A Legislator's Guide to Montana's Public Employee Retirement Systems

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STATE ADMINISTRATION AND VETERANS' AFFAIRS INTERIM COMMITTEE 2015-2016

Under section 5-5-228, Montana Code Annotated, the State Administration and Veterans' Affairs Interim Committee provides legislative oversight of Montana's Public Employee Retirement System. This guide is published pursuant to their duties.

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TABLE OF CONTENTS

INTRODUCTION

Why read this?

Legislators must navigate state laws governing 11 different public employee retirement systems (or plans). Nearly every public employer and public employee participates in one of these systems. Benefit levels and employer and employee contribution rates are set in state statute and so are determined by the Legislature.

Each legislative session, legislators examine the fiscal health of the retirement systems, consider various bills amending benefits or funding levels, and engage in policy debates about these systems.

What is at stake?

As of June 30, 2016, the actuarial value of trust fund assets in Montana's nine defined benefit public employee retirement plans totaled about $10.4 billion. Total liabilities amounted to about $14 billion. As shown in Figure 1, more than 1,000 public employers, about 46,000 active employees, and 40,000 beneficiaries may be affected by legislative decisions.

Figure 1 - Employers, Active Members, and Benefit Recipients

Number of participating public employers (i.e., cities, counties, school districts, state agencies, and other public entities)	1,036+
Active members (i.e., working employees)	~46,000
Benefit recipients	~40,000

Source: Estimates based on June 30, 2016, Actuarial Valuations.

Interim committee role

This guide is published to provide legislators with basic background information about Montana's public employee retirement systems pursuant to statutory duties assigned to the State Administration and Veterans' Affairs Interim Committee (SAVA). Under section 5-5-228, Montana Code Annotated, SAVA is to:

> (a) consider the actuarial and fiscal soundness of the state's public employee retirement systems, based on reports from the teachers' retirement board, the public employees' retirement board, and the board of investments, and study and evaluate the equity and benefit structure of the state's public employee retirement systems;
>
> (b) establish principles of sound fiscal and public policy as guidelines;
>
> (c) as necessary, develop legislation to keep the retirement systems consistent with sound policy principles; and
>
> (d) publish, for legislators' use, information on the public employee retirement systems that the committee considers will be valuable to legislators when considering retirement legislation.

Is it a "system" or a "plan"?

Throughout this guide, the terms "retirement system" and "retirement plan" are used interchangeably most of the time. Nearly all of the public employee retirement plans are named "systems" in Montana statute. All but one of these systems consists of a single plan. However, one system, the Public Employees' Retirement System (PERS), actually consists of two different retirement plans, a defined benefit plan and a defined contribution plan. Therefore, with respect to PERS, the term "system" refers to both plans.

Is it a "retirement plan" or a "pension plan"?

For the purposes of this guide, the terms "retirement plan" and "pension plan" are used interchangeably. The actual name of most of the public employee retirement plans includes the words "retirement system."

CHAPTER 1
PRIMER ON RETIREMENT PLANS

What is the purpose of a retirement plan?

Retirement plans started as an alternative method for employers to compensate their employees for services rendered. Employer contributions to pension funds are sometime thought of as "cheaper" than pay increases because they are made before payroll taxes are calculated.

Later, employers used retirement plans as a recruiting and retention tool that supplemented rather than replaced pay. This rationale, too, evolved to a point where employer-sponsored retirement plans were simply viewed as the socially responsible thing to do.

As pension plans evolved, so did government regulation to ensure the plans remained financially sound, that contracts were honored, and that people were not discriminated against. Ultimately, employers and the Internal Revenue Code focused on encouraging employees to save for retirement. And, employer-sponsored pension plans became cost-sharing plans to which employees could also contribute.

With this historical perspective in mind, retirement plans are usually viewed as a method for employers to compensate and recruit and retain employees, while employees view employer-sponsored retirement plans as their primary way to save and invest their earned compensation so they will have financial security in retirement.[1]

How much income is needed?

Experts seem to agree that to live comfortably in retirement, today's retirees need a monthly income of at least 70% to 80% of the salary they earned during their final years of work.[2,3] Clearly, serious long-term planning is required to replace 80% of preretirement income for the rest of a person's life. More than one financial plan or vehicle is necessary. Many types of retirement plans and a

[1] Bleakney, Thomas P., F.S.A., *Retirement Systems for Public Employees*, Pension Resource Council, University of Pennsylvania Press, 1991 edition, p. 10 and p. 33. National Conference of State Legislatures, *Public Pensions: A Legislator's Guide*, NCSL, Washington D.C., July 1995.

[2] "How much money will I need in retirement?", in "The Ultimate Guide to Retirement" from *Money* magazine at http://money.cnn.com.

[3] "How much do you need to retire?", from *msn.money*. Originally printed in *Kiplinger's Personal Finance Magazine*.

variety of insurance and investment products make retirement planning a complex affair. Financial advisers often refer to financial security in retirement as resting on a three-legged stool consisting of an employer-sponsored retirement plan, Social Security income, and personal savings.

How are contributions made?

Contributions to tax-qualified retirement plans are made on a pretax basis each month or during each pay period. Employee contributions, which are a percentage of the employee's compensation, are withheld from the employee's paycheck and paid directly to the pension plan. Employer contributions are also made directly to the retirement plan.

Two basic plan types: DB or DC

There are two types of retirement plans: defined benefit (DB) plans and defined contribution (DC) plans. There are also a range of hybrid plans that combine different aspects of DB and DC plans. Fundamentally, in a DB plan, benefits are defined and costs must be estimated. In a DC plan, costs are defined, but benefit amounts fluctuate according to the account balance at any given time.

Nevertheless, whether a plan is a DB, a DC, or a hybrid of the two, one equation is universal:

Contributions + Investment Earnings = Benefits + Expenses
(C + I = B + E)

There are different perspectives concerning the pros and cons of DB, DC, and hybrid plans. Although the risks are the same with any plan, the plan's design dictates how risk is managed and the extent to which the employer and employee share the responsibility for managing the risks.

Any retirement plan will have to cope with the following:

- Investment risks and market volatility.

- Longevity risks, i.e., whether the benefit will last to the end of a retiree's life.

- Inflation risks, i.e., how to provide postretirement benefit increases to keep up with cost-of-living.[4]

Also, DB, DC, and hybrid plans will offer different approaches about how to provide te following:

- Sufficient benefits in retirement.
- Flexibility.
- Portability.[5]

As shown in Figure 2, each type of plan manages risks and responsibilities differently. Which type of retirement plan is "best" depends on the sponsor's policy goals.

Figure 2 - Comparison: DB, DC, and Hybrid Retirement Plans

Issue	DB Plans	DC Plans	Hybrid Plans
Philosophical perspective	Employer responsibility. Employer is obligated to provide a base retirement benefit. Contributions are pooled and debts or gains, usually caused by market fluctuations, are shared by employers in the pool. Unfunded liabilities are typical. Reasonable amortization schedule provides financial security and "shock absorber."	Employee responsibility. Employer responsibility ends with contribution to the plan. Employee bears investment risks and responsibilities. No gains or losses to a shared plan so no unfunded liabilities, no amortization schedule, and no actuarial valuations.	Shared responsibility. The employer guarantees a certain defined benefit amount, which alone is not sufficient. However, depending on the plan's design, the employee's benefit will depend also on the employee's individual account balance, so the employee also has responsibility and bears a risk.
Flexibility	Less. A DB plan usually provides only the option of how the defined benefit is to be paid out, e.g., as a single life annuity, joint and survivor annuity, term certain, etc.	More. Depending on design, the plan may allow participants to choose contribution amount, investment options, and form of payout.	Less or more. Flexibility will depend on plan features, but the DB portion will be less flexible, while the DC portion will add some flexibility.

[4] Paul Zorn, "Alternative Retirement Plan Designs: Hybrid Plans", *Government Finance Review*, April 2011.

[5] National Conference on Public Employee Retirement Systems, "The Evolution of Public Pension Plans: Past, Present, and Future", March 2008.

Issue	DB Plans	DC Plans	Hybrid Plans
Portability	Less. Employer contributions are not made to individual accounts so if an employee leaves employment before vesting, the employee is usually not eligible for a retirement benefit or to "take" or "transfer" employer contributions.	More. Employer contributions are made to individual accounts. Money in the account may not be accessible until retirement, but the employee can continue to manage the account. Actual portability depends on the specific provisions of the plan, which may or may not limit transferability.	Less or more. Portability will depend on plan features, but the DB portion will be less portable, while the DC portion will add some portability.
Investment risk & return	Risk is assumed by the employer. To the extent that assumptions or projections differ from actual experience, the pension funds may experience gains or losses. Pension assets are pooled. Gains and losses are smoothed over a long-term period. Risk is therefore minimized.	Risk is assumed by the employee. Employees may select a risk/return tradeoff to fit personal circumstances.	Shared risk. How this risk is shared will depend on the actual plan's design.
Who benefits	Career employee. Typically, longer-term or older employees benefit most.	Short-term employee. Typically, shorter-term and younger employees benefit most (depending on investment choices and realization of assumptions).	Depends on actual plan design.
Pension security/ longevity risk	Higher. The benefit amount is guaranteed and can be counted on for a lifetime.	Lower. The actual benefit amount is not known in advance and a retiree could outlive the benefit.	DB - Higher. DC - Lower. Actual pension security will depend on the plan's features.
Administrative costs	Paid by plan sponsors.	Paid by plan participants.	Paid by both employer and employees, depending on the plan's features.

Public versus private plans

Private sector employers have switched from primarily offering DB plans to primarily offering DC plans, such as 401(k) plans. However, DB plans are the predominant plan type in the public sector. According to the U.S. Bureau of Labor Statistics, in 2016, DB retirement plans were available to 63% of state and local government employees, and DC plans were offered to only 37% of state and local government employees.[6]

Pension regulation and tax treatment

Sections 400 through 419 of Title 26, U.S.C.—Title 26 is the Internal Revenue Code (IRC)—and attendant federal administrative regulations govern public and private pension plans. Plans may be referred to according to the IRC section under which the plan is qualified (e.g., a 401(k) plan, a 403(b) plan, a 457 plan, etc.). Qualified pension plans are plans that comply with the IRC and applicable provisions of the Employee Retirement Income Security Act of 1974 (ERISA). ERISA specifies nondiscrimination standards and regulates reporting and accounting procedures. Qualified plans receive favorable tax treatment; nonqualified plans do not. Except for certain administrative and accounting standards, ERISA does not apply to public pension plans. However, public plans must be qualified under various sections of the IRC in order for employee contributions and accruing benefits to be tax deferred.

Supplemental plans

Montana state government employees and some local government employees may also voluntarily participate in a 457 deferred compensation plan to help supplement their retirement plans.[7] School districts and universities may establish 403(b) plans (i.e., tax-sheltered annuity plans) for their employees, and many Montana school districts and the Montana University System have done so.

An individual public employee may also establish a traditional IRA (individual retirement account) or Roth IRA.[8] Contributions to a traditional IRA are tax deductible if the employee's income does not exceed a certain threshold established in the IRC.

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[6] U.S. Bureau of Labor Statistics, "Employee Benefits Survey, March 2016", available at http://www.bls.gov/ncs/ebs/benefits/2016/benefits_retirement.htm.

[7] See Title 19, ch. 50, MCA.

[8] Contributions to a Roth IRA are "after tax" whereas contributions to a traditional IRA are "before tax". Distributions from a Roth IRA are not taxable if the account holder meets certain conditions.

Social Security

The 1935 Social Security Act did not originally allow state and local government employees to participate in Social Security. However, in 1950, the act was amended to make coverage optional for certain state and local government employees, but still left many public employee groups uncovered. The option for states to allow certain public employees to participate was expanded in subsequent amendments to the act. Congress made Social Security coverage mandatory, staring in July 1991, for most state and local government employees not already covered by a public pension plan. Coverage is provided to these employees through individual agreements with state and local governments. The net effect of how Social Security coverage has evolved federally and these various agreements is that coverage for public employees varies greatly from state to state.[9]

In Montana, as in many states and localities, public safety employees typically do not participate in Social Security because these professions were not allowed to participate when the Social Security Act was first enacted. According to the Congressional Research Service, about 10.5% of Montana's state and local government employees are not covered by Social Security.

GASB financial reporting

Purpose

New Governmental Accounting Standards Board (GASB) reporting requirements under GASB Statement No. 67, *Financial Reporting for Pension Plans*, and GASB Statement No. 68, *Accounting and Financial Reporting for Pensions,* in 2015 changed how public employers in Montana who participate in a public employee retirement plan must calculate and report pension costs and obligations on their individual governmental financial statements. According to GASB, the purpose of these new statements was to "improve the decision-usefulness of reported pension information and to increase the transparency, consistency, and comparability of pension information across governments." [10]

[9] Congressional Research Service, "Social Security: Mandatory Coverage of State and Local Government Employees", 7-5700, www.crs.gov, R41936, July 25, 2011.

[10] Governmental Accounting Standards Board, *New GASB Pension Statements to Bring about Major Improvements in Financial Reporting*, December 2013. Available online at http://gasb.org/cs/ContentServer?site=GASB&c=Document_C&pagename=GASB%2FDocument_C%2FGASBDocumentPage&cid=1176160140567.

An article prepared by the GASB to explain these new requirements stated:

> It is important to note that the new Statements relate to *accounting and financial reporting* issues only—how pension costs and obligations are measured and reported in audited external financial reports. The Statements do not address how governments approach pension plan *funding*—a government's policy regarding how much money it will contribute to its pension plan each year. While there has been a close relationship between how governments fund pensions and how they account for and report information about them until now, the new guidance establishes a decided shift from the *funding-based* approach to an *accounting-based* approach. The Board crafted its new Statements with the fundamental belief that funding is squarely a policy decision for elected officials to make as part of the government budget approval process.[11]

Why separate reports for each employer?

Under the new GASB statements, the employers who participate in cost-sharing multiple-employer retirement plans (such as Montana's statewide public employee retirement plans) are now required to show pension obligations on their individual financial statements rather than only on a combined financial statement.

A GASB article explains:

> Through its research, the GASB concluded that the needs of users of information regarding cost-sharing employers do not differ significantly from those interested in single and agent employers. Therefore, the GASB believes it is important to give users of the financial statements of cost-sharing employers access to better, more transparent financial information. Consequently, under the new standards the GASB is requiring that cost-sharing governments report a net pension liability, pension expense, and pension-related deferred inflows and outflows of resources based on their proportionate share of the collective amounts for all the governments in the plan.[12]

[11] Ibid.

[12] Ibid.

Different pension liability numbers

The way that pension liabilities are calculated and shown under the new GASB requirements is different from the way actuaries calculate and show these liabilities for actuarial valuations. Because of these different calculations, the GASB reports may show a higher pension liability than the actuarially calculated liability and therefore also show a lower funded ratio for the plan.

Implications for bond ratings

Because a governmental entity's financial statement is used by credit-rating companies when assessing creditworthiness, there has been concern about how this new reporting requirement will affect government bond ratings. However, credit-rating companies have indicated that the new pension disclosures will have limited impact on state and local government credit ratings.

Addressing these concerns, the GASB article explains:

> While this information will, in some cases, give the appearance that a government is financially weaker than it was previously, the financial reality of the government's situation will not have changed. Reporting the net pension liability (or asset, if plan net position exceeds the total pension liability) on the face of the financial statements will more clearly portray the government's financial status because the pension liability will be placed on an equal footing with other long-term obligations.[13]

Discount rate and investment return assumptions

Under GASB, the term "discount rate" is used when referring to the assumed rate of return on investments because the calculations involve discounting (or translating) the future value of assets and liabilities into present values. The discount rate used for the GASB report will be the same as the actuarial assumed rate of return used in the actuarial valuations as long as the assets are projected (under GASB calculations) to be sufficient to pay the future benefits. However, if the assets are projected under the GASB calculations to be depleted before the benefit liabilities are due, then the GASB discount rate applied after the date of depletion will be the rate of return on a 20-year tax-exempt municipal general obligation bond with a rating AA/Aa or higher. These rates on June 30, 2016, ranged from a high of about 3.1% to a low of about 2.65%.

[13] Ibid.

Sensitivity studies

The new GASB statements also require a section in the financial report showing sensitivity to future experience with respect to assuming a higher or lower discount rate. Actuarial valuations continue to include a similar section on sensitivity to market changes. Again, the pension liability numbers in the GASB report will be different from the numbers in the actuarial valuations due to differences in how assets and liabilities are calculated.

CHAPTER 2
DEFINED BENEFIT PLANS: STRUCTURE AND FUNDING

How are benefits defined?

As previously noted, DB plans provide a predictable formula-driven monthly benefit for the life of a member and sometimes for the life of a beneficiary. Benefits within a DB plan often also provide disability and death benefits. The traditional formula used to calculate the benefit amount paid in a DB plan is:

> Multiplier (%) x Years of Service x Final Average Salary [14]

Pooled trust fund

To pay for future benefits, current contributions are deposited into a pooled pension trust fund. The trust fund's assets are invested. As the investments yield returns, the trust fund grows and must ultimately be sufficient to pay for benefits as members retire and the defined monthly benefits come due.

Determining costs

The cost of the defined benefits are estimated based on actuarial valuations. An actuarial valuation is a mathematical investigation by an actuary. These actuarial valuations assess the financial condition of the plan at a particular point in time. Montana law requires that actuarial valuations be conducted annually for each of Montana's DB plans. When estimating costs, actuaries evaluate whether current and expected contributions are sufficient to cover the estimated cost of benefits as they are expected to accrue and be paid in the future. The cost of benefits as they accrue is called the "normal cost." Other costs accrue when or if the experience of the plan is different from actuarial projections, which are based on actuarial assumptions.

