directly by the individual account holder (Collins, December 2003).
- To account for longevity, inflation, fluctuating investments and other risks, participants/employers need to make greater contributions to their DC accounts than would be made to DB plans to attain the same level of benefits (Almeida and Fornia, 2008).
- Disability and survivor benefit coverage can be provided to the participants at costs beyond normal contributions.
- Costs for public assistance will rise in the future for those account holders who will not have accumulated sufficient assets to adequately fund retirement needs.
- Typical investment fees charged to DC plan accounts can reduce account values by 21-30 percent (Congressional Budget Office, 2004).

Transition Costs

- Mercer's analysis prepared for Minnesota's three pension funds shows a significant cost increase associated with transitioning from the current DB structure to a DC structure. The analysis shows that in the first five years, pension costs would increase by $1.5 billion. This occurs because closing off the existing DB to new hires restricts future revenue flows and reduces the contribution base. This has the effect of accelerating, or front-loading necessary contributions in the near term as the loss of new members restricts future revenue and makes it more difficult to finance existing obligations (Mercer analysis begins on p. 61; GFOA, 2011; Olleman, 2007 and 2009; and Bovie & Almeida, 2008). Mercer's results are consistent with similar studies done for other states considering conversion including studies done for Nevada, Missouri, and New Mexico. Mercer's analysis is also consistent with a report recently prepared by Standard and Poor's in January 2001, "Outlook: U.S. State And Local Governments Must Navigate Turbulent Conditions To Maintain Credit Stability" which stated:

  > "Although restructured pension plans that include new tiers or hybrid (partially defined contribution) arrangements could make pension benefits more affordable in the longer run, we believe that the new structures could in some cases deprive existing pension plans of additional needed contributions in the near-to-medium term. Once new benefit plan tiers are created, current contributions are typically deposited in the asset trust funds of the new plans and are legally not available to the closed plans."

- Education and administrative expenses to establish and maintain a DC plan can be costly when transitioning from a traditional plan design to DC offerings. For example, Florida created a DC plan for its public employees; the 2001 to 2004 budget to administer this plan was $89 million with $55 million dedicated to educating its 650,000 employees about the new plan (Gabriel Roeder Smith & Company, 2005).

- Freezing a DB plan and replacing it with a pure DC or hybrid plan can increase costs in the short term because closing off the existing DB plan to new hires limits future revenue flows while reducing the contribution base (covered payroll). This accelerates or front-loads required contributions to fund the closed DB Plan. (Olleman, 2007 and 2009; Bovie & Almeida, 2008; and Mercer analysis). After a DB plan is closed to new hires, it is common practice for actuaries to calculate the plan's future contribution requirements based on a level dollar method. (GASB, Statement 25, 36(f) and Statement 27, 10(f)).

Investment Performance

- Overall, investment returns of account holders in DC plans are lower than DB plans, significantly lowering investment earnings over the account holder's lifetime.
    - Towers Watson found that DC plans returned 1 percent per year less than DB plans (Towers Watson, 2009).
    - A Boston College study found that from 1988 to 2004 the median annual DC plan [401(k)] return was 9.7 percent, a 1 percent lower return than DB plans, which returned 10.7 percent for the same period (Munnell, 2008; Cerling, 2008; and Olleman, 2007 and 2009).
    - A Morningstar study showed that over the 10-year period (1997 to 2006), public sector DB plans outperformed all US retail mutual funds by 1.7 percent annually (Morningstar, 2007).
- The investment classes available to individual account holders are not as diverse as those available to institutional investors, limiting their choices (American Academy of Actuaries, 2006).
- A recent study showed that workers don't understand that they don't need to invest in other assets or mutual fund products if they have chosen a target date fund. EBRI stated that it was apparent that some investors didn't understand the purpose of those funds and as a result could end up with a potentially inferior portfolio with respect to risk and reward tradeoff (VanDerhei, Holden and Alonso, Issue Brief 350, 2010).
- Participants suffer lower returns because they fail to sufficiently monitor their DC accounts.
    - Studies reveal very little portfolio changes from investors in response to either the participant's advancing age or investment returns (Munnell, Golub-Sass, Muldoon, 2009).
    - Some employees impulsively transfer assets to more conservative funds during market slumps hurting their returns by locking in losses (AON/Hewitt, 2009).
    - Individual investors tend to invest in mutual funds before they fall in value and sell funds before they peak (Frazzini and Lamont, 2005).
- Prior to 2002, Nebraska had a DC-only plan. From 1982 to 2002, state and county workers averaged annual returns of 6 to 7 percent versus an 11 percent return for the state's professional investors handling the traditional pension money. In West Virginia, the DB plan outperformed the DC plan in both the best and worst markets from 2001 to 2007 (Olleman, 2007 and 2009).
- Studies have found that as individuals enter retirement, the need to adjust the asset allocation from higher risk/higher return asset classes to lower risk/lower return results in an average 2 percent annual lower return between ages 62 and 97 (Almeida and Fornia, 2008). The retirement confidence survey conducted in 2010 found that at the end of calendar year 2009, workers in their 60s had much more conservative asset allocations than the average participant with 32 percent in equity funds, about 8 percent in target date funds, 7 percent in balanced funds, 14 percent in bonds, 7 percent in money markets, 20 percent in guaranteed insurance contracts, 8 percent in company stock and 4 percent in other types (VanDerhei, Holden, Alonso, 2010).

Portability

- Employees who take advantage of loan or hardship withdrawal options will have smaller net accounts for retirement than initially expected, unless they are disciplined about repayment.

- Greater portability for mobile workers leads to leakage, defined as spending accumulated account balances rather than transferring to another savings vehicle, thus reducing assets available for investment and accumulation over the lifetime of the individual. This leakage from DC plans due to cash-outs from job changes, hardship withdrawals and loan defaults are substantial and have grown in recent years according to studies done by the General Accountability Office and The Vanguard Group Inc. This leakage reduces the amount ultimately available to the employee upon retirement (DC plan leakage, 2011).

- More than half of DC plan participants withdraw funds from their DC plan accounts when they change jobs, removing between one-quarter and one-third of total DC plan assets before they reach retirement (Munnell and Sunden, 2004).

Income Security/Adequacy

- A recent Wall Street Journal study and analysis showed that median households headed by a person aged 60 to 62 relying only on social security and a 401(k) account has less than one-quarter of what is needed to maintain its standard of living in retirement, according to data compiled by the Federal Reserve and the Center for Retirement Research at Boston College. The WSJ study found that such households have a median 401(k) balance of only $149,400, less than one-quarter of the $636,673 these households need in order to maintain their pre-retirement standard of living. In its analysis, the study used the 2009 median annual income for age 60-62 households of $87,700 and estimated that such households need an annual retirement income of $74,545 (or 85% replacement ratio) to maintain their pre-retirement standard of living. It found that such households have a median 401(k) balance of just $149,400 which generates only $9,073 in annual income. Even after counting social security income, these households have a huge income deficit of $30,392 annually. In order to meet target income goals, these households need a 401(k) balance of $636,673, an amount that only 8% of such households have. In sharp contrast, households approaching retirement with social security, a 401(k) account and a traditional pension have 95% of what they need in retirement income to maintain their living standard ("Retiring Boomers," February 19-20, 2011). See chart on p. 6

- Lower or inadequate incomes for retirees will mean that fewer retirees will be self-sufficient and therefore may be dependent upon taxpayer-supported health and welfare programs. Research at the federal level shows that: 1) poverty among older households lacking pension income was six times greater than those with pension income; 2) pensions reduce the risk of poverty and public assistance dependence for women and minority populations; and 3) DB pension income saved $7.3 billion in public assistance expenditures in 2006 (Porell and Almeida, 2009).

- Insufficient asset accumulation or distribution may result in higher costs to taxpayers through increased medical and other public assistance for the financially disadvantaged older population (Almeida, Kenneally and Madland, 2008). The National Retirement Risk Index has determined 65 percent of households are "at risk" of not having sufficient income for retirement when general health care and long-term care costs are included in the analysis, compared to 41 percent of households for persons who work to age 65 and annuitize all their financial assets, including receipts from reverse mortgages (Munnell, Webb, Golub-Sass and Muldoon; March 2009).

- During periods of extended inflation, individual account accumulations generally do not produce benefits that have kept pace with cost-of-living increases.

- More than half of DC plan participants withdraw funds from their DC plan accounts when they change jobs, removing between one-quarter and one-third of total DC plan assets before they reach retirement (Munnell and Sunden, 2004). This leakage from DC plans due to cash-outs from job changes, hardship withdrawals and loan defaults are substantial and have grown in recent years according to studies done by the General Accountability Office and The Vanguard Group Inc. This leakage reduces the amount ultimately available to the employee upon retirement ("DC plan leakage," March 2011).

- Most DC plan participants choose to take lump-sum withdrawals of account balances, not sufficiently understanding the need to convert account balances into lifetime annuities.

- DC plan administrators are just beginning to develop annuity options as part of the plans available, but none have yet had success in marketing the use of their new design (Steyer, 2010).

- Some would assert that DC plan accounts are not always fully funded if they do not hold sufficient assets to provide adequate income for the account holder's retirement lifetime (Almeida, Kenneally and Madland, 2008).

- Purchasing an annuity through an insurer is not without risk. Risk is present in the form of the financial integrity of the insurer. If the insurer defaults, there may be no protection available to the purchaser of the annuity product. And since most annuities do not offer protection against the risk of inflation, an individual could be trading market risk for credit risk (Zwecher, 2010).

- In 2004, workers aged 55 to 64 had a median account balance of $50,000 according to a GAO study. This account balance converts to an annuity at age 65 of only $4,400 per year (GAO study 2007).

- More than half (54 percent) of workers reported that they had less than $25,000 in total savings and investments (excluding their home and DB plans) and about one-quarter (27 percent) had less than $1,000, up from 20 percent in 2009. In 2007, 29 percent of workers surveyed had savings and investments of at least $100,000 compared to 22 percent of workers with that level of savings in 2010 (Helman, Greenwald and Associates, Copeland and VanDerhei; 2010).

- If employees are not always eligible to participate in a DC plan over their entire working lifetime, the income that may be generated from these plans may be substantially less than the recommended targeted replacement (when combined with Social Security) of 70 to 85 percent of pre-retirement income (Holden and VanDerhei, 2002).

- Very few households buy annuities and instead choose to draw down their own assets, typically using the 4 percent draw down rule or live off the interest that their assets generate, putting real security in retirement at risk (NRRI Fact Sheet, October 2010).

Defined Contribution Plan Examples

Example 1: The Variable Annuity Fund (TRA, 1969-1989)

In 1969, the Legislature authorized a defined benefit plan for TRA based on a career average salary basis (which was later replaced by the high-five average salary formula). Additionally, both existing and new teachers entering TRA could elect defined contribution plan options that provided partial or full coverage in a new retirement fund called the Variable Annuity Fund (VAF).

The VAF was similar to a defined contribution plan with the notable exception that the portfolio was invested by the Minnesota State Board of Investment (SBI) instead of the individual teacher.

The VAF experienced three straight years of negative investment return (including a -17.96 percent return in fiscal year 1975), creating widespread discontent among teachers. In 1978, legislation allowed VAF participants to stop VAF contribution and to contribute entirely to the formula plan. In 1989, the Legislature abolished the VAF and the $154.3 million plan assets were transferred to the TRA Fund on June 30, 1989. The legislation required that all VAF contributions and service credit since 1969 be treated as if they had been high-five formula plan coverage. The additional unfunded liability that was added to the TRA Fund to accomplish this transfer was about $122.3 million.

Example 2: State of Alaska

http://www.state.ak.us/drb

Alaska implemented a mandatory DC retirement plan for new general state employees and teachers hired after July 1, 2006. Employees who were not vested in the existing DB plan were given a 12-month window to opt into the DC plan.

Employees contribute 8 percent of salary and the state contributes 5 percent for general employees and 7 percent for teachers.

One-quarter of employer contributions are vested after two years, half are vested after three years, three-quarters after four years and all state contributions are vested after five years.

Example 3: State of Michigan

http://www.michigan.gov/ors/

Michigan general State employees hired after March 31, 1997 participate in a 401(k) DC retirement plan. At the time the plan was established, employees were given an option to switch from the existing DB plan to the new DC plan; only 6 percent of employees elected to do so.

Employees are automatically enrolled to receive a 4 percent employer contribution. In addition, employees who voluntarily contribute 3 percent of salary will have 100 percent of that amount matched by the state. The employee may designate their contributions as pre-tax or Roth/after-tax. The maximum state contribution is 7 percent of pay.

The employee may contribute the annual maximum contribution amount to both the 401(k) DC plan and a supplemental 457 plan as defined by the Internal Revenue Code.

The employee vests in one-half of the employer contributions after two years, three-quarters after three years and fully vested after four years.

Please note: Michigan public school employees participate in a hybrid plan; municipal employees may choose to have their own plan or participate in another centralized plan.

Source: Center for State and Local Government Excellence. "Fact sheet on states with defined contribution pension plans (2009).

SECTION THREE: HYBRID PLANS

DB/DC Blend

The most common hybrid design combines features of a traditional DB plan and a DC plan. The plan has a modest multiplier for each year of service, generally 1.0 to 1.5 percent, and an employee-directed supplemental DC plan. Participation in both plans is mandatory and contributions to each are usually fixed. The DB portion of the benefit is annuitized for lifetime income. The individual may elect how the DC portion is distributed; options may include a lump sum, annuity payable for life, a partial lump-sum payment or installment payments.

