Cavanaugh Macdonald
CONSULTING, LLC

The experience and dedication you deserve

Public Employees' Retirement System of the State of Montana

Long Term Disability Plan under the Defined Contribution Retirement Plan

MONTANA PUBLIC EMPLOYEE RETIREMENT ADMINISTRATION

Actuarial Valuation As of June 30, 2017

www.CavMacConsulting.com

Cavanaugh Macdonald
CONSULTING, LLC
The experience and dedication you deserve

September 28, 2017

Public Employees' Retirement Board
100 North Park, Suite 200
Helena, MT 59620-0139

Members of the Board:

In this report are submitted the results of the annual valuation of the assets and liabilities of the Public Employees' Retirement System of the State of Montana Long-Term Disability Plan under the Defined Contribution Retirement Plan (DCRP), prepared as of June 30, 2017.

The purpose of this report is to provide a summary of the funded status of the Plan as of June 30, 2017. While not verifying the data at source, the actuary performed tests for consistency and reasonability. The valuation indicates that the statutory contribution rate is sufficient to amortize the unfunded accrued liability over a 19-year period.

The promised benefits of the Plan are included in the actuarially calculated contribution rates which are developed using the Entry Age Normal Cost Method. Gains and losses are reflected in the unfunded accrued liability that is being amortized by regular annual contributions as a level percentage of payroll, on the assumption that payroll will increase by 3.50% annually. The assumptions recommended by the actuary and adopted by the Board are, in the aggregate, reasonably related to the experience under the Fund and to reasonable expectations of anticipated experience under the Fund.

This is to certify that Edward Macdonald and Todd Green, Principal and Consulting Actuaries for Cavanaugh Macdonald Consulting, are members of the American Academy of Actuaries and meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinion contained herein. This also certifies that the undersigned have experience in performing valuations for public retirement systems, that the valuation was prepared in accordance with principles of practice prescribed by the Actuarial Standards Board, and that the actuarial calculations were performed by qualified actuaries in accordance with accepted actuarial procedures, based on the current provisions of the Plan and on actuarial assumptions that are internally consistent and reasonably based on the actual experience of the Plan.

3550 Busbee Pkwy, Suite 250, Kennesaw, GA 30144
Phone (678) 388-1700 • Fax (678) 388-1730
www.CavMacConsulting.com
Offices in Englewood, CO • Kennesaw, GA • Bellevue, NE

Future actuarial results may differ significantly from the current results presented in this report due to such factors as the following: plan experience differing from that anticipated by the economic or demographic assumptions; changes in economic or demographic assumptions; increases or decreases expected as part of the natural operation of the methodology used for these measurements (such as the end of an amortization period or additional cost or contribution requirements based on the plan's funded status); and changes in plan provisions or applicable law. Since the potential impact of such factors is outside the scope of a normal annual actuarial valuation, an analysis of the range of results is not presented herein.

The Table of Contents, which immediately follows, outlines the material contained in the report.

Respectfully submitted,

Edward A. Macdonald, ASA, FCA, MAAA
President

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

Joseph A. Nichols, ASA, EA, FCA, MAAA, MSPA
Consulting Actuary

Matthew Yonz, ASA
Senior Actuarial Analyst

Montana Public Employees' Retirement System DCRP Long-Term Disability Plan

Table of Contents

Section I: Summary of Results

For convenience of reference, the principal results of the valuation and a comparison with the preceding year's results are summarized below:

VALUATION DATE		**June 30, 2017**		**June 30, 2016**
Active members		2,541		2,409
Disabled Members		3		6
Retirees and Beneficiaries		0		0
Terminated Vested Members		0		0
Terminated Non-Vested Members		0		0
Total		2,544		2,415
Covered Payroll of Active Members	$	129,157,695	$	114,883,091
Average Salaries from Covered Payroll	$	50,829	$	47,689
Annual Retirement Allowances for Disabled Members	$	25,829	$	49,269
Assets				
Market Value of Assets	$	3,456,936	$	3,118,397
Actuarial Accrued Liability (AAL)	$	3,967,262	$	3,591,249
Unfunded Actuarial Accrued Liability	$	510,326	$	472,852
Funded Ratio		87.14%		86.83%
Market Value Rate of Return		0.02%		0.38%
Annual Cost				
Statutory Funding Rate		0.30%		0.30%
Total Normal Rate		0.28%		0.30%
Employee Contribution Rate		0.00%		0.00%
Employer Normal Rate		0.28%		0.30%
Employer Contribution Rate				
Normal Rate		0.28%		0.30%
Administrative Expense Load		0.00%		0.00%
UAAL Rate		0.02%		0.00%
Total Rate		0.30%		0.30%
Amortization Period		19 years		Does not amortize
Employer Contribution Rate Necessary to Amortize UAAL over 30 Years				
Normal Rate		0.28%		0.30%
Administrative Expense Load		0.00%		0.00%
UAAL Rate (30-Year Rate)		0.01%		0.01%
Total Rate		0.29%		0.31%
Shortfall/(Surplus)		(0.01)%		0.01%

As a result of this actuarial valuation of the benefits in effect under the DCRP Long-Term Disability Plan as of June 30, 2017, the statutory employer contributions are sufficient to amortize the Unfunded Actuarial Accrued Liability (UAAL) of the Plan. The Funded Ratio is 87.14%.

Calculations based on the Market Value of Assets

MCA 19-2-407 requires this report to show how market performance is affecting the actuarial funding of the Plan. This report uses the market value of assets for all calculations.