[14] Sometimes the term "highest average compensation" or "final average compensation" is used. These terms all mean that an average salary is calculated and the average may be calculated on the final years of employment or based on the highest consecutive years of salary. Each plan's statutes define the parameters for the calculation.

Actuarial assumptions

When making the projections that help determine the expected normal cost of benefits, an actuary applies various demographic and economic assumptions about future experience.

Key demographic assumptions are made about the following:

- Individual salary increases.
- Retirement rates.
- Disablement rates.
- Mortality rates.
- Terminations of employment.
- Probability of an employee retaining membership in system.

Key economic assumptions are about the following:

- General salary increases.
- Investment returns.
- Price inflation.
- Growth in membership.
- Interest on member accounts.
- Administrative expenses.

Actuarial gains and losses

If actual experience is different from the assumed experience, the DB plan will have an actuarial gain or loss. For example, if investment returns are better than projected by the actuary, the actuarial valuation will show an actuarial gain equal to the amount that actual investment returns exceeded the actuarial assumed rate of return. If experience is worse than expected, then the retirement plan will have an actuarial loss. For example, if more members become disabled earlier and draw disability benefits for longer than projected, the actuarial valuation will show an actuarial loss. Each actuarial valuation includes a section about the plan's actuarial gains and losses.

Adjusting assumptions

Actuarial assumptions are tested and adjusted from time to time based on experience studies. An experience study examines the actual history and experience of the system and measures the assumptions against that actual history. Assumptions about mortality, disability, investment returns, and so forth, can then be adjusted accordingly. Outside actuaries may also periodically

audit an actuary's work, methodologies, or other elements integral to assessing the financial status of the plan. These peer reviews ensure professional actuarial standards are being followed.

Montana law requires that regular experience studies be conducted for the statewide public employee retirement plans to compare actual experience with the actuarial assumptions. If plan experience shows that the actuarial assumptions need to be adjusted, an actuary will recommend that certain adjustments be made. The governing boards of the plans, who are the fiduciaries of the plan, set the assumptions after receiving recommendations from the actuary. Fiduciaries are legally and ethically accountable for their decisions.

Unfunded liabilities

Actuarial losses or benefit increases applied to past service will result in an actuarial unfunded liability. Unfunded liabilities are typical in DB plans because projections, no matter how good, cannot perfectly predict the future. The road into the future is bumpy and, like a shock absorber on a car, the amount of these actuarial unfunded liabilities fluctuates with the road conditions. Because these liabilities are typical, contributions to DB retirement plans should cover more than the normal cost of benefits. This allows the "extra" contributions to be made available to cover the ups and downs of the plan's experience. Thus, although these liabilities are called "unfunded," if contributions are sufficient to pay more than just the normal cost of benefits, then the balance of the contributions after covering the normal cost fund (i.e., pay off) the actuarial unfunded liabilities over time.

Annual required contribution

The term "annual required contribution" (ARC) refers to the total contribution needed (based on an actuarial valuation) to fund the normal cost of benefits as they accrue and to pay down the plan's unfunded liabilities in a reasonable amount of time. This amount of time is called an amortization period.

Amortization period

A plan is considered actuarially sound if the unfunded liabilities are being paid off within a reasonable amount of time, or amortization period. The most commonly accepted standard for actuarial soundness is if the unfunded liabilities amortize in 30 years or less according to the latest actuarial valuation. Again, because the road of experience is bumpy, the amortization period, like the

system's actuarial unfunded liabilities, will increase and decrease like a shock absorber; and again, the ultimate goal is for contributions to be sufficient to cover the normal cost of benefits as well as pay for a good shock absorber so that even when road conditions are bad, the amortization period does not exceed 30 years.

Funded ratio

Another key indicator of actuarial soundness is the extent to which current assets cover current liabilities. Current assets include the value of all of the trust fund's investments. Current liabilities include the value of all accrued benefit obligations. The ratio of assets to liabilities is called the funded ratio. If a DB plan has an unfunded actuarial liability, a DB plan's funded ratio will be less than 100%. Experts advise DB plans to maintain at least an 80% funded ratio. However, retirement boards and legislative bodies may adopt policies that target a 100% funded ratio, or even a more than 100% funded ratio in order to provide a cushion against adverse plan experiences, such as a market downturn.

Both funded ratio and amortization period matter

The fiscal health of a DB plan should be measured both in terms of the amortization period and the plan's funded ratio. A DB plan's liabilities may amortize in less than 30 years, but if the plan's funded ratio is less than 80%, then the fiscal health of the plan is not as good as experts advise. Conversely, a plan may be 80% funded, but if the unfunded liabilities are not being paid off in less than 30 years, the plan is also not as healthy as desired.

In summary

To summarize, in DB plans:

- Contributions are pooled and invested as a whole.
- Benefits are defined, but costs are estimated through actuarial valuations.
- Actuarial valuations are based on economic and demographic assumptions, which are adjusted based on experience studies.

- Unfunded liabilities are typical because long-term assumptions will differ from short-term experience. Therefore the long-term trend is what matters most.

- In general, to be actuarially sound, contributions must be sufficient to allow the amortization period to absorb the ups and downs of short-term experience and still remain within 30 years.

- A plan's funded ratio should be at least 80%.

CHAPTER 3
DEFINED CONTRIBUTION AND HYBRID PLANS

Account balance determines benefit

Defined contribution plans define contribution amounts (i.e., costs) but do not define the benefit paid. Members have individual accounts to which contributions are made. The member then directs how those contributions are invested.[15] However, the investment options available depend on what the plan sponsor provides. Each participant's account balance at retirement depends on total contributions plus investment earnings (or losses) to that point in time. When the participant retires, the balance of the account may be rolled over and reinvested or converted to a monthly annuity.

Because contribution amounts are defined and costs are known, a DC plan has no unfunded liabilities and does not rely on actuarial projections about the future.

Employee bears risk and responsibility

In a DC plan, the employee is responsible for making investment choices and takes the risk of contributions plus investment earnings being insufficient to provide adequate income in retirement.

Hybrid plans

As previously mentioned, hybrid plans combine different elements of a DB plan and a DC plan. For example, in Montana's largest public employee retirement system, the Public Employees' Retirement System, a member's benefit is calculated under both a DB formula and a DC (money purchase) formula. The member is paid the higher of the two benefit amounts.

There are two broad categories of hybrid plans:

- Cash balance plans
- Combination plans

[15] Defined contribution plans have a "default" investment that is used whenever an employee fails to direct the investment of the contributions made to his or her account. The investment options are limited to a menu of options composed most often of stock mutual funds, bond mutual funds, and money market funds.

Cash balance

Under a cash balance plan, members have individual retirement accounts. Contributions, as in a DB plan, are set as a percentage of pay. Then, each account is credited with a certain amount of interest, as defined by the plan, depending on plan goals. The benefit ultimately paid, as in a DC plan, depends on the individual's account balance at retirement. However, as in a DB plan, the individual's account balance is a guaranteed amount based on the contributions and interest credited to the account, not on actual investment earnings.

The U.S. Department of Labor explains it this way:

> A cash balance plan is a defined benefit plan that defines the benefit in terms that are more characteristic of a defined contribution plan. In other words, a cash balance plan defines the promised benefit in terms of a stated account balance. In a typical cash balance plan, a participant's account is credited each year with a "pay credit" (such as 5 percent of compensation from his or her employer) and an "interest credit" (either a fixed rate or a variable rate that is linked to an index such as the one-year treasury bill rate). Increases and decreases in the value of the plan's investments do not directly affect the benefit amounts promised to participants. Thus, the investment risks are borne solely by the employer. [16]

There are numerous variations of cash balance plans, such as having the interest that is credited indexed to actual investment returns, or setting an interest rate depending on the employee's years of service, to name just two.

Combination DB/DC plans

The most common hybrid plan is a combination DB/DC plan. Under this type of plan, part is a traditional DB plan, while the other part is a traditional DC plan. For example, the plan may provide that the employer contribution is deposited to a pooled DB plan trust fund, which guarantees a floor benefit to the member. Meanwhile, the employee's contributions are deposited to the DC portion of the plan, which is an individual account invested by the employee in the investment options provided by the plan. At retirement, the member's benefit is the floor

[16] Employee Benefits Security Administration, U.S. Department of Labor, "Cash Balance Pension Plans", January 2014. Frequently Asked Questions webpage at http://www.dol.gov/ebsa/faqs/faq_consumer_cashbalanceplans.html.

DB benefit plus the member's DC account balance.[17] Again, there is a variety of different ways to design a DB/DC hybrid plan.

In summary

To summarize, in DC plans:

- Costs are known, but benefits fluctuate depending on the individual's account balance at any given time.
- Members direct their own investments among a provided menu of investment options and so reap the risks and rewards of the market.
- Benefits at retirement depend on individual account balances at retirement.

[17] National Conference on Public Employee Retirement Systems, "The Evolution of Public Pension Plans: Past, Present and Future", March 2008, pg. 10.

CHAPTER 4
MONTANA'S RETIREMENT PLANS

Overview

Montana's public employee retirement systems consist of nine DB plans and two DC plans. These systems involve many different types of employers and employees. All but one of the systems are cost-sharing, meaning that both employees and employers contribute to them. Although there are a few special exceptions, all public employees are required to be members of these plans.

MPERA systems

Nine of Montana's retirement plans (8 DB plans and 1 DC plan) are governed by the seven-member, governor-appointed Public Employees' Retirement Board (PER Board). Administrative staff for the PER Board are organized as the Montana Public Employees' Retirement Administration (MPERA). The retirement plans governed by this board are often referred to as MPERA systems. These MPERA systems are listed in Figure 3.

Figure 3 - MPERA Systems

System	Description
PERS Public Employees' Retirement System - PERS-DB plan (default) - PERS-DC plan (optional)	Consists of two plans: a DB plan and an optional DC plan. Covers most of the general classified positions in state agencies and participating local governments, including school districts. Local governments and school districts contract with MPERA to participate in PERS. The PERS-DC plan was implemented on July 1, 2002, as an optional plan. Newly hired PERS-eligible employees have 12 months to decide whether to remain in the DB plan, the default plan, or to transfer to the DC plan. Largest of Montana's public employee retirement systems.
JRS Judges' Retirement System (DB plan)	Covers district court judges, the supreme court justices, the chief water judge, and the associate water judge employed by the state judicial branch.
HPORS Highway Patrol Officers' Retirement System (DB plan)	Covers state highway patrol officers.
SRS Sheriffs' Retirement System (DB plan)	Covers sheriffs, sheriffs' deputies, certain others employed in the county sheriff's office, and state investigators employed by the Montana Department of Justice.

System	Description
GWPORS Game Wardens' and Peace Officers' Retirement System (DB plan)	Covers game wardens employed by the state and specified state law enforcement positions, including campus security officers.
MPORS Municipal Police Officers' Retirement System (DB plan)	Covers police officers employed by participating cities, towns, and municipalities.
FURS Firefighters' Unified Retirement System (DB plan)	Covers paid firefighters employed by participating cities, towns, and municipalities.
VFCA Volunteer Firefighters' Compensation Act pension trust fund (DB plan)	Covers the volunteer (uncompensated) firefighters of qualifying volunteer fire companies organized in unincorporated areas.

Teachers' Retirement System

Teachers in school districts and some state institutions, not including the faculty of the University System, are covered by the Teachers' Retirement System (TRS), which is also a DB plan. The TRS is governed by a six-member governor-appointed Teachers' Retirement Board.

Montana University System Retirement Program

Faculty of state-funded higher education institutions belong to the Montana University System Retirement Program (MUS-RP). This is a DC plan. The fiduciary body governing the MUS-RP is the Board of Regents. This plan was originally called the Optional Retirement Program (ORP) because when it was first established in 1987, faculty could choose between the TRS or the optional DC plan.[18] However, the ORP became a mandatory plan in 1993, to stabilize plan membership and the financial impact on TRS.[19] It was not until 2013 that the Legislature enacted a bill to change the program's name to the University System Retirement Program and thus eliminate the word "optional."[20]

[18] Ch. 494, Laws of Montana, 1987.

[19] Ch. 178, Laws of Montana, 1993.

[20] Ch. 282, Laws of Montana, 2013.

At-a-glance summary tables, or green sheets

The Legislative Services Division, in collaboration with the staff of the retirement systems and Board of Investments, has developed summary tables to provide an "at-a-glance" view of benefits, membership, funding status, and investment returns, for each of Montana's public employee retirement systems. These tables have become known as the "green sheets." They are included with this guide but are also available separately from the Montana Legislative Services Division research staff for the State Administration and Veterans' Affairs Interim Committee and online under the topic of "pension oversight" on the following web page, www.leg.mt.gov/sava.

Why so many plans?

Most of Montana's statewide public employee retirement systems originated as local government and school district plans. For example, in 1899, only 10 years after Montana achieved statehood, the Sixth Legislature authorized each municipality to establish a fire department. Each municipality that established a fire department was required to establish a "disability fund," to be used to compensate firemen[21] disabled in the line of duty only, i.e., there weren't any specific provisions for firefighters killed in the line of duty or who had worked as firefighters for years (until at least age 45, at which time they were forced into retirement). By 1911, however, the system had metamorphosed into a disability plan and a retirement system.[22]

In the meantime, state employee retirement systems initially covered only state employees. Gradually, local governments were given the option of merging their local plans into a statewide system. As compliance with federal tax regulations and management of pension fund investments become more complex, local governments found themselves struggling to keep their funds solvent and in compliance with regulations. Gradually, more and more local jurisdictions opted to join the state's plans or to combine their local plans into one statewide plan, such as was done with respect to the municipal police officers' and firefighters' unified retirement plans.

[21] "Firemen", not "firefighter", is the term used in the law and in 1899, the force of a fire department was likely to be composed of men only. The law also lists as "qualifications of firemen": qualified voter of the city or town; less than 45 years of age; and having passed a physical examination by a practicing physician. (See Sec. 5, HB 17, p. 74, L. 1899.)

[22] For a more complete discussion of the history and development of Montana's public employee retirement systems see *An Overview of the Development and Status of Montana's Public Employee Retirement Systems* by David D. Bohyer and David S. Niss, October 2007, Legislative Services Division.

The following is a list of the year each plan was formed:

- 1935 VFCA
- 1937 TRS
- 1945 PERS and HPORS
- 1963 GWPORS
- 1967 JRS
- 1974 MPORS and SRS
- 1987 MUS-RP

While a few localities continue to sponsor their own local plans (for police or for firefighters), the majority of local government employees are members of one of the statewide systems. As an aside, a local government is statutorily authorized to secede from the state system provided that the withdrawing entity pays the actuarial cost of withdrawing, which is one reason that such withdrawals are increasingly rare.

Constitutional protections

Retirement plan assets, which include contributions and investment earnings, are constitutionally protected trust funds. Each plan's governing board members are the plan's responsible fiduciaries, which means they must act only in the best interest of plan members and their beneficiaries. Also, pension funds must be invested based on the "prudent expert" rule.[23] Montana's constitution also provides that retirement system funding may not be diverted or encumbered for any other purpose.[24]

Article VIII, Section 13, of the Montana constitution reads in part:

> Section 13. Investment of public funds and public retirement system and state compensation insurance fund assets. ...
>
> (3) Investment of public retirement system assets shall be managed in a fiduciary capacity in the same manner that a prudent expert acting in a fiduciary capacity and familiar with the circumstances would use in the conduct of an enterprise of a similar character with similar aims. Public retirement system assets may be invested in private corporate capital stock. ...

[23] Art. VIII, sec. 15, Montana Constitution.

[24] Art. VIII, sec. 15, Montana Constitution.

Article VIII, Section 15, of the Montana constitution reads:

> Section 15. Public retirement system assets. (1) Public retirement systems shall be funded on an actuarially sound basis. Public retirement system assets, including income and actuarially required contributions, shall not be encumbered, diverted, reduced, or terminated and shall be held in trust to provide benefits to participants and their beneficiaries and to defray administrative expenses.
>
> (2) The governing boards of public retirement systems shall administer the system, including actuarial determinations, as fiduciaries of system participants and their beneficiaries.

Summary of FY 2016 Public Retirement System Actuarial Valuations[6]

Compiled by Sheri Scurr, Legislative Services Division

From TRS Board and PER Board June 30, 2016, Actuarial Valuations and Board of Investments Data

System	Funded Ratio[1] (percentage)	Covered Payroll[2] on June 30, 2016	ARC[3] Shortfall (% payroll)[4]	ARC Shortfall (as dollar amt - increases annually)[5]	Amortization period (years)
PERS-DB	77%	$1.2 billion	0%	0	26
TRS	69%	$795.9 million	0%	0	24
SRS	83%	$70.6 million	3.39%	$2,393,340	does not amortize
MPORS	69%	$47.2 million	0%	0	18
GWPORS	84%	$47.1 million	2.08%	$979,680	does not amortize
FURS	78%	$43.1 million	0%	0	9
HPORS	66%	$15.3 million	0%	0	28
JRS	166%	$6.9 million	0%	0	0
TOTAL				***$ 3,373,029***	

Notes:

1. "Funded Ratio" means current assets compared to current liabilities. When a plan is 100% funded, it means current assets are sufficient to pay 100% of current liabilities. The percentages in this column are rounded.

2. "Covered Payroll" means the annual salaries of all active members.

3. "ARC" means the Annual Required Contribution rate required to amortize the unfunded liabilities over 30 years as determined by the system's actuary. Unfunded liabilities are the liabilities that cannot be paid with current assets, but that are being paid off over time. This time period is the called the "amortization period".

