



## Retirement Systems of Minnesota

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# Retirement Plan Design Study

September 21, 2011

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## Why this study?

- 2010 legislation required state retirement plans to complete a study by June 1, 2011, analyzing plan options for Minnesota's 500,000 public employees and retirees.
- Study contrasts features of defined benefit ["DB" or pension plan], defined contribution ["DC" or 401(k)-type plans] and hybrid plans.
- Systems issued draft on April 1, 2011, and solicited feedback from all interested parties, including stakeholder groups representing active public workers, public retirees, public employers and taxpayers.
- Compares costs, portability, income adequacy, investment performance and recruitment/retention.
- Mercer, the retirement systems' actuary, analyzed costs of transitioning from current structure to a defined contribution plan.
- **Goal: Illustrate the pros and cons of each option and analyze potential costs.**



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## Why pension plans?

- Encourages/mandates savings for retirement by employees.
- Encourages savings throughout worker's career, allowing investment earnings to finance a pension that provides modest income replacement in retirement.
- Allows self-sufficiency in retirement, avoiding dependence on public assistance or nonprofit safety net programs.
- Helps to recruit and retain competent personnel.
- Helps employer with workforce management, allowing orderly replacement of retiring workers.



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## What is a 'DB' retirement plan?

- The basic funding equation for a defined benefit (DB or pension) plan is:  
**Contributions + Investment Earnings = Benefits + Expenses**
- In a DB plan, the benefit is calculated using a pre-determined formula (a percentage for each year of service multiplied by the final average salary) and is generally paid for the member's lifetime.
- A DB plan pools contributions and the funds are managed by investment professionals.
- Benefits are pre-funded during the working life of the employee so that contributions and investment earnings on those contributions fund the benefit. Investment earnings typically fund two-thirds of benefits.
- 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 amount is reduced.



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## Study highlights: DB pros + cons

Feature	Pro	Con
<b>Costs</b>	<ul style="list-style-type: none"><li>▪ DB funds same benefit amount for half (46%) the cost</li><li>▪ Terminating employees can't cash out employer contributions; those stay in plan</li><li>▪ Less costly to administer than individual DC accts</li><li>▪ In MN, employees share approx. 50% of benefit costs</li></ul>	<ul style="list-style-type: none"><li>▪ Market declines erode funded status and transfer costs to taxpayers, employees, retirees</li><li>▪ Improving life expectancies add to plan costs</li><li>▪ Long amortization periods push costs into future</li><li>▪ When plans fully funded, pressure builds to improve benefits and/or lower contributions</li></ul>
<b>Investment performance</b>	<ul style="list-style-type: none"><li>▪ Two of every three dollars to pay benefits result from investment earnings</li><li>▪ Professional management produces superior returns (1%-1.7% per year higher), lower investment fees</li><li>▪ Longer-term investment horizons allow for more diversified and higher-earning portfolios</li></ul>	<ul style="list-style-type: none"><li>▪ Some individuals can outperform large institutional investors</li><li>▪ Lower returns during down markets can cause plans to lower long-term expectations, and contributions increase</li><li>▪ DC returns can improve if participants are educated about goal-setting and investment options</li></ul>
<b>Portability/ Recruitment/ Retention</b>	<ul style="list-style-type: none"><li>▪ Surveys show DB attracts, retains workers</li><li>▪ Participants can withdraw their contributions</li><li>▪ MN plans have short vesting periods, portability options for terminating employees</li></ul>	<ul style="list-style-type: none"><li>▪ People change jobs frequently; most DBs don't allow transfer of employer contributions</li><li>▪ Vesting periods are often longer than in DC plans</li><li>▪ Some employees coming from private sector used to having control over their own investments</li></ul>
<b>Income adequacy</b>	<ul style="list-style-type: none"><li>▪ Reliable, lifetime income in the form of annuity</li><li>▪ Income more dependable as individuals not exposed to market fluctuations</li><li>▪ Reduces risk of poverty and use of public assistance</li></ul>	<ul style="list-style-type: none"><li>▪ Income inadequacies of DCs can be overcome with employee education and better savings discipline</li><li>▪ Auto-enrollment in DCs improves savings success</li><li>▪ Annuity options now exist for private sector DCs</li></ul>



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## What is a 'DC' retirement plan?

