

State of Alaska

Department of Administration

Division of Retirement and Benefits

Presentation to the Senate Finance Committee

- Defined Benefit Versus Defined Contribution Comparison
 - Public Employees' Retirement System (PERS)
 - Teachers' Retirement System (TRS)
- Kathy Lea, Director
- David Kershner, Gallagher
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Defined Benefit vs Defined Contribution

- **Defined Benefit (DB) plan**

- Is 'defined' in the sense that the “benefit” formula is defined
- Employer contributions (Normal Cost and Past Service payment) will fluctuate annually based on the actuarial valuation*
- Benefit calculated on set formulas such as the multiplier (percentage), salary history, and duration of employment
- Provide a guaranteed benefit for employees at retirement based on the formula. Inflation-protection is also provided via PRPAs
- Benefits can be paid as monthly payments for a lifetime

- **Defined Contribution (DC) plan**

- Is 'defined' in the sense that the “contributions” are defined
- Contributions are maintained in an individual account
- These contributions are invested on the employee's behalf
- Provide an account balance that will fluctuate due to the changes in the value of the investments; the employee will ultimately receive the balance in their account based on contributions plus or minus investment gains or losses
- Benefits can be a lump sum, rollover to another retirement plan, or conversion to annuity payments

** Actuarial valuation: A retirement plan estimates a plan's financial position at a specific point in time.*



Contribution Rates

PERS: Defined Benefit Tier 3	PERS: Defined Contribution Tier 4
○ Employee ○ 7.50% – Peace Officers/Firefighters ○ 6.75% – All Others ○ 9.60% – School District Alternate Option	○ Employee – 8.00%
○ Employer* – Normal Cost & Past Service Cost	○ Employer – 5.00%

TRS: Defined Benefit Tier 2	TRS: Defined Contribution Tier 3
○ Employee – 8.65%	○ Employee – 8.00%
○ Employer* – Normal Cost & Past Service Cost	○ Employer – 7.00%

Supplemental Annuity Plan (Supplemental Benefits System (SBS)) – not included in illustrations
○ Employee – 6.13%
○ Employer – 6.13%

* Effective July 2008, total employer contributions are 22% for PERS Non-State employers and 12.56% for TRS employers. Under SB 55 effective July 2021, PERS State-as-Employer contributes the full actuarial rate based on the payroll of its employees.



Comparison

- **What are we comparing?**
 - DB Plan provides monthly benefits based on pre-defined formulas, including Postretirement Pension Adjustments (PRPAs) based on annual changes in Anchorage Consumer Price Index (CPI); Alaska residents also receive 10% Cost Of Living Adjustments (COLA) (applied to their base benefits), but these COLAs have been excluded from the illustrations
 - DC Plan account balance will fluctuate due to changes in the value of the investments; amount of annuitized benefit also depends on the interest rate at the time of annuitization, in addition to other factors as determined by insurers
- **Is it a true or fair comparison?**
 - These comparisons are illustrated based on DC account balances assuming two alternative rates of return (5% and 7%), and assuming an average interest rate for annuity conversions; the DC account balances and annuity conversions are sensitive to these assumptions
 - These illustrations compare the DB single life annuity with a single life annuity that could be purchased with the DC account balances at retirement; DB and DC members could elect to purchase an annuity other than a single life annuity, but the amount of the annuity would be different than what is illustrated
 - The same assumptions are used for both DB and DC to assist in making comparisons; other assumptions could be used and would produce different results



Formulas and Assumptions

- **Defined Benefit Plan Formulas:**

- PERS – Peace Officers/Firefighters Tier 3
 - $[(2.00\% \times \text{service up to 10 years}) + (2.50\% \times \text{service} > 10 \text{ years})] \times 3\text{-year average salary}$
- PERS – All Others Tier 3
 - $[(2.00\% \times \text{service up to 10 years}) + (2.25\% \times \text{next 10 years of service}) + (2.50\% \times \text{service} > 20 \text{ years})] \times 5\text{-year average salary}$
- TRS Tier 2
 - $[(2.00\% \times \text{service up to 20 years}) + (2.50\% \times \text{service} > 20 \text{ years})] \times 3\text{-year average salary}$