Examples of governmental hybrid DB/DC plans include: Federal Employees Retirement Systems (FERS), Georgia Employees Retirement System (ERS), Indiana Public Employees Retirement Fund (PERF) & Teachers Retirement Fund (TRF), Michigan Public School Employees Retirement System, Ohio Public Employees Retirement System (OPERS) & State Teachers Retirement System (STRS), Oregon Public Employees Retirement System (PERS), Washington State Department of Retirement Services (DRS), Utah Retirement Systems (URS).

Additional Hybrid Plan Descriptions

Target Benefit Plan

Combines a DB plan and a Money Purchase Plan, annual employee and/or employer contributions are based on assumptions used to determine the total amount of money that must be accumulated at an assumed rate of interest to pre-fund a projected or target benefit. The contribution amount is based on employee's age and length of service. If actual earnings differ from earnings assumption, the contribution amount does not fluctuate, rather the benefit amount payable to the member increases or decreases.

Cash Balance Plan

The account balance is guaranteed and will not decrease even during negative market returns. Assets are pooled and managed by investment professionals. The balance increases two different ways: salary credits and interest credits. Each year a percentage of salary is added to the balance and the balance at the end of the prior year is credited with a percentage of interest (generally a fixed rate or based on an index). At the time of retirement or termination, the employee receives the cash balance amount, either in lump sum or by converting the amount to an annuity.

Hybrid Floor Plan

Employer maintains both a DC plan and a DB plan, which has a "floor" or minimum benefit. The DB value must be the equivalent of accumulated employee contributions and a defined multiplier or interest rate. The employee contributes to a DC plan, which fluctuates based on investments and market conditions. At retirement, the employee receives at least the value of the DB benefit. If the DC benefit provides income equal to or in excess of the DB floor benefit, no DB benefit is payable. If the DC value is less than the minimum benefit, the DB floor makes up the difference.

Hybrid - Proponent View

Overall Plan Design

- Experience with a number of other state public employee systems shows the hybrid approach is acceptable, workable and can combine "best practices" of DB and DC plans.
- Using the compromise approach of a hybrid may allow the preservation of some DB protection elements (benefit adequacy, lifetime income) while making available to employees some of the positive elements of DC plans such as enhanced portability.
- Hybrids represent a "middle ground" in which the risks of negative or positive experience are shared by both employers and employees.
- Relative to a pure DB or pure DC, a hybrid can strike a more optimal balance or sharing of risks such as investment risk (i.e., the risk of poor investment returns) and longevity risk (i.e., the risk of outliving one's savings).
- Many private sector companies have opted for a hybrid plan as a means to both curb costs and still maintain a commitment to retirement protection for employees.
- A hybrid preserves a DB component which gives the employer more flexibility to design incentives and accommodate workforce management needs.
- The DB component of a hybrid can provide disability and survivor coverage that may not otherwise be available in a pure DC.
- The DC element of a hybrid is easier to understand as employees can see their account balances and they have more control over investment decisions.

Costs

- Hybrids shift a portion, but not all, of the risks and costs of investment performance, longevity, and other potentially adverse actuarial experience from the employer to the employee.
- Hybrids can help control or reduce costs for employers seeking to pare back their portion of the costs of maintaining a funded retirement system. Hybrids give employers more financial flexibility, allowing them to lower or eliminate their contribution to the DC element of the hybrid to save money during tough economic times.
- Relative to a pure DB plan, a hybrid approach offers the potential for more stable contribution rates for both employers and employees because, under a hybrid plan, exposure to rising or fluctuating contribution rates that result from adverse conditions, especially investment performance, are more limited than in a DB plan.
- Relative to a pure DB, a hybrid design reduces the potential for unfunded liabilities.

Investment Performance/Costs

- A hybrid design maintains at least a partial DB element which allows employers and employees to benefit from the superior investment performance and lower fees. Research shows that large institutional investors for DB plans have better investment performance and lower fees (Flynn and Lum, 2007; Watson Wyatt, 2008; Towers Watson, 2009).

- The DC element of a hybrid could be designed to allow employees to invest in a state's large pooled investment fund, which offers the potential for lower fees and higher returns. The hybrids offered by Oregon and Washington State allow members to invest their DC assets in a portfolio which mirrors the professionally managed state DB plan. In Washington State, about 61 percent of members elect this type of portfolio (Olleman, 2007 and 2009).

- To improve the chances for adequate investment performance, plan participants can be educated about appropriate asset allocation and investment behaviors. The introduction of target date funds as an investment option can help participants better manage the DC element of their hybrid accounts.

Retirement Income Security/Adequacy

- Relative to a pure DC, a hybrid design would provide members with better retirement income protection in the event of investment market adversities or longevity risks.

- Having a DC element in a hybrid may create a culture of savings in which employees feel more empowered and are more actively engaged in saving and planning for retirement.

- Assets from the DC portion of a hybrid could be left to a person's estate for the benefit of children or heirs.

- Assets from the DC portion of a hybrid could be annuitized upon retirement by the employer, shifting post-retirement investment and longevity risks back to the employer (or insurer offering the annuity program).

- The DC element of a hybrid gives employees more choice and allows the employees to direct how their funds are invested. If participants can achieve investment returns in their DC accounts that are superior, this can result in higher benefits for the participants than might otherwise be earned in pure DBs.

- The benefit accumulation pattern of a hybrid could simultaneously achieve dual goals: the DB element would produce higher benefits for longer-service, late-career employees while the DC element would produce relatively higher benefits for shorter-service, early-career, younger employees.

- Adequate death and disability benefits could be provided in a hybrid plan if employers and employees make supplemental or extra contributions when they elect such coverage.

Portability

- Hybrids are more portable for mobile workers than a pure DB plan. This portability is more attractive to younger workers and workers who change jobs frequently.

- Employee contributions to the DC element of a hybrid can be immediately vested and thus more portable.

- When an employee terminates, employee contributions to the DC element of the hybrid can be transferred or rolled over to another pension account.

Recruitment/Retention

- With a hybrid, recruitment/retention of employees may be enhanced, particularly for mobile or younger workers who might find the DC element in a hybrid to be attractive. Surveys show that 53 percent of workers prefer a plan that participants can take with them when they change jobs (Watson Wyatt, 2009).

- With a hybrid, the DC element could attract and retain employees who wish to control their investments. Surveys show that half of workers prefer the freedom to make their own investment decisions and are willing to accept the investment risks for an opportunity to earn higher returns (Watson Wyatt, 2009).

- To encourage some longevity and commitment to the employer, the employer contributions to the hybrid's DC element could have vesting rules of 5 to 10 years.

- The DC element of the hybrid is easier to understand for participants compared to a pure DB.

Plan Management

- Although plan management of a hybrid is more complex than managing one integrated plan as would be the case with a pure DB or DC plan, it is nevertheless worth the positives gained for the employer and employee.

Hybrid - Opponent View

Overall Plan Design

- The overwhelming majority of public employees (79 percent) are in a pure DB structure, a benefit design that provides relatively predictable and secure retirement income.

- When public employees are given the opportunity to make a choice between a DB, DC or hybrid, the vast majority select a DB rather than a hybrid or DC (Munnell, 2008 and Olleman, 2007/2009).

Costs

- Compared to a pure DB, a hybrid plan is a less efficient use of taxpayer dollars. Pure DBs can provide the same level of benefits at roughly one half to two-thirds the costs of a DC plan because of the pooling of longevity risk and higher investment returns of DBs (Almeida and Fornia, 2008 and Cerling, 2008).

- The DC element of a hybrid is not likely to provide adequate survivor and disability benefits (especially for hazardous occupations). Providing such coverage would require employers or employees to incur an extra cost to obtain disability and survivor benefits (an extra cost that would be higher than what would otherwise be available in a large DB pool).

- It is misguided to use a hybrid design to ensure that the increased costs due to adverse experience do not fall on employers alone. In Minnesota, employees, employers and benefit recipients have shared in the extra costs caused by adverse experience. For example, when markets declined in the recent decade, the 2010 law reduced benefits and raised contributions, requiring a sharing of costs among retirees, employees and employers.

- The DC portion of the hybrid often is more costly than a pure DB because it has higher investment fees than a pure DB, resulting in wasted resources (Munnell, 2008).

- In a pure DB, favorable conditions can result in lower contribution levels for employers whereas in a hybrid, a portion of the rewards from any favorable experience will go to employees through the DC element. For example, TRA employer contribution rates averaged between 8 and 9 percent for most of the 1990s. Due to favorable investment performance, TRA employer rates dropped to 5 percent from 1998 to 2007 and to 5.5 percent in 2008. Over the 12-year period (1998–2009), that drop resulted in a cumulative savings of approximately $1 billion to $1.4 billion for local school districts and the state**.**

- Freezing a DB plan and replacing it with a pure DC or hybrid plan can increase costs in the short term because closing off the existing DB plan to new hires limits future revenue flows while reducing the contribution base (covered payroll). This accelerates or front-loads required contributions to fund the closed DB Plan. (Olleman, 2007 and 2009; Bovie & Almeida, 2008; and Mercer analysis). After a DB plan is closed to new hires, it is common practice for actuaries to calculate the plan's future contribution requirements based on a level dollar method. (GASB, Statement 25, 36(f) and Statement 27, 10(f)).

Investment Performance/Costs

- The hybrid's DC element detracts from potential investment performance. Studies show that DCs have higher fees and lower investment returns relative to DBs. With respect to investment performance,
    - Towers Watson found that DBs outperformed DCs by 1 percent per year (Towers Watson, 2009).
    - A Boston College study found that median annual DB returns from 1988-2004 were 10.7 percent, 1 percent higher than the 9.7 percent returns for 401(k) plans (Munnell, Jan. 2008; Cerling, 2008; and Olleman, 2007 and 2009). A difference of 1 percent per year over the length of a career means as much as a 25 percent difference in assets to pay retirement benefits.
    - A Morningstar study showed that over the 10-year period (1997 to 2006), public sector DB plans outperformed all US retail mutual funds by 1.7 percent annually (Morningstar, 2007).
    - Typical fees charged to DC accounts can reduce account values by 21-30 percent (Congressional Budget Office, 2004).

- The individualized DC element of the hybrid has a shorter investment horizon which can lower investment performance, whereas pure DB plans have longer time horizons and can retain a higher allocation to equities. Thus DBs achieve higher returns than hybrids or DCs, which tend to be more conservatively invested, especially as the employee ages.[1]

- The DC element of a hybrid may not perform well from an investment perspective. Some studies show that participants fail to sufficiently monitor their DC accounts and thus suffer lower returns.
    - Studies reveal very little portfolio changes by investors in response to either the participant's advancing age or investment returns (Munnell, Golub-Sass, Muldoon, 2009).
    - Some employees impulsively transfer assets to more conservative funds during market slumps hurting their returns by locking in losses (AON/Hewitt, 2009).
    - Individual investors tend to invest in mutual funds before they fall in value and sell funds before they peak (Frazzini and Lamont, 2005).

- The investment performance of a pure DB is better than the performance of a hybrid or pure DC.
    - Prior to 2002, Nebraska had a DC-only plan. They found that from 1982 to 2002, state and county workers averaged annual returns of 6 to 7 percent versus an 11 percent return for the state's professional investors handling the traditional pension money (Olleman, 2007 and 2009).
    - In West Virginia, the DB plan outperformed the DC plan in both the best and worst markets from 2001-2007 (Olleman, 2007 and 2009).

[1] A study of the Nebraska DC plan showed that 50% of DC member contributions were invested in the most conservative stable value fund (Olleman 2007 and 2009). According to a 2004 Employee Benefit Research Institute (EBRI) study, DC participants in their 20s on average invest 65% of their accounts in equities and 21% in fixed-income securities. Participants in their 60s invest 49% in equities and 40% in fixed-income (Holden and VanDerhei, 2004). In contrast, large public systems hold 57% of assets in equities, 32% in fixed-income and the remaining 11% in other investments (Brainard, 2004).

- The DC element of a hybrid is not likely to be invested in alternative investments, such as private equity, venture capital and real estate which add diversification to a portfolio and can offer higher long-term returns.

Retirement Income Security/Adequacy

- In adverse markets, hybrid plans, relative to pure DBs, reduce overall income adequacy of benefits and can cause fluctuations in expected benefits. This occurs because the hybrid's DC element shifts some of the risk of adverse investment experience to the employee who may not be able to bear that risk, especially when the employee is near retirement.

- Terminating employees who are eligible for a lump-sum distribution of the hybrid's DC element are likely to spend, rather than save or rollover the lump- sum into another retirement savings vehicle, diminishing their chances for retirement income adequacy (Cerling, 2008). More than half of DC plan participants withdraw funds from their DC accounts when they change jobs, removing between one-quarter and one-third of total DC plan assets before they reached retirement (Munnell and Sunden, 2004).

- Lower or inadequate incomes for retirees means that fewer retirees will be self-sufficient and therefore may be dependent upon taxpayer-supported health and welfare programs. Research at the federal level shows that: 1) poverty among older households lacking pension income was six times greater than those with pension income; 2) pensions reduce the risk of poverty and public assistance dependence for women and minority populations; and 3) DB pension income saved $7.3 billion in public assistance expenditures in 2006 (Porell and Almeida, 2009).