4. The "ARC shortfall" as a percent of payroll is the contribution rate increase (i.e., contributions above current contributions) that is needed to amortize the system's unfunded liabilities in 30 years. If a plan's liabilities are being paid off over a period of 30 years or less, actuaries consider the system actuarially sound.

5. The ARC shortfall as a dollar amount is the amount of money required in the first year of the biennial budget, in addition to current contributions to amortize the system's unfunded liabilities in 30 years. This amount was calculated by legislative staff, so is not in the valuations, and is based on the June 30, 2016, snapshot of payroll. The actual amount will change as payroll changes.

6. Actuarial valuations are based on economic and demographic assumptions. The governing boards have the constitutional duty to adopt these assumptions, and they do so based on experience studies. Experience studies are conducted approximately every 5 years. The legislature may not alter these assumptions, but may request information based on different assumptions. The main actuarial assumptions for the FY 2016 actuarial valuations were as follows:

Main Economic Assumptions	TRS	MPERA Systems
Investment rate of return	7.75%	7.75%
Wage growth	4.0%	4.0%
Inflation	3.25%	3.0%

Cover Page 2

Sensitivity to Future Experiences:

Each actuarial valuation includes a section that includes a basic analysis of how sensitive estimated costs of benefits are to changes in the assumed rate of return on investments. The table below shows what the funded ratio and amortization period would be if the actuary where to assume a 1% lower rate of return instead of the 7.75% assumed rate. This is to illustrate how sensitive the plan's funding targets are to a 1% decrease in the rate of return assumption.

With 6.75% Investment Return Assumption

System	Funded Ratio[1] (percentage)	Amortization period (years)	Difference from 7.75% Assumption
PERS-DB	69%	does not amortize	N/A
TRS	62%	51 yrs	(7.1%) / 27 yrs
SRS	73%	does not amortize	N/A
MPORS	60%	46 yrs	(8.5%) / 28 yrs
GWPORS	73%	does not amortize	N/A
FURS	69%	24 yrs	(9.7%) / 15 yrs
HPORS	58%	does not amortize	N/A
JRS	152%	0 yrs	(14.3%) / 0 yrs

Montana's Public Employees' Retirement Plans: Summary Tables *(Source: FY 2016 Actuarial Valuations)*

Table 1 – CONTRIBUTIONS AND NORMAL COSTS

SYSTEM Year enacted	TEACHERS' RETIREMENT SYSTEM (TRS) 1937	PERS DEFINED BENEFIT PLAN (PERS-DBRP) 1945	JUDGES (JRS) 1967	HIGHWAY PATROL OFFICERS' (HPORS) 1945	SHERIFFS' (SRS) 1974	GAME WARDENS' AND PEACE OFFICERS' (GWPORS) 1963	MUNICIPAL POLICE OFFICERS (MPORS) 1974	FIREFIGHTERS' UNIFIED (FURS) 1981
Employer contributions ** percentages are of covered compensation* ***bolded date headings are "on and after" hire dates*	**School Districts:** 8.77% (increases 0.1% each yr to 2024) plus **State GF:** 2.49% **State agencies & University System:** 11.15% (increases 0.1% each yr) plus **State GF:** 0.11% reduced if certain conditions met	**State entities:** 8.37% (includes base of 6.9% plus a supplemental amount that increases 0.1% each year to 2024, supplemental, reduced when amortization period is 25 years or less) **Schools**: 8.00% plus **State GF** 0.37% **Local Gov't:** 8.27% plus **State GF:** 0.1%	25.81%	**7/1/13** 28.15%	10.115% Includes 0.58% supplemental amount that may be reduced if amortization is 25 years	9.00%	14.41%	14.36%
Employee contributions	**Tier One (pre-7/01/13)**: 7.15% plus 1% supplemental contribution until system is 90% funded **Tier Two (7/1/13):** 8.15%	7.90% reduced to 6.9% when amortization period is 25 year or less	7.00%	**Pre-7/1/97** 12% **7/1/97 or elected GABA (Guaranteed Annual Benefit Adjustment):** 12.05%	9.245%	10.56%	**6/30/75** 7.0% **7/1/97** 8.5% **7/1/97 or elected GABA** 9%	**Pre-7/1/97** 9.5% **7/1/97 or elected GABA** 10.7%
Funding from other sources	**U- System:** 4.72% of MUS-RP payroll	**Coal Tax:** 29.8 Million	None	**State GF:** 10.18%	None	None	**State GF**: 29.37%	**State GF**: 32.61%
Total statutory contributions	19.31%	16.27%	32.81%	51.38%	19.36%	19.56%	52.78%	57.67%
Normal cost (i.e., cost of benefits as they accrue)	9.87%	11.34%	24.14%	24.94%	17.91%	18.06%	27.72%	26.48%

Montana's Public Employees' Retirement Plans: Summary Tables
(Source: FY 2016, Actuarial Valuations)

Table 2 – ACTURIAL DATA

SYSTEM Year enacted	TEACHERS' RETIREMENT SYSTEM (TRS) 1937	PERS DEFINED BENEFIT PLAN (PERS-DBRP) 1945	JUDGES (JRS) 1967	HIGHWAY PATROL OFFICERS' (HPORS) 1945	SHERIFFS' (SRS) 1974	GAME WARDENS' AND PEACE OFFICERS' (GWPORS) 1963	MUNICIPAL POLICE OFFICERS (MPORS) 1974	FIREFIGHTERS' UNIFIED (FURS) 1981
Actuarial value of assets	$3.8 billion	$5.2 billion	$91.2 million	$133.9 million	$310.5 million	$160.6 million	$357 million	$365.3 million
Actuarial Accrued Liability (AAL)	$5.5 billion	$6.8 billion	$54.8 million	$203.3 million	$373.4 million	$191 million	$518.9 million	$466.7 million
Unfunded portion of accrued actuarial liability	$1.7 billion	$1.5 billion	$(36.4 million)	$69.5 million	$62.6 million	$30.5 million	$162 million	$101.4 million
Funded ratio (rounded)	69%	77%	166%	66%	83%	84%	69%	78%
Percentage of contributions available to fund unfunded liabilities	9.23%	4.72%	8.52%	26.20%	1.28%	1.33%	24.86%	30.99%
Years to amortize unfunded liability	24 years	26 years	0 years	28 years	Does not amortize	Does not amortize	18 years	9 years
Percentage being paid above (in parentheses) or below the ARC	(1.15)%	(0.04)%	(36.24)%	(1.18)%	3.39%	2.08%	(6.99)%	(18.65)%
Projected ARC shortfall as rough annual dollar amount	$0	$0	$0	$0	$2,393,340	$979,680	$0	$0

Montana's Public Employees' Retirement Plans: Summary Tables *(Source: June 30, 2016, Actuarial Valuation)*

Table 3 - BENEFIT ELIGIBILITY AND BASIC FORMULA
(multiplier x highest average compensation x years of service)

SYSTEM Year enacted	TEACHERS' RETIREMENT SYSTEM (TRS)	PERS DEFINED BENEFIT PLAN (PERS-DB)	JUDGES (JRS)	HIGHWAY PATROL OFFICERS' (HPORS)	SHERIFFS' (SRS)	GAME WARDENS' AND PEACE OFFICERS' (GWPORS)	MUNICIPAL POLICE OFFICERS' (MPORS)	FIREFIGHTERS' UNIFIED (FURS)
Service and age eligibility criteria for full retirement	**Tier One (pre-7/01/13)**: 25 yrs, any age or 5 yrs, age 60 **Tier Two (7/01/13)** 30 yrs, age 55 or 5 yrs, age 60	**Pre-7/01/11** 30 yrs service, any age or 5 yrs, age 60 or any yrs, age 65 **7/01/11** 5 yrs, age 65, or any yrs, age 70	5 years, age 60	20 years, any age	20 years, any age	20 years, age 50 or 5 years, age 55	20 years, any age or 5 years, age 50	20 years any age or 5 years, age 50
Minimum service for vesting	5 years	5 years	5 years	**Pre-7/01/13** 5 yrs **7/01/13** 10 yrs	5 years	5 years	5 years	5 years
Highest average compensation (HAC) period used in benefit calculation	**Tier One (pre-7/01/13)**: 3 years **Tier Two (7/01/13)** 5 years	**Pre-7/01/11** 3 years **7/01/11** 5 years	3 years	3 years	**Pre-7/01/11** 3 years **7/01/11** 5 years	**Pre-7/01/11** 3 years **7/01/11** 5 years	3 years (final avg, not highest avg.)	3 years
Service retirement benefit multiplier	1.67% per year **Tier Two (7/01/13)** 1067% but if attained 30 yrs service and age 60: 1.85% per year (professional retirement option)	**Pre-7/01/11** less than 25 yrs: 1.78571% 25 yrs or more: 2% **7/01/11** less than 10 yrs: 1.5% 10- 29 yrs: 1.78571% 30 yrs or more: 2% **Money Purchase Option** The greater of the above or actuarial equivalent of 2X member's accumulated contributions plus interest set by board (0.25% - for FY 2016-17)	up to 15 years: 3.33% 15 yrs or more: 1.785% for each year more than 15 years	2.6% per year	2.5% per year	2.5% per year	2.5% per year	2.5% per year
Social Security coverage	Yes (most members)	Yes (most members)	Yes	No	Yes	Yes	No	No

Montana's Public Employees' Retirement Plans: Summary Tables
(Source: June 30, 2016, Actuarial Valuations)

Table 4 – ACTIVE MEMBERSHIP

SYSTEM Year enacted	TEACHERS' RETIREMENT SYSTEM (TRS) 1937	PERS DEFINED BENEFIT PLAN (PERS-DBRP) 1945	JUDGES (JRS) 1967	HIGHWAY PATROL OFFICERS' (HPORS) 1945	SHERIFFS' (SRS) 1974	GAME WARDENS' AND PEACE OFFICERS' (GWPORS) 1963	MUNICIPAL POLICE OFFICERS (MPORS) 1974	FIREFIGHTERS' UNIFIED (FURS) 1981
Total active members (full- and part-time)	19,048	28,390	55	228	1,364	989	762	644
Average age	45 years*	48.3	58.9	40.2	40.1	40.2	38.4	40.1
Average hire age	34 years*	39	49.7	30.2	32.9	32.3	29.8	29.3
Average years of service	11 years*	9.3	9.2	10.0	7.2	7.9	8.6	10.8
Average annual salary (full-time members)	$52,776	$41,763	$125,825	$67,000	$51,755	$47,632	$61,987	$66,955
Number of participating employers	372	541	1	1	57	7	32	25
Employers' covered payroll (annual valuation compensation)	$795.9 million	$1,185 million	$6.9 million	$15.3 million	$70.6 million	$47.1 million	$47.2 million	$43.1 million

*excludes part-time active members with annual compensation of less than $1,000

Montana's Public Employees' Retirement Plans: Summary Tables
(Source: June 30, 2016, Actuarial Valuations)

Table 5 – RETIREE AND BENEFIT RECIPIENT DATA

SYSTEM Year enacted	TEACHERS' RETIREMENT SYSTEM (TRS) 1937	PERS DEFINED BENEFIT PLAN (PERS-DBRP) 1945	JUDGES (JRS) 1967	HIGHWAY PATROL OFFICERS' (HPORS) 1945	SHERIFFS' (SRS) 1974	GAME WARDENS' AND PEACE OFFICERS' (GWPORS) 1963	MUNICIPAL POLICE OFFICERS (MPORS) 1974	FIREFIGHTERS' UNIFIED (FURS) 1981
Number of benefit recipients	15,164	21,333	68	329	620	250	768	621
Average age of current retirees	71 years	72 years	76.3 years	68.1	64.9	66.6	66.0	69.3
Average age at retirement	59 years	59.5 years	63.9 years	50.7	54.5	57.8	47.4	52.6
Average years of service at retirement	25 years	20.1 years	17.4 years	22.8	18.3	18.3	19.0	23.7
Average annual benefit (service retirement)	$22,188	$16,487	$50,975	$31,772	$25,840	$21,144	$29,347	$34,731
Total benefits paid in FY 2016	$325,897,000	$344,103,875	3,416,023	$10,482,414	$15,476,437	$5,068,318	$21,960,690	$20,896,200
Benefits paid as a percentage of system assets (actuarial value)	8.58%	7%	4%	8%	5%	3%	6%	6%

Montana's Public Employees' Retirement Plans: Summary Tables
(Source: Montana Code Annotated - 2015)

Table 6 – POSTRETIREMENT BENEFIT INCREASES

SYSTEM Year enacted	TEACHERS' RETIREMENT SYSTEM (TRS) 1937	PERS DEFINED BENEFIT PLAN (PERS-DBRP) 1945	JUDGES (JRS) 1967	HIGHWAY PATROL OFFICERS' (HPORS) 1945	SHERIFFS' (SRS) 1974	GAME WARDENS' AND PEACE OFFICERS' (GWPORS) 1963	MUNICIPAL POLICE OFFICERS (MPORS) 1974	FIREFIGHTERS' UNIFIED (FURS) 1981
Minimum benefit or Guaranteed Annual Benefit Adjustment (GABA)	GABA **Tier One (Pre-7/01/13)** 1.5% **Tier Two (7/01/13)** Equal to or greater than 0.50% but no more than 1.50% depending on the funding status of the plan*	GABA **Pre-7/01/07** 3.0% **7/01/07** 1.5% **7/01/13** 1.5% reduced 0.1% for every 2 years system is below 90% funded	Minimum **Pre-7/01/97** Benefits increased same as salary of sitting judge GABA **7/01/97 or elected GABA** 3.0%	Minimum **Pre-7/01/97** 2% of base salary of probationary officer GABA **7/01/97 or elected GABA** 3.0% **07/01/13** 1.5%	GABA **Pre-07/01/07** 3.0% **07/01/07** 1.5%	GABA **Pre-07/01/07** 3.0% **07/01/07** 1.5%	Minimum **Pre-7/01/97** ½ of monthly salary of new officer GABA **7/01/97 or elected GABA** 3.0%	Minimum **Pre-7/01/97** ½ of monthly salary of new firefighter GABA **7/01/97 or elected GABA** 3.0%
Waiting period for GABA	3 years	**Pre-7/01/07** 1 year	1 year	**Pre-7/01/13** 1 year **7/01/2013** 3 years	1 year	1 year	1 year	1 year

Note:
*The TRS GABA for those hired on or after 7/01/2013 is: If system liabilities are at least 90% funded and the provision of the increase is not projected to cause the system's liabilities to be less than 85% funded, the GABA will be set by the board to an amount that is at least 0.5% but no more than 1.5%. The benefit increase will be effective on January 1.

Montana's Public Employees' Retirement Plans: Summary Tables
(Source: Montana Board of Investments)

Table 7 – INVESTMENT DATA

SYSTEM Year enacted	TEACHERS' RETIREMENT SYSTEM (TRS) 1937	PERS DEFINED BENEFIT PLAN (PERS-DBRP) 1945	JUDGES (JRS) 1967	HIGHWAY PATROL OFFICERS' (HPORS) 1945	SHERIFFS' (SRS) 1974	GAME WARDENS' AND PEACE OFFICERS' (GWPORS) 1963	MUNICIPAL POLICE OFFICERS (MPORS) 1974	FIREFIGHTERS' UNIFIED (FURS) 1981
Amount invested (fair value on 6/30/16)	$3.62 billion	$5.02 billion	$87.45 million	$128.57 million	$298.64 million	$154.41 million	$ 329.53 million	$337.33 million
Actual rate of return: FY 2016 and 10-year actual	2.08% - 1 year 5.89% - 10-year	2.07% - 1-year 5.89% - 10-year	2.08% - 1-year 5.89% - 10-year	2.07% - 1-year 5.89% - 10-year	2.08% - 1-year 5.87% - 10-year	2.07% - 1-year 5.87% - 10-year	2.09% - 1-year 5.85% - 10-year	2.08% - 1-year 5.87% - 10-year
Rate of return on board composite benchmark: FY 2016 and 10-yr	2.83% - 1-year 6.22% - 10-year	2.84% - 1-year 6.21% - 10-year	2.85% - 1-year 6.21% - 10-year	2.85% - 1-year 6.22% - 10-year	2.85% - 1-year 6.21% - 10-year	2.86% - 1-year 6.20% - 10-year	2.84% - 1-year 6.16% - 10-year	2.85% - 1-year 6.18% - 10-year
Actuarial value of return in FY 2016 with 4-year smoothing	8.79%	9.27%	8.64%	8.76%	8.66%	8.42%	8.37%	8.33%
Asset allocation all pension funds	Domestic Equity – 37.71% International Equity –15.44% Private Equity – 11.15% Fixed Income –23.65% Real Estate –9.27% Cash Equivalents –2.78%							
Pension funds by investment pool	Montana Domestic Equity Pool –$3,765,627,511 Montana International Pool –$1,541,646,604 Montana Real Estate Pool –$925,451,959 Montana Private Equity Pool –$1,113,423,468 Retirement Funds Bond Pool –$2,361,468,219 Short Term Investment Pool –$277,781,493							

Montana's Public Employees' Retirement Plans: Summary Tables
(Source: FY 2016, Actuarial Valuations)

Table 8 – CASH FLOW DATA

Notes on cash flow: Investment strategy must take into how much of the pension fund's assets need to be kept in more liquid investments in order to pay benefits as they come due. The more mature a plan becomes (i.e., the more retirees there are compared to current employees), the more cash is needed to cover benefit payments. If a plan has a "negative cash flow", it means that cash flowing out to pay benefits is greater than the cash flowing in from current contributions. However, the nature of a retirement plan is that contributions are not being spent as they come in, but are being invested to earn interest over time to pay for the individual's benefit in retirement. Thus, cash flow information helps provide context with respect to the liquidity needs of the pooled investment portfolio, but cash flow information is not a key indicator of the overall actuarial soundness of the pension fund. Actuarial soundness is best indicated by the plan's funded ratio (assets compared to liabilities) and progress toward 100% funding where current assets covered current liabilities. How fast this progress is made is reflected in the amortization schedule. Nonetheless, the more a pension fund's assets must be invested in shorter-term investments or kept in cash, the lower the interest earning potential on those assets. This table is offered to provide legislators with perspective on how cash flow needs may affect the overall investment earning potential of the fund.