- **Assumptions and Common Variables:**

- Hire age = 25
- Salary at hire = \$60K with 2.75% annual salary increases
- Retirement ages: 50, 55, 60 and 65 for PERS Peace Officers/Firefighters and TRS; 55, 60 and 65 for PERS All Others
- Annual inflation (CPI) for PRPAs = 2.50%
- DC account balance annual rate of returns (ROR) = 5% and 7%
- DC annuity conversion interest rate and interest rate for DB present values = 3.74% (based on 30-year average of 10-year constant maturity Treasury yields 1995-2024)
- Life expectancy based on unisex (50% male/50% female) Pub-2010 General Retiree table with MP-2021 mortality improvement scale



Observations

- The DB plans offer guaranteed lifetime income to members; post-retirement survivor benefits can be elected by the member, but the amount of the annual benefit would be less than what is shown in the exhibits
- The DB plans also provide inflation protection via the PRPAs; this can be seen by the increases in the DB benefits at 10 and 20 years after retirement; the inherent value of the PRPAs is reflected in the present value of the DB benefits
- Alaska residents also receive 10% COLAs based on their base benefits (excluding PRPAs); these were not included in the illustrations
- DC benefits at retirement largely depend on two factors:
 - DC account investment earnings based on the member's investment elections
 - If annuitized, the prevailing annuitization interest rates (and other factors as determined by insurers) can affect the amount of the annuitized benefit; for example, lower interest rates result in lower annuitized benefit amounts (and vice versa)
- PERS DC members contribute more over their careers than PERS DB members; the opposite is true for TRS



PERS – Peace Officers/Firefighters

Tier 3 (DB) vs Tier 4 (DC)

Annual Benefit at Retirement
Annual Benefit at 10 Years After Retirement
Annual Benefit at 20 Years After Retirement
Present Value of Benefit at Retirement*
Total Employee Contributions

Retire at Age 50 Service at Retirement = 25 Years Salary at Retirement = \$118,222		
DB	DC 5% ROR	DC 7% ROR
\$64,403	\$25,698	\$33,531
\$69,387	\$25,698	\$33,531
\$81,520	\$25,698	\$33,531
\$1,511,032	\$503,000	\$656,305
\$158,786	\$169,372	\$169,372

Retire at Age 55 Service at Retirement = 30 Years Salary at Retirement = \$135,396		
DB	DC 5% ROR	DC 7% ROR
\$89,794	\$40,393	\$55,978
\$97,340	\$40,393	\$55,978
\$117,210	\$40,393	\$55,978
\$1,935,661	\$733,666	\$1,016,740
\$205,626	\$219,334	\$219,334

Annual Benefit at Retirement
Annual Benefit at 10 Years After Retirement
Annual Benefit at 20 Years After Retirement
Present Value of Benefit at Retirement*
Total Employee Contributions

Retire at Age 60 Service at Retirement = 35 Years Salary at Retirement = \$155,066		
DB	DC 5% ROR	DC 7% ROR
\$121,203	\$62,934	\$92,840
\$142,396	\$62,934	\$92,840
\$171,465	\$62,934	\$92,840
\$2,468,709	\$1,041,382	\$1,536,250
\$259,270	\$276,554	\$276,554

Retire at Age 65 Service at Retirement = 40 Years Salary at Retirement = \$177,592		
DB	DC 5% ROR	DC 7% ROR
\$159,842	\$98,429	\$154,900
\$192,472	\$98,429	\$154,900
\$231,763	\$98,429	\$154,900
\$2,870,466	\$1,449,370	\$2,280,900
\$320,707	\$342,087	\$342,087

* Present Value of DB benefit includes future PRPAs. Present Value of DC benefit does not include future increases. If the DC member were to use their accumulated account balance to purchase an increasing annuity, the amount of the initial benefit would be less than what is shown in this exhibit.