Additional Details

MCA 19-3-2117 requires each employer to contribute 0.30% of total compensation paid to the long-term disability plan trust fund.

The actuarial costs are calculated using the entry age actuarial cost method. This is the method used by most public plans. It is designed to provide a stable contribution rate as a percent of member pay. This actuarial valuation measures the adequacy of the contribution rates set in Montana State Law.

Investment Experience

The market assets earned 0.02% net of investment and operating expenses, which is 3.48% less than the actuarial assumption of 3.50%. The chart below shows the annual returns for the past five years.

Year	Market Return	Assumed Rate of Return	Market Return over Assumption
7/1/2012 to 6/30/2013	0.25%	3.50%	(3.25)%
7/1/2013 to 6/30/2014	0.14	3.50	(3.36)
7/1/2014 to 6/30/2015	0.13	3.50	(3.37)
7/1/2015 to 6/30/2016	0.38	3.50	(3.12)
7/1/2016 to 6/30/2017	0.02	3.50	(3.48)

Asset gains or losses result when the return on the actuarial value of assets differs from the assumed actuarial investment return.

The Plan earned $91,932 less than anticipated by the 3.50% assumption in the year ended June 30, 2016, and $114,485 less than anticipated by the 3.50% assumption in the year ended June 30, 2017.

Amortization of the UAAL

The statutory contribution required in MCA 19-3-2117 is sufficient to amortize the unfunded actuarial accrued liability over a 19-year period.

Funding and Benefits Policy

The Montana Public Employees' Retirement Board has adopted a Funding and Benefits Policy to provide general guidelines to help ensure decisions are made based on sound, consistent, and thoroughly examined criteria. The Funding and Benefits Policy includes guidance on the following topics:

1) Funding Requirement

   a) The Funding and Benefits Policy states:

      1. The Entry Age Normal Cost Method shall be applied to the projected benefits in determining the Normal Cost and Actuarial Accrued Liability.

      2. The unfunded actuarial accrued liability should be amortized over a reasonable period of time and should not exceed 30 years on a rolling basis. Generally, the funding period should be constant or decreasing.

   b) Analysis: The liabilities of the Plan are determined using the Entry Age Normal Cost Method and are compared to the market value of assets. The contributions provided for in statute are sufficient to fully amortize the unfunded actuarial accrued liability within a 19-year period. The current statutory rate is adequate to keep the System's funding within Board policy guidelines.

2) Funding Objectives

   a) The Funding and Benefits Policy states: "The primary objectives are to: 1) ensure that the systems are financially sound and pay all benefits promised using assets accumulated from required employer and member contributions and investment income; and 2) achieve a well-funded status with a range of safety to absorb market volatility without creating a UAL."

   b) Analysis: The contributions provided for in statute are sufficient to fully amortize the unfunded actuarial accrued liability within a 19-year period. This ensures that the System is financially sound and will be able to pay all promised benefits and achieve a well-funded status with a range of safety to absorb market volatility without creating a UAL.

3) Benefit Enhancements

   a) The Funding and Benefits Policy states: "Proposals must provide funding from sources sufficient to cover future costs. Unfunded liabilities created by the proposal must be amortized over a period of time appropriate to the retirement system, but not more than 30 years."

   b) Analysis: Without supplemental funding, a benefit enhancement would increase the amortization period of the unfunded actuarial accrued liability and further delay the goal of achieving a well-funded status with a range of safety to absorb market volatility without creating a UAL.

Sensitivity to Future Experience

The valuation results are projections based on the actuarial assumptions. Actual experience will differ from these assumptions, either increasing or decreasing the ultimate cost. The following illustrations provide simple analyses on how the costs are sensitive to changes in the assumed rate of return.

Investment Return – The investment return generally has the largest impact on the funding of the Plan.

Impact of Assuming 1.00% Lower Investment Return	
	Funded Ratio
Current Assumption 3.50%	87.14%
Lower Assumption 2.50%	80.58%
Increase / (Decrease)	(6.56)
	Amortization Period Increase / (Decrease)
Current Assumption 3.50%	19 years
Lower Assumption 2.50%	Does not amortize
Increase / (Decrease)	N/A

The future funding status of the Plan will be determined by the Plan's experience. The Plan's actual asset returns and retirement rates, as well as member longevity, salary increases, withdrawal rates, disability rates and future legislation will all impact the funding status of the Plan. The entry age normal cost method will help to provide a more orderly funding of the Plan's liabilities, but will not change the actual experience. The amortization period of the UAAL is not likely to decrease by the expected 1.0 year with each passing actuarial valuation. Instead, the amortization period is expected to decrease more or less than 1.0 years each year, reflecting gains and losses due to experience different than the actuarial assumptions.

Assumption Changes

Since the June 30, 2016 valuation, the Montana Public Employee Retirement Administration (MPERA) adopted the recommendations made in the experience study for the six-year period ending June 30, 2016. The assumption changes outlined below are effect July 1, 2017:

- Lowered the inflation rate from 3.00% to 2.75%.
- Updated non-disabled mortality to the RP-2000 Combined Employee and Annuitant Mortality Table projected to 2020 using scale BB, males set back 1 year.
- Increased the rates of withdrawal.
- Lowered the wage base component of the total salary increase from 4.00% to 3.50%.