- The basic equation for a defined contribution or 401(k)-type plan is:  
**Benefit = Contributions + Investment Earnings – Expenses**
- A DC retirement plan has a pre-determined contribution amount that is invested at the direction of the member to provide retirement income.
- Benefits payable vary depending on value of individual's account at retirement.
- Employee contributes a percentage of income to an account and the employer might make an equivalent or lesser contribution.
- At retirement, individuals might have a variety of payment options, including a lump sum payout, annuity, partial lump sum, or installment payments.
- Income is not guaranteed for life unless individual purchases a lifetime annuity.
- Few state public plans have a mandatory DC (Michigan, Alaska). More states offer a voluntary DC (Colorado, Florida, Montana, Ohio, South Carolina, Utah, Washington).



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## Study highlights: DC pros + cons

Feature	Pro	Con
<b>Costs</b>	<ul style="list-style-type: none"><li>▪ Employer contributions can be reduced/eliminated in tough times</li><li>▪ Employers have no financial liability to participants after they retire</li><li>▪ No unfunded liability, no added taxpayer responsibility if market declines</li></ul>	<ul style="list-style-type: none"><li>▪ Twice the cost to fund same benefit amount as DB; no longevity, investment risk pooling</li><li>▪ Administrative/investment costs can be considerably higher than for DB; costs borne by individual</li><li>▪ Public assistance costs rise if retired elderly unable to be self-sufficient</li></ul>
<b>Investment performance</b>	<ul style="list-style-type: none"><li>▪ Individuals control asset allocation and can change it to maximize returns</li><li>▪ Target date fund structure take guesswork out of allocation, help individuals assess risk level</li><li>▪ Can provide option to invest in state's large pooled investment fund (like SBI) for portfolio diversification, lower fees, higher returns</li></ul>	<ul style="list-style-type: none"><li>▪ Investment returns lower than DB by 1% – 1.7%/year</li><li>▪ Investment options not as diverse as those available to institutional investors</li><li>▪ Those close to retirement particularly harmed by market downturns with little time to recover losses</li><li>▪ Returns lower if participants fail to monitor asset allocation as they age or overreact to market slumps</li></ul>
<b>Portability/ Recruitment/ Retention</b>	<ul style="list-style-type: none"><li>▪ DC portability features attract younger, mobile employees</li><li>▪ Shorter vesting period</li><li>▪ Can cash out/rollover contributions when terminating</li></ul>	<ul style="list-style-type: none"><li>▪ Less likely to retain experienced employees to work until retirement age</li><li>▪ Portability leads to “leakage,” meaning workers spend the account balance rather than rolling over and saving for retirement</li></ul>
<b>Income adequacy</b>	<ul style="list-style-type: none"><li>▪ If investments are successful, potential to accumulate assets and savings enough for retirement and heirs</li><li>▪ Individuals determine how best to fund lifestyle and income needs in retirement</li></ul>	<ul style="list-style-type: none"><li>▪ Median older household relying on Social Security + 401(k) has less than one-quarter of what is needed to retire, increasing risk of poverty /public assistance</li><li>▪ Insufficient disability/survivor protection for those in hazardous occupations</li></ul>



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## What is a 'hybrid' plan?