SYSTEM Year enacted	TEACHERS' RETIREMENT SYSTEM (TRS) 1937	PERS DEFINED BENEFIT PLAN (PERS-DBRP) 1945	JUDGES (JRS) 1967	HIGHWAY PATROL OFFICERS' (HPORS) 1945	SHERIFFS' (SRS) 1974	GAME WARDENS' AND PEACE OFFICERS' (GWPORS) 1963	MUNICIPAL POLICE OFFICERS (MPORS) 1974	FIREFIGHTERS' UNIFIED (FURS) 1981
Active employees / retirees (includes beneficiaries)	19,048 active 15,164 retirees	28,390 active 21,333 retirees	55 active 68 retirees	228 active 329 retirees	1,364 active 620 retirees	989 active 250 retirees	762 active 768 retirees	644 active 621 retirees
Total contributions (A)	$205.3 million	$230.5 million	$2.54 million	$8.1 million	$14.3 million	$9.3 million	$25.1 million	$24.9 million
Total benefits & expenses paid (B)	$328.4 million	$359.9 million	$3.62 million	$10.8 million	$16.9 million	$6.4 million	$23.6 million	$21.2 million
Difference (A-B)	($123 million)	($129 million)	($1.08 million)	($2.7 million)	($2.6 million)	$2.9 million	$1.5 million	$3.7 million
Total investment income	$71.5 million	$101 million	$1.78 million	$2.6 million	$6.1 Million	$3.2 million	$7.1 million	$7.3 million
Net cash flow	($51.6 million)/ 1.39% of assets	($28.1 million)/ 0.56% of assets	$700,000	($100,000)	$3.5 million	$6 million	8.6 million	$11 million
Total assets (market value)	$3.7 billion	$5 billion	$87.8 million	$129 million	$299 million	$154.7 million	$343.6 million	$351.6 million
Benefits & expenses as a percentage of total assets	9%	7%	4%	8%	5%	4%	7%	6%

Montana's Public Employees' Retirement Plans: Summary Tables
(Source: June 30, 2016, Actuarial Valuation)

Table 9 – VOLUNTEER FIREFIGHTER'S COMPENSATION ACT
(Established in 1935)

Eligible fire companies (as defined in 19-17-109, MCA)	220
Members	1,895 active members 1,425 benefit recipients
Minimum age and service requirements	For full benefit: Age 55 and 20 years of service For reduced benefit: Age 60 and 10 years of service
Vesting	10 Years
Basic benefit formula	Full: $175 per month, but after 20 years of service, increased by $7.50 per year of service up to 30 years. If retired after July 1, 2011, after 30 years of service, increased by $7.50 per year only if the fund is actuarially sound and the amortization period remains 20 years or less. Reduced: normal benefit amount is prorated by years of service less than 20
Disability benefit	$7.50 per year of service, with a minimum of $75 per month and with the same maximum as a regular retirement benefit. The benefit can increase for over 30 years of service if the system is funded in 20 years or less.
Survivorship benefit	$7.50 per year of service (maximum of 40 months including any amounts retiree received).
Average age of active members	45.6 years of age
Average years of service of active members	9.8 years of service
Average benefit for full service retiree	$ 165.00 per month
Contributions	State General Fund: amount equal to 5% of insurance premium taxes collected (See Sections 19-17-301 and 50-3-109, MCA)
Actuarial value of assets	$35.3 Million
Actuarial liabilities	$44 million
Unfunded liability	$8.7 million
Years to amortize unfunded liability	7 years
Funded ratio	80%

Montana's Public Employees' Retirement Plans: Summary Tables
(Source: MPERA and Board of Investments)

Table 10 – PERS DEFINED CONTRIBUTION (DC) RETIREMENT PLAN
June 30, 2016

Membership	New hires have 12 months to make a one-time, irrevocable choice between the DB and DC plans – default is DB plan
Active membership	2,409 – 8% of total active members of PERS
Employee Contributions	7.9% of salary – all allocated to individual member accounts Reduced to 6.9% when PERS-DB plan amortization period is less than 25 years.
Employer and State GF Contributions	8.37% of salary (reduced when PERS-DB amortization period is less than 25 years Contributions allocated as follows: -- 8.03 % to member accounts -- 0.04% to an educational fund -- 0.3% to disability trust fund
Total contributions to member accounts	15.93% reduced to 11.09% when PERS-DB plan amortization period is less than 25 years
Total Amount Invested	$ 154.5 million
Investment Choices	28 funds (5 categories) evaluated quarterly. Options range from aggressive to conservative and include mutual funds, bond funds, and Target Date funds.
Vesting	5 years for employer contributions and investment earnings
Benefits	Contributions plus investment earnings, minus administrative expenses; payable at any time after termination, with a possible federal tax penalty for withdrawal before age 59½.
Disability Benefit	A defined disability benefit based on a 1/56 x HAC x years of service formula, same as provided in the PERS-DBRP.
Death/survivorship benefit	Member's account balance
Plan Administration	PERB is the plan's board of trustees Empower Retirement Services is the plan's record keeper

Montana's Public Employees' Retirement Plans: Summary Tables
(Source: MPERA and Board of Investments)

Table 11 – DEFERRED COMPENSATION PLAN (457)

Membership	Voluntary supplemental retirement savings plan available to all employees of the State, Montana University System, and contracting political subdivisions.
Number of Participants	4,708 Active members
Employee Contributions	Voluntary, pre-tax deferral or designated ROTH deferral
Employer Contributions	None, unless specified in an employer contract
Total Amount Invested	$448.2 million
Number of Investment Choices	20 funds (5 categories)
Vesting	Participants are fully vested in their accounts immediately
Benefit Eligibility	Not available to distribute until separation from service, retirement, death, or upon an unforeseeable emergency, while still employed, provided IRS-specified criteria are met.
Benefit Amount	Lump sum or periodic benefit payment, at the option of the participant. Based on individual account balance and plan provisions. IRS permitted rollovers are also possible.
Death/survivorship Benefit	Member's account balance
Plan Administration	- PERB is the plan's board of trustees - Great-West Retirement Services is the plan's record keeper

Montana's Public Employees' Retirement Plans: Summary Tables
(Source: Office of Commissioner of Higher Education and Board of Investments)

Table 12 – MONTANA UNIVERSITY SYSTEM RETIREMENT PROGRAM (MUS-RP)
June 30, 2016

Membership	All administrative, scientific, and instructional staff of the University System and classified staff that elected MUS-RP rather than the PERS-DC plan. Contributing (active): 4,239 Non-contributing (inactive, retired, etc): 4,969 Avg. age: 49 yrs Avg. yrs of membership: 10.8 yrs
Retirement eligibility	A plan member may "retire" (i.e., access the MUS-RP account) any time after service is terminated. There are federal tax penalties for withdrawal prior to age 59½.
Benefit	An MUS-RP member's benefit depends on total contributions to the member's individual account, plus investment earnings, minus administrative expenses. The MUS-RP is administered by TIAA (Teachers' Insurance and Annuity Association) Avg. account balance: $ 61,419
Death and survivor benefits	The full account value in member's annuity account is payable to the beneficiary. The benefit can be paid in a single sum, as an annuity to the beneficiary for life, or as an annuity for a fixed period of years. The annuity may also be deferred as federal law permits.
Total Amount Invested	$ 565.5 million
Investment Choices	27 choices (6 asset classes)
Total MUS-RP payroll covered	$251.7million
Contributions to member accounts as a percentage of payroll	**Contract and Professional Staff:** Employer: 5.956% Employee: 7.044% TOTAL: 13.0% **Classified Staff:** Employer: 8.43% Employee: 7.90% TOTAL: 16.33%
Supplemental employer contributions to TRS for unfunded liability.	**Contract and Professional Staff:** to TRS for unfunded liability: 4.72% **Classified Staff:** to PERS for education: .04%
Increase required in supplemental contribution rate to amortize unfunded liability by 2033 as required under 19-20-621, MCA	5.02% increase needed to the 4.72% to reach a total supplemental of 9.75% Note: As of June 30, 2014, valuation, which is the most recent. This increase is needed if the legislature wishes to continue to have the unfunded liability created in TRS when the MUS-RP was established paid by the U-System and not subsidized by the TRS pension fund.

CHAPTER 5
COMPARISONS WITH OTHER STATES

Plan design

States with DB plans

According to the National Association of State Retirement Administrators (NASRA), public employees are covered only by pure DB plans in 28 states, while public employees in the other 22 states are covered by a mix of different plan types. Pure DC plans are provided for in only 10 states. The rest of the plans are hybrids of some sort. Cash balance plans are provided for in 5 states.[25]

States with DC plans

According to NASRA, Alaska, Michigan, and Oklahoma are the only states that currently have a DC plan as the required primary retirement plan. West Virginia had a mandatory DC retirement plan for teachers until July 1, 2005.[26] Five other states have, in recent years, created defined contribution plans as the primary coverage for elected officials and political appointees, sometimes including legislative staff. These states include Colorado, Louisiana, Nevada, Vermont and Virginia.[27]

States with hybrid plans

The following 16 states have primary hybrid plans: California, Colorado, Georgia, Indiana, Kansas, Kentucky, Michigan, Nebraska, Ohio, Oregon, Rhode Island, Tennessee, Texas, Utah, Virginia, and Washington.[28] Because Montana's PERS-DB

[25] National Association of State Retirement Administrators, "Overview of Primary Retirement Benefit Plan Type, by State," April 2016. Available online at http://www.nasra.org/plandesign or directly at http://www.nasra.org//Files/Topical%20Reports/Plan%20Design/Overview%20of%20Primary%20Retirement%20Benefit%20Plan%20Type.pdf.

[26] From *Defined Benefit and Defined Contribution Retirement Plans*, NCSL, February 2005; found at http://www.ncsl.org/programs/fiscal/defineretire.htm. NOTE: The NCSL document was written prior to the WV teachers' DC plan closing to new members (July 1, 2005). Teachers in WV hired after June 30, 2005, are required to become members of the WV Teachers' Retirement System. Source: "TRS Frequently Asked Questions", West Virginia Consolidated Public Retirement Board, http://www.wvretirement.com/Questions%20TRS.html.

[27] *Ibid*. NOTE: Alaska is not cited in the NCSL paper because the paper was prepared in February 2005 and Alaska converted to a mandatory DC plan later that year.

[28] National Association of State Retirement Administrators, "Overview of Primary Retirement Benefit Plan Type, by State," April 2016. Available online at http://www.nasra.org/plandesign.

plan has a money purchase (defined contribution) feature, it is technically a hybrid plan and Montana could be included in the states with hybrid plans.

Funded ratio

According to the Center for Retirement Research at Boston College , the average funded ratio of state and local DB retirement plans has been decreasing since the market downturn in 2001. For FY 2015, the average funded ratio of these plans was about 74%.[29] Montana's PERS-DB plan's funded ratio for FY 2016 was above this national average, at 77%. However the funded ratio in TRS for FY 2016 was 69%, which is below the national average.

The history of the funded ratios in PERS and TRS is provided in Chapter 6.

Amortization

Making consistent long-term progress toward paying of a DB plan's unfunded actuarial liabilities is one measure used to assess a DB plan's fiscal health. To make this steady progress, contributions must be sufficient to cover both normal costs and pay off the unfunded actuarial liabilities so that they would be 100% funded in 30 years or less. The contribution amount necessary to progress toward 100% funding is sometimes referred to as the actuarial required contribution (ARC). According to research conducted by The PEW Charitable Trusts, as of 2014, many states were not contributing the full ARC, so were not reducing their unfunded actuarial liabilities. In fact, unfunded actuarial liabilities grew in 15 states. Because of funding increases passed by the Montana Legislature in 2013, Montana was listed as one of the 35 other states where the full ARC was being paid and unfunded actuarial liabilities were being reduced.

The history of the amortization periods in PERS and TRS is provided in Chapter 6.

[29] Center for Retirement Research at Boston College, National Data, graph on Actuarial Funded Ratio under Actuarial Funding section. Available online at http://publicplansdata.org/quick-facts/national/.

Benefit formula multipliers

As previously mentioned, the basic pension benefit formula in a DB plan and that is used to calculate the normal retirement benefit in all but one of Montana's state-sponsored defined benefit plans[30] is expressed as:

Multiplier (%) x Years of Service x Final Average Salary[31]

The percentage used in the benefit formula is sometimes referred to as the "escalator" or "multiplier."

General employees

According to a 2012 Wisconsin report comparing 87 public employee retirement systems among all 50 states, the multiplier used most frequently in retirement plans for general employees is between 1.5% and 1.7%. The next most frequent range of multipliers was 1.9% to 2.1%. The third most frequent range was 1.7% to 1.9%.[32]

Legislation passed by Montana's 2011 Legislature changed the multiplier for PERS members hired on or after July 1, 2011, to create a tiered system as follows:

- For members with less than 10 years of service, 1.5% per year.
- For members with 10 to 29 years of service, 1.786% per year.
- For members with 30 or more years of service, 2% per year.

A hybrid feature of PERS is that the retirement benefit is also calculated according to a money purchase formula, which is double the member's contributions, plus regular interest as determined by the PERB. The regular interest credited in PERS for 2015 was 0.25%.[33] A PERS retiree receives whichever benefit amount is greater between the two calculations.

[30] The formula is not applicable to members under the Volunteer Firefighters Compensation Act. See section 19-17-404, MCA. The current monthly benefit is $7.50 x years, with a maximum monthly benefit of $150.

[31] Some systems use the term "highest average compensation".

[32] *2012 Comparative Study of Major Public Employee Retirement Systems*, by Daniel Schmidt, Principal Analyst, Wisconsin Legislative Council, December 2013, pg. 25.

[33] The interest credit is set by the PERB annually.

Teachers

Data collected by the National Education Association (NEA) shows that the most frequent multiplier among the large pension plans surveyed for teachers was between 2.0% and 2.24%. The second most frequent multiplier was between 1.5% and 1.74%.[34]

In Montana's TRS, the multiplier is 1.667%. However, for members hired on or after July 1, 2013, and who retires with 30 or more years of service and is at least age 60, the multiplier is 1.85% per year of service.

Public safety employees

Retirement benefits for public safety personnel are generally higher in most states than for general employees. Potential reasons for the higher benefits include the following: (1) the benefits provide compensation for the higher risk in public safety professions; (2) public safety professionals tend to have shorter lives and are entitled to the actuarially determined higher benefit; and (3) public safety positions are often not covered by Social Security.

In Montana, most positions covered by MPORS, FURS, and HPORS are not covered by Social Security. In 1997, the Legislature equalized the multipliers among MPORS, FURS, SRS, and HPORS by raising the sheriffs' and firefighters' multipliers to 2.5%. In 2001, the Legislature increased the multiplier for the GWPORS to 2.5% as well.

According to an NCSL report, this 2.5% multiplier is within the 2.5% to 2.99% range found in 49% of other statewide public safety retirement plans where officers are not covered by Social Security and in 35% of the retirement plans where employees are covered by Social Security.[35]

Final average compensation

According to a 2012 Wisconsin survey, the most frequently used period for determining a final average compensation in primary public employee retirement plans is 5 years, which is up from the 3 years that was most frequently used in 2010. Fiscal pressures caused by investment losses in 2001

[34] National Education Association, *Characteristics of Large Public Pension Plans*, December 2010, pg. 60

[35] Ronald Snell, "State Retirement Plans for Public Safety Employees", National Conference for State Legislatures, August 2012.

and 2008 prompted Montana's 2011 Legislature to join several other states in increasing the final average compensation period in PERS, SRS, and GWPORS from 3 years to 5 years for new hires. This increase in the number of years used to calculate an average compensation results in lower benefits. Montana's other DB plans remain at a 3-year-average period for computing the final average compensation used in the benefit formula.

Years of service and age

In most DB plans, a person must work a certain number of years or attain a certain age, or both, to be eligible for normal retirement benefits (i.e., benefits calculated under the normal benefit formula). Early retirement eligibility allows for retirement with fewer years of service or at a younger age, but calculated under a benefit formula that includes an actuarial reduction in the benefit.

General employee plans

According to the Wisconsin survey, the most frequent retirement eligibility criteria for general classified employees is 30 years of service and age 55 or older. However, a significant number of plans have "X years and out" provisions, which allow members to receive normal benefits at any age if the member has served a certain number of years, regardless of age.[36]

Montana's PERS for members hired before July 1, 2011, provides for normal retirement at the following:

- 30 years any age.
- 5 years and age 60.
- Age 65 regardless of years of service.

If hired on or after July 1, 2011, Montana's PERS provides normal retirement at the following:

- Age 65 with age least 5 years of service.
- Age 70 regardless of years of service.