- Compared to a pure DB, hybrid plans are less likely to provide:
    - adequate income to survivors in the event of death or disability occurring at younger ages or before retirement;
    - higher retirement benefits for the same level of contributions; and
    - economic stimulus and job creation for state and local economies (Anderson and Brainard, 2004).

Portability

- The DC element of a hybrid directs more employer resources to short-term, mobile workers which, depending upon the employers' recruitment/retention goals, may not be the most efficient and effective use of employer and taxpayer resources.

- Hybrids are less likely to attract career employees who remain employed until they are eligible for retirement since career employees generally receive higher benefits under a pure DB than a hybrid or pure DC plan (Buck, 2001).

Recruitment/Retention

- Recruitment/retention of employees may be more difficult, as a hybrid may be seen as offering less secure retirement protection than a pure DB. When West Virginia's employees were given the option to switch out of a DC into a DB, 76 percent of members under age 40 switched to a DB and 81 percent of those age 45 to 64 switched to a DB (Olleman, 2007 and 2009).

- Hybrids are not as effective in attracting and retaining long-service employees. A pure DB is better at retaining intellectual capital in some public professions such as teaching and public safety, professions which tend to benefit from longer-service, career employees. Pure DB plans are associated with higher levels of satisfaction and loyalty among workers; studies find DB-covered workers are less likely to search for another job and leave. Surveys show that 52 percent of workers covered by a DB say their pension plan is a key reason they continue to work for their employer compared with 33 percent of those with a DC plan (Watson Wyatt, 2009 and Friedberg and Owyang, 2004).

- DBs are effective for recruitment and retention for both younger and older employees as well as for new recruits. A recent Towers Watson survey found that:

    - One-third of employees in organizations that offer a DB plan indicated that these plans are an important reason they decided to work for their current employer compared to only one-fifth of employees working for companies that sponsor DC plans;

    - 59 percent of employees at organizations with DBs cite their pension as an important reason they decided to stay with their current employer, compared to only 32 percent of those with a DC;
    - 60 percent of new hires say that their company's DB is an important reason they chose to work for their current employer compared to only 20 percent saying the company's DC plan was an important reason.; and
    - younger workers find DBs attractive – 43 percent of employees who are less than 40 say their company's DB was an important reason for joining their current employer, versus just 17 percent of younger employees citing the company's DC as the reason for joining an employer. Sixty three percent of employees who are less than 40 cite their company's DB as a reason for staying, compared to only 26 percent of younger employees citing their company's DC as the reason for staying with an employer (Towers Watson, 2010).

- Studies show that when given a choice, public employees prefer DBs over DCs even when a hybrid is a default option; 63 percent of new members in Washington PERS actively selected an all-DB plan over the default of a hybrid (Olleman, 2007 and 2009).

- According to one study, 58 percent of company plan sponsors with 25,000 or more employees believe that their DB plans have a major impact on employee retention (Majority of US Companies, 2004).

- DB pensions serve as a powerful recruitment and retention tool. The retention effect of pensions is important. Employees with DB pensions report higher levels of commitment, and this result is strongest for younger workers (Almeida, 2010 and Almeida and Bovie, 2009).

- Freezing a DB plan and replacing it with a hybrid or pure DC can hamper worker recruitment and retention, resulting in higher employee turnover, labor shortages, increased training costs, and lower productivity levels (Bovie & Almeida, 2008).

Plan Management

- A hybrid introduces complexity into the management of plans such as additional record keeping for individual accounts which would need to be updated daily and accessible to the participant.

- To manage the DC account element of a hybrid, employees would need to receive more education, financial planning assistance and counseling regarding investment selection and how to manage large account balances as an active worker and in retirement. For example, Florida created a DC plan for its public employees; the 2001-2004 budgets to administer this plan was $89 million with $55 million dedicated to educating its 650,000 employees about the new plan (Gabriel Roeder Smith & Company, 2005).

- According to Census data, administrative expenses for DB plans (including cost of administration and investment management) is 0.34 percent of assets whereas the cost of administering DC plans is 1.1 percent of assets (Munnell, 2008).

- According to the Investment Management Institute, the operating expense ratio for DB plans averages 31 basis points (31 cents per $100 of assets) compared with 96 to 175 basis points for DC plans (Collins, 2003).

Miscellaneous

- Hybrids do not generate as much added economic value as pure DBs. The economic value added by the extra investment income generated by DB plans nationwide over what would otherwise have been earned in DC plans is estimated to be about $200 billion annually, or 2 percent of GDP. DBs act as financial engines, using employer and employee contributions to generate investment income that, when paid as retirement benefits, bolsters state and local economies (Anderson and Brainard, 2004). In Minnesota, the multiplier effect of the three statewide public funds has been estimated to have a positive impact on the state's economy of $3.3 billion annually, leading to the creation of 22,500 additional jobs statewide. State and local taxes paid on pension benefits and by the holders of the additional jobs exceeded public employer pension contributions to the system by $80 million annually (Lubov, 2008).

Hybrid Plan Examples

Example 1: State of Georgia

http://www.ers.ga.gov

Beginning in 2009, the State of Georgia began offering a hybrid retirement plan that includes a DB pension component and a 401(k) DC component. All employees hired on or after January 1, 2009 must participate in this plan. Members hired prior to that day may opt into this plan at any time. The normal retirement age in Georgia is age 60 with 10 years of service or any age with 30 years of service.

DB Component: The DB multiplier is 1.0 percent for each year of service multiplied by the highest 24 months of salary (high-two). There is a ten year vesting requirement for the DB plan and the employees contribute 1.25 percent of salary towards this benefit; the employer contributes the remaining amount required. For an employee with 20 years of service and salary of $40,000, the DB calculation:

1.0 X 20= 20% of $40,000= $8,000 per year or $666.66 per month

DC Component: Employees are automatically enrolled in the DC plan with a default contribution rate of 10 percent of pay. The employer matches the first one percent and 50 percent of employee contributions of the next four percent contributed. DC plan participants may opt out of this plan at any time. Payout options for the DC component include lump sum, partial lump sum, payments for a period certain, payments based on life expectancy or purchase of an annuity.

Example 2: State of Ohio

https://www.strsoh.org

The State Teachers Retirement System of Ohio began offering the "Combined Plan" to teachers in 2001. New hires and non-vested employees since 2001 may choose the combined plan or a DC only plan. Ohio plans are not coordinated with Social Security.

DB Component: The DB multiplier for the Ohio plan is 1.0 percent for each year of service multiplied by the highest three years of salary (high-three). The employer funds the entire DB benefit and contributes 14 percent of salary to this portion of the benefit.

DC Component: The employee contributes 10 percent to the DC portion. Employees are eligible for a normal retirement at age 60 with five years of service. The withdrawal options for the DC portion include a partial lump sum, lump sum, rollover and annuity.

Example 3: State of Utah

http://www.urs.org

New employees hired after July 1, 2011 in the State of Utah may choose between a hybrid plan and DC plan. This new hybrid plan was enacted in law during 2010. All but six percent of members in plan are coordinated with Social Security.

The multiplier for the DB portion of the benefit is 1.5% for most employees and 2.0% for public safety employees. The employer contribution is 10% for most employees and 12% for public safety employees; this is the maximum amount the employer will contribute to the retirement plan. This contribution first goes to fund the annual required contributions (ARC) to pre-fund the retirement benefit. If the employer cost to fund the DB is less than 10%, then the residual (the difference between the ARC amount and the maximum contribution amount) is contributed to the DC portion of the benefit. Currently it is estimated that the employer needs to contribute 7.62% to the DB, leaving 2.38% residual for DC accounts.

If the ARC exceeds the maximum employer contribution amount, the employee must fund the remaining ARC for the DB benefit. The employee may choose to contribute to the DC portion of the benefit.

The employee is vested after four years and normal retirement age is age 65 with four years, age 60 with 20 years, age 62 with ten years or any age with 35 years of service. Public safety employees normal retirement age is any age with 25 years of service.

Sources: Center for State and Local Government Excellence "What are Hybrid Retirement Plans: A Quick-Reference Guide"; and Nationals State Retirement Administrators www.nasra.org/resources/hybrid%20grid.pdf

Mercer Analysis

ACTUARIAL ANALYSIS AND IMPLICATIONS

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March 31, 2011

Subject: Defined Benefit/Defined Contribution Analysis

Dear Mary, Laurie, and Dave:

As you requested, we have prepared a comparison of estimates of projected contributions for the current plan ("ongoing DB plan") and an alternative structure that closes the ongoing DB plan to new hires as of July 1, 2010 and replaces it with a defined contribution plan for employees hired after June 30, 2010 (DB/DC plan"). The comparison includes estimated contribution amounts through one year beyond the statutory amortization date.

As you requested, we compared contributions using two different actual investment return scenarios – 8.5% baseline and 7.0% alternate. The 7.0% alternate results are discussed and summarized in Exhibits 2a and 2b. This letter otherwise focuses only the 8.5% baseline results.

For the defined contribution portion of the DB/DC plan, you directed us to assume that members and employers hired after June 30, 2010 would each contribute 5% of pay per year. We have not analyzed how comparable the benefits under this DC plan formula would be to those under the ongoing plan.

These results are based on the July 1, 2010 Alternative Assumptions valuation results (required by action of the Legislative Commission on Pensions and Retirement (LCPR)) described in the 2010 valuation report. July 1, 2010 is the most recent date for which an

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annual valuation has been completed. In that report, the assumptions that differ from those used to determine 2010 baseline valuation results are payroll growth and salary scale assumptions, as described in the report.

Summary of Key Findings

When a DB plan closes to new members, there is no change in the cost of benefits being earned by the current members remaining in the plan, or in the existing unfunded liability. But the amortization payments required to pay off the unfunded actuarial liability do change significantly, and become materially more expensive in the short-term.

In an ongoing DB plan, the unfunded liability can be paid off over the long-term. In a closed plan, the unfunded liability would logically be addressed over a shorter timeframe, while active member contributions are being received. Paying off unfunded liabilities over a shorter timeframe can result in greatly accelerated contribution requirements.

A summary of the increase in contributions required by adopting the DB/DC plan is shown in Exhibit 1 based on an investment return assumption of 8.5%. In particular, the analysis shows:

- The DB/DC plan clearly has higher annual contributions in the short-term, as payments for the unfunded liabilities are accelerated.

Change in Total Required Contribution ($ millions)

Years	PERA	TRA	MSRS	Total
1-5	$573	$653	$276	$1,502
6-10	$529	$433	$298	$1,260
11-15	$302	($57)	$238	$483
16-20	$58	($610)	$161	($391)

- Part of the increase in short-term contributions is recouped in the form of lower contributions in later years. Contributions are lower in the later years because the accelerated contributions have the opportunity to generate more investment earnings.

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- This is especially evident for PERA and TRA, which have "break-even" points after year 19 for PERA and year 12 for TRA when the DB/DC plan becomes less expensive than the ongoing DB Plan. However, once the unfunded liability is fully amortized, there is no longer a savings. MSRS does not have a break-even point under the 8.5% scenario.
- On Exhibit 1, the contributions in the final years displayed represent the ultimate annual cost after the unfunded liabilities are eliminated. **The ongoing DB plan cost (i.e. normal cost) is less than the cost of the DB/DC plan (assuming a 10% DC Plan with 5% contributed by employees and 5% contributed by employers).**

Discount Rate Changes - Closed Plan

Closing a defined benefit plan to new entrants changes the expected cash flow of the plan, which in turn may affect investment policy and asset allocation. These results assume no change in the asset allocation or the valuation interest rate of 8.5%. However, the financial impact of these changes would be significant. If the valuation interest rate for the closed DB Plan were changed from 8.5% to 6.0% (for example) to reflect a more conservative asset allocation, the actuarial accrued liabilities would increase by approximately 30% to 40% and the unfunded actuarial accrued liabilities as of July 1, 2010 would more than double, causing a very dramatic increase in the funding requirements of the closed DB Plan.

Postretirement Benefit Increases

As you know, if a plan reaches a funding ratio of 90% (on a market value of assets basis), postretirement increases will revert from the current rate to 2.5%. As you requested for the 2010 valuation calculations, these results assume future postretirement benefit increases are at the current rate for each future year in all scenarios, even after 90% funding is attained. However, contributing the actuarially required amount (as opposed to the statutory amount) results in both the ongoing DB plan and the DB/DC plan reaching 100% funding by the end of the amortization period; therefore, at some point the 2.5% rate would be triggered.

As of July 1, 2010, valuation liabilities with a 2.5% postretirement increase (as opposed to a 1% or 2% postretirement increase) are approximately 13% larger for PERA, 7% larger for TRA, and 4% higher for MSRS. Because our model assumes postretirement increases will not change to 2.5% in the future, the costs that we show in the exhibits are understated for both the ongoing DB Plan and the closed DB Plan. We have not attempted to quantify the

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increased costs, since doing so would add significant complexity, and because the projected attainment of 90% funding is more than 15 years away for each plan in the study.

Assumptions

For purpose of this analysis, for both the ongoing DB Plan and the closed DB Plan, we assumed that the entire required contribution would be contributed. Any contribution deficiency that remains after accounting for the statutory contributions is assumed to be contributed to the DB Plan. Potential costs associated with financing these additional contributions other than through tax revenue have not been included in our analysis.

