



# Cavanaugh Macdonald

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February 18, 2011

Mr. David L. Senn  
Executive Director  
Teachers' Retirement System  
State of Montana  
1500 Sixth Avenue  
Helena, MT 59620-0139

## **Defined Contribution Plan Proposals**

Dear Dave:

At your request, we are writing to describe the actuarial impact of potential legislation to place all new hires in defined contribution (DC) plan will have on the Montana Teachers' Retirement System (TRS).

### **BACKGROUND**

The current TRS plan is an Internal Revenue Code (IRC) qualified defined benefit (DB) plan. A DB plan provides a guaranteed lifetime benefit at retirement based on a formula that reflects salary history and service with a covered employer. In contrast, a DC plan does not provide for a guaranteed lifetime benefit. A DC plan is funded by employer (and possibly employee) contributions. These contributions accumulate with actual investment earnings, and the participant's annual retirement income is whatever the accumulated assets can provide over the retiree's lifetime.

In general, DB plans do a better job of providing retirement income whereas DC plans are better at creating retirement savings. Because of the 2008-2009 market downturn, the current approach in the public sector is to consider *replacing* a DB plan with a DC plan. However, there are compelling funding reasons to view them as complementary vehicles that should be offered together.

The ultimate goal of any retirement program is to provide adequate retirement benefits to career employees when they reach normal retirement age. DB plans are the superior vehicle for achieving this goal, as they provide lifetime benefits, and do so in a more cost-effective manner - for any level of employer contribution, a DB plan will provide a greater benefit to a retiree than will the same employer contribution to a DC plan. This is demonstrated on the following page.

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For all pension plans, whether defined benefit or defined contribution, the basic retirement funding equation is:

$$C + I = B + E$$

Where:

- C = employer and member contributions
- I = investment income
- B = benefits paid
- E = expenses paid from the fund, if any.

The underlying message is that dollars in have to equal dollars out. When comparing a DB plan and a DC plan with identical employer contributions (“C”), if investment income (“I”) and expenses (“E”) are the same, then the *total* benefits (“B”) paid from the plans must be equal. However, DC plans are designed to allow members terminating from service prior to retirement to withdraw their account balances which include employer contributions. By contrast when a member terminates prior to retirement under a DB plan with no right to a vested benefit, the employer contributions remain in the system.

Therefore, under a DC plan the benefit paid to a member who terminates prior to retirement is higher than under a DB plan. As a result, a DB plan retains a higher proportion of overall contributions as system assets when members terminate and withdraw prior to retirement; and a decision to move from a DB plan to a pure DC plan will provide lower benefits to employees who serve the citizens of the State for their career, and higher benefits for those employees who terminate after a short period of service in the State.

#### **CURRENT DB/DC ENVIRONMENT**

The DB/DC debate has been going on in the public sector for more than a decade. In that time, a number of states have created DC plans for some or all of their employees, including Alaska, Colorado, Florida, Michigan and South Carolina. Others, such as Georgia, Indiana, Oregon and Washington created combined DB/DC plans. Ohio established both a standalone DC plan and a DB/DC combination plan.

A few states, such as Michigan and Washington, offered a choice between the current DB plan and the new DC plan to only existing members. However, the most common approach taken by these states was to offer a choice to both existing members and new hires. Some, like Florida and Ohio, went so far as to allow members to change their elections at specified times in the future.



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The experience of the States that offered a choice between a DB plan and a DC plan indicates employees much prefer the DB plan. As well, some states with DC plans have studied the benefits being provided to their members and the employer contribution level, and have concluded that the DC plans are not meeting their retirement goals and are too costly to the employer. Nebraska switched members of the State Employees Retirement System and the County Employees Retirement System from a DC plan to a DB plan. West Virginia recently did the same for participants in the Teachers Retirement System.

### **ISSUES AFFECTING TRS**

In considering whether to establish a DC plan for Montana TRS, there are a number of issues to keep in mind. Foremost is that the current pension benefits may be contractual obligations of the State and may be protected by statute as well as the state constitution. As a result, it may not be possible to cut back or eliminate retirement benefits for existing members. Typically, as is the case with the proposed legislation, changes would only apply to new hires. The current unfunded liabilities for TRS will remain unchanged.

Since new hires will not be joining the current DB plan, the payroll base of the DB plan will begin to decline immediately, so less money will be available to pay down the unfunded liabilities (UAL). Since that base is used to fund the Systems' unfunded accrued liabilities (UAL), the financial burden as a percent of payroll will increase. This will be compounded by Governmental Accounting Standards Board requirements under Statements 25 and 27 to change the payroll growth assumption in financing the UAL to a 5% declining payroll methodology. The impact of this change is in Column A of the attached chart.

The System's stated funding policy is to amortize the unfunded liability over a 30 year period. If TRS were closed to new entrants, as a result of this legislation, we would recommend shortening the amortization period to match the future remaining working lifetime of the active members with the intent of completely amortizing the UAL by the time the last active member retires from the System. On this basis we recommend an 11 year closed amortization period. The impact of this change is in Column B of the attached chart.

The final thing to consider is that the cash flow of TRS would become progressively more and more negative throughout future years. The effect is due to a greater reduction in contributions in future years relative to the reduction in the amount of future benefit payments. Most all mature, ongoing DB plans experience negative cash flow. However, the degree of negative cash flow is usually limited due to new hires replacing those retiring and maintaining a stable flow of incoming contributions. A concern with negative cash flow is that when the degree of negative cash flow exceeds income attributable to interest and dividends earned on the invested assets, assets must be sold to satisfy the need the cash, further reducing the investment return of the System. If legislation to move all new hires to a DC plan were to pass, we recommend close monitoring of cash flow to maintain the alignment of the investment strategy with the short and



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long term needs of the System to pay benefits. To demonstrate this fact we have provided the results based on a 4.50% assumed rate of return compared to 7.75% which is currently assumed for the ongoing plan. The impact of this change is in Column C in the attached chart.