Teachers

According to the previously cited NEA report, the most common normal retirement age for teachers' public retirement plans is age 60 or 62, while the most common years of service requirement of retirement at any age is 30 years

[36] *2012 Comparative Study of Major Public Employee Retirement Systems*, by Daniel Schmidt, Wisconsin Legislative Council, Dec. 2012, pp. 11-17.

of service. There are wide-ranging differences among teachers' retirement plans when age and service requirements are combined.[37]

Public safety employees

In public safety professions, there is an occupational incentive to leave the profession when age and "burnout" begin to affect job performance. Thus, years of service and age requirements for normal retirement eligibility are typically lower in public safety retirement plans than in plans for general employees.

An NCSL study reports that the most frequently used age criteria among the studied public safety retirement plans was age 50.[38] Twenty years of service is also a norm, and many plans provide for normal retirement with 20 years of service regardless of age.

There are age and service eligibility differences among Montana's public safety plans as follows:

- HPORS and SRS provide a 20-year retirement at any age.
- MPORS and FURS provide a 20-year retirement at any age, or 5 years and age 50.
- GWPORS provides a 20-year retirement at any age, or 5 years and age 55.

Vesting period

A member becomes entitled to receive some retirement benefits—i.e., he or she "vests" or becomes "vested"—when the member has contributed to the system for a certain number of years. According to the Wisconsin survey, 52% of the plans required 5 years of service to vest, while 30% require 10 years of service.[39]

Montana's Legislature has enacted laws to establish a 5-year vesting period uniformly among Montana's public retirement plans. However, in 2013, the Legislature increased the vesting period in the HPORS to 10 years in an effort to

[37] National Education Association, *Characteristics of Large Public Pension Plans*, December 2010, pp. 29-39.

[38] Ronald Snell, "State Retirement Plans for Public Safety Employees", National Conference for State Legislatures, August 2012.

[39] *2012 Comparative Study of Major Public Employee Retirement Systems*, by Daniel Schmidt, Wisconsin Legislative Council, Dec. 2012, p 23.

reduce the normal cost of benefits going forward and thereby improve the actuarial funding of the plan.[40]

Postretirement benefit increases

Prior to 1997, Montana's legislature has been periodically persuaded to provide *ad hoc* increases to the monthly benefits of current retirees to mitigate the effects of inflation, which were seriously eroding the value of the retirement benefits over time. However, *ad hoc* increases are not prefunded by contributions or investment earnings. Therefore, these increases added significantly to the unfunded actuarial liabilities of the plans.

In 1997, Montana's Legislature enacted a 1.5% "guaranteed annual benefit adjustment" (GABA) for retirees in all MPERA systems, except the VFCA.[41] A similar 1.5% GABA was enacted for TRS in 1999. In 2001, the Legislature increased the 1.5% GABA for the MPERA systems to 3%.[42] However, after market losses significantly hurt the pension plans, the 2007 Legislature reduced the GABA for new hires in PERS, HPORS, SRS and GWPORS back to 1.5%.[43] And, in 2013, the Montana Legislature reduced the GABA for employees in PERS and TRS hired on and after July 1, 2013, to an adjustable amount based on the actuarial funding status of the plan to a maximum of 1.5%. The GABA in JRS, MPORS, and FURS, continues to be 3.0%.

Most of the plans (92%) included in the Wisconsin study provide some sort of cost-of-living adjustment (COLA). According to the study:

- 34% of the plans index the adjustments to the Consumer Price Index (CPI).
- 28% of the plans provide a set percentage, similar to Montana's GABA.
- 24% of the plans still provide *ad hoc* adjustments.
- 6% of the plans spend investment earnings above the assumed rate of return.[44]

[40] Ch. 272, Laws of Montana, 2013

[41] As a money purchase DC plan, the ORP cannot provide for a postretirement benefit increase. The PERS/DC plan did not exist in 1997 but, had it existed, also could not provide a postretirement increase.

[42] Ch. 149, Laws of Montana, 2001.

[43] Ch. 371, Laws of Montana, 2007.

[44] *2012 Comparative Study of Major Public Employee Retirement Systems*, by Daniel Schmidt, Wisconsin Legislative Council, Dec. 2012, pp. 30-35.

The Social Security COLA, which is indexed to the CPI, between 2010 and 2016 has been as follows:

Year	SS COLA
2010	0.0%
2011	3.6%
2012	1.7%
2013	1.5%
2014	1.7%
2015	0.0%
2016	0.3%

CHAPTER 6
ASSUMPTIONS, INVESTMENT RETURNS, AND HISTORICAL DATA

Actuarial assumptions

As previously noted, actuaries use economic and demographic assumptions when conducting actuarial valuations. These assumptions are developed based on a long-term analysis of actual experience based on standards adopted by the Actuarial Standards Board.[45] The governing boards for the retirement systems set these assumptions based on the actuary's recommendations.

Figure 4 shows what economic assumptions are currently used for the MPERA systems and TRS based on the most recent experience studies for these systems.

Figure 4 - Economic Assumptions for Montana's Plans

Economic Assumption	MPERA Systems	TRS
General wage increase	4.00%	4.00%
Investment return	7.75%	7.75%
Price inflation	3.00%	3.25%
Growth in membership	0.00%	0.00%
Interest on member accounts	3.50%	5.00%
Administrative expenses	0.27%	0.31%

Demographic assumptions are also made but are not summarized in this guide. Information on these assumptions is provided in the actuarial valuations for each system and are listed in the actuarial valuation assumptions and methods policies of the respective retirement boards.[46]

[45] See http://www.actuarialstandardsboard.org/ for more information on the ASB and the standards of practice that guide how actuaries develop these assumptions.

[46] For the MPERA systems, the valuations are available at http://mpera.mt.gov/. For TRS, the valuation is available at https://trs.mt.gov/.

Investment management

For the MPERA and TRS DB plans, assets are managed and invested by the Montana Board of Investments (BOI) as part of the state's unified investment program.

For the PERS-DC plan, MPERA contracts with several retirement fund companies to provide a menu of investment options for plan members.

For the MUS-RP, the Board of Regents contracts with the Teachers Insurance and Annuity Association – College Retirement Equities Fund (TIAA–CREF) for plan administration and investment options.

Investment return assumption

Because investment income is the primary source of funding for any retirement plan, the investment return assumption is the most significant assumption used when estimating costs. Actuaries make the investment return assumption recommendation based on an extensive long-term analysis of investment returns.[47]

Since 2008, many state retirement plans have reduced their rate of return assumptions because of the significant market losses in 2001 and 2008, which obviously affected the actual experience of the pension plans.

The Montana Public Employees' and Teachers' Retirement boards have each adopted a 7.5% investment rate of return assumption to be used for actuarial valuations.

According to data reported by NASRA, as of June 30, 2015, the median investment rate of return assumption among public pension plans surveyed was 7.5%.[48]

[47] See Actuarial Standard of Practice No. 27, paragraph 3.8 for standards of practice related to the selection of investment return assumptions, available online at http://www.actuarialstandardsboard.org/asops/selection-economic-assumptions-measuring-pension-obligations/#38-selecting-an-investment-return-assumption.

[48] National Association of State Retirement Administrators chart at http://www.nasra.org/investment.

The Montana TRS Board reduced its rate of return assumption from 8% to 7.75% in 2005. Then, based on the TRS experience study for the 5-year period ending July 1, 2013, the TRS actuary recommended no change from the 7.75% investment return assumption and the TRS Board concurred.

The Montana PER Board reduced its assumed rate of return from 8% to 7.75% in 2010, based on an experience study for the 5-year period ending June 30, 2009.[49] In 2013, the contracted actuarial firm recommended that the 7.75% investment return assumption be reduced to 7.5%.[50] After discussion and testimony, the PER Board chose not to make this change, citing the 2013 legislative session changes in benefits and funding for PERS and the desire to allow some time to assess the fiscal impacts from these changes before making further changes.[51]

Smoothing investment gains and losses

When actuaries conduct valuations, investment gains and losses are smoothed over several years. This reduces the impact of market volatility when assessing the long-term fiscal soundness of the pension plan. This in turn allows for a more steady approach to funding decisions.

The actuaries for Montana's pension plans smooth investment gains and losses over four years. Thus, when legislators look at the results of an actuarial valuation, they should keep this smoothing in mind because only 25% of the market loss or gain will be used in the valuation for that fiscal year.

Investment performance

Figures 5 and 6 show the actual investment return experience of PERS and TRS compared to the smoothed actuarial return and the investment return assumptions adopted boards.

Figure 7 is an extract from an outside consultant reports to the Montana Board of Investments showing the comparative performance of the pension funds as of September 30, 2016. Figure 8 is a color-coded chart showing highest to lowest performing fund categories by fiscal year. (The categories are color coded.)

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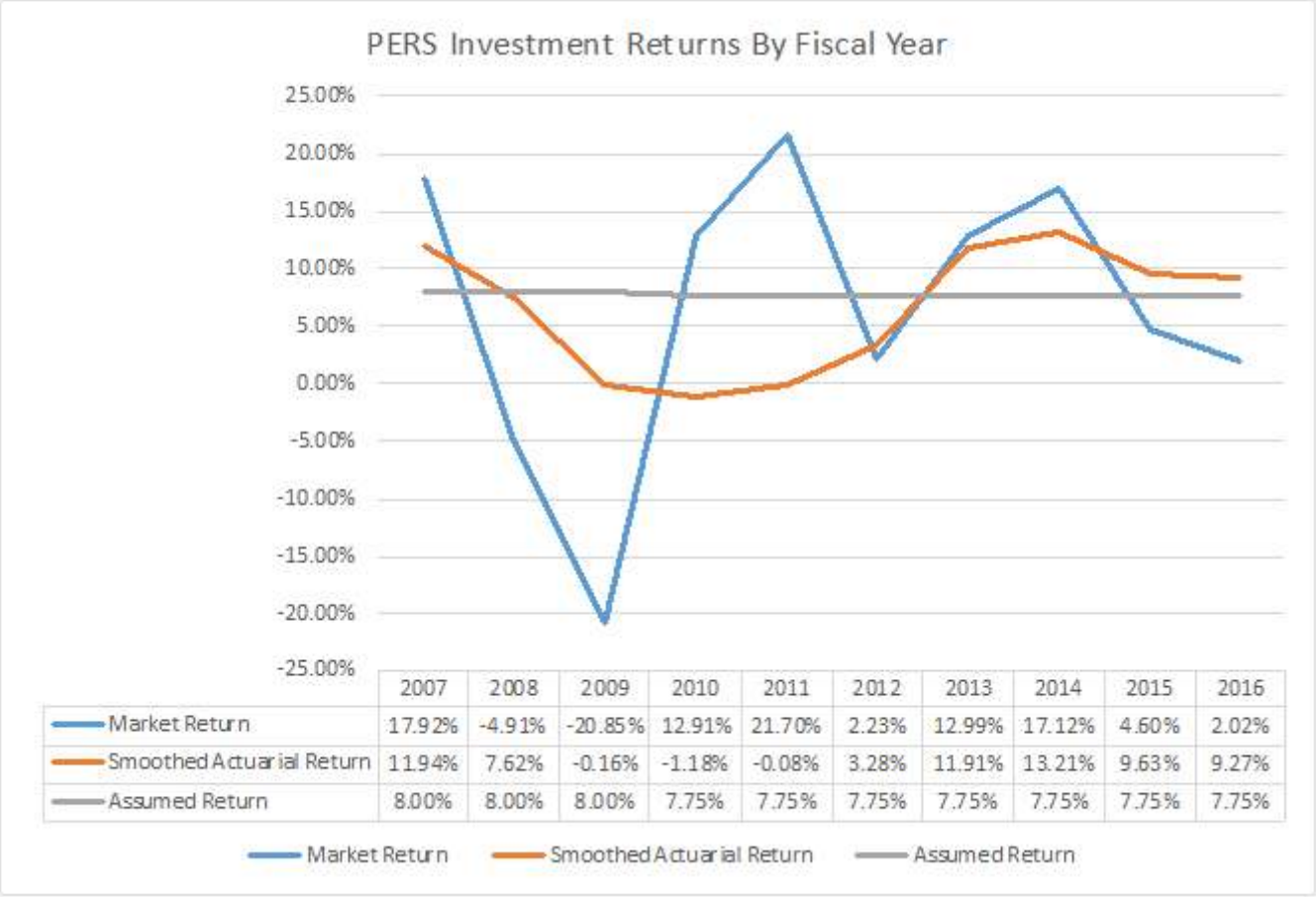
[49] See Cheiron, *Montana Public Employees' Retirement Administration Experience Study Results and Recommendations for the period covering July 1, 2003 — June 30, 2009*. See also Public Employees' Retirement Board, Minutes, May 13, 2010.

[50] Cheiron, *Montana Public Employees' Retirement Board Economic Experience Study As of June 30, 2013,* presented to the PER Board Sept. 12, 2013.

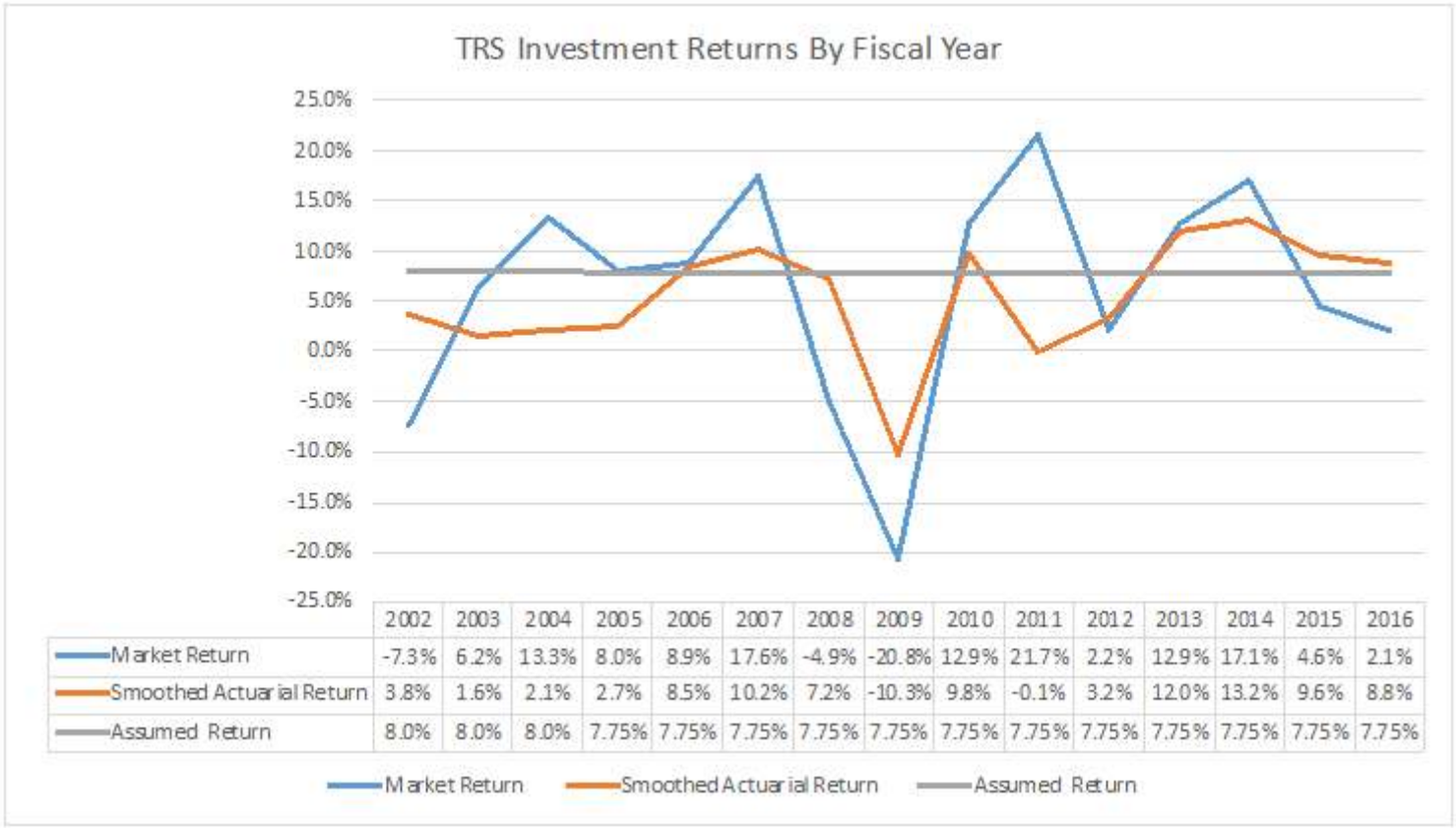
[51] Public Employees' Retirement Board, Minutes, Sept. 12, 2013.