If employee contribution rates are increased, it will result in higher employee contribution account balances and higher refund payments. We've ignored the additional cost to the DB Plan that might be incurred by having employees contribute more to a DB Plan.

Assumptions for the Ongoing DB Plan

- The valuation interest rate used to discount liabilities is 8.5% compounded annually.
- Actual investment return of 8.5% annually
- Total payroll grows at a rate of 3.75% per year, consistent with the Alternative Assumptions adopted by the LCPR
- Entry age of new entrants remains the same as for the current active participant group; thus, normal cost as a percent of payroll does not change
- Consistent with current statutes, unfunded liabilities in the ongoing DB Plan are amortized as a level percent of payroll over a period ending on the statutory amortization date. Surplus liabilities are amortized over a rolling 30 year period. After the statutory amortization date, the amortization period is reset to 30 years.
- Except as noted with regard to investment returns for the 7.0% scenario, no actuarial gains or losses
- Market value of assets with no smoothing of investment gains or losses is used to determine required contributions and funded status
- Administrative expenses remain level as a percent of payroll
- Other than as described herein, benefit provisions will remain unchanged

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- Future statutory employee and employer contributions will not be adjusted using the contribution stabilizer provisions defined in statutes.
- All other assumptions and methods are as described in the 2010 actuarial valuation report

Assumptions for the DB/DC Plan

In the DB/DC Plan scenario, we made the following modifications to the assumptions and methods described above:

- The DB plan is closed to all new hires effective July 1, 2010
- Future payroll is projected for active members as of July 1, 2010 according to the 2010 valuation "Alternative Assumptions"
- Normal cost is projected for active members as of July 1, 2010 according to the 2010 valuation "Alternative Assumptions"
- Unfunded liabilities are amortized as a level dollar amount over a period ending on the statutory amortization date. After the statutory amortization date, the amortization period is reset to 30 years. The Governmental Accounting Standards Board (GASB) Statement No. 25 does not permit the current level percent of payroll amortization method, which assumes a constantly increasing payroll, to be used for a closed plan. Paragraph 36.f.3. of GASB Statement No. 25 states that the amortization period may be determined using a level dollar or level percentage projected payroll, and "if the level percentage of projected payroll method is used....projected decreases in that number should be included if no new members are permitted to enter the plan (for example, a plan that covers only employees hired before a certain date.)" Level dollar amortization is permitted by GASB for a closed plan and is much more commonly used than a method that assumes decreasing payroll.
- Administrative expenses for the DB plan are a constant dollar amount equal to the assumed expenses used to determine the required contribution as of July 1, 2010

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Important Notices

The information in this letter is provided solely to show the potential affect of legislation that would close the DB plan to new entrants and cover new employees in a DC plan with 5% employee and employer contribution rates. This report may not be used for any other purpose; Mercer is not responsible for the consequences of any unauthorized use or for reliance upon this report by any other party.

Decisions about benefit changes, granting new benefits, investment policy, funding policy, benefit security and/or benefit-related issues should not be made on the basis of this report, but only after careful consideration of alternative economic, financial, demographic and societal factors, including financial scenarios that assume future sustained investment losses.

The Fund is solely responsible for selecting the plan's investment policies, asset allocations and individual investments. Mercer's actuaries have not provided any investment advice to the Fund.

Our projections were based on the Plan's estimated financial condition at a particular point in time and project the effect of client-specified sets of assumptions as to future events. They do not predict the Plan's future financial condition or its ability to pay benefits in the future and do not provide any guarantee of future financial soundness of the Plan. Over time, a plan's total cost will depend on a number of factors, including the amount of benefits the plan pays, the number of people paid benefits, the period of time over which benefits are paid, plan expenses and the amount earned on any assets invested to pay benefits. These amounts and other variables are uncertain and unknowable as of the dates the projections were completed.

Because modeling all aspects of a situation is not possible or practical, we may use summary information, estimates, or simplifications of calculations to facilitate the modeling of future events in an efficient and cost-effective manner. We may also exclude factors or data that are immaterial in our judgment. Use of such simplifying techniques does not, in our judgment, affect the reasonableness of these projections.

To prepare these results, actuarial assumptions, as described in our actuarial reports or within this report, are used in a forward looking financial and demographic model to select a single scenario from a wide range of possibilities; the results based on that single scenario

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are included in the report. The future is uncertain and the plan's actual experience will differ from those assumptions; these differences may be significant or material because these results are very sensitive to the assumptions made and, in some cases, to the interaction between the assumptions.

Different assumptions or scenarios within the range of possibilities may also be reasonable and results based on those assumptions would be different. As a result of the uncertainty inherent in a forward looking projection over a very long period of time, no one projection is uniquely "correct" and many alternative projections of the future could also be regarded as reasonable. Two different actuaries could, quite reasonably, arrive at different results based on the same data and different views of the future. A "sensitivity analysis" shows the degree to which results would be different if you substitute alternative assumptions within the range of possibilities for those utilized in this report. The only such analyses we were engaged to perform are the differences in projection scenarios and as such are described in the attached exhibits.

Data, computer coding and mathematical errors are possible in the preparation of a projection involving complex computer programming and thousands of calculations and data inputs. Errors in a projection discovered after its preparation may be corrected by amendment to the projection.

Certain actuarial assumptions, including discount rates, mortality tables and others identified in the valuation report, are prescribed by Minnesota Statutes Section 356.215, the requirements of the Standards of Actuarial Work established by the LCPR, and the Trustees as of the valuation date. The Fund is responsible for selecting the plan's funding policy, actuarial valuation methods, asset valuation methods, and assumptions. The policies, methods and assumptions used in this valuation are those that have been so prescribed and are described in our valuation report. The Fund is solely responsible for communicating to Mercer any changes required thereto.

To prepare this report Mercer has used and relied on financial data and participant data supplied by the Fund and summarized in the 2010 valuation report. The Fund is responsible for ensuring that such participant data provides an accurate description of all persons who are participants under the terms of the plan or otherwise entitled to benefits as of the valuation date that is sufficiently comprehensive and accurate for the purposes of this report. Although Mercer has reviewed the data in accordance with Actuarial Standards of Practice No. 23, Mercer has not verified or audited any of the data or information provided.

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Mercer has also used and relied on the plan documents, including amendments, and interpretations of plan provisions, supplied by the Fund as summarized in the valuation report dated December 2010. The Fund is solely responsible for the validity, accuracy and comprehensiveness of this information. If any data or plan provisions supplied are not accurate and complete, the valuation results may differ significantly from the results that would be obtained with accurate and complete information; this may require a later revision of this report. Moreover, plan documents may be susceptible to different interpretations, each of which could be reasonable, and that the different interpretations could lead to different valuation results.

Professional qualifications

We are available to answer any questions on the material in this report or to provide explanations or further details as appropriate. The undersigned credentialed actuaries meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinion contained in this report. In addition, Mr. Dickson meets the requirements of "approved actuary" under Minnesota Statutes, Section 356.215, Subdivision 1, Paragraph (c). We are not aware of any direct or material indirect financial interest or relationship, including investments or other services that could create a conflict of interest, that would impair the objectivity of our work.

The information contained in this document (including any attachments) is not intended by Mercer to be used, and it cannot be used, for the purpose of avoiding penalties under the Internal Revenue Code that may be imposed on the taxpayer.

Sincerely,

Bonita J. Wurst

Gary D. Dickson

Bonita J. Wurst, ASA

Gary D. Dickson, FSA

Enclosure

Copy:
Jim Verlautz, Becky Wegleitner, Sheri Wroblewski – Mercer

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PERA - General Employees Retirement Plan

Exhibit 1

DB/DC Study - Market Value Basis, 8.5% annual investment return

		Current Estimated DB Contribution			Total Estimated DB & DC Contribution								
Years Out	Years Ending 6/30	DB Payroll ($ millions)	Total Required Contribution (% of DB Pay)	Total Required Contribution ($ millions)	DB Payroll ($ millions)	Total DB Required Contribution (% of DB Pay)	Total DB Required Contribution ($ millions)	DC Payroll ($ millions)	Total DC Required Contribution (% of DC Pay)	Total DC Required Contribution ($ millions)	Total DB & DC Required Contribution ($ millions)	Change in Total Required Contribution ($ millions)	Change in Total Required Contribution (% of Total Payroll)
1	2011	5,173	15.43%	798	5,173	15.43%	798	0	n/a	0	798	0	0.00%
2	2012	5,367	15.39%	826	4,988	18.93%	944	378	10%	38	982	156	2.90%
3	2013	5,568	15.39%	857	4,844	19.24%	932	724	10%	72	1,004	147	2.65%
4	2014	5,777	15.37%	888	4,694	19.58%	919	1,082	10%	108	1,027	139	2.41%
5	2015	5,993	15.35%	920	4,535	19.96%	905	1,458	10%	146	1,051	131	2.19%
6	2016	6,218	15.33%	953	4,367	20.40%	891	1,852	10%	185	1,076	123	1.97%
7	2017	6,451	15.32%	988	4,193	20.89%	876	2,258	10%	226	1,102	114	1.77%
8	2018	6,693	15.28%	1,023	4,015	21.44%	861	2,678	10%	268	1,129	106	1.58%
9	2019	6,944	15.26%	1,060	3,834	22.07%	846	3,110	10%	311	1,157	97	1.39%
10	2020	7,205	15.24%	1,098	3,652	22.75%	831	3,553	10%	355	1,187	89	1.23%
11	2021	7,475	15.22%	1,138	3,470	23.52%	816	4,005	10%	400	1,217	79	1.06%
12	2022	7,755	15.19%	1,178	3,291	24.37%	802	4,464	10%	446	1,248	70	0.91%
13	2023	8,046	15.16%	1,220	3,116	25.29%	788	4,930	10%	493	1,281	61	0.76%
14	2024	8,348	15.13%	1,263	2,944	26.26%	773	5,404	10%	540	1,314	51	0.61%
15	2025	8,661	15.09%	1,307	2,777	27.37%	760	5,884	10%	588	1,348	41	0.48%
16	2026	8,985	15.05%	1,352	2,616	28.52%	746	6,369	10%	637	1,383	31	0.34%
17	2027	9,322	15.00%	1,398	2,461	29.78%	733	6,861	10%	686	1,419	21	0.22%
18	2028	9,672	14.94%	1,445	2,313	31.13%	720	7,359	10%	736	1,456	11	0.11%
19	2029	10,035	14.86%	1,491	2,169	32.55%	706	7,865	10%	787	1,492	1	0.01%
20	2030	10,411	14.74%	1,535	2,031	34.02%	691	8,380	10%	838	1,529	-6	-0.05%
21	2031	10,801	14.52%	1,568	1,897	35.42%	672	8,904	10%	890	1,562	-6	-0.06%
22	2032	11,206	6.83%	765	1,767	5.94%	105	9,440	10%	944	1,049	284	2.53%
1-5	011-201	27,878	15.38%	4,289	24,234	18.56%	4,498	3,642	10%	364	4,862	573	2.06%
6-10	016-202	33,511	15.28%	5,122	20,061	21.46%	4,305	13,451	10%	1,345	5,651	529	1.58%
11-15	021-202	40,285	15.16%	6,106	15,598	25.25%	3,939	24,687	10%	2,467	6,408	302	0.75%
16-20	026-203	48,425	14.91%	7,221	11,590	31.03%	3,596	36,834	10%	3,684	7,279	58	0.12%

Assumptions:

* 8.50% discount rate
* 1.00% COLA
* 3.75% payroll growth
* 5.00% employee and employer DC contribution
* 8.50% rate of return
* 2031 amortization date
* Assumes no contribution stabilizer increases
* Assumes level dollar amortization for closed group starting July 1, 2011
* Any contribution deficiency that remains after accounting for the statutory contributions is assumed to be contributed

Notes

* Totals do not reflect the time value of money
* Not all numbers may add due to rounding