- The most common hybrid design combines features of traditional DB plan and DC plan.
- Participation in both plans is usually mandatory and contributions are usually fixed.
- Examples:
  - **Side-by-side/parallel:** Contributions go to both an employee-invested DC account and to a DB pension, which usually has a lower multiplier (generally 1 to 1.5 percent) for each year of service.
  - **Stacked:** DB benefit provided on first \$X of salary, contributions on salary over \$X go into employee-invested DC account.
- The DB portion of the benefit is annuitized for lifetime income. The individual may elect how the DC portion is distributed; options might include a lump sum, annuity payable for life, a partial lump-sum payment, or installment payments.
- States that have a mandatory hybrid DB/DC include: Georgia, Indiana, Michigan, Oregon, and Utah.





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## Study highlights: Hybrid pros + cons

Feature	Pro	Con
<b>Costs</b>	<ul style="list-style-type: none"><li>▪ Shifts portion of risks and costs of potential market declines and longevity to employee</li><li>▪ Helps control costs for employers</li><li>▪ Has potential for more stable contribution rates</li><li>▪ Reduces potential for unfunded liabilities</li></ul>	<ul style="list-style-type: none"><li>▪ Less efficient use of taxpayer dollars compared to pure DB</li><li>▪ Less cost-saving potential from longevity- and investment-risk pooling</li><li>▪ DC portion has higher investment fees than a pure DB</li></ul>
<b>Investment performance</b>	<ul style="list-style-type: none"><li>▪ DB component lets employers/employees benefit from superior investment performance, lower fees</li><li>▪ DC element can be invested in state's large pooled investment fund (SBI) for lower fees, higher returns</li><li>▪ Participants can be educated about appropriate DC asset allocation and investment behaviors</li></ul>	<ul style="list-style-type: none"><li>▪ Higher fees and lower returns relative to pure DB</li><li>▪ DC element of hybrid has shorter investment horizon, lower returns</li><li>▪ DC participants suffer lower returns if they fail to monitor allocation over time, overreact to market slumps</li></ul>
<b>Portability/ Recruitment/ Retention</b>	<ul style="list-style-type: none"><li>▪ Hybrids attractive to younger workers and those who change jobs often</li><li>▪ DC contributions can be immediately vested and rolled to another account upon termination</li></ul>	<ul style="list-style-type: none"><li>▪ DC element directs more employer resources to short-term, mobile workers</li><li>▪ Less likely to retain experienced employees to work until retirement age</li></ul>
<b>Income adequacy</b>	<ul style="list-style-type: none"><li>▪ Better retirement income protection than pure DC in adverse markets or longevity risks</li><li>▪ Assets from DC could be left to estate for heirs</li><li>▪ DB provides benefits for long-service, late-career employees; DC provides benefits for early-career, younger workers</li></ul>	<ul style="list-style-type: none"><li>▪ DC element shifts some risk to employee, reducing income adequacy during adverse markets</li><li>▪ Terminating employees likely to spend rather than save/roll over DC payout</li><li>▪ Inadequate incomes mean more retirees on taxpayer-supported public assistance</li></ul>