Figure 5



	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Market Return	17.92%	-4.91%	-20.85%	12.91%	21.70%	2.23%	12.99%	17.12%	4.60%	2.02%
Smoothed Actuarial Return	11.94%	7.62%	-0.16%	-1.18%	-0.08%	3.28%	11.91%	13.21%	9.63%	9.27%
Assumed Return	8.00%	8.00%	8.00%	7.75%	7.75%	7.75%	7.75%	7.75%	7.75%	7.75%

Figure 6



	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Market Return	-7.3%	6.2%	13.3%	8.0%	8.9%	17.6%	-4.9%	-20.8%	12.9%	21.7%	2.2%	12.9%	17.1%	4.6%	2.1%
Smoothed Actuarial Return	3.8%	1.6%	2.1%	2.7%	8.5%	10.2%	7.2%	-10.3%	9.8%	-0.1%	3.2%	12.0%	13.2%	9.6%	8.8%
Assumed Return	8.0%	8.0%	8.0%	7.75%	7.75%	7.75%	7.75%	7.75%	7.75%	7.75%	7.75%	7.75%	7.75%	7.75%	7.75%

Figure 7

Montana Board of Investments
Comparative Performance
Retirement Plans

As of September 30, 2016

	QTD/ FYTD	CYTD	1 Year	3 Years	5 Years	7 Years	10 Years	2015	2014	2013	2012	2011
Public Employees' Retirement - Net	**3.24**	**6.18**	**9.49**	**7.25**	**10.25**	**9.22**	**5.77**	**1.86**	**8.07**	**17.38**	**13.24**	**2.13**
Public Employees' Benchmark	3.25	7.67	10.50	7.98	10.75	9.81	6.06	1.40	9.08	17.94	14.88	1.67
Difference	-0.01	-1.49	-1.01	-0.73	-0.50	-0.59	-0.29	0.46	-1.01	-0.56	-1.64	0.46
Public Employees' Retirement - Gross	**3.34**	**6.52**	**9.96**	**7.75**	**10.78**	**9.78**	**6.29**	**2.31**	**8.61**	**17.96**	**13.83**	**2.68**
All Public Plans > $3B Total Fund Median	3.82	6.91	9.57	6.18	8.96	8.34	5.75	0.34	6.81	14.65	13.08	1.24
Rank	73	60	37	1	3	1	11	8	8	6	32	32
Teachers' Retirement - Net	**3.24**	**6.20**	**9.51**	**7.27**	**10.26**	**9.24**	**5.77**	**1.86**	**8.09**	**17.38**	**13.24**	**2.14**
Teachers' Benchmark	3.25	7.67	10.51	8.00	10.76	9.82	6.06	1.40	9.11	17.94	14.89	1.66
Difference	-0.01	-1.47	-1.00	-0.73	-0.50	-0.58	-0.29	0.46	-1.02	-0.56	-1.65	0.48
Teachers' Retirement - Gross	**3.34**	**6.55**	**9.98**	**7.77**	**10.80**	**9.79**	**6.29**	**2.32**	**8.63**	**17.96**	**13.84**	**2.68**
All Public Plans > $3B Total Fund Median	3.82	6.91	9.57	6.18	8.96	8.34	5.75	0.34	6.81	14.65	13.08	1.24
Rank	73	58	36	1	2	1	11	8	8	6	32	31
Police Retirement - Net	**3.23**	**6.18**	**9.49**	**7.26**	**10.25**	**9.20**	**5.73**	**1.86**	**8.07**	**17.41**	**13.23**	**2.10**
Police Benchmark	3.25	7.66	10.49	7.99	10.74	9.78	6.01	1.41	9.10	17.92	14.80	1.66
Difference	-0.02	-1.48	-1.00	-0.73	-0.49	-0.58	-0.28	0.45	-1.03	-0.51	-1.57	0.44
Police Retirement - Gross	**3.33**	**6.53**	**9.95**	**7.75**	**10.78**	**9.75**	**6.25**	**2.31**	**8.61**	**18.00**	**13.78**	**2.65**
All Public Plans > $3B Total Fund Median	3.82	6.91	9.57	6.18	8.96	8.34	5.75	0.34	6.81	14.65	13.08	1.24
Rank	73	60	37	1	3	1	12	8	8	5	36	34

Net performance shown is net of all manager fees and expenses (Net-All). All Public Plans > $3B Total Fund Median is reported gross of fees.
Benchmark returns reflect unmanaged indices which are not impacted by management fees. Fiscal year ends on June 30.

RVK

Montana Board of Investments
Comparative Performance
Retirement Plans

As of September 30, 2016

	QTD/ FYTD	CYTD	1 Year	3 Years	5 Years	7 Years	10 Years	2015	2014	2013	2012	2011
Firefighters' Retirement - Net	**3.23**	**6.17**	**9.48**	**7.26**	**10.25**	**9.19**	**5.76**	**1.87**	**8.07**	**17.41**	**13.22**	**2.10**
Firefighters' Benchmark	3.25	7.67	10.50	7.99	10.74	9.77	6.03	1.41	9.10	17.92	14.80	1.66
Difference	-0.02	-1.50	-1.02	-0.73	-0.49	-0.58	-0.27	0.46	-1.03	-0.51	-1.58	0.44
Firefighters' Retirement - Gross	**3.33**	**6.52**	**9.95**	**7.75**	**10.78**	**9.75**	**6.27**	**2.32**	**8.61**	**17.99**	**13.81**	**2.64**
All Public Plans > $3B Total Fund Median	3.82	6.91	9.57	6.18	8.96	8.34	5.75	0.34	6.81	14.65	13.08	1.24
Rank	73	61	37	1	3	1	11	8	8	5	34	34
Sheriffs' Retirement - Net	**3.25**	**6.18**	**9.49**	**7.25**	**10.23**	**9.19**	**5.76**	**1.86**	**8.05**	**17.35**	**13.19**	**2.12**
Sherriffs' Benchmark	3.26	7.68	10.51	7.98	10.73	9.78	6.06	1.40	9.07	17.91	14.84	1.65
Difference	-0.01	-1.50	-1.02	-0.73	-0.50	-0.59	-0.30	0.46	-1.02	-0.56	-1.65	0.47
Sheriffs' Retirement - Gross	**3.34**	**6.53**	**9.96**	**7.74**	**10.76**	**9.75**	**6.28**	**2.32**	**8.59**	**17.93**	**13.79**	**2.66**
All Public Plans > $3B Total Fund Median	3.82	6.91	9.57	6.18	8.96	8.34	5.75	0.34	6.81	14.65	13.08	1.24
Rank	73	59	37	1	6	1	11	8	8	6	36	33
Highway Patrol Retirement - Net	**3.25**	**6.17**	**9.49**	**7.26**	**10.25**	**9.23**	**5.77**	**1.87**	**8.08**	**17.38**	**13.24**	**2.12**
Highway Patrol Benchmark	3.26	7.68	10.51	8.00	10.76	9.82	6.07	1.41	9.10	17.94	14.88	1.65
Difference	-0.01	-1.51	-1.02	-0.74	-0.51	-0.59	-0.30	0.46	-1.02	-0.56	-1.64	0.47
Highway Patrol Retirement - Gross	**3.34**	**6.52**	**9.96**	**7.75**	**10.79**	**9.78**	**6.29**	**2.32**	**8.62**	**17.96**	**13.84**	**2.66**
All Public Plans > $3B Total Fund Median	3.82	6.91	9.57	6.18	8.96	8.34	5.75	0.34	6.81	14.65	13.08	1.24
Rank	73	61	37	1	3	1	11	8	8	6	32	33

Net performance shown is net of all manager fees and expenses (Net-All). All Public Plans > $3B Total Fund Median is reported gross of fees.
Benchmark returns reflect unmanaged indices which are not impacted by management fees. Fiscal year ends on June 30.

RVK

Montana Board of Investments
Comparative Performance
Retirement Plans

As of September 30, 2016

	QTD/ FYTD	CYTD	1 Year	3 Years	5 Years	7 Years	10 Years	2015	2014	2013	2012	2011
Game Wardens' Retirement - Net	**3.25**	**6.17**	**9.49**	**7.24**	**10.22**	**9.19**	**5.75**	**1.88**	**8.03**	**17.34**	**13.20**	**2.09**
Game Wardens' Benchmark	3.26	7.69	10.52	7.98	10.74	9.78	6.06	1.41	9.06	17.90	14.85	1.64
Difference	-0.01	-1.52	-1.03	-0.74	-0.52	-0.59	-0.31	0.47	-1.03	-0.56	-1.65	0.45
Game Wardens' Retirement - Gross	**3.35**	**6.52**	**9.95**	**7.73**	**10.76**	**9.74**	**6.27**	**2.33**	**8.57**	**17.92**	**13.79**	**2.63**
All Public Plans > $3B Total Fund Median	3.82	6.91	9.57	6.18	8.96	8.34	5.75	0.34	6.81	14.65	13.08	1.24
Rank	72	61	37	1	6	1	11	8	8	6	35	34
Judges' Retirement - Net	**3.25**	**6.18**	**9.49**	**7.25**	**10.23**	**9.21**	**5.77**	**1.86**	**8.06**	**17.36**	**13.20**	**2.12**
Judges' Benchmark	3.26	7.68	10.51	7.98	10.74	9.80	6.07	1.40	9.08	17.92	14.84	1.64
Difference	-0.01	-1.50	-1.02	-0.73	-0.51	-0.59	-0.30	0.46	-1.02	-0.56	-1.64	0.48
Judges' Retirement - Gross	**3.34**	**6.53**	**9.96**	**7.74**	**10.77**	**9.76**	**6.29**	**2.32**	**8.60**	**17.94**	**13.79**	**2.66**
All Public Plans > $3B Total Fund Median	3.82	6.91	9.57	6.18	8.96	8.34	5.75	0.34	6.81	14.65	13.08	1.24
Rank	73	59	37	1	6	1	11	8	8	6	35	33
Volunteer Firefighters' Retirement - Net	**3.25**	**6.03**	**9.33**	**7.23**	**10.23**	**9.23**	**5.77**	**1.91**	**8.09**	**17.42**	**13.18**	**2.09**
Volunteer Firefighters' Benchmark	3.25	7.66	10.49	8.00	10.75	9.83	6.06	1.42	9.11	17.97	14.79	1.70
Difference	0.00	-1.63	-1.16	-0.77	-0.52	-0.60	-0.29	0.49	-1.02	-0.55	-1.61	0.39
Volunteer Firefighters' Retirement - Gross	**3.34**	**6.37**	**9.79**	**7.73**	**10.76**	**9.79**	**6.28**	**2.36**	**8.63**	**18.00**	**13.77**	**2.63**
All Public Plans > $3B Total Fund Median	3.82	6.91	9.57	6.18	8.96	8.34	5.75	0.34	6.81	14.65	13.08	1.24
Rank	73	69	42	1	6	1	11	8	8	5	36	34

Net performance shown is net of all manager fees and expenses (Net-All). All Public Plans > $3B Total Fund Median is reported gross of fees.
Benchmark returns reflect unmanaged indices which are not impacted by management fees. Fiscal year ends on June 30.

RVK

Figure 8

FY7	FY8	FY9	FY10	FY11	FY12	FY13	FY14	FY15	FY16
Intl Equity 31.5%	Prvt Equity 9.6%	Fixed Inc 2.5%	Prvt Equity 18.2%	US Equity 31.9%	Real Estate 11.5%	US Equity 22%	US Equity 25.2%	Real Estate 13.1%	Real Estate 12.1%
Prvt Equity 23.4%	Fixed Inc 5.8%	Cash 1.7%	US Equity 15.9%	Intl Equity 30.6%	Prvt Equity 11.1%	Intl Equity 14.4%	Intl Equity 21.7%	Prvt Equity 8.4%	Fixed Inc 6%
US Equity 19.5%	Real Estate 4.6%	PERS -20.7%	Fixed Inc 14.4%	PERS 21.8%	Fixed Inc 8.1%	PERS 13%	PERS 17.2%	US Equity 7.3%	Prvt Equity 5.8%
PERS 18%	Cash 4.3%	Prvt Equity -24.3%	PERS 12.9%	Prvt Equity 21.5%	US Equity 3%	Prvt Equity 12.6%	Prvt Equity 16.5%	PERS 4.6%	PERS 2.1%
Fixed Inc 6.9%	PERS -4.9%	US Equity -27.3%	Intl Equity 9.9%	Real Estate 16.5%	PERS 2.4%	Real Estate 8.5%	Real Estate 11.7%	Fixed Inc 2.3%	US Equity 1.7%
Cash 5.6%	Intl Equity -9.3%	Real Estate -28%	Cash 0.3%	Fixed Inc 6.8%	Cash 0.3%	Fixed Inc 1.6%	Fixed Inc 5.2%	Cash 0.1%	Cash 0.4%
Real Estate 4.9%	US Equity -13%	Intl Equity -35.3%	Real Estate -17.3%	Cash 0.3%	Intl Equity -15.5%	Cash 0.2%	Cash 0.1%	Intl Equity -4.2%	Intl Equity -8.9%

Source: Montana Board of Investments

Each category of investments is shown by color and is arranged from top to bottom with respect to how that category performed in each fiscal year. This illustrates the relative volatility of the investment type. The PERS fund is shown as a category to illustrate its comparative performance.

How do Montana's pension investments stack up?

Independent consultants for the BOI reported the following to the BOI in August 2016:

- Montana's 5-year net total return of 8.4% was above both the U.S. public median of 7.2% and the peer median was also 7.2%.[52]
- Montana's total investment expenses were slightly lower than the peer median.[53]
- On a risk-adjusted basis, pension investments are providing a higher return than peers with less risk over a ten-year period.[54]
- The total return on key U.S. pension funds over the last 25 years has averaged 9.55%.[55]

[52] CEM Benchmarking presentation to the Montana Board of Investments (BOI) on Benchmarking Results, August 16, 2016, p. 4. Available at the BOI website, www.investmentmt.com, under Board Meeting Materials for August 16-17, 2016.

[53] Ibid., pp. 14-15.

[54] RVK Inc., Quarterly Report to the BOI, August 17, 2016, p. 3. Available at the BOI website, www.investmentmt.com, under Board Meeting Materials for August 16-17, 2016.

[55] CEM Benchmarking presentation to the Montana Board of Investments (BOI) on Key Trends and Research Insights, August 16, 2016, p. 4. Available at the BOI website, www.investmentmt.com, under Board Meeting Materials for August 16-17, 2016.

Historical funded ratios and amortization periods

Figures 9 through 12 illustrate the historical tend of funded ratios and amortization periods for PERS and TRS.

Figure 9

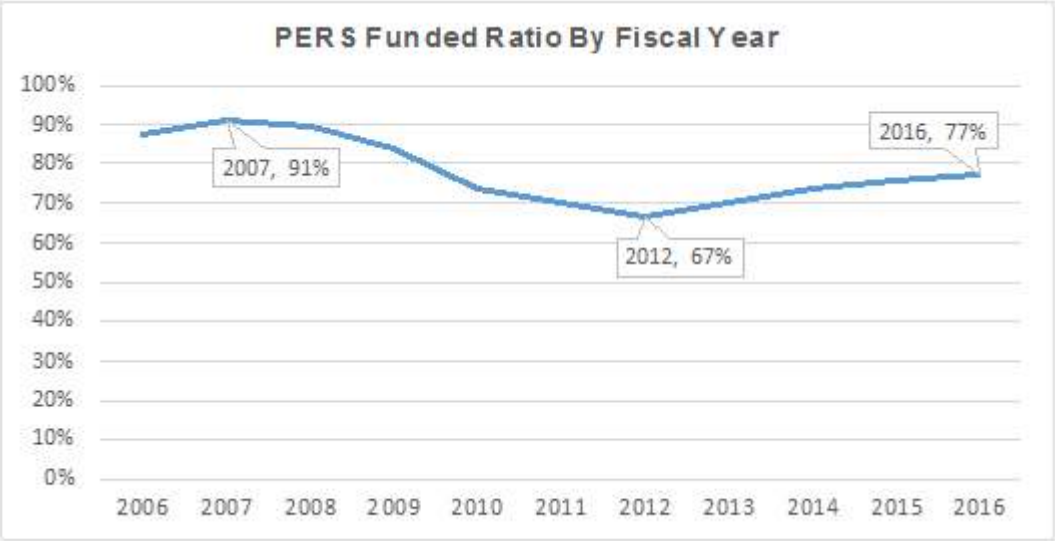
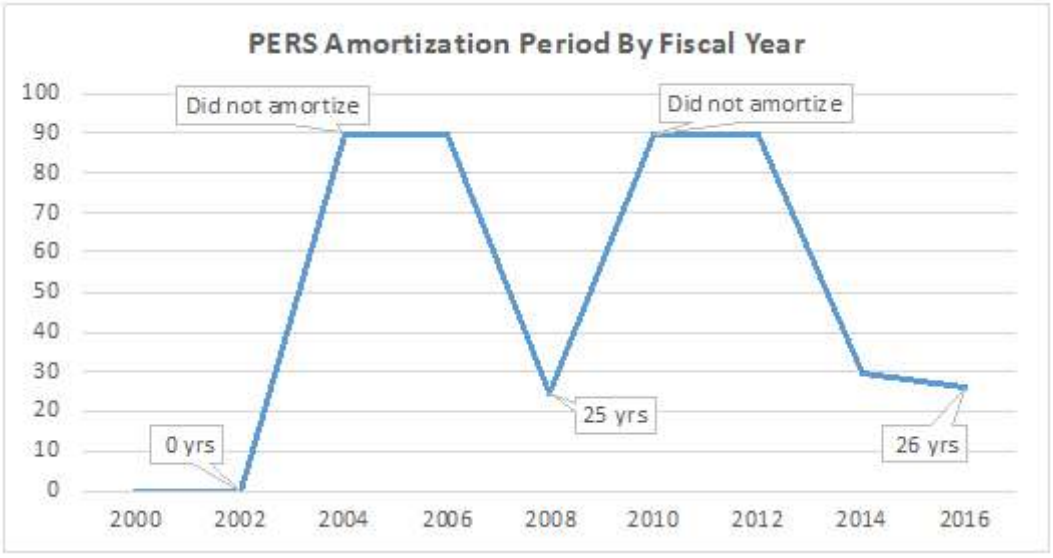


Figure 10

Note: The "did not amortize" data points in Figure 10 are actually an infinite number of years, but



the time period was set at 90 years for the purposes of developing the graph.