State Employees Retirement Fund

Exhibit 1

DB/DC Study - Market Value Basis, 8.5% annual investment return

		Current Estimated DB Contribution			Total Estimated DB & DC Contribution								
Years Out	Year Ending 6/30	DB Payroll ($ millions)	Total Required Contribution (% of DB Pay)	Total Required Contribution ($ millions)	DB Payroll ($ millions)	Total DB Required Contribution (% of DB Pay)	Total DB Required Contribution ($ millions)	DC Payroll ($ millions)	Total DC Required Contribution (% of DC Pay)	Total DC Required Contribution ($ millions)	Total DB & DC Required Contribution ($ millions)	Change in Total Required Contribution ($ millions)	Change in Total Required Contribution (% of Total Payroll)
1	2011	2,476	13.57%	336	2,476	13.57%	336	0	n/a	0	336	0	0.00%
2	2012	2,568	13.55%	348	2,365	16.87%	399	203	10%	20	420	72	2.79%
3	2013	2,665	13.55%	361	2,272	17.25%	392	392	10%	39	431	70	2.64%
4	2014	2,765	13.53%	374	2,186	17.57%	384	579	10%	58	442	68	2.47%
5	2015	2,868	13.49%	387	2,096	17.94%	376	772	10%	77	453	66	2.31%
6	2016	2,976	13.47%	401	2,004	18.36%	368	972	10%	97	465	64	2.16%
7	2017	3,088	13.47%	416	1,912	18.83%	360	1,176	10%	118	478	62	2.01%
8	2018	3,203	13.46%	431	1,818	19.36%	352	1,385	10%	139	490	60	1.87%
9	2019	3,323	13.42%	446	1,725	19.94%	344	1,599	10%	160	504	57	1.72%
10	2020	3,448	13.40%	462	1,632	20.59%	336	1,816	10%	182	517	55	1.60%
11	2021	3,577	13.39%	479	1,541	21.28%	328	2,037	10%	204	532	53	1.47%
12	2022	3,712	13.36%	496	1,451	22.05%	320	2,260	10%	226	546	50	1.36%
13	2023	3,851	13.35%	514	1,365	22.93%	313	2,485	10%	249	561	48	1.24%
14	2024	3,995	13.32%	532	1,283	23.85%	306	2,712	10%	271	577	45	1.13%
15	2025	4,145	13.29%	551	1,205	24.81%	299	2,940	10%	294	593	42	1.01%
16	2026	4,300	13.28%	571	1,130	25.93%	293	3,170	10%	317	610	39	0.90%
17	2027	4,462	13.25%	591	1,059	27.10%	287	3,402	10%	340	627	36	0.80%
18	2028	4,629	13.22%	612	992	28.33%	281	3,637	10%	364	644	32	0.70%
19	2029	4,803	13.20%	634	928	29.63%	275	3,874	10%	387	663	29	0.60%
20	2030	4,983	13.16%	656	867	31.14%	270	4,115	10%	412	681	25	0.51%
21	2031	5,169	13.14%	679	809	32.76%	265	4,361	10%	436	701	22	0.43%
22	2032	5,363	13.11%	703	752	34.57%	260	4,611	10%	461	721	18	0.34%
23	2033	5,564	13.07%	727	698	36.53%	255	4,867	10%	487	742	15	0.27%
24	2034	5,773	13.03%	752	645	38.76%	250	5,128	10%	513	763	11	0.20%
25	2035	5,990	12.97%	777	594	41.41%	246	5,395	10%	540	785	8	0.14%
26	2036	6,214	12.91%	802	545	44.22%	241	5,669	10%	567	808	6	0.09%
27	2037	6,447	12.84%	828	497	47.48%	236	5,950	10%	595	831	3	0.05%
28	2038	6,689	12.75%	853	452	51.11%	231	6,237	10%	624	855	2	0.03%
29	2039	6,940	12.62%	876	409	55.01%	225	6,531	10%	653	878	2	0.03%
30	2040	7,200	12.35%	889	368	58.70%	216	6,832	10%	683	899	10	0.14%
31	2041	7,470	7.43%	555	327	6.73%	22	7,143	10%	714	736	181	2.43%
1-5	2011-2015	13,342	13.54%	1,806	11,395	16.56%	1,887	1,946	10%	194	2,082	276	2.07%
6-10	2016-2020	16,038	13.44%	2,156	9,091	19.36%	1,760	6,948	10%	696	2,454	298	1.86%
11-15	2021-2025	19,280	13.34%	2,572	6,845	22.88%	1,566	12,434	10%	1,244	2,809	238	1.23%
16-20	2026-2030	23,177	13.22%	3,064	4,976	28.26%	1,406	18,198	10%	1,820	3,225	161	0.69%
21-25	2031-2035	27,859	13.06%	3,638	3,498	36.48%	1,276	24,362	10%	2,437	3,712	74	0.27%
26-30	2036-2040	33,490	12.68%	4,248	2,271	50.59%	1,149	31,219	10%	3,122	4,271	23	0.07%

Assumptions:

* 8.50% discount rate
* 2.00% COLA
* 3.75% payroll growth
* 5.00% employee and employer DC contribution
* 8.50% rate of return
* 2040 amortization date
* Assumes no contribution stabilizer increases
* Assumes level dollar amortization for closed group starting July 1, 2011
* Any contribution deficiency that remains after accounting for the statutory contributions is assumed to be contributed

Notes

* Totals do not reflect the time value of money
* Not all numbers may add due to rounding

Teachers Retirement Association Fund

DB/DC Study - Market Value Basis, 8.5% annual investment return

Exhibit 1

		Current Estimated DB Contribution			Total Estimated DB & DC Contribution								
Years Out	Years Ending 6/30	DB Payroll ($ millions)	Total Required Contribution (% of DB Pay)	Total Required Contribution ($ millions)	DB Payroll ($ millions)	Total DB Required Contribution (% of DB Pay)	Total DB Required Contribution ($ millions)	DC Payroll ($ millions)	Total DC Required Contribution (% of DC Pay)	Total DC Required Contribution ($ millions)	Total DB & DC Required Contribution ($ millions)	Change in Total Required Contribution ($ millions)	Change in Total Required Contribution (% of Total Payroll)
1	2011	4,048	19.42%	786	4,048	19.42%	786	0	n/a	0	786	0	0.00%
2	2012	4,200	19.40%	815	3,945	24.74%	976	255	10%	25	1,001	186	4.43%
3	2013	4,357	19.39%	845	3,870	24.99%	967	487	10%	49	1,016	171	3.93%
4	2014	4,521	19.38%	876	3,800	25.26%	960	721	10%	72	1,032	156	3.45%
5	2015	4,690	19.36%	908	3,733	25.50%	952	957	10%	96	1,047	140	2.98%
6	2016	4,866	19.32%	940	3,669	25.73%	944	1,198	10%	120	1,063	123	2.53%
7	2017	5,049	19.29%	974	3,604	25.97%	936	1,444	10%	144	1,080	106	2.09%
8	2018	5,238	19.28%	1,010	3,543	26.19%	928	1,695	10%	169	1,097	87	1.66%
9	2019	5,434	19.27%	1,047	3,477	26.43%	919	1,957	10%	196	1,115	68	1.26%
10	2020	5,638	19.24%	1,085	3,405	26.75%	911	2,233	10%	223	1,134	49	0.88%
11	2021	5,850	19.21%	1,124	3,331	27.08%	902	2,519	10%	252	1,154	30	0.51%
12	2022	6,069	19.20%	1,165	3,257	27.42%	893	2,812	10%	281	1,174	10	0.16%
13	2023	6,297	19.15%	1,206	3,183	27.77%	884	3,113	10%	311	1,196	-11	-0.17%
14	2024	6,533	19.13%	1,250	3,114	28.13%	876	3,418	10%	342	1,218	-32	-0.49%
15	2025	6,778	19.11%	1,295	3,048	28.48%	868	3,730	10%	373	1,241	-54	-0.79%
16	2026	7,032	19.07%	1,341	2,977	28.85%	859	4,055	10%	405	1,265	-76	-1.09%
17	2027	7,296	19.04%	1,389	2,899	29.32%	850	4,397	10%	440	1,290	-99	-1.36%
18	2028	7,569	19.00%	1,438	2,812	29.91%	841	4,757	10%	476	1,316	-122	-1.61%
19	2029	7,853	18.96%	1,489	2,718	30.57%	831	5,135	10%	514	1,344	-145	-1.85%
20	2030	8,148	18.92%	1,542	2,614	31.37%	820	5,533	10%	553	1,373	-168	-2.06%
21	2031	8,453	18.87%	1,595	2,502	32.33%	809	5,951	10%	595	1,404	-191	-2.26%
22	2032	8,770	18.81%	1,650	2,381	33.47%	797	6,389	10%	639	1,436	-214	-2.44%
23	2033	9,099	18.76%	1,707	2,253	34.80%	784	6,846	10%	685	1,469	-238	-2.62%
24	2034	9,440	18.67%	1,762	2,119	36.39%	771	7,322	10%	732	1,503	-260	-2.75%
25	2035	9,794	18.57%	1,819	1,980	38.18%	756	7,814	10%	781	1,537	-281	-2.87%
26	2036	10,161	18.42%	1,872	1,839	40.24%	740	8,322	10%	832	1,572	-300	-2.95%
27	2037	10,543	18.12%	1,910	1,695	42.36%	718	8,848	10%	885	1,603	-307	-2.91%
28	2038	10,938	8.37%	916	1,549	7.36%	114	9,389	10%	939	1,053	138	1.26%
1-5	2011-2015	21,816	19.39%	4,230	19,396	23.93%	4,641	2,420	10%	242	4,882	653	2.99%
6-10	2016-2020	26,225	19.28%	5,056	17,698	26.21%	4,638	8,527	10%	852	5,489	433	1.65%
11-15	2021-2025	31,527	19.16%	6,040	15,933	27.76%	4,423	15,592	10%	1,559	5,983	-57	-0.18%
16-20	2026-2030	37,898	19.00%	7,199	14,020	29.96%	4,201	23,877	10%	2,388	6,588	-610	-1.61%
21-25	2031-2035	45,556	18.73%	8,533	11,235	34.86%	3,917	34,322	10%	3,432	7,349	-1,184	-2.60%

Assumptions:

* 8.50% discount rate
* 2.00% COLA for years after 2012
* 3.75% payroll growth
* 5.00% employee and employer DC contribution
* 8.50% rate of return
* 2037 amortization date
* Assumes no contribution stabilizer increases
* Assumes level dollar amortization for closed group starting July 1, 2011
* Any contribution deficiency that remains after accounting for the statutory contributions is assumed to be contributed

Notes

* Totals do not reflect the time value of money
* Not all numbers may add due to rounding

Exhibit 2a

Summary of Key Findings – 7.0% Investment Return Assumption

A summary of the increase in contributions required by adopting the DB/DC plan is shown in Exhibit 2b based on the following assumptions:

- The valuation interest rate used to discount liabilities is 8.5% compounded annually
- Actual investment return of 7.0% annually

Under the 7.0% alternative, because the liabilities are based on assumed investment return of 8.5%, investment losses occur each year. The losses result in greater contribution requirements in order to pay off the unfunded liability by the statutory amortization date. After the statutory amortization date, if the plan continued to earn 7.0% and the valuation discount rate remain unchanged at 8.5%, losses would continue to occur.

In particular, the analysis shows:

- The DB/DC plan clearly has higher annual contributions in the short-term, as payments for the unfunded liabilities are accelerated.

Change in Total Required Contribution ($ millions)

Years	PERA	TRA	MSRS	Total
1-5	$612	$706	$305	$1,623
6-10	$628	$588	$384	$1,600
11-15	$319	$94	$323	$736
16-20	($535)	($689)	$115	($1,109)

- Part of the increase in short-term contributions is recouped in the form of lower contributions in later years. Contributions are lower in the later years because the accelerated contributions have the opportunity to generate more investment earnings. This is evident for all of the plans, which have "break-even" points after year 15 for PERA, year 13 for TRA and year 19 for MSRS when the DB/DC plan becomes less expensive than the ongoing DB Plan.
- Once the existing unfunded liability and asset losses realized prior to the statutory amortization date are fully amortized, the DB Plan becomes less expensive than the DB/DC Plan (see the final year of contributions shown on Exhibit 2b). However, continued asset losses after that date may again make the ongoing DB plan more expensive than the DB/DC Plan.

A

PERA - General Employees Retirement Plan

Exhibit 2b

DB/DC Study - Market Value Basis, 7.0% annual investment return

		Current Estimated DB Contribution			Total Estimated DB & DC Contribution								
Years Out	Years Ending 6/30	DB Payroll ($ millions)	Total Required Contribution (% of DB Pay)	Total Required Contribution ($ millions)	DB Payroll ($ millions)	Total DB Required Contribution (% of DB Pay)	Total DB Required Contribution ($ millions)	DC Payroll ($ millions)	Total DC Required Contribution (% of DC Pay)	Total DC Required Contribution ($ millions)	Total DB & DC Required Contribution ($ millions)	Change in Total Required Contribution ($ millions)	Change in Total Required Contribution (% of Total Payroll)
1	2011	5,173	15.43%	798	5,173	15.43%	798	0	n/a	0	798	0	0.00%
2	2012	5,367	15.63%	839	4,988	19.27%	961	378	10%	38	999	160	2.98%
3	2013	5,568	15.88%	884	4,844	19.96%	967	724	10%	72	1,040	156	2.79%
4	2014	5,777	16.13%	932	4,694	20.75%	974	1,082	10%	108	1,082	151	2.61%
5	2015	5,993	16.39%	982	4,535	21.65%	982	1,458	10%	146	1,128	145	2.43%
6	2016	6,218	16.66%	1,036	4,367	22.69%	991	1,852	10%	185	1,176	140	2.25%
7	2017	6,451	16.94%	1,093	4,193	23.87%	1,001	2,258	10%	226	1,227	134	2.07%
8	2018	6,693	17.26%	1,155	4,015	25.23%	1,013	2,678	10%	268	1,281	127	1.89%
9	2019	6,944	17.58%	1,221	3,834	26.81%	1,028	3,110	10%	311	1,339	118	1.71%
10	2020	7,205	17.93%	1,292	3,652	28.61%	1,045	3,553	10%	355	1,401	109	1.51%
11	2021	7,475	18.31%	1,369	3,470	30.72%	1,066	4,005	10%	400	1,466	97	1.30%
12	2022	7,755	18.74%	1,453	3,291	33.12%	1,090	4,464	10%	446	1,536	84	1.08%
13	2023	8,046	19.20%	1,545	3,116	35.91%	1,119	4,930	10%	493	1,612	67	0.83%
14	2024	8,348	19.71%	1,645	2,944	39.13%	1,152	5,404	10%	540	1,693	48	0.57%
15	2025	8,661	20.31%	1,759	2,777	43.00%	1,194	5,884	10%	588	1,782	23	0.27%
16	2026	8,985	21.00%	1,887	2,616	47.55%	1,244	6,369	10%	637	1,881	-6	-0.06%
17	2027	9,322	21.84%	2,036	2,461	53.15%	1,308	6,861	10%	686	1,994	-42	-0.45%
18	2028	9,672	22.91%	2,216	2,313	60.10%	1,390	7,359	10%	736	2,126	-90	-0.93%
19	2029	10,035	24.33%	2,442	2,169	69.34%	1,504	7,865	10%	787	2,290	-152	-1.51%
20	2030	10,411	26.55%	2,764	2,031	82.77%	1,681	8,380	10%	838	2,519	-245	-2.35%
21	2031	10,801	31.06%	3,355	1,897	108.01%	2,049	8,904	10%	890	2,940	-415	-3.84%
22	2032	11,206	7.12%	798	1,767	7.92%	140	9,440	10%	944	1,084	287	2.56%
1-5	011-201	27,878	15.91%	4,435	24,234	19.32%	4,682	3,642	10%	364	5,047	612	2.20%
6-10	016-202	33,511	17.30%	5,797	20,061	25.31%	5,078	13,451	10%	1,345	6,424	628	1.87%
11-15	021-202	40,285	19.29%	7,771	15,598	36.04%	5,621	24,687	10%	2,467	8,089	319	0.79%
16-20	026-203	48,425	23.43%	11,345	11,590	61.49%	7,127	36,834	10%	3,684	10,810	-535	-1.10%