Benefit Changes

PERS members hired **after** July 1, 2011 have a normal retirement age of 65. PERS DC members hired after July 1, 2011 who became disabled were previously only eligible for a disability benefit until age 65. Effective July 1, 2017, these individuals will be eligible for a disability benefit until they reach age 70, thus ensuring the same 5 year time period available to PERS DC disabled members hired **prior to** July 1, 2011 who have a normal retirement age of 60 and are eligible for a disability benefit until age 65.

Contribution Changes

There have been no contribution changes since the previous valuation.

Method Changes

To be consistent with the wage base growth change, the payroll growth assumption for amortization as a level percent of pay was reduced from 4.00% to 3.50%.

Impact of Changes

The following table summarizes how experience has changed the UAAL since the June 30, 2016 Actuarial Valuation. Further detail can be found in Table 9.

Changes in the Unfunded Actuarial Accrued Liability (UAAL)

June 30, 2016 Valuation UAAL	$ 472,852
Normal Cost	390,119
Contributions	(392,100)
Interest	23,342
Expected June 30, 2017 UAAL	$ 494,213
Experience Gain on Actuarial Liabilities	$ (172,089)
Experience Loss on Actuarial Assets	114,485
Assumption & Method Changes	73,717
Total (Gain) / Loss	$ 16,113
June 30, 2017 Valuation UAAL	$ 510,326

Summary

* The Plan's investment return of for the year ended June 30, 2017 is less than the actuarial assumption of 3.50%. This represents an asset loss of $114,485 due to investment return being less than anticipated. As of June 30, 2017, the market value of assets was $3,456,936.

* Contributions are sufficient to amortize the unfunded actuarial accrued liability within a 19-year period. Prior to this valuation, the contribution was not sufficient to amortize the unfunded accrued liability. Experience gains, offset by a loss due to the adoption of the assumption changes from the experience study accounted for the decrease in the amortization period.

* The funding of the Plan will be impacted by future experience which will sometimes be more favorable than the actuarial assumptions and sometimes less favorable. In particular, investment returns larger and smaller than the 3.50% assumption are expected to have significant impacts on the Plan's funding progress. In the long term, the favorable experience is needed to offset the less favorable experience.

Assets

In many respects, an actuarial valuation can be regarded as an inventory process. The inventory is taken as of the actuarial valuation date, which for this valuation is June 30, 2017. On that date, the assets available for the payment of benefits are appraised. These assets are compared with the actuarial liabilities. The actuarial process thus leads to a method of determining what contributions by members and their employers are needed to strike a balance.

The asset valuation method being used is the market value of assets. Table 1 lists the assets held and their market value for the past two years. Table 2 summarizes the fund's activity during the past two years. Table 3 summarizes historical asset returns for the last 5 years including which was greater or less than the actuarial investment return assumption. Table 4 summarizes the historical asset values on a market value basis, to the extent it was available. Additional data can be included in this table for future reports, if provided by the Plan.

Table 1:
Statement of Fiduciary Net Position
Fiscal Year Ended June 30,

	2017	2016
ASSETS		
Cash and Short Term Investments	$ 302,356	$ 278,519
Securities Lending Collateral	$ -	$ 1,116
Receivables:		
Interest Receivable	$ 248	$ 455
Accounts Receivable	20,325	1,450
Due from Other Funds	5,272	3,453
Due from Primary Government	-	-
Notes Receivable	-	-
Total Receivables	$ 25,845	$ 5,358
Investments, at fair value:		
Investment Pools	3,129,535	2,834,520
Other Investments	-	-
Total Investments	$ 3,129,535	$ 2,834,520
Capital Assets		
Property and Equipment, at cost, net of Accumulated Depreciation	$ -	$ -
Equipment	-	-
Total Capital Assets	$ -	$ -
TOTAL ASSETS	$ 3,457,736	$ 3,119,513
LIABILITIES		
Securities Lending Liability	$ -	$ 1,116
Accounts Payable	800	-
Unearned Revenue	-	-
Due to Other Funds	-	-
Compensated Absences	-	-
OPEB Implicit Rate Subsidy LT	-	-
TOTAL LIABILITIES	$ 800	$ 1,116
NET POSITION - RESTRICTED FOR PENSION BENEFITS	$ 3,456,936	$ 3,118,397

Table 2:
Statement of Changes in Fiduciary Net Position
Fiscal Year Ended June 30,