Figure 11

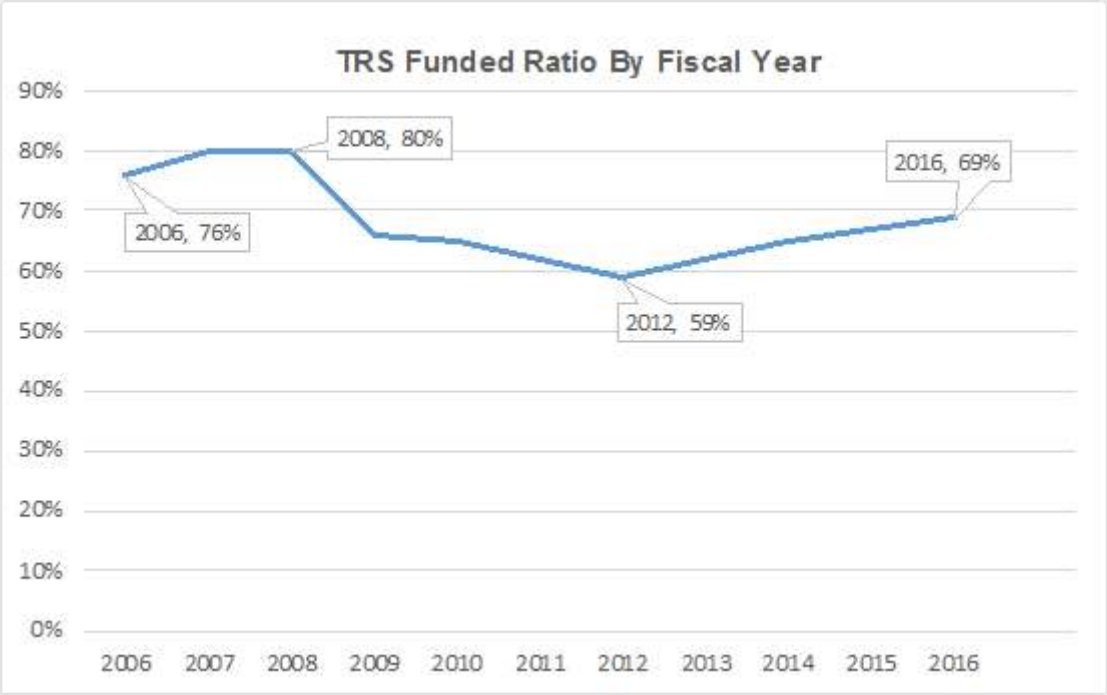
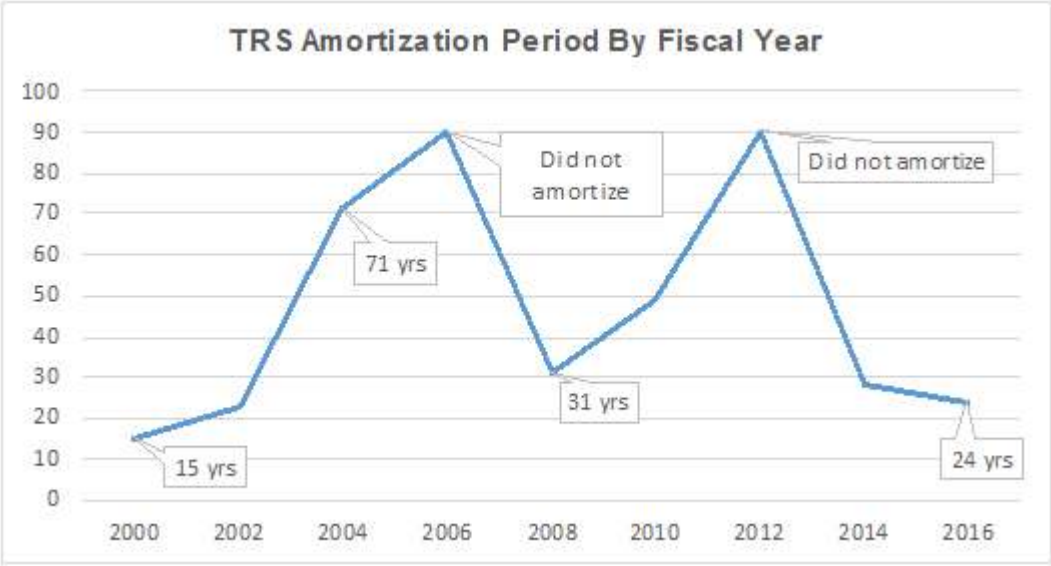


Figure 12



Note: The "did not amortize" data points in Figure 12 are actually an infinite number of years, but the time period was set at 90 years for the purposes of developing this graph.

Funded ratios and ARC paid in other states

Figure 13 shows the funded ratios and the percentage of the ARC paid in other states' retirement plans for general public employees in 2015

Figure 13
Funded Ratios in Montana PERS and Selected Other States[56]

State	Funded Ratio in 2015 (Plan for General Employees)	Percentage of ARC Paid in FY 2015*
Idaho	90%	98%
Montana	76%	102%
North Dakota	69%	66%
South Dakota	100%	115%
Wyoming	79%	85.9%

*Note: Contributions of 100% of the ARC is the amount sufficient to amortize the plan's unfunded liabilities in 30 years, which is the maximum desirable number of years for paying off the plan's unfunded liabilities. If contributions are less than 100% of the ARC, then plan contributions are not sufficient to pay down the plan's unfunded liabilities and the amortization period will increase. If more than 100% of the ARC is being paid, then the liabilities are being paid down and the amortization period is being reduced from the 30 years.

Cash flow

The fundamental equation for funding a retirement system is that benefits and administrative expenses are paid for by contributions and investment income. As a retirement system matures, benefits and administrative expenses often exceed contributions, causing negative cash flow in the system. Actuarial funding is designed to accumulate large pools of assets that will provide investment income and finance negative cash flows as the system matures.
If the fund is looked at as a whole, investment income is usually larger than the difference between contributions and benefits payments.

[56] Public Plans Data, a project of the Center for Retirement Research at Boston College, FY 2015 state data at http://publicplansdata.org/.

What is important is that the retirement system's investment strategy should maximize potential returns at a prudent level of risk while providing for the needed cash flow.

Although cash flow information helps provide context with respect to the liquidity needs of and the investment strategy for the investment portfolio, it is not the most important indicator of the overall actuarial soundness of the pension fund. Actuarial soundness is best indicated by the plan's overall funded ratio (the ratio of total assets to total liabilities) and the progress toward 100% funding (i.e., the amortization schedule for paying down any unfunded liabilities).

Figures 14 and 15 on the next pages illustrate the historical cash flow situation in the PERS and TRS pension funds.

Figure 14

PERS - Historical Cash Flow
($ Millions)

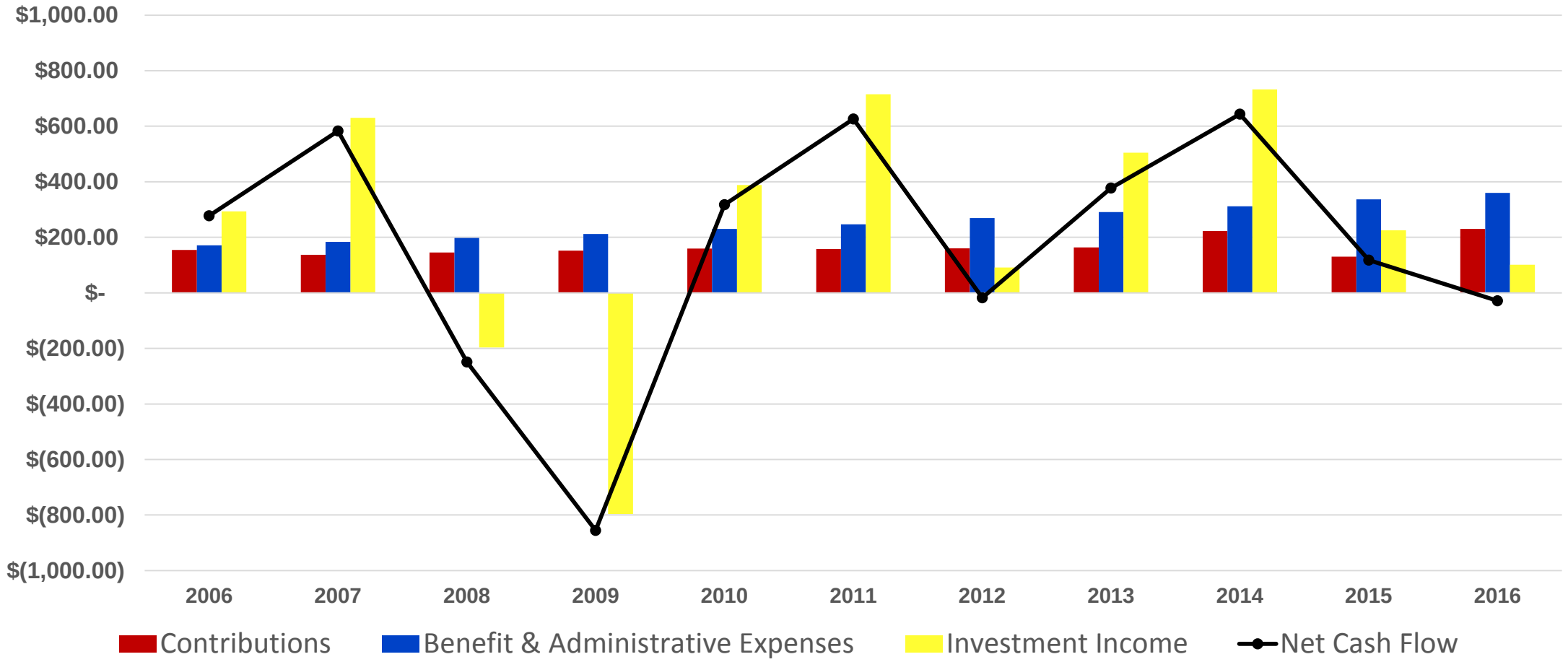
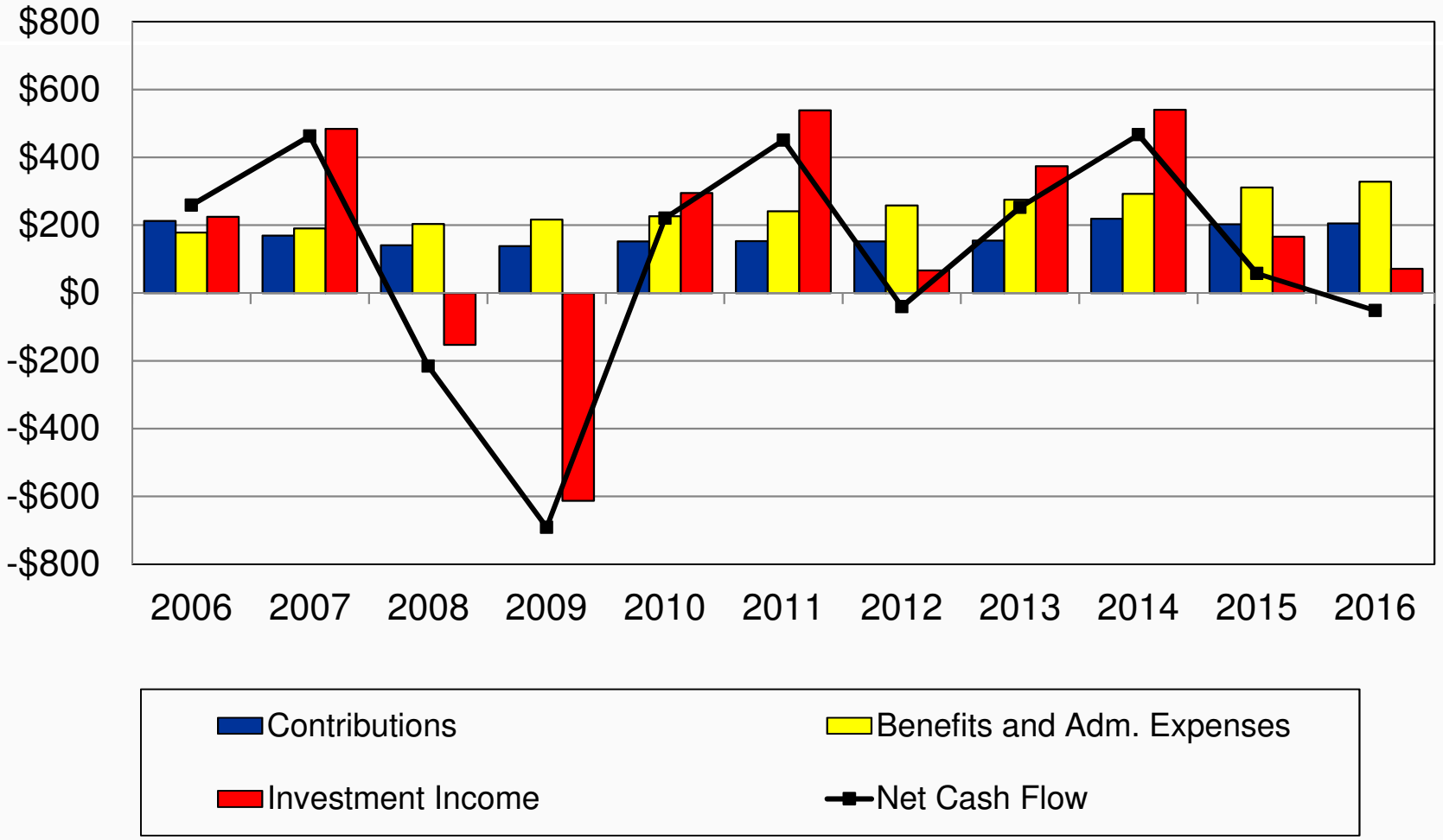


Figure 15

TRS - Historical Cash Flow (in Millions)



CHAPTER 7
POLICY ISSUES

Benefit enhancements

Legislators considering bills to change benefits in DB plans may find it helpful to consider some of the funding and policy implications of benefit enhancements in DB plans.

Past-service liability

Additional unfunded liabilities are created whenever a benefit enhancement is applied to past service. The liability occurs because the contribution rates for past service were set based on the projected costs of the pervious benefits. A benefit enhancement increases the normal cost of the system going forward. But, if it also applied by legislation to service that was performed in the past, a past-service liability is created.[57]

One way to avoid liability for past service is to make a benefit enhancement applicable only to new service or to new members. However, this creates a two-tiered benefit structure and results in unequal treatment of members within the same retirement system.

Ratchet effect

Another policy issue involves what is termed the "ratchet effect." Just as a ratchet can be tightened but not loosened, legal protections related to contract rights often mean that once a retirement benefit is promised to members, it cannot be withdrawn from or reduced for those members.

Although the Legislature has reduced benefits of future employees, equity and fairness arguments have resulted in bills passed by the Legislature to reinstate the higher benefits for all employees. As mentioned above, this creates a past-service liability and costs that may be beyond what would have been the costs if the benefit had never been reduced.

[57] A good, recent example of a benefit enhancement that applied to past service but for which past contribution rates were not actuarially sufficient to cover the normal cost of the benefit was the increase in 2001 of the GABA from 1.5% to 3% annually for PERS/DB members and retirees. (See Ch. 149, L. 2001.)

Benefit swaps

Benefit-for-benefit "swaps" can sometimes be designed and are legal, provided that the new benefit is of equal or greater value than the old benefit. Such swaps were used to help fund a portion of the costs of the 1.5% GABA granted to certain plans by the Legislature in 1997.[58]

Leapfrog effect

Another policy issue may arise if the Legislature passes a benefit enhancement in one system, but not in the other similar systems. If a benefit is increased for members of one system during a legislative session, the Legislature is likely to see a bill to grant that benefit enhancement, or a better benefit, in the other systems as well. This is often referred to as the "leapfrog effect."

Granting benefit enhancements by allowing the retirement plans to play leapfrog with each other can lead to inconsistent and inequitable retirement policy as well as additional costs and unfunded liabilities. To help prevent leapfrogging, legislators may want to ask proponents of benefits enhancements this question: "If the proposed benefit enhancement is appropriate for members of this system, is it appropriate and should it be granted for members of other systems?"

Funding options

A legislator who is asked to support a benefit enhancement may also be asked to support one of the following funding mechanisms:

- *Increase contributions to sufficiently fund the enhancement:* Contributions should be sufficient to fund both the normal cost of the enhancement and to amortize in 30 years or less any unfunded past service liability. Raising employer contributions in a retirement system places an additional burden on the employer's budgets. Furthermore, where local governments are the employers, increasing employer contributions may be considered an unfunded mandate. On the other hand, employees cannot legally be asked to contribute more than the normal cost of their benefits.

[58] Ch. 287, L. 1997. The Statement of Intent attached to the legislation (HB 170) read, in part, "the bill provides that the GABA be substituted for other benefits in cases in which the GABA is as valuable or more valuable to members. The resulting actuarial savings will reduce the additional funding required for the GABA."

- *Extend the amortization schedule:* If contributions are not raised enough to cover the costs of enhancing benefits, the system's unfunded liability will increase. A system's liabilities may be "refinanced" by extending the amortization schedule. Policymakers asked to extend the amortization period should consider sound policy principles to determine how far the amortization period may be extended before the system is no longer responsibly funded.[59]

- *Apply the enhancement to new hires only:* Applying an enhancement to new hires and future service only will help control costs because no debt for past service is created. However, this future-application-only option results in a tiered system in which members of the same plan will receive different benefits.

Pension reform

In recent years, the Legislature has considered various pension reform bills seeking to redesign the DB plans to shift some of the risk and responsibility from the employer to the employee by creating hybrid plans or freezing the DB plans and moving employees to a DC plan. (See Chapter 1 for a discussion of DB, DC, and hybrid plans.)