Assumptions:

* 8.50% discount rate
* 1.00% COLA
* 3.75% payroll growth
* 5.00% employee and employer DC contribution
* 7.00% rate of return
* 2031 amortization date
* Assumes no contribution stabilizer increases
* Assumes level dollar amortization for closed group starting July 1, 2011
* Any contribution deficiency that remains after accounting for the statutory contributions is assumed to be contributed

Notes

* Totals do not reflect the time value of money
* Not all numbers may add due to rounding

State Employees Retirement Fund

Exhibit 2b

DB/DC Study - Market Value Basis, 7.0% annual investment return

		Current Estimated DB Contribution			Total Estimated DB & DC Contribution								
Years Out	Year Ending 6/30	DB Payroll ($ millions)	Total Required Contribution (% of DB Pay)	Total Required Contribution ($ millions)	DB Payroll ($ millions)	Total DB Required Contribution (% of DB Pay)	Total DB Required Contribution ($ millions)	DC Payroll ($ millions)	Total DC Required Contribution (% of DC Pay)	Total DC Required Contribution ($ millions)	Total DB & DC Required Contribution ($ millions)	Change in Total Required Contribution ($ millions)	Change in Total Required Contribution (% of Total Payroll)
1	2011	2,476	13.57%	336	2,476	13.57%	336	0	n/a	0	336	0	0.00%
2	2012	2,568	13.82%	355	2,365	17.34%	410	203	10%	20	430	75	2.91%
3	2013	2,665	14.07%	375	2,272	18.18%	413	392	10%	39	452	76	2.87%
4	2014	2,765	14.36%	397	2,186	19.03%	416	579	10%	58	474	77	2.78%
5	2015	2,868	14.64%	420	2,096	20.04%	420	772	10%	77	498	77	2.70%
6	2016	2,976	14.92%	444	2,004	21.21%	425	972	10%	97	522	78	2.62%
7	2017	3,088	15.22%	470	1,912	22.49%	430	1,176	10%	118	548	78	2.53%
8	2018	3,203	15.52%	497	1,818	23.98%	436	1,385	10%	139	575	77	2.42%
9	2019	3,323	15.83%	526	1,725	25.62%	442	1,599	10%	160	602	76	2.30%
10	2020	3,448	16.13%	556	1,632	27.57%	450	1,816	10%	182	631	75	2.17%
11	2021	3,577	16.44%	588	1,541	29.72%	458	2,037	10%	204	661	73	2.03%
12	2022	3,712	16.78%	623	1,451	32.12%	466	2,260	10%	226	692	70	1.88%
13	2023	3,851	17.11%	659	1,365	34.87%	476	2,485	10%	249	725	66	1.70%
14	2024	3,995	17.47%	698	1,283	37.96%	487	2,712	10%	271	758	60	1.51%
15	2025	4,145	17.83%	739	1,205	41.41%	499	2,940	10%	294	793	54	1.30%
16	2026	4,300	18.23%	784	1,130	45.40%	513	3,170	10%	317	830	46	1.07%
17	2027	4,462	18.62%	831	1,059	49.76%	527	3,402	10%	340	867	36	0.81%
18	2028	4,629	19.05%	882	992	54.74%	543	3,637	10%	364	907	25	0.55%
19	2029	4,803	19.51%	937	928	60.45%	561	3,874	10%	387	949	12	0.24%
20	2030	4,983	20.01%	997	867	67.01%	581	4,115	10%	412	993	-4	-0.09%
21	2031	5,169	20.55%	1,062	809	74.54%	603	4,361	10%	436	1,039	-23	-0.45%
22	2032	5,363	21.16%	1,135	752	83.51%	628	4,611	10%	461	1,089	-46	-0.86%
23	2033	5,564	21.84%	1,215	698	93.84%	655	4,867	10%	487	1,142	-73	-1.31%
24	2034	5,773	22.62%	1,306	645	106.67%	688	5,128	10%	513	1,200	-106	-1.83%
25	2035	5,990	23.54%	1,410	594	122.05%	725	5,395	10%	540	1,265	-145	-2.42%
26	2036	6,214	24.65%	1,532	545	141.47%	771	5,669	10%	567	1,338	-195	-3.13%
27	2037	6,447	26.09%	1,682	497	166.80%	829	5,950	10%	595	1,424	-259	-4.01%
28	2038	6,689	28.05%	1,876	452	200.66%	907	6,237	10%	624	1,530	-345	-5.16%
29	2039	6,940	31.07%	2,156	409	250.86%	1,026	6,531	10%	653	1,679	-477	-6.87%
30	2040	7,200	37.31%	2,686	368	344.84%	1,269	6,832	10%	683	1,953	-733	-10.18%
31	2041	7,470	7.84%	586	327	13.76%	45	7,143	10%	714	759	174	2.33%
1-5	2011-2015	13,342	14.11%	1,883	11,395	17.51%	1,995	1,946	10%	194	2,190	305	2.29%
6-10	2016-2020	16,038	15.54%	2,493	9,091	24.01%	2,183	6,948	10%	696	2,878	384	2.39%
11-15	2021-2025	19,280	17.15%	3,307	6,845	34.86%	2,386	12,434	10%	1,244	3,629	323	1.68%
16-20	2026-2030	23,177	19.12%	4,431	4,976	54.76%	2,725	18,198	10%	1,820	4,546	115	0.50%
21-25	2031-2035	27,859	22.00%	6,128	3,498	94.31%	3,299	24,362	10%	2,437	5,735	-393	-1.41%
26-30	2036-2040	33,490	29.66%	9,932	2,271	211.45%	4,802	31,219	10%	3,122	7,924	-2,009	-6.00%

Assumptions:

* 8.50% discount rate
* 2.00% COLA
* 3.75% payroll growth
* 5.00% employee and employer DC contribution
* 7.00% rate of return
* 2040 amortization date
* Assumes no contribution stabilizer increases
* Assumes level dollar amortization for closed group starting July 1, 2011
* Any contribution deficiency that remains after accounting for the statutory contributions is assumed to be contributed

Notes

* Totals do not reflect the time value of money
* Not all numbers may add due to rounding

Teachers Retirement Association Fund

Exhibit 2b

DB/DC Study - Market Value Basis, 7.0% annual investment return

		Current Estimated DB Contribution			Total Estimated DB & DC Contribution								
Years Out	Years Ending 6/30	DB Payroll ($ millions)	Total Required Contribution (% of DB Pay)	Total Required Contribution ($ millions)	DB Payroll ($ millions)	Total DB Required Contribution (% of DB Pay)	Total DB Required Contribution ($ millions)	DC Payroll ($ millions)	Total DC Required Contribution (% of DC Pay)	Total DC Required Contribution ($ millions)	Total DB & DC Required Contribution ($ millions)	Change in Total Required Contribution ($ millions)	Change in Total Required Contribution (% of Total Payroll)
1	2011	4,048	19.42%	786	4,048	19.42%	786	0	n/a	0	786	0	0.00%
2	2012	4,200	19.74%	829	3,945	25.25%	996	255	10%	25	1,021	192	4.56%
3	2013	4,357	20.08%	875	3,870	26.07%	1,009	487	10%	49	1,057	182	4.18%
4	2014	4,521	20.39%	922	3,800	26.92%	1,023	721	10%	72	1,095	172	3.81%
5	2015	4,690	20.75%	973	3,733	27.78%	1,037	957	10%	96	1,133	160	3.42%
6	2016	4,866	21.06%	1,025	3,669	28.73%	1,054	1,198	10%	120	1,173	148	3.04%
7	2017	5,049	21.41%	1,081	3,604	29.72%	1,071	1,444	10%	144	1,215	134	2.65%
8	2018	5,238	21.76%	1,140	3,543	30.74%	1,089	1,695	10%	169	1,259	119	2.27%
9	2019	5,434	22.12%	1,202	3,477	31.90%	1,109	1,957	10%	196	1,304	102	1.88%
10	2020	5,638	22.47%	1,267	3,405	33.16%	1,129	2,233	10%	223	1,352	85	1.50%
11	2021	5,850	22.85%	1,337	3,331	34.52%	1,150	2,519	10%	252	1,402	65	1.11%
12	2022	6,069	23.25%	1,411	3,257	36.05%	1,174	2,812	10%	281	1,455	44	0.73%
13	2023	6,297	23.66%	1,490	3,183	37.70%	1,200	3,113	10%	311	1,511	21	0.34%
14	2024	6,533	24.09%	1,574	3,114	39.43%	1,228	3,418	10%	342	1,570	-4	-0.06%
15	2025	6,778	24.55%	1,664	3,048	41.31%	1,259	3,730	10%	373	1,632	-32	-0.47%
16	2026	7,032	25.04%	1,761	2,977	43.43%	1,293	4,055	10%	405	1,698	-63	-0.89%
17	2027	7,296	25.56%	1,865	2,899	45.88%	1,330	4,397	10%	440	1,769	-96	-1.32%
18	2028	7,569	26.15%	1,979	2,812	48.72%	1,370	4,757	10%	476	1,846	-133	-1.76%
19	2029	7,853	26.81%	2,105	2,718	52.10%	1,416	5,135	10%	514	1,929	-175	-2.23%
20	2030	8,148	27.53%	2,243	2,614	56.16%	1,468	5,533	10%	553	2,021	-222	-2.73%
21	2031	8,453	28.37%	2,398	2,502	61.03%	1,527	5,951	10%	595	2,123	-276	-3.26%
22	2032	8,770	29.36%	2,575	2,381	67.11%	1,598	6,389	10%	639	2,237	-338	-3.85%
23	2033	9,099	30.57%	2,782	2,253	74.79%	1,685	6,846	10%	685	2,370	-412	-4.53%
24	2034	9,440	32.11%	3,031	2,119	84.80%	1,797	7,322	10%	732	2,529	-502	-5.32%
25	2035	9,794	34.20%	3,350	1,980	98.48%	1,950	7,814	10%	781	2,731	-618	-6.31%
26	2036	10,161	37.43%	3,803	1,839	118.87%	2,186	8,322	10%	832	3,019	-785	-7.72%
27	2037	10,543	44.08%	4,647	1,695	157.94%	2,677	8,848	10%	885	3,561	-1,086	-10.30%
28	2038	10,938	8.81%	964	1,549	10.39%	161	9,389	10%	939	1,100	136	1.25%
1-5	2011-2015	21,816	20.10%	4,385	19,396	25.01%	4,851	2,420	10%	242	5,092	706	3.24%
6-10	2016-2020	26,225	21.79%	5,715	17,698	30.81%	5,452	8,527	10%	852	6,303	588	2.24%
11-15	2021-2025	31,527	23.71%	7,476	15,933	37.73%	6,011	15,592	10%	1,559	7,570	94	0.30%
16-20	2026-2030	37,898	26.26%	9,953	14,020	49.05%	6,877	23,877	10%	2,388	9,263	-689	-1.82%
21-25	2031-2035	45,556	31.03%	14,136	11,235	76.16%	8,557	34,322	10%	3,432	11,990	-2,146	-4.71%

Assumptions:

* 8.50% discount rate
* 2.00% COLA for years after 2012
* 3.75% payroll growth
* 5.00% employee and employer DC contribution
* 7.00% rate of return
* 2037 amortization date
* Assumes no contribution stabilizer increases
* Assumes level dollar amortization for closed group starting July 1, 2011
* Any contribution deficiency that remains after accounting for the statutory contributions is assumed to be contributed

Notes

* Totals do not reflect the time value of money
* Not all numbers may add due to rounding

Public Safety Plans

UNIQUE CONSIDERATIONS

The defined benefit plan structure is key to providing benefit coverage to those individuals employed in the positions responsible for ensuring the protection and safety of the general public. Not only the defined benefit retirement annuities, but the disability and survivor coverage offered through the statewide public safety plans is critical to attracting and retaining individuals who put their lives on the line to defend the safety of others.