PERS – All Others

Tier 3 (DB) vs Tier 4 (DC)

Annual Benefit at Retirement
Annual Benefit at 10 Years After Retirement
Annual Benefit at 20 Years After Retirement
Present Value of Benefit at Retirement*
Total Employee Contributions

Retire at Age 55 Service at Retirement = 30 Years Salary at Retirement = \$135,396		
DB	DC 5% ROR	DC 7% ROR
\$84,311	\$40,393	\$55,978
\$91,396	\$40,393	\$55,978
\$110,053	\$40,393	\$55,978
\$1,817,466	\$733,666	\$1,016,740
\$185,063	\$219,334	\$219,334

Retire at Age 60 Service at Retirement = 35 Years Salary at Retirement = \$155,066		
DB	DC 5% ROR	DC 7% ROR
\$114,440	\$62,934	\$92,840
\$134,451	\$62,934	\$92,840
\$161,898	\$62,934	\$92,840
\$2,330,972	\$1,041,382	\$1,536,250
\$233,343	\$276,554	\$276,554

Annual Benefit at Retirement
Annual Benefit at 10 Years After Retirement
Annual Benefit at 20 Years After Retirement
Present Value of Benefit at Retirement*
Total Employee Contributions

Retire at Age 65 Service at Retirement = 40 Years Salary at Retirement = \$177,592		
DB	DC 5% ROR	DC 7% ROR
\$151,545	\$98,429	\$154,900
\$182,481	\$98,429	\$154,900
\$219,732	\$98,429	\$154,900
\$2,721,459	\$1,449,370	\$2,280,900
\$288,636	\$342,087	\$342,087

* Present Value of DB benefit includes future PRPAs. Present Value of DC benefit does not include future increases. If the DC member were to use their accumulated account balance to purchase an increasing annuity, the amount of the initial benefit would be less than what is shown in this exhibit.



TRS

Tier 2 (DB) vs Tier 3 (DC)

Annual Benefit at Retirement
Annual Benefit at 10 Years After Retirement
Annual Benefit at 20 Years After Retirement
Present Value of Benefit at Retirement*
Total Employee Contributions

Retire at Age 50 Service at Retirement = 25 Years Salary at Retirement = \$118,222		
DB	DC 5% ROR	DC 7% ROR
\$58,803	\$29,652	\$38,689
\$61,036	\$29,652	\$38,689
\$71,708	\$29,652	\$38,689
\$1,340,676	\$580,385	\$757,276
\$183,134	\$169,372	\$169,372

Retire at Age 55 Service at Retirement = 30 Years Salary at Retirement = \$135,396		
DB	DC 5% ROR	DC 7% ROR
\$83,380	\$46,608	\$64,590
\$90,387	\$46,608	\$64,590
\$108,838	\$46,608	\$64,590
\$1,797,400	\$846,538	\$1,173,162
\$237,155	\$219,334	\$219,334

Annual Benefit at Retirement
Annual Benefit at 10 Years After Retirement
Annual Benefit at 20 Years After Retirement
Present Value of Benefit at Retirement*
Total Employee Contributions

Retire at Age 60 Service at Retirement = 35 Years Salary at Retirement = \$155,066		
DB	DC 5% ROR	DC 7% ROR
\$113,857	\$72,616	\$107,123
\$133,766	\$72,616	\$107,123
\$161,073	\$72,616	\$107,123
\$2,319,090	\$1,201,594	\$1,772,596
\$299,024	\$276,554	\$276,554

Retire at Age 65 Service at Retirement = 40 Years Salary at Retirement = \$177,592		
DB	DC 5% ROR	DC 7% ROR
\$151,429	\$113,572	\$178,730
\$182,342	\$113,572	\$178,730
\$219,565	\$113,572	\$178,730
\$2,719,389	\$1,672,350	\$2,631,808
\$369,882	\$342,087	\$342,087

* Present Value of DB benefit includes future PRPAs. Present Value of DC benefit does not include future increases. If the DC member were to use their accumulated account balance to purchase an increasing annuity, the amount of the initial benefit would be less than what is shown in this exhibit.



Department of Administration

Championing improvement in the State's performance and results.



For more information, please contact Forrest Wolfe at forrest.wolfe@alaska.gov