One of the key policy challenges legislators encounter when crafting reform bills is how to address the fiscal impact these reforms have on the long-term benefit obligations in the DB plans. Because DB plan funding relies on future contributions to meet funding obligations, if those contributions is reduced or the horizon for realizing investment returns on those contributions are reduced, then the long-term experience of the plan will be fundamentally changed from the actuarial assumptions used when contribution amounts were set. As was discussed in Chapter 2 concerning DB plan funding, such changes will increase unfunded liabilities (i.e., create liabilities that are not funded by the contributions that were set to pay future benefits). Thus, any fundamental reform of the DB plans requires careful actuarial analysis and consideration about the implications for how to continue to pay for the DB plan's liabilities if employees (and the contributions for those employees) are moved out of the DB plan and into a DC or hybrid plan.

[59] As previously noted, the MCA defines "actuarially sound basis" as requiring amortization of unfunded liabilities in 30 years or less. Section 19-2-409, MCA.

Fiscal notes

The Governor's Office of Budget and Program Planning (OBPP), assisted by retirement system staff, prepares the fiscal notes for all retirement legislation with fiscal implications. Each fiscal note is required to show anticipated costs over the next biennium. However, the financial obligations incurred when retirement legislation is passed will be ongoing (i.e., as long as benefits are to be paid, which can extend for the life of a retired member and to that member's beneficiary).

In an effort to provide legislators and others with information necessary to make an informed assessment, the OBPP has developed a specialized format for fiscal notes prepared on retirement system-related legislation.

Among the key information that legislators should look for in a fiscal note is:

- *Will the normal cost of benefits be changed?*
- *Will new unfunded liabilities be created?*
- *How will the amortization period and funded ratio be affected?*

Whenever retirement legislation with a fiscal impact is passed and the future of the affected retirement system is changed, an actuarial calculation is required in order to project the long-term costs. Thus, when legislators seek to amend retirement legislation, new fiscal information can be made available only after the system's actuary has conducted this analysis.

CHAPTER 8
POLICY PRINCIPLES

Long-term consistency

Decisions made during one legislative session will have lasting impacts on the benefits paid over the life of a retiree and the retiree's beneficiaries and on the long-term funding obligations of public employers and therefore taxpayers. Thus, legislative policy should be carefully set and consistently applied.

NCSL recommendations

In 1995, the Public Pension Working Group of the National Conference of State Legislatures (NCSL) adopted and recommended to state legislatures four principles for sound and consistent retirement policy.[60]

I. *Pensions should provide financial security in retirement.*

II. *Pension funding should be a contemporary obligation.*

III. *Pension investments should be governed by the "prudent expert rule."*

IV. *Pension benefits should be equitably allocated among beneficiaries.*

In Montana, a legislative interim committee in 1997 examined these NCSL principles and made several recommendations to the full Legislature to promote sound and consistent policy in Montana. The committee made one modification to the first principle, adding the words "the base for" in front of "financial security."[61] Since these principles were first adopted, they have survived several iterations.

[60] National Conference of State Legislatures, *Public Pensions: A Legislator's Guide*, NCSL Working Group on Pensions, 1995.

[61] *Legislative policy objectives for Montana's Public Employee Retirement Systems : 1999-2000 Interim* , by Sheri Heffelfinger, State Administration, Public Retirement Systems, and Veterans' Affairs Interim Committee, 1999-2000.

SAVA's recommendations

Section 5-5-228, MCA, requires that the interim SAVA committee recommend policy principles to the full legislature to help guide legislative decisions on retirement bill. The policy principles SAVA adopted on Nov. 17, 2016, are shown below. They are the same as the NCSL principles, except that Principle I was changed by adding the language shown by the underlining.

I. *Pensions should provide the base of financial security in retirement. Retirement is the statutorily-defined years of service and age to be attained for a full retirement benefit.*

II. *Pension funding should be a contemporary obligation.*

III. *Pension investments should be governed by the "prudent expert rule."*

IV. *Pension benefits should be equitably allocated among beneficiaries.*

Appendix A

Chronology of Significant Pension Plan Events

Funding health and challenges

1997 PERS more than 100% funded. A 1.5% GABA[62] enacted for MPERA[63] plans. Interim study results in recommendation to establish a DC plan within PERS by 2001.

1999 TRS funding status healthy. A 1.5% GABA enacted for TRS.

2000 The PERS-DB, SRS, and GWPORS were either more than 100% funded or nearly 100% funded. Financial markets peaked.[64]

2001 The GABA for MPERA plans was increased from 1.5% to 3%. PERS-DC plan implemented as an optional plan. Market began a sharp decline.[65]

2002 Market hit bottom.[66]

2004 The unfunded liabilities in PERS and SRS did not amortize in any amount of time, so systems were actuarially unsound.

2005 The TRS unfunded liabilities did not amortize (system actuarially unsound). December 2005 special session: the Legislature appropriated from the general fund $25 million to PERS-DB and $100 million to TRS. Market slowly recovering.[67]

2006 During the 2005-2006 interim, SAVA study examined pension funding and investments.

2007 The legislature reduced the 3% GABA in PERS, HPORS, SRS, HPORS, and GWPORS to 1.5% for new hires. Modest employer contribution increases were passed for TRS and MPERA systems but were phased in over two bienniums beginning July 1, 2007. A state supplement contribution from the general fund was used to offset the contribution increases for local government and school district employers. The Legislature also appropriated $50 million from the general fund to TRS as a second cash infusion. Interim

[62] GABA is a guaranteed annual benefit adjustment (i.e., cost-of-living increase) for retirees.

[63] Montana Public Employee Retirement Administration, which administers all of the retirement systems except TRS and the University Systems' Optional Retirement Program.

[64] E-Trade Market Data Express for S&P 500 index.

[65] Ibid.

[66] Ibid.

[67] E-Trade Market Data Express for S&P 500 index.

study of pension plan funding and plan design alternatives, but no recommendations.

2008 Market began another a sharp decline.[68]

2009 SAVA interim study of retirement plan design and funding options. Outside actuarial consulting firm hired. The study produced two competing bill recommendations concerning only TRS. One bill failed. A bill establishing a cash balance plan tier in TRS was passed by the Legislature but vetoed by the governor.

2011 The legislature passed contribution increases and reduced benefits for new hires in PERS-DB, SRS, and GWPORS and also closed certain loopholes and tightened provisions in TRS to improve actuarial soundness.

2013 The legislature raised HPORS vesting period from 5 years to 10 years, raised period to calculate highest average salary from 3 years to 5 years, raised benefit multiplier from 2.5% per year of service to 2.6%. In PERS, increased employer and employee contributions, provided for contributions from coal tax revenue, and reduced the GABA.[69] In TRS, raised employee contributions, increased GF supplemental contributions, reduced the GABA[70], increased benefit multiplier for members with 30 years of service and who are at least age 60.

Reform proposals introduced but not passed

Funding challenges and lawmakers' concerns about the long-term obligations to taxpayers to fund DB plan benefits in the midst of the market declines led to the introduction of several bills to reform one of more of the retirement plans. None of the bills passed, but the chronology offers perspective on how Montana's Legislature sought to respond to funding challenges.

2007 HB 827 (Himmelberger) - Establishing a new mandatory DC plan for future TRS and PERS members

2009 HB 679 (Stahl) - Freezing DB plans and moving to a DC plan

2011 HB 608 (Stahl) - Freezing DB plans and moving to an annuity benefit program

SB 54 (Balyeat) - Establishing a TRS cash balance hybrid tier for new hires

SB 328 (Lewis) - Requiring new hires under PERS to join PERS-DC plan

[68] Ibid.

[69] The GABA reduction in HB 454 was challenged as a breach of contract and a district court has enjoined implementation of the reduction.

[70] The GABA reduction in HB 377 was challenged as a breach of contract and a district court has enjoined implementation of the reduction.

2013 HB 338 (Regier) - Requiring all new public employees to join a revised and expanded PERS-DC plan

SB 82 (Lewis) - Requiring new hires under PERS to join DC plan

SB 333 (Arthun) - Establishing a cash balance tier in PERS and TRS

SB 406 (Dee Brown) - Statutory referendum requiring new hires in PERS and TRS to join a DC plan

Recent legislative history, key bills

2013 Joint pension oversight session committee established to consider all recommended reform and funding bills.

HB 454 (McChesney) - Passed. Provided full actuarial funding for PERS and reduced the GABA. Key provisions included:

- Funding from coal severance tax revenue and interest.
- Temporary increases in employer and employee contribution rates.
- Reducing the GABA based on actuarial funding status of the plan. (Note: The reduction for current members was invalidated by the court after a lawsuit was filed on the grounds that the benefit reduction for current members was an unconstitutional impairment of a contract.)

HB 377 (Woods) - Passed. Provided full actuarial funding for TRS, revised benefits for new hires, reduced GABA. Key provisions included:

- Creating two membership tiers and reducing benefits for tier two (new) employees.
- A temporary increase in employee contributions (an adjustable supplemental contribution rate).
- Providing for a one-time sweep of school district retirement fund operating reserves in excess of a decreased statutory cap.
- Providing for a professional retirement option (a higher benefit calculation) for new members who attain a higher age and/or years of service threshold).
- Reducing the GABA based on the actuarial funding status of the plan. (Note: The reduction for current members was invalidated by the court after a lawsuit was filed on the grounds that the benefit reduction for current members was an unconstitutional impairment of a contract.)

2015 No major funding or benefit changes.

APPENDIX B

GLOSSARY

"401(k) plan" or "401(k)": a defined contribution plan governed by section 401(k) of the IRC that is offered to employees and in which they may voluntarily participate on an individual basis. A 401(k) allows an employee to set aside tax-deferred income for retirement purposes. In some 401(k) plans, the employer will match an employee's contributions dollar-for-dollar.

"403(b) plan" or "403(b)": a retirement plan governed by section 403(b) of the IRC that is similar but not identical to a 401(k) plan and is offered by nonprofit organizations, such as universities and some charitable organizations.

"457 plan" or "457": a tax-exempt deferred compensation program governed by section 457 of the IRC that is made available to employees of state and federal governments and agencies. A 457 plan is similar to a 401(k) plan, except there are never employer matching contributions and the IRS does not consider it a qualified retirement plan.

"Accrued benefit": a retirement, pension, or disability benefit that an employee has earned based on years of service. Accrued benefits are often calculated in relation to the employee's salary and years of service.

"Accumulated contributions": the sum of all the regular and any additional contributions made by a member in a defined benefit plan, together with the regular interest on the contributions.

"Active member": a member who is a paid employee making the required contributions and is properly reported for the most current reporting period.

"Actuarial assumption": an estimate made for the purposes of calculating benefits. Possible variables include life expectancy, return on investments, interest rates, and compensation.

"Actuarial cost": the amount determined to represent the present value of the benefits to be derived from the additional service to be credited based on the most recent actuarial valuation for the system.

"Actuarial equivalent": a benefit of equal value when computed on the basis of the mortality table and interest rate assumptions of the retirement plan. It reflects the condition in which two or more payment streams have the same present value based on the appropriate actuarial assumptions.

"Actuarial liabilities": the excess of the present value of all benefits payable under a defined benefit retirement plan over the present value of future normal costs in that retirement plan.

"Actuary": a highly trained professional of a special area of finance who deals with the financial impact of risk and uncertainty. Actuaries have a deep understanding of financial-security systems, their reasons for being, their complexity, their mathematics, and the way they work.

"Annuity": in the case of a defined benefit plan, equal and fixed payments for life that are the actuarial equivalent of a lump-sum payment under a retirement plan and as such are not benefits paid by a retirement plan and are not subject to periodic or one-time increases. In the case of the defined contribution plan, an annuity is a payment of a fixed sum of money at regular intervals, which may or may not be for life.

"Book value": the value of an asset or liability that value might be higher or lower than the market value of the asset or liability. The book value reflects depreciation or appreciation accruing to the asset or liability. Contrast with "market value."

"Cost-of-living adjustment" or "COLA": annual increase in the prior year's benefit amount, usually a percentage and based on national economic data, e.g., consumer price index; similar to "guaranteed annual benefit adjustment" or "GABA."

"Deferred compensation": an arrangement, subject to IRC conditions and requirements, in which a portion of an employee's income is paid out at a date after which that income is actually earned. The primary benefit of most deferred compensation is that any taxes due on the income are deferred until funds are withdrawn under the arrangement.

"Defined benefit retirement plan" or "defined benefit plan": a pension plan in which a retired employee is entitled to receive upon retirement a regular, periodic, specific amount based on the retiree's salary history and years of service.

"Defined contribution retirement plan" or "defined contribution plan": a retirement plan in which the employee is required to or elects to defer some amount of salary into an individual account over which the employee has limited control for investing the assets and limited options when making withdrawals at retirement.

"Direct rollover": a distribution from a qualified pension plan, 401(k) plan, 403(b) plan, etc., that is remitted directly to the trustee, custodian, or issuer of the receiving retirement plan or IRA and is reported to the IRS as a rollover.

"Early retirement": a retirement plan provision that allows an employee to retire before the normal retirement age.

"Early retirement benefit": the retirement benefit payable to a member following early retirement and is the actuarial equivalent of the accrued portion of the member's service retirement benefit.

"Employee Retirement Income Security Act" or "ERISA": the federal law enacted in 1974 that established legal guidelines for private pension plan administration and investment practices. Public retirement plans generally are not subject to ERISA.

"Government Accounting Standards Board" or "GASB": an independent, private-sector organization based in Norwalk, Connecticut, that establishes accounting and financial reporting standards for U.S. state and local governments that follow generally accepted accounting principles .

"Guaranteed annual benefit adjustment" or "GABA": an annual increase in the prior year's benefit amount, usually as a percentage of benefit; similar to "cost-of-living adjustment" or "COLA."

"Inactive member": a member who terminates service and does not retire or take a refund of the member's accumulated contributions.

"Individual retirement account" or "IRA": a tax-deferred retirement account for an individual that permits the individual to set aside money each year, with earnings tax-deferred until withdrawals begin. Also see "Roth IRA."

"Internal Revenue Code" or "IRC": Title 26 of the United States Code. It is also known as the "federal tax code."

"IRA rollover": a tax-free reinvestment of a distribution from a qualified retirement plan into an IRA or other qualified plan within a specific time frame, usually 60 days.

"Lump sum distribution": a single distribution all at once, rather than as a series of payments over time.

"Market value": the price at which an asset is trading and could presumably be purchased or sold.

"Money purchase pension plan" or "money purchase plan": a defined contribution plan in which the amount of contributions made annually is in proportion to the employee's wages and is mandatory every year.

"Normal cost" or "future normal cost": an amount calculated under an actuarial cost method required to fund accruing benefits for members of a defined benefit retirement plan during any year in the future. Normal cost does not include any portion of the supplemental costs of a retirement plan.

"Normal retirement age": the age at which a member is eligible to immediately receive a retirement benefit based on the member's age, length of service, or both, as specified under the member's retirement system, without disability and without an actuarial or similar reduction in the benefit.

"Portability": the ability of an employee to retain benefits, such as in a pension plan or insurance coverage, when switching employers.

"Qualified retirement plan" or "qualified plan": a plan that meets the applicable requirements of the Internal Revenue Code and, if applicable, the Employee Retirement Income Security Act, and is thus eligible for favorable tax treatment.

"Roth IRA": a type of IRA, established under the Taxpayer Relief Act of 1997, that allows taxpayers, subject to certain income limits, to save for retirement while allowing the savings to grow tax-free. Taxes are paid on contributions, but withdrawals, subject to certain rules, are not taxed at all.

"Tax deferral" or "tax deferred": the payment of taxes in the future on income earned in the current period.

"Unfunded actuarial liabilities" or "unfunded liabilities": the excess of a defined benefit retirement plan's actuarial liabilities at any given point in time over the value of its cash and investments on that same date. Also known by the acronyms "UAAL" and "UAL."

"Vested account": an individual account within a defined contribution plan that is for the exclusive benefit of a member or the member's beneficiary. A vested account includes all contributions and the income on all contributions in the member's contribution account, the vested portion of the employer's contribution account, and the member's account for other contributions.

"Vested member" or "vested": a member or the status of a member who meets the minimum membership service requirement of the system or plan to which the member belongs.

APPENDIX C
LIST OF RETIREMENT-RELATED ACRONYMS

BOI: Montana Board of Investments or Board of Investments

DC: Defined contribution, as in defined contribution retirement plan

DB: Defined benefit, as in defined benefit retirement plan

ERISA: Employee Retirement Income Security Act of 1974, a federal law

FAC: Final average compensation

FAS: Final average salary

FURS: Firefighters' Unified Retirement System

GASB: Governmental Accounting Standards Board

GWPORS: Game Wardens' and Peace Officers' Retirement System

HAC: Highest average compensation

HAS: Highest average salary

HPORS: Highway Patrol Officers' Retirement System

IRA: Individual retirement account (rarely: individual retirement arrangement)

IRC: Internal Revenue Code

JRS: Judges' Retirement System

MPERA: Montana Public Employee Retirement Administration

MPORS: Municipal Police Officers' Retirement System

MUS-RP: Montana University System Retirement Program

OBPP: Office of Budget and Program Planning

ORP: Optional Retirement Program or (inaccurately) Optional Retirement Plan

PCR: Plan choice rate

PERS: Public Employees' Retirement System

PER Board: Public Employees' Retirement Board

SAVA: State Administration and Veterans' Affairs Interim Committee (2003-present)

SRS: Sheriffs' Retirement System

TRS: Teachers' Retirement System

TRS Board: Teachers' Retirement Board

UAAL: Unfunded actuarially accrued liability

UAL: Unfunded actuarial liability

VFCA: Volunteer Firefighters' Compensation Act pension trust fund

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