The Legislature and the federal government have recognized the need to acknowledge the sacrifices that families of public safety officers make through additional benefits to augment those of the defined benefit pension, especially for officers who are injured, or even more importantly, killed in the line of duty. The reasons why defined benefit plans are more fitting for public safety professions – professions that do not have comparable positions in the private sector – will be highlighted in this section.

Social Security Coverage

Unlike the general employee plans administered by the Minnesota statewide retirement systems, law enforcement officers (local police, state patrol, conservation officers, etc.) and salaried fire fighters are not allowed to participate in and contribute to the Social Security Old Age, Disability and Survivor portion of the program offered by the federal government. Specifically, statutes governing social security coverage for governmental employees in Minnesota, Section 355.07, the declaration of policy, in paragraph (d) states:

> *"Nothing in any provision of this chapter authorizes the extension of the insurance system established by this chapter, to service in any police officer's or firefighter's position or in any position covered by a retirement system applicable exclusively to positions in one or more law enforcement or firefighting units, agencies or departments."*

Beginning April 1, 1986, newly hired law enforcement officers and fire fighters were required to contribute to and be covered by the Medicare portion of the federal program.

These professions impose intense physical and psychological demands on the individuals who choose these career paths. The later retirement age currently in law for receipt of unreduced retirement benefits from Social Security -- capping at age 67, with some discussion of raising it higher – do not align with the need for many in the public safety professions to leave these professions before even age 62, the earliest age for receipt of benefits from Social Security. The policy decision to not extend Social Security disability, survivor and retirement benefits to our public safety professions made sense in the 1950s when the state policy declaration was initially enacted, and continues to make sense in today's environment for public safety positions.

Disability Benefit Protection

A key design feature of the benefits provided to members of our public safety plans is the disability benefit protection afforded those who are unable to continue to perform the duties associated with their professions. Different benefit levels are available dependent on whether the disabling event is incurred while performing the work of the position, or otherwise. One of the policy reasons for providing some disability benefit coverage for injuries or illnesses that are a result of non-hazardous work activities is to ensure that individuals who are not in the best physical or psychological condition to ensure the safety of the general public are not on the streets or responding to emergency calls when they cannot truly provide the needed protection and services demanded of these professions.

Since there is no Social Security disability benefit available, the provision of disability benefit coverage is key to those in a profession where fulfilling many of their main job duties means putting themselves in hazardous situations with the potential of becoming physically disabled through injury, possibly contracting a life-altering disease, or encountering difficult and traumatizing events that deteriorate the mental capacity to continue to deal with these types of events.

Disability insurance could be an additional benefit provided by the DC plan; however, it is unlikely that individuals could qualify for a disability insurance benefit, given the dangerous nature of their job responsibilities.

Survivor Coverage

Surviving spouse and dependent children benefits are provided through the retirement system's benefit structure. As with the disability benefit coverage, these protections are not available through Social Security since there is no participation in that program. As mentioned earlier, the State and the federal government have taken additional measures to provide for the families of officers killed in the line of duty, further recognition of the need to ensure the families of individuals in these professions are taken care of and recognized for the sacrifices they make by supporting their public safety officer family member.

Survivor coverage could be available through individual insurance policies, but the cost associated with the individual insurance protection will far exceed the cost of providing this protection through the pooled defined benefit plan, spreading the risk across a large group of participants. Insurance carriers structure their benefit plan fees to provide a profit margin, something not needed in the administration of the programs administered by the statewide retirement systems.

Recruitment and Retention

The DB plan design is key to the recruitment and retention of public safety officers. Unlike a DC plan, the DB provides:

- sufficient retirement income (in lieu of Social Security benefits).
- adequate disability benefits in the event the officer is injured and unable to continue to work.
- adequate survivor protection in the event the officer is killed while protecting the safety of others.

In 2005, the State of Alaska closed its DB plan for all state employees hired after June 30, 2006. The Municipality of Anchorage is now considering re-opening its closed DB public safety plan to enhance recruitment opportunities for public safety employees.

Portability

One of the primary reasons that many believe DC plans are more suitable to today's workers is that individuals more readily move from job to job. That is not the case in the public safety professions. Public safety personnel are typically "career" employees. In a public, multi-employer cost-sharing plan like that administered by Minnesota's statewide retirement systems, individuals who have chosen fire fighting or law enforcement as their profession can move from one local government employer to another and continue to earn the same pooled, cost-sharing DB plan for their employment with all employers for whom they provide their public safety service. Law enforcement personnel who move from local government to a state law enforcement position or vice versa, earn benefit credit in each of the plans recognized by state law to provide for the payment of benefits from each plan that when added together would be comparable to the benefit earned if all service had been credited to one plan.

Transitioning to Retirement

Defined benefit plans for public safety personnel are designed to ensure that benefits are adequate for early transition out of the work force. Public safety officers have physical fitness requirements necessary to perform jobs that may be difficult to maintain as individuals age. These early retirement provisions are modified from time-to-time to ensure they can remain affordable and align with the needs of the employer to either transition some out of the workforce or to encourage longer service by skilled officers who are needed to meet the needs of mentoring the less experienced public safety personnel who are just beginning their careers.

Investment and Longevity Risk

The pooling of investment and longevity risk impacts the retirement savings needs of public safety personnel even more than general employees given their earlier retirement (or disability) needs. With a shorter working period in which to save, public safety personnel would need significantly greater contribution levels to a DC plan or would need to take significant risks with the asset allocation in hopes of producing an account balance sufficient to replace the same level of benefit provided in our DB plans.

Individuals in law enforcement and emergency response positions face an increased longevity and Inflation risk, especially in light of the fact that they are not covered by social security. The risk is more extreme for earlier departures from the workforce by individuals in these physically and psychologically demanding professions. A DB plan can more cost effectively provide inflation and longevity protection by pooling the risks. The DB structure can fund for the average, knowing that some participants will not live as long as projected while others will live longer. The assumptions to forecast fund requirements are typically reviewed every four to five years and modest changes are made when necessary. Doing so within a consistent time-line can ensure the administrators are adequately forecasting the expected financing of the plan.

Conclusion

The academic and research information regarding DB and DC plans have been presented in this section in the overall comparison of the various features of the two distinctly different retirement plan arrangements. The use of the DB plan for public safety officers calls attention to the features of DB plans that are difficult to adequately replace with the defined contribution arrangement in light of the special protections that can be more cost effectively provided through a DB.

Minnesota Public Pensions in Perspective

DISCIPLINED FUNDING AND PROACTIVE LIABILTY MANAGEMENT

Much attention has been drawn recently to challenges other states have experienced with their public pension plans. Minnesota state legislators and governors have historically worked together on a bipartisan basis to maintain the financial soundness of Minnesota's public pension plans. Unlike some other states, Minnesota has been disciplined in properly funding and managing its liabilities for the three statewide plans. Minnesota has been proactive to correct problems and prevent adverse long-term financial impacts.

Funding ratios reasonably healthy before recent market downturn

Until the recent market downturn, Minnesota's three statewide plans had a pattern of healthy funding ratios. In 2007, MSRS was nearly 100 percent funded and TRA was over 90 percent funded. While having a somewhat lower funding ratio of 77 percent, PERA was on track to achieve full funding by June 30, 2031. At the end of the 1990s, MSRS achieved a funding ratio of 110 percent; TRA achieved a ratio of 105 percent and PERA, a ratio of 90 percent.

Prompt, pro-active action taken in 2010 and in previous decades

The market downturn in 2008-2009 caused the retirement systems' funding ratios to sharply decline. At the end of FY 2009, when measured on a market value basis, MSRS had dropped to a 66 percent funding ratio, PERA stood at a 54 percent ratio and TRA at a 60 percent ratio. This precipitous deterioration in the systems' financial status was caused by the market situation, not lack of funding discipline. In reaction to the deterioration in financial status, in late 2009, the retirement system boards recommended a pension reform package which was enacted into law in 2010 with strong bipartisan support. The elements of the package are described below.

	MSRS	PERA	TRA
Post-Retirement Adjustments	Lower COLA to 2% until 90% funded	Lower COLA to 1% until 90% funded	Two-year suspension, then lower COLA to 2% until 90% funded
Vesting	Increase from 3 to 5 years (Correctional Plan: graded vesting schedule starting at 5 years through 10 years)	Increase from 3 to 5 years (Police & Fire: increase from 5 to 10 years)	Remain at 3 years
Deferred Interest-Inactive Members	2% for all plans	1% for all plans for current inactive; no interest for future terminating members	2% for all plans
Contribution Rate Changes	None (Exception: State Patrol - 2% increase for employee and 3% increase for employer)	.25% increase for both employee and employer (Exception: Police & Fire - 0.2% increase for employee and 0.3% increase for employer)	2% increase for both employee and employer, phased in 2011-2014
Refund Interest	Lower from 6% to 4%	Lower from 6% to 4%	Lower from 6% to 4%

As a result of enactment of this reform package, all three systems regained firmer financial footing. In particular, benefit liabilities for the three systems were reduced as follows:

Fund	Plan	Cost reduction
MSRS	General	$ 0.650 billion
	Correctional	$ 0.045 billion
	State Patrol	$ 0.062 billion
PERA	General	$ 2.800 billion
	Police & Fire	$ 0.625 billion
	Correctional	$ 0.015 billion
TRA	---	$ 1.750 billion
	TOTAL	**$ 5.947 billion**

Source: MSRS, PERA, TRA annual FY10 actuarial valuations, Mercer Consulting

As a result of the 2010 reform package and the strong 15.2 percent investment return experienced in FY 2010, the systems' funded ratios improved markedly and their unfunded liabilities declined substantially. The remarkable progress made in just one year is highlighted below. Since the end of FY 2010 (June 30, 2010), funding ratios have improved even further as investment returns between June 30 and December 31, 2010 were up an additional 16 percent. If this level of investment returns continues through the remainder of the fiscal year, it is expected that the funding ratio for MSRS will increase to the mid-80s and the funding ratios for PERA and TRA will increase to the mid-70s.

	MSRS		PERA		TRA	
	2009	**2010**	**2009**	**2010**	**2009**	**2010**
Funding Ratio Assets as % of benefit liabilities	65.6%	75.0 %	53.8%	66.0 %	59.8%	67.5%
Unfunded Liabilities Shortfall between assets and liabilities	$3.6 billion	$2.6 billion	$8.7 billion	$5.8 billion	$9.3 billion	$7.1 billion
Assets	$6.9 billion	$7.7 billion	$10.1 billion	$11.3 billion	$13.8 billion	$14.9 billion

Source: MSRS, PERA, TRA annual FY09 and FY10 actuarial valuations, Mercer Consulting

Two significant benefit reforms made in past years

Relative to other states, Minnesota's three statewide systems have been conservative about the pensions offered and taken steps to ensure the plans remain viable.

- While many states are now just increasing the retirement age for employees to receive full, unreduced benefits, Minnesota was the first in the nation to take that progressive action over 20 years ago. In 1989, legislation was enacted to increase the retirement age and eliminate early retirement subsidies. The retirement age for Minnesota's plans is age 66 and the Rule of 90 was eliminated for new hires as of July 1, 1989. Today, approximately 70-80 percent of the systems' active employees are under these more restrictive rules.

- The Post Retirement Investment Fund, which was a flawed statutory mechanism that adjusted retirees' benefits after retirement, was capped at 5 percent by 2006 legislation, subsequently reformed in 2008 legislation and eliminated in 2009. This mechanism was replaced by a fixed 2.5 percent rate increase for retirees and subsequently reduced in 2010 to lower levels until healthier funding ratios are achieved (2 percent for MSRS/TRA; 1 percent for PERA).