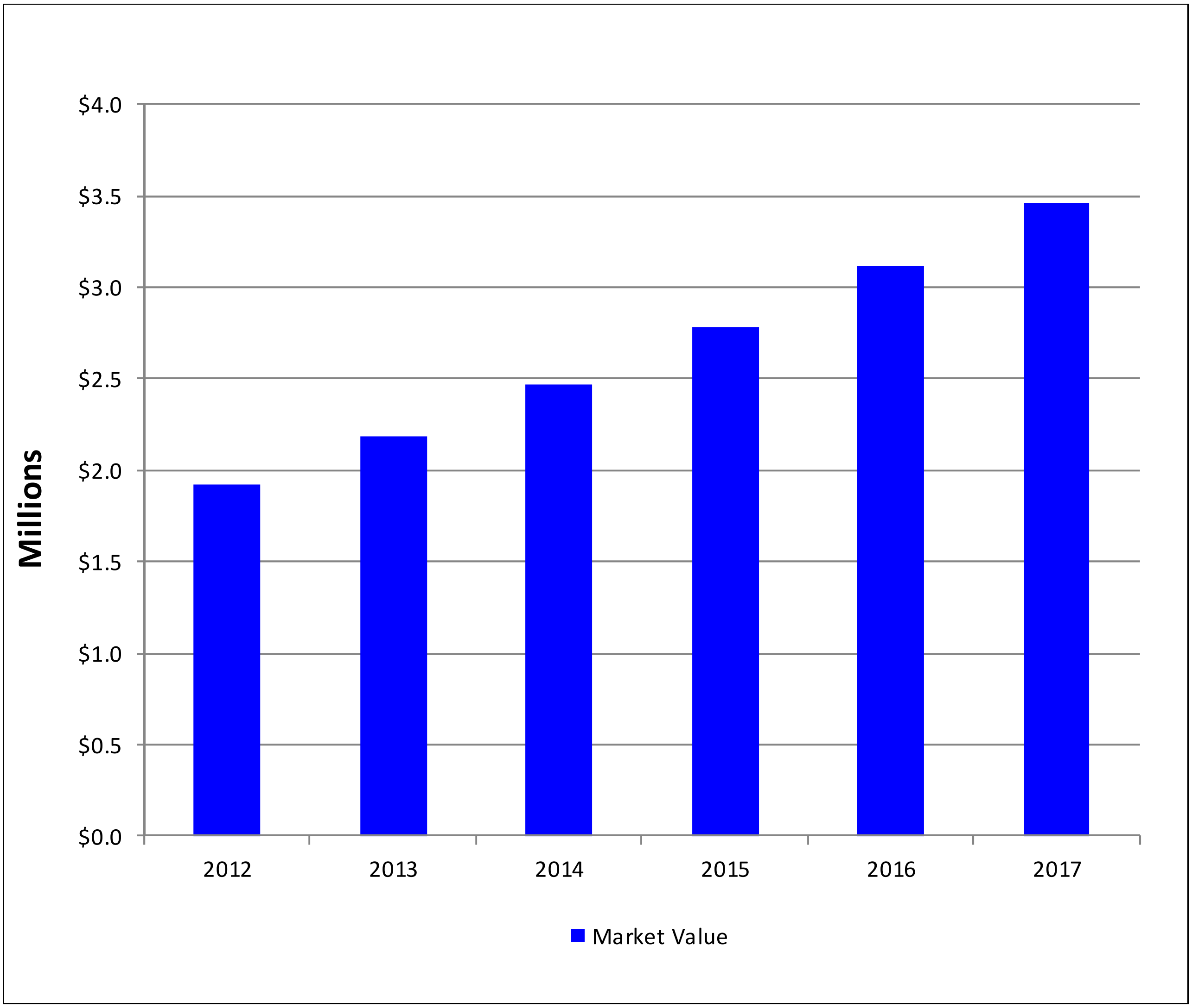
	2017	2016
ADDITIONS		
Contributions:		
Employer	$ 392,100	$ 368,019
Plan Member	-	-
Other	-	-
Total Contributions	$ 392,100	$ 368,019
Misc Income	$ -	$ -
Investment Income:		
Net Appreciation/(Depreciation) in Fair Value of Investments	$ (7)	$ 55
Investment Earnings	2,289	10,982
Security Lending Income	7	50
Investment Income/(Loss)	$ 2,289	$ 11,087
Investment Expense	(1,712)	-
Security Lending Expense	(3)	(20)
Net Investment Income/(Loss)	$ 574	$ 11,067
Total Additions	$ 392,674	$ 379,086
DEDUCTIONS		
Benefit Payments	$ 54,135	$ 41,809
Refunds/Distributions	-	-
Refunds to Other Plans	-	-
Transfers to DCRP	-	-
Transfers to MUS-RP	-	-
OPEB Expense	-	-
Administrative Expense	-	-
Total Deductions	$ 54,135	$ 41,809
NET INCREASE (DECREASE) IN PLAN NET ASSETS	$ 338,539	$ 337,277
NET POSITION - RESTRICTED FOR PENSION BENEFITS BEGINNING OF YEAR	$ 3,118,397	$ 2,781,120
ADJUSTMENT	-	-
END OF YEAR	$ 3,456,936	$ 3,118,397

Table 3:
Historical Investment Returns*

Fiscal Year Ending	Market Returns	Assumed Rate of Return	Market Return Over Assumption
June 30, 2013	0.25%	3.50%	(3.25)%
June 30, 2014	0.14%	3.50%	(3.36)%
June 30, 2015	0.13%	3.50%	(3.37)%
June 30, 2016	0.38%	3.50%	(3.12)%
June 30, 2017	0.02%	3.50%	(3.48)%
5 Year Average	0.18%		(3.32)%

* Returns reflect all investment returns, including investment income and realized and unrealized investment gains and losses, and are net of investment expenses and administrative expenses paid by the Plan.

Table 4:
Market Value of Assets



Actuarial Present Value of Future Benefits

In the previous section, an actuarial valuation was related to an inventory process, and an analysis was given of the inventory of assets of the Plan as of the valuation date. In this section, the discussion will focus on the commitments of the Plan, which will be referred to as its actuarial liabilities.

Table 5 contains an analysis of the actuarial present value of all future benefits for contributing members, for retirees, and for beneficiaries. The analysis is given by type of benefit.