Finally, the administrative burden will increase substantially if a DC plan is created. Staffing will have to increase significantly to handle the additional duties of managing the DC plan along with the existing DB plan. DB and DC plans are fundamentally different, so the skill sets that are needed to administer the plan are not the same. In addition, there will be greater communication needs, not only for educational purposes, but also for participant access to the DC plan's account information.

### **COST IMPACT ON TRS**

The employee population covered by a DC plan will be very slow in developing. As a result, even without the added cost factors noted below, it will take many years before the State may begin to realize any cost savings anticipated by creating a DC plan.

In fact, initially employer costs will increase. As noted in a recent National Conference on Public Employee Retirement Systems (NCPERS) white paper:

“A DC plan must be designed, vendors must be selected, and its operation must be monitored. In addition, employees must be informed about plan features and available investments. Staff time is spent throughout the process, and the sponsoring government must pay additional legal and consulting fees. If a third-party administrator is not hired to administer the plan, the government must do this as well. Even if a third-party administrator is hired, the government will still have operating costs related to the DC plan, possibly ranging in the millions of dollars. For example, the budget for the State of Florida's DC plan, established in 2000, totaled \$89 million from FY 2001 through FY 2004. This includes \$55 million to educate Florida's 650,000 government employees about the new plan.”

In the short term, closing the DB plan to new entrants will require a change in the method used to finance the UAL. Since the UAL does not change when the DB plan is closed, and does not decrease significantly even if existing members are given the option of moving to the DC plan, changing the method will increase the contribution required, at least in the near term. The table provided in Attachment A provides an estimate of the impact on the TRS based on the discussion above. The figures are based on the July 1, 2010 valuation. In the long term, following conversion to a DC plan for new hires, DB plan costs are expected to rise due to the shift in the investment strategy of the remaining asset pool in which benefits will be paid to DB plan participants.



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On an ongoing basis, there are additional costs that must be paid for either by the employer or the employee. Administrative expenses are greater for the reasons noted above. Investment expenses are much greater in a DC plan. This is due to the higher cost structure of mutual funds, the typical DC investment vehicle, compared to investment management firms used by DB plans. The NCPERS white paper mentioned earlier noted “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.”

### **CONCLUSION**

DC plans are not a panacea. They do provide features not usually found in DB plans, such as portability, investment choice, personal responsibility and lump sum payouts. However, DC plans do not offer the many advantages of a DB plan such as pre-retirement death and disability benefits, post-retirement inflation protection, lower expense ratios and higher average investment returns.

Establishing a DC plan in the State will increase total TRS employer costs in the future, until the employee population is predominantly covered by the DC plan. In order to possibly create these future cost savings, the State will have to lower retirement benefits for the teachers in the DC plan. This in turn will lead to degradation in retirement security for teachers and will negatively affect the overall the State economy.

### **Certification**

This is to certify that the independent consulting actuary is a member of the American Academy of Actuaries and has experience in performing valuations for public retirement systems, that the valuation was prepared in accordance with principles of practice prescribed by the Actuarial Standards Board, and that the actuarial calculations were performed by qualified actuaries in accordance with accepted actuarial procedures, based on the current provisions of the retirement system and on actuarial assumptions that are internally consistent and reasonably based on the actual experience of the System.

Sincerely yours,

A handwritten signature in blue ink, appearing to read 'Edward Macdonald'.

Edward A. Macdonald ASA, FCA, MAAA  
President

A handwritten signature in blue ink, appearing to read 'Todd B. Green'.

Todd B. Green ASA, FCA, MAAA  
Principal and Consulting Actuary

Attachment A  
All Dollar Values are in Millions



	(A)	(B)	(C)	
	July 1, 2010 Valuation	Decreasing Payroll Amortization	Decreasing Payroll Amortization Over the Future Working Lifetime	Long Term Impact Reflecting 4.50% Assumed Rate of Return
Present Value of Future Benefits	\$ 5,115.9	\$ 5,115.9	\$ 5,115.9	\$ 8,440.5
Present Value of Future Normal Cost	(597.7)	(597.7)	(597.7)	(1,783.1)
Actuarial Accrued Liability	\$ 4,518.2	\$ 4,518.2	\$ 4,518.2	\$ 6,657.4
Actuarial Value of Assets	2,956.6	2,956.6	2,956.6	2,956.6
Unfunded Actuarial Accrued Liability (UAAL)	\$ 1,561.6	\$ 1,561.6	\$ 1,561.6	\$ 3,700.8
Total Normal Cost Rate	9.74%	9.74%	9.74%	22.04%
Employee Contribution Rate	7.15%	7.15%	7.15%	7.15%
Employer Normal Rate	2.59%	2.59%	2.59%	14.89%
Employer Statutory Contribution Rate				
Normal Rate	2.59%			
UAAL Amortization Rate	7.37%			
Total Rate	9.96%			
Amortization Period (Years)	49.5			
Actuarially Determined Contribution Rate				
Normal Rate	2.59%	2.59%	2.59%	14.89%
UAAL Amortization Rate	9.57%	23.77%	31.21%	47.91%
Total Rate	12.16%	26.36%	33.80%	62.80%
Amortization Period (Years)	30	30	11	11
Annual Payroll Growth/(Decrease) Assumption	4.5%	(5.0%)	(5.0%)	(5.0%)