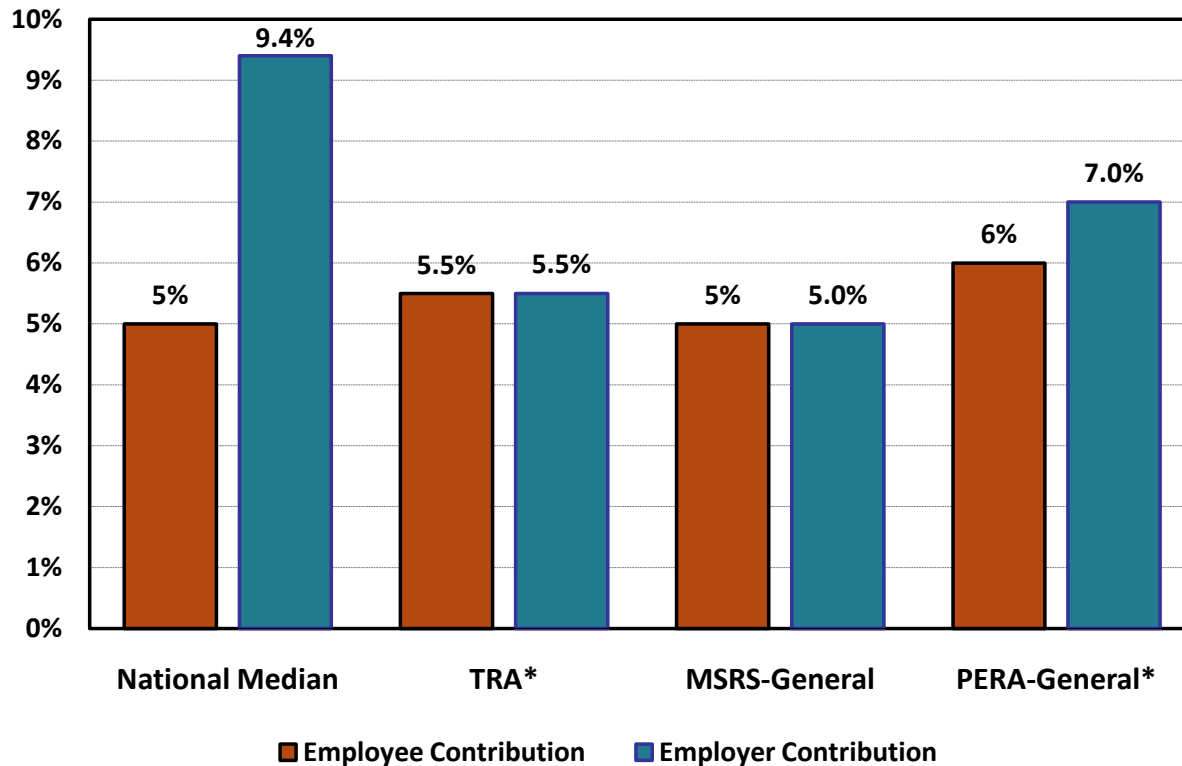


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## MN public employer costs lower

Minnesota systems vs. national, FY2009  
Source: NASRA Public Fund Survey



\* Note: FY 2009 contribution rates shown for consistency with NASRA FY 2009 data. PERA employee rate rose to 6.25% and employer rate to 7.25% in FY 2011. TRA's employee and employer rates scheduled to rise gradually to 7.5% by 2014.



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## Actuarial assumptions for study

- DB closed to new hires; new hires participate in DC plan with 5 percent employer, 5 percent employee contribution rates (rates selected as an example; comparability of benefits has not been tested).
- Baseline investment return assumption of 8.5 percent; alternate assumption of 7 percent. The valuation interest rate used to discount liabilities is 8.5 percent.
- Future post-retirement benefit increases equal current rate.
- The entire actuarial required contribution is assumed to be contributed.
- Unfunded liabilities in ongoing DB plan amortized as a level percent of payroll over the statutory period.
- Unfunded liabilities in closed DB amortized as a level dollar amount over same statutory period.
- No actuarial gains or losses.



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## Key findings: Transition costs high

- Based on assumptions outlined on previous page, the cost of closing the current DB plans and placing new hires in a DC plan would be approximately **\$2.76 billion over the next decade** for the three systems.
- 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 on an accelerated schedule.
- Scenario similar to what Legislature faced recently in funding Minneapolis Police & Fire, which was closed to new members in 1980, and the Minneapolis Employees Retirement Fund (MERF), which was closed to new members in 1978.
- Mercer's analysis regarding transition costs is consistent with studies conducted in Nevada, Kansas, Rhode Island, New Mexico and Missouri.