The actuarial liabilities summarized in Table 5 include the actuarial present value of all future benefits expected to be paid with respect to each member covered as of the valuation date. For an active member, this value includes a measure of both benefits already earned and future benefits to be earned. Thus, for all members, active and retired, the value extends over benefits earnable and payable to age 65 for disabilities occurring prior to age 60, and for five years for disabilities occurring after age 60, or normal retirement age (age 65). PERS DC members hired after July 1, 2011 will be eligible for a disability benefit until they reach age 70.

The actuarial valuation does not recognize liabilities for employees who become members and participate in the Plan after the valuation date.

Table 5:
Actuarial Present Value of Future Benefits for Active Members, Retirees, and Beneficiaries

	June 30, 2017 Total	June 30, 2016 Total
A. Active Members Liability Due to the Probability of		
Retirement	$ -	$ -
Disability	8,753,270	8,969,616
In-Service Death	-	-
Termination	-	-
Total	$ 8,753,270	$ 8,969,616
B. Inactive Members and Annuitants		
Service Retirement	$ -	$ -
Disability Retirement	214,931	400,785
Beneficiaries	-	-
Vested Terminated Members	-	-
Refund of Member Contributions	-	-
Total	$ 214,931	$ 400,785
C. Grand Total	$ 8,968,201	$ 9,370,401

Employer Contributions

In the previous two sections, attention has been focused on the assets and the present value of all future benefits of the Plan. A comparison of Tables 2 and 5 indicates that there is a shortfall in current assets to meet the present value of all future benefits for current members and beneficiaries.

In an active system, there will always be a difference between the assets and the present value of all future benefits. An actuarial valuation sets a schedule of future contributions that will deal with this funding in an orderly fashion.

The method used to determine the incidence of the contributions in various years is called the actuarial cost method. For this valuation, the entry age actuarial cost method has been used. A description of the entry age actuarial cost method is provided in Appendix A. Under this method, or essentially any actuarial cost method, the contributions required to meet the difference between current assets and the present value of all future benefits are allocated each year between three elements:

- A normal cost amount, which ideally is relatively stable as a percentage of salary over the years;
- A load for administrative expenses; and
- An amount which is used to amortize the UAAL.

The two items described above, normal cost and UAAL, are the keys to understanding the actuarial cost method. Let us first discuss the normal cost.

The normal cost is the theoretical contribution rate, which will meet the ongoing costs of a group of average new employees. Suppose that a group of new employees were covered under a separate fund from which all benefits and to which all contributions and associated investment return were to be paid. Under the entry age actuarial cost method, the normal cost contribution rate is that level percentage of pay which would be exactly right to maintain this fund on a stable basis. If experience were to follow the actuarial assumptions exactly, the fund would be completely liquidated with the last payment to the last survivor of the group.

The assumed investment rate of return is 3.50%, net of investment and operating expenses.

We have determined the normal cost rates separately by type of benefit under the Plan. These are summarized in Table 6. In Table 6 we also provide a summary of the member and employer statutory contributions.

The term "fully funded" is often applied to a system where contributions for everyone at the normal cost rate will fully pay for the benefits of existing as well as new employees. Often, systems are not fully funded, either because of benefit improvements in the past that have not been completely paid for or actuarial deficiencies that have occurred because experience has not been as anticipated. Under these circumstances, a UAAL exists.

Table 7 shows how the UAAL was derived for the Plan. Lines A and B show, respectively, the total present value of future benefits and the portion of the future liability that is expected to be paid from future normal cost contributions, both employer and employee. The future normal cost contributions are the portion of the present value of future benefits that are attributed to future years of service that have not been earned yet by the active membership. Line C shows the actuarial accrued liability. Line D shows the amount of assets available for benefits. Line E shows the UAAL.

The UAAL at any date after establishment of a system is affected by any actuarial gains or losses arising when the actual experience of the system varies from the experience anticipated by the actuarial assumptions used in the valuations. To the extent actual experience as it develops differs from the assumptions used, so also will the actual emerging costs differ from the estimated costs. The impact of these differences in actual experience from the assumptions is included in Section 1, the Summary of Results.

Table 6:
Normal Cost Contribution Rates
As Percentages of Salary

	June 30, 2017 Total	June 30, 2016 Total
Service retirement	0.00%	0.00%
Disability retirement	0.28%	0.30%
Survivors' benefits	0.00%	0.00%
Vested retirement	0.00%	0.00%
Total Normal Rate	0.28%	0.30%
Employee Normal Rate	0.00%	0.00%
Employer Normal Rate	0.28%	0.30%
Administrative Expense Load	0.00%	0.00%
Rate Available to Amortize the Unfunded Accrued Actuarial Liability	0.02%	0.00%
Statutory Rate	0.30%	0.30%

Table 7:
Unfunded Actuarial Accrued Liability

	June 30, 2017	June 30, 2016
A. Actuarial present value of all future benefits for present members and retirees and their survivors (Table 5)	$ 8,968,201	$ 9,370,401
B. Less actuarial present value of total future normal costs for present members	$ 5,000,939	$ 5,779,152
C. Actuarial accrued liability	$ 3,967,262	$ 3,591,249
D. Less assets available for benefits	$ 3,456,936	$ 3,118,397
E. Unfunded actuarial accrued liability	$ 510,326	$ 472,852