Minnesota public employees share in the cost of pensions

Unlike some states where public employees make no or low contributions to their pension plans, Minnesota has always required substantial employee contributions to the systems. Current employee and employer rates as of January 2011 are nearly equal for all three plans as shown below:

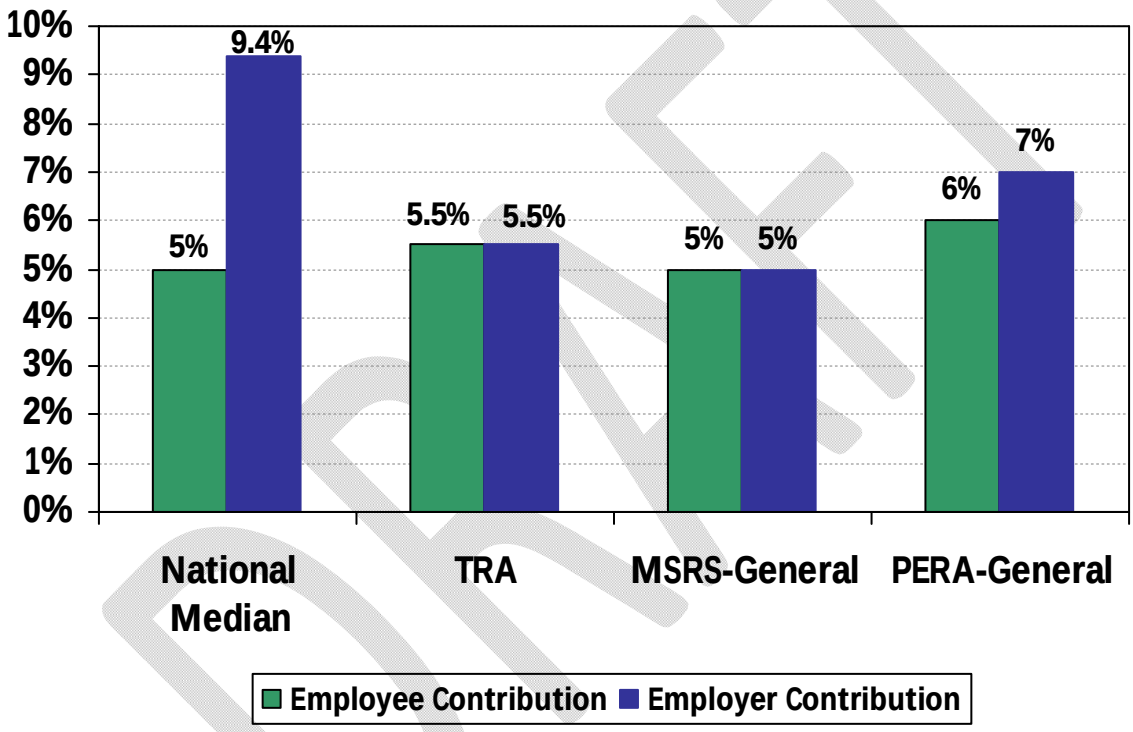
	Employee Rate	Employer Rate
MSRS General	5.0%	5.0%
PERA General	6.25%	7.25%
TRA	5.5%	5.5%

The contribution rates for Minnesota's public safety plans are higher than other Minnesota public plans. They tend to have a 60 percent employer and 40 percent employee contribution rate structure in recognition of the higher costs of those plans due to the early retirements generally required for public safety officers.

Minnesota contribution rates compare favorably

Compared to other states, Minnesota's employee contribution rates tend to be equal to or slightly higher than contribution rates in other states. In contrast, Minnesota's employer rates are lower. The chart below compares the contribution rates of Minnesota's statewide public funds with the national median contribution rates. For systems like Minnesota which are covered by Social Security, the median employee contribution rate in FY 2009 was 5 percent. The median employer contribution rate in FY 2009 was 9.4 percent. Employer contribution rates for all three Minnesota systems are far lower than the median employer rate for other public systems.

CONTRIBUTION RATE COMPARISONS, MN SYSTEMS VS NATIONAL, FY 2009



Source: Public Fund Survey Summary of Findings for FY 2009

The U.S. Census Bureau data also shows evidence of lower employer contributions. Public employer contributions in Minnesota represent 1.6 percent of total state and local government spending, compared to an average of 2.9 percent of state and local government spending in other states (U.S. Bureau of Census data, 2005-2009).

Comparison of contribution rates of Minnesota's pension funds with private sector pension, 401(k) and profit sharing plans

Deloitte Consulting and the International Foundation on Employee Benefit Plans annually publish a 401(k) Benchmarking Survey which describes private sector pension contributions. According to this survey, the median private sector employee contribution rate to 401(k) plans in 2009 by non-highly compensated employees was 5.65%; the median rate for highly compensated employees was 7%. With respect to employer contributions, the Benchmarking Survey showed that 59% of private sector employers paid matching contributions, 5% paid profit sharing contributions, and 27% paid both employer matching and profit sharing contributions. The survey shows that the most common private sector employer 401(k) matching contribution is 50% of employee contributions up to 6% of pay and the average employer contribution to profit sharing plans is 4.7% of compensation. (Deloitte, International Foundation of Employee Benefit Plans. 2009. 401(k) Benchmarking Survey)

According to a paper published by the Center for Retirement Research (CRR), the average employer contribution rate for private sector defined benefit plans in 2006 was 8% and the employee contribution rate was 0%, as private sector defined benefit plans are typically totally employer funded. Similar to the Benchmarking Survey cited above, the CRR study found that the average employer contribution rate in private sector defined contribution plans was 3% and the average employee contribution rate was 6%. (Munnell and Soto, November 2007)

Minnesota public pension levels modest

Average pension benefit levels for Minnesota employees are relatively modest. The table below describes average salary levels and average benefit levels for the three systems. The distribution of benefits is also shown.

	MSRS	PERA	TRA
Average Salary	$48,000	$34,000	$49,000
Average Monthly Pension	$1,600	$1,300	$2,300
Pensions <$1000/month	42%	57%	24%
Pensions <$2000/month	73%	77%	47%
Pensions <$3000/month	87%	86%	73%

Source: MSRS, PERA, TRA annual FY10 actuarial valuations, Mercer Consulting

Minnesota public pensions impact the State's economy

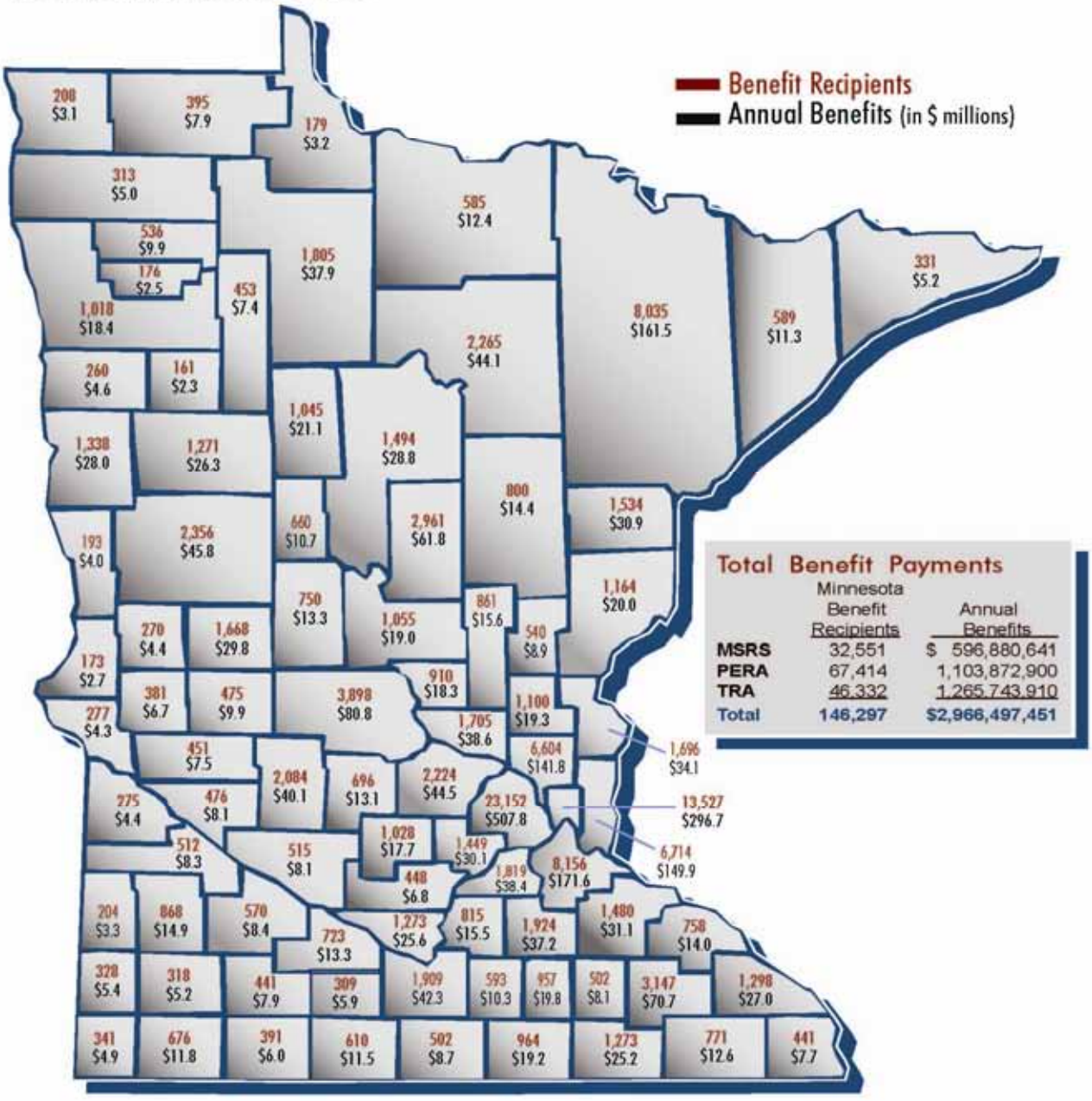
Minnesota's public pension systems serve one-half million persons, nearly 1 in 10 Minnesotans. Approximately 90 percent of public retirees stay in Minnesota, purchase goods and services in the state and pay state taxes. According to an economic impact study, Minnesota public pensions had a $3.3 billion impact on the state's economy in 2006 (Lubov, 2008). The gross state product (GSP) represented by pension outlays was larger than the GSP for Minnesota's mining sector and equivalent to 92 percent of the GSP for crop and animal production.

The economic impact study also estimated that public retiree spending stimulated the creation of 22,500 additional jobs in Minnesota in 2006. The study estimated that public retiree spending, combined with these additional jobs, generated $80 million more in state taxes than what was paid by public employers into the three statewide systems.

Data as of fiscal year ending June 30, 2010

BENEFIT RECIPIENTS OF THREE RETIREMENT FUNDS

Annual Benefits by County for the Teachers Retirement Association, Minnesota State Retirement System, and Public Employees Retirement Association



Benefit Recipients of Three Retirement Funds

Annual Benefits by County for the Teachers Retirement Association, Minnesota State Retirement System, and Public Employees Retirement Association

County	Annuitants	Annual Benefit
Aitkin	800	$14,370,166.21
Anoka	6,604	$141,825,121.17
Becker	1,271	$26,296,861.67
Beltrami	1,805	$37,892,998.14
Benton	910	$18,305,014.56
Big Stone	277	$4,317,470.35
Blue Earth	1,909	$42,261,769.37
Brown	723	$13,271,862.16
Carlton	1,534	$30,906,577.24
Carver	1,449	$30,124,205.49
Cass	1,494	$28,755,588.80
Chippewa	476	$8,100,128.42
Chisago	1,696	$34,140,139.15
Clay	1,338	$27,953,211.33
Clearwater	453	$7,374,125.68
Cook	331	$5,218,768.45
Cottonwood	441	$7,884,412.24
Crow Wing	2,961	$61,754,229.68
Dakota	8,156	$171,635,503.77
Dodge	502	$8,134,471.09
Douglas	1,668	$29,758,892.55
Faribault	502	$8,657,047.23
Fillmore	771	$12,618,652.58
Freeborn	964	$19,152,422.33
Goodhue	1,480	$31,102,882.35
Grant	270	$4,409,792.31
Hennepin	23,152	$507,750,153.51
Houston	441	$7,678,040.69
Hubbard	1,045	$21,129,009.91
Isanti	1,100	$19,255,328.89
Itasca	2,265	$44,120,207.49
Jackson	391	$6,011,378.35
Kanabec	540	$8,858,332.58
Kandiyohi	2,084	$40,109,394.11
Kittson	208	$3,138,993.43
Koochiching	585	$12,353,026.43
Lac Qui Parle	275	$4,361,324.99
Lake	589	$11,313,497.28
Lake of the Woods	179	$3,156,201.26
Le Sueur	815	$15,469,898.85
Lincoln	204	$3,313,942.46
Lyon	868	$14,872,975.05
Mahnomen	161	$2,273,996.36
Marshall	313	$5,038,572.70
Martin	610	$11,488,484.56
McLeod	1,028	$17,696,181.94
Meeker	696	$13,132,093.84
Mille Lacs	861	$15,589,035.27
Morrison	1,055	$18,980,694.55
Mower	1,273	$25,170,595.28
Murray	318	$5,197,555.02
Nicollet	1,273	$25,570,612.47
Nobles	676	$11,765,367.34
Norman	260	$4,550,122.90
Olmsted	3,147	$70,685,399.29
Otter Tail	2,356	$45,790,779.46
Pennington	536	$9,858,993.37
Pine	1,164	$19,983,004.88
Pipestone	328	$5,386,654.74
Polk	1,018	$18,398,870.22
Pope	475	$9,940,851.84
Ramsey	13,527	$296,673,769.19
Red Lake	176	$2,512,128.98
Redwood	570	$8,447,344.81
Renville	515	$8,145,333.89
Rice	1,924	$37,162,359.52
Rock	341	$4,921,401.60
Roseau	395	$7,899,961.60
Saint Louis	8,035	$161,541,856.70
Scott	1,819	$38,389,128.95
Sherburne	1,705	$38,599,374.86
Sibley	448	$6,762,501.60
Stearns	3,898	$80,772,542.94
Steele	957	$19,815,050.45
Stevens	381	$6,675,821.91
Swift	451	$7,524,799.97
Todd	750	$13,305,395.81
Traverse	173	$2,713,059.94
Wabasha	758	$14,039,137.18
Wadena	660	$10,726,408.60
Waseca	593	$10,308,108.37
Washington	6,714	$149,883,184.24
Watonwan	309	$5,875,859.87
Wilkin	193	$4,008,262.71
Winona	1,298	$27,026,278.65
Wright	2,224	$44,506,576.74
Yellow Medicine	512	$8,286,000.21
TOTAL	146,297	$2,966,497,450.57

Data as of fiscal year ending June 30, 2010

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