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## Key findings: Transition costs high

- While there are significant transition costs in the next decade, paying off the unfunded liability of the existing DB plans in a shorter time frame **would eventually lower costs for PERA and TRA**, because accelerated funding has the opportunity to generate more investment earnings.
- DB/DC becomes less expensive than the ongoing DB after year 12 for TRA and after year 19 for PERA. However, after the unfunded liability of the DB is eliminated (after year 27 for TRA, year 21 for PERA, year 30 for MSRS), cost of the ongoing DB becomes lower than cost of replacement DB/DC.

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)



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## Key findings: Lower investment returns

- When a DB plan is closed, plan assets are spent down, and likely will be invested in a lower-risk investment allocation.
- The financial impact of these investment allocation changes would be significant and are not included in the cost estimates in this study.
- 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, **actuarial accrued liabilities would increase by about 30 to 40 percent and unfunded actuarial accrued liabilities would more than double.**



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## Additional cost analysis information

- Refer to Mercer's letter dated March 31, 2011, for additional detail, assumptions, background, and important notices.
- This information is provided solely to show the potential effect of legislation that would close the DB plan to new hires and cover new employees in a DC plan with 5 percent employee and employer contribution rates. This information may not be used for any other purpose.
- To prepare these results, actuarial assumptions, as described herein and in Mercer's March 31 letter, were used to select a single scenario from a wide range of possibilities; the results based on that single scenario are included in this 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.



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## Study: Retirement crisis looms

- Although Social Security was meant to be supplemental, 23 percent of those 65 and older live in families that depend on Social Security for nearly all their income.
- WSJ study shows the median household headed by person age 60 to 62 relying only on Social Security and a 401(k) account has **less than one-quarter of what is needed to provide for themselves** in retirement.
- These households have median 401(k) balance of \$149,400 or \$9,073 annual income.
- Unless workers are disciplined, knowledgeable investors, many will be **unable to save the 80 to 90 percent pre-retirement income** financial planners recommend.
- WSJ study shows households need an annual retirement income of \$74,545 (85 percent replacement) – or a total of **\$636,673** to support themselves in retirement.
- Without adequate income, retirees **may not be able to afford basic living expenses, such as food, shelter, and health care**. Many may end up relying on public assistance at taxpayers' expense.