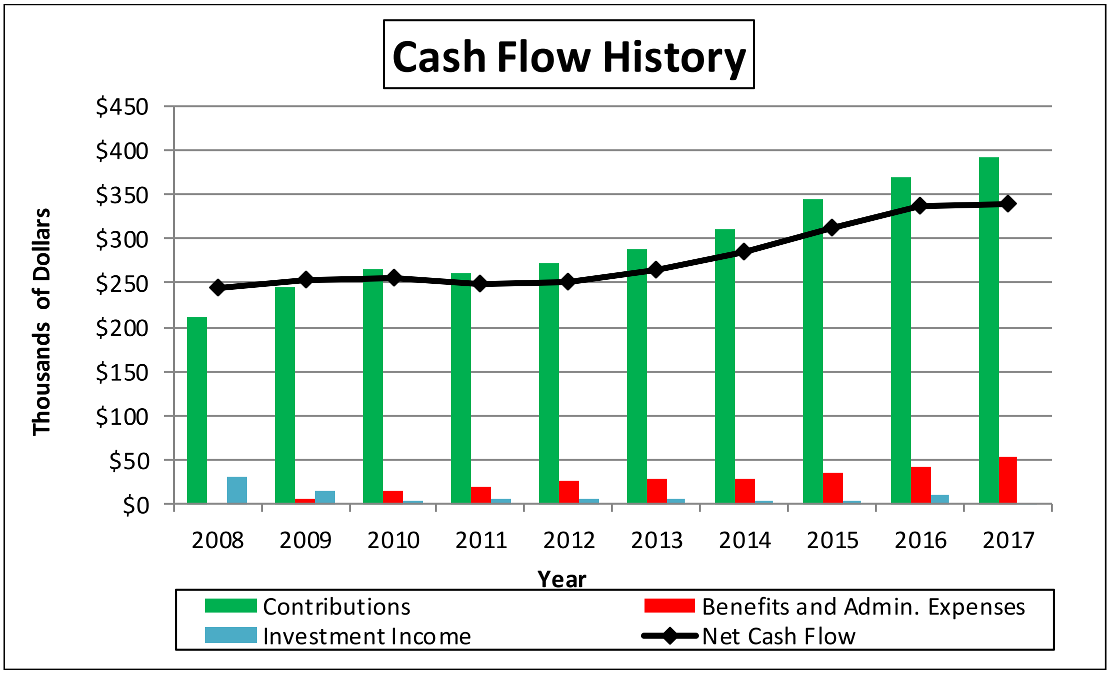
Cash Flows

The fundamental equation for funding a retirement system is that benefits and administrative expenses must be provided for by contributions (past and future) and investment income. When a retirement system matures, benefits and administrative expenses often exceed contributions. In this case we say the system has a “negative cash flow.” Mature systems are characterized by negative cash flows and large pools of assets. This is natural. Actuarial funding is designed to accumulate large pools of assets which will in turn provide investment income and finance negative cash flows when systems mature. If the fund is looked at as a whole, investment income is usually larger than the difference between contributions and benefit payments. The retirement system’s investment strategy should maximize potential returns at a prudent level of risk while providing for needed cash flows.

Table 8 shows the Plan had a positive cash flow for the year ended June 30, 2017. The Plan’s total cash flow including benefits payments, administrative expenses and investment earnings was $338.6 thousand. Of the $338.6 thousand, $0.6 thousand was due to investment returns.

As long as the Plan had a positive cash flow, there was no need to plan where the funds would come from to pay benefits since benefits could be paid by incoming contributions. A negative cash flow, as defined above, requires planning what funds will be used to pay the difference between benefits and contributions. We are providing these projections to aid in developing the investment strategy for the Plan’s assets.

Table 8:
Cash Flow History
(Dollar amounts in thousands)



Year Ended June 30	Contributions	Benefits & Administrative Expenses	Investment Income	Net Cash Flow
	Historical Cash Flows			
2008	$ 212.0	$ -	$ 32.0	$ 244.0
2009	245.0	7.0	16.0	254.0
2010	265.0	14.0	4.0	255.0
2011	262.0	19.0	5.0	248.0
2012	273.0	27.0	5.0	251.0
2013	288.4	29.5	5.1	264.0
2014	311.3	29.5	3.3	285.1
2015	343.4	35.4	3.4	311.4
2016	368.0	41.8	11.1	337.3
2017	392.1	54.1	0.6	338.6

Actuarial Gains or Losses

An analysis of actuarial gains or losses is performed in conjunction with all regularly scheduled valuations.

The developments of the gains or losses related to the actuarial liability and the assets are shown in Table 9. The results of our analysis of the financial experience of the System in the three most recent regular actuarial valuations are presented in Table 10. Each gain or loss shown represents our estimate of how much the given type of experience caused the Unfunded Actuarial Accrued Liability or Funding Reserve to change in the period since the previous actuarial valuation.

Gains and losses shown due to demographic sources are approximate. Demographic experience is analyzed in greater detail in our periodic assumption studies.

Non-recurring gains and losses result from changes in the actuarial assumptions and benefit improvements.

Table 9:
Analysis of Actuarial (Gains) or Losses*

A. UNFUNDED ACCRUED ACTUARIAL LIABILITY (GAIN) / LOSS ANALYSIS

1. Actual Unfunded Accrued Actuarial Liability as of June 30, 2016:	$	472,852
2. Normal Cost for this Plan Year		390,119
3. Interest on items 1 and 2 [(1+2) x 3.50%]		30,204
4. Contributions for this Plan Year:		(392,100)
5. Interest on item [4 x 3.50% x .5]		(6,862)
6. Changes due to:		
a. Assumption changes		73,717
b. Plan amendments		0
c. Funding Method		0
d. Actuarial (Gain) / Loss	$	(57,604)
7. Actual Unfunded Accrued Actuarial Liability as of June 30, 2017: (1. + 2. + 3. + 4. + 5. + 6.)	**$**	**510,326**

8. Items Affecting Calculation of Unfunded Accrued Actuarial Liability:

a. Benefit provisions reflected in the unfunded accrued liability (see Appendix C)
b. Actuarial assumptions and methods used to determine actuarial accrued liability (see Appendix B)

B. ASSET (GAIN) / LOSS ANALYSIS

1. Market Value of Assets as of June 30, 2016:	$	3,118,397
2. Interest on item [1 x 3.50%]		109,144
3. Contributions for the 2016/2017 Plan Year		392,100
4. Interest on item [3. x 3.50% x .5]		6,862
5. Benefit Payments for 2016/2017 Plan Year (Including Admin Expenses)		(54,135)
6. Interest on item [5. x 3.50% x .5]		(947)
7. Expected Actuarial Value of Assets as of June 30, 2017:		3,571,421
8. Actuarial Value of Assets as of June 30, 2017:	$	3,456,936
9. (Gain) / Loss	**$**	**114,485**

* Effects related to gains are shown in parentheses. Numerical results are expressed as a (decrease) increase in the Unfunded Actuarial Accrued Liability (UAAL). Gains decrease the UAAL and losses increase the UAAL.

Table 10:
Historical Actuarial (Gains) or Losses*

	UAAL (Gain)/Loss		
	June 30, 2017	**June 30, 2016**	**June 30, 2015**
Investment Income			
Investment income was (greater) less than expected based on actuarial value of assets.	$ 114,485	$ 91,932	$ 169,134
Pay Increases			
Pay increases were (less) greater than expected.	92,969	57,240	1,016
Age & Service Retirements			
Members retired at (older) younger ages or with (less) greater final average pay than expected	(5,511)	(401)	(35,805)
Disability Retirements			
Disability claims were (less) greater than expected	(251,583)	(120,568)	(223,348)
Death-in-Service Benefits			
Survivor claims were (less) greater than expected	4,617	3,975	7,212
Withdrawal From Employment			
(More) less reserves were released by withdrawals than expected	2,551	(426)	(113,801)
Death After Retirement			
Retirees (died younger) lived longer than expected	(160,422)	(70,855)	1,534
Data Adjustments and Benefit Payment Timing			
Service purchases, data corrections, etc.	67,178	82,710	163,043
Other			
Miscellaneous (gains) and losses	78,112	(18,973)	(88,738)
Total (Gain) or Loss During Period From Financial Experience	$ (57,604)	$ 24,634	$ (119,753)
Non-Recurring Items.			
Changes in actuarial assumptions and methods	73,717	-	-
Changes in benefits caused a (gain) loss	-	-	-
Composite (Gain) Loss During Period	$ 16,113	$ 24,634	$ (119,753)

* Effects related to gains are shown in parentheses. Numerical results are expressed as a (decrease) increase in the Unfunded Actuarial Accrued Liability (UAAL). Gains decrease the UAAL and losses increase the UAAL.

The assumptions and methods utilized in the valuation were developed in the six-year experience study for the period ending 2016.

Tables B-3 through B-6 give rates of decrement for service retirement, disablement, mortality, and other terminations of employment.

Actuarial Cost Method

The actuarial valuation was prepared using the entry age actuarial cost method. Under this method, the actuarial present value of the projected benefits of each individual included in the valuation is allocated as a level percentage of the individual's projected compensation between entry age and assumed exit. The portion of this actuarial present value allocated to a valuation year is called the normal cost. The normal cost was first calculated for each individual member. The normal cost rate is defined to equal the total of the individual normal costs, divided by the total pay rate.

The portion of this actuarial present value not provided for at a valuation date by the sum of (a) the actuarial value of the assets and (b) the actuarial present value of future normal costs is called the UAAL. The UAAL is amortized as a level percentage of the projected salaries of present and future members of the System.

Records and Data

The data used in the valuation consist of financial information; records of age, sex, service, salary, contribution rates, and account balances of contributing members; and records of age, sex, and amount of benefit for retired members and beneficiaries. All of the data was supplied by the System and has been accepted for valuation purposes without audit.

Valuation of Assets

Market value of assets

Investment Earnings

The annual rate of investment earnings of the assets of the System is assumed to be 3.50% per year net of investment expenses, compounded annually.

Postretirement Benefit Increases

None.

Future Salaries

The rates of annual salary increase assumed for the purpose of the valuation are illustrated in Table B-2. In addition to increases in salary due to merit and longevity, this scale includes an assumed 3.50% annual rate of increase in the general wage level of the membership.

Service Retirement

Table B-3 shows the annual assumed rates of retirement among members eligible for service retirement. Separate rates are used when a member is eligible for reduced benefits, for the first year a member is eligible for full benefits, and for the years following the first year a member is eligible for full benefits.

Disablement

The rates of disablement used in this valuation are illustrated in Table B-4.

Mortality

The mortality rates used in this valuation are illustrated in Table B-5. A written description of each table used is included in Table B-1.

Other Terminations of Employment

The rates of assumed future withdrawal from active service for reasons other than death, disability or retirement are shown for representative ages in Table B-6.

Records with no Birth Date

New records with no birth date are assumed to be 37 years old. Records that are not new and have no birth date used the same birth date as the prior year's valuation.