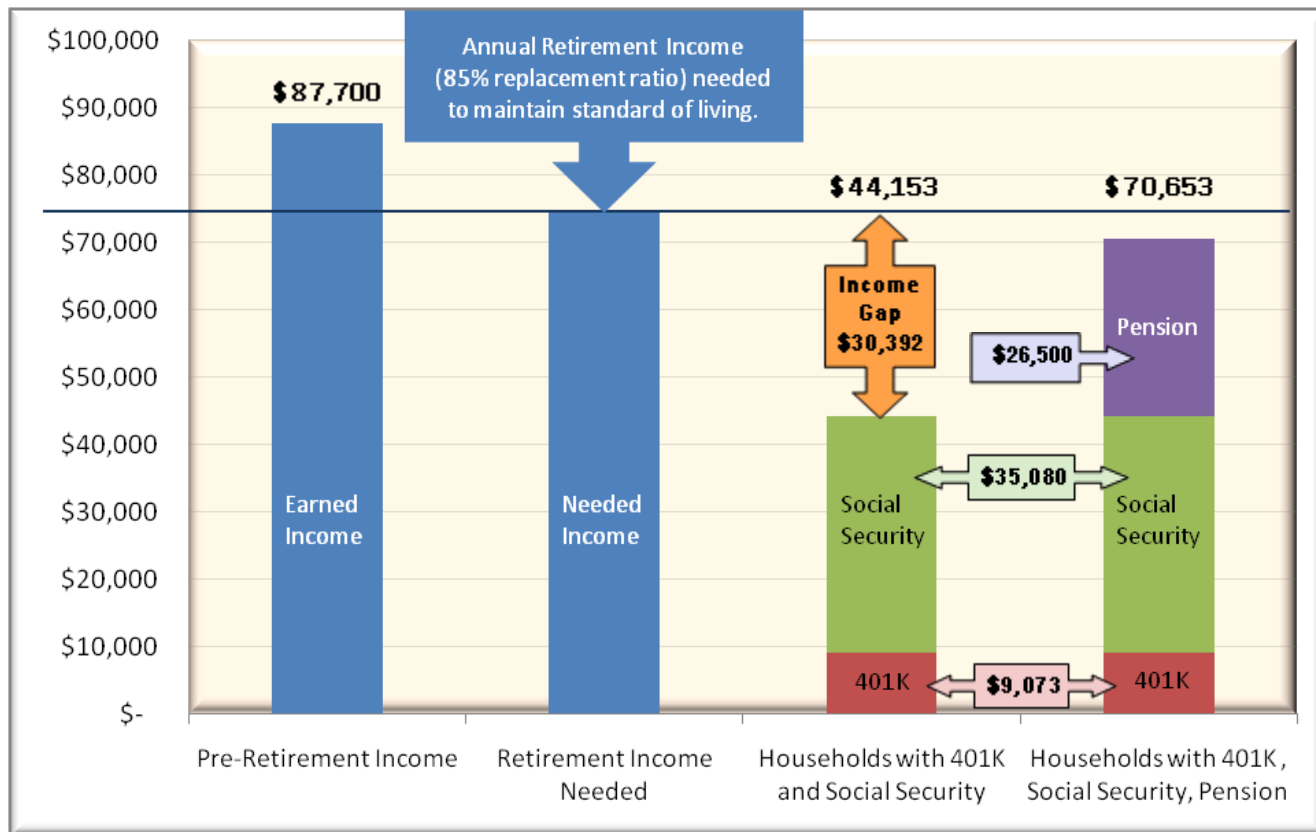




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## Retirement income gap



Source: "Retiring Boomers Find 401(k) Plans Fall Short," Wall Street Journal, 2011



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## Pension income reduces poverty

- Because of pension income, 1.4 million fewer Americans need public assistance. Without DBs, there would be a 40 percent increase in the 3.4 million older households on public assistance. Pension income saved an estimated \$7.3 billion in federal public assistance expenditures in 2006.

	Number of households (millions)	Poverty rate (below \$12,201)	Near poverty (\$12,201 to \$24,402)	Not poor (above \$24,402)
All older households	31.6	9%	25.5%	65.5%
Receiving own or spouse's pension	15.0	2.4%	16.2%	81.5%
No DB pension income	16.6	15.1%	33.9%	51%

Source: National Institute on Retirement Security, 2009; based on 2006 data



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## Pension income boosts MN economy

- Our public retirement systems serve a half-million people.
- In FY 2011, the three Minnesota retirement plans paid 153,210 benefit recipients more than \$3 billion.
- About 90 percent of retirees live and pay taxes in Minnesota. Retiree spending generates \$738.3 million in federal, state and local tax revenue here, according to National Institute on Retirement Security (NIRS) state-by-state “Pensionomics” survey.
- Public retiree spending ripples through the economy as one person’s spending becomes another person’s income. Such spending supports \$4.5 billion in total economic output in Minnesota. (NIRS)
- Expenditures stemming from state and local pensions supports 31,274 jobs in Minnesota that paid \$1.8 billion in wages and salaries. Each dollar paid out in benefits supports \$1.43 in economic activity in Minnesota. (NIRS)



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## Recommendations

- Carefully analyze **financial impacts** of transitioning to an alternative retirement plan. Modifying plans can have complex financial implications with unintended consequences.
- Consider potential negative effect of closing DB on **investment returns**. SBI strategy would need to become conservative, lowering expected future returns.
- Review and clearly understand **funding requirements** of alternative plan.
- Develop a specific, **long-term funding strategy** that identifies sources of revenue and future costs for any alternative plan.
- Analyze **benefit adequacy** and the impact changes would have on Minnesota's half-million public employees and retirees, state and local governments, and state and local economies.