Table B-1

Summary of Valuation Assumptions

I.	Economic assumptions		
	A.	General wage increases	3.50%
	B.	Investment return	3.50%
	C.	Price inflation assumption	2.75%
	D.	Growth in membership	0.00%
	E.	Administrative expenses as a percentage of payroll	0.00%
II.	Demographic assumptions		
	A.	Individual salary increase due to promotion and longevity	Table B-2
	B.	Retirement	Table B-3
	C.	Disablement	Table B-4
	D.	Mortality among contributing members, service retired members, and beneficiaries. The tables include margins for mortality improvement which is expected to occur in the future. For Males and Females: RP 2000 Combined Employee and Annuitant Mortality Table projected to 2020 using Scale BB, set back one year for males.	Table B-5
	E.	Mortality among disabled members For Males and Females: RP 2000 Combined Mortality Table with no projections.	Table B-5
	F.	Other terminations of employment	Table B-6

Table B-2

Future Salaries

Years of Service	(a) Individual Merit & Longevity	(b) General Wage Increase	(1+(a))*(1+(b)) Total Salary Increase
1	4.80%	3.50%	8.47%
2	3.80	3.50	7.43
3	2.80	3.50	6.40
4	2.00	3.50	5.57
5	1.40	3.50	4.95
6	0.80	3.50	4.33
7	0.40	3.50	3.91
8	0.00	3.50	3.50
8 & Up	0.00	3.50	3.50

Table B-3

Retirement
Annual Rates

Age	All Members
50	3.0%
51	3.0
52	3.0
53	3.0
54	3.0
55	3.0
56	4.0
57	5.0
58	5.0
59	6.0
60	8.0
61	15.0
62	25.0
63	15.0
64	15.0
65	30.0
66	30.0
67	25.0
68	25.0
69	25.0
70 & Over	100.0

Members hired before July 1, 2001 are assumed to retire at the assumed rates once reaching the earlier of age 50 with five years of service or age 65 regardless of service.

Members hired on or after July 1, 2001 are assumed to retire at the assumed rates once reaching the earlier of age 55 with five years of service or age 70 regardless of service.

These rates are the same as the retirement rates used in the PERS-DB actuarial valuation for members not eligible for unreduced retirement benefits.

Table B-4

Disablement
Annual Rates

Age	All Members
22	.00%
27	.01
32	.01
37	.04
42	.10
47	.13
52	.25
57	.36
60	.00
62	.00

All disabilities are assumed to be permanent and without recovery.

Table B-5

Mortality
Annual Rates

Age	Contributing Members, Service Retired Members and Beneficiaries		Disabled Members	
	Men	Women	Men	Women
25	0.0354%	0.0195%	0.0376%	0.0207%
30	0.0388	0.0249	0.0444	0.0264
35	0.0661	0.0447	0.0773	0.0475
40	0.0961	0.0665	0.1079	0.0706
45	0.1316	0.1058	0.1508	0.1124
50	0.1879	0.1578	0.2138	0.1676
55	0.3010	0.2458	0.3624	0.2717
60	0.5271	0.4135	0.6747	0.5055
65	0.9041	0.7624	1.2737	0.9706
70	1.4636	1.3151	2.2206	1.6742
75	2.5057	2.2077	3.7834	2.8106
80	4.2816	3.6037	6.4368	4.5879
85	7.3750	6.0833	11.0757	7.7446
90	13.0721	10.5549	18.3408	13.1682
95	21.7835	17.2452	26.7491	19.4509

Table B-6

Other Terminations of Employment
Among Members Not Eligible to Retire
Annual Rates

Years of Service	All Members
0	30.0%
1	22.5
2	15.0
3	12.5
4	10.0
5	10.0
6	8.0
7	8.0
8	6.0
9	6.0
10	6.0
11	4.0
12	4.0
13	4.0
14	4.0
15 & Over	2.0

No termination rates are assumed after age 50 with five years of service for either males or females.

Type of Plan	• Multiple-employer cost sharing OPEB
Membership eligibility	• Employees of the State and local governments that have contracted for PERS coverage. • Certain employees of the university system and school districts, not covered by a separate retirement system governed by Title 19 of Montana Code Annotated. • Employees must have elected to be a member of the defined contribution retirement plan.
Member contributions	• None
Employer contribution	• 0.30% of each eligible member's compensation, for those employers participating in the PERS-DCRP
Compensation period used in benefit calculation	• HAC = Highest Average Compensation • Hired **prior to** July 1, 2011: HAC is average of the highest 36 consecutive months (or shorter period of total service) of compensation paid to member. • Hired **on or after** July 1, 2011: HAC is average of the highest 60 consecutive months (or shorter period of total service) of compensation paid to member. • Hired **on or after** July 1, 2013: 110% annual cap on compensation considered as part of a member's HAC
Disability eligibility and benefit	• 5 years membership service For members hired **on or before** June 30, 2011, **or** hired **on or before** February 24, 1991 **and** so elected: • **Less than 25 years** of membership service: 1.785% of HAC multiplied by service credit, or • **At least 25 years** of membership service: • 2% of HAC multiplied by service credit; and • Benefit is payable to the later of age 65 or for five years. For members hired **on or after** July 1, 2011: • **Between 5 and 10 years** of membership service: 1.5% of HAC x years of service credit; or • **Between 10 and 30 years** of membership service: 1.785% of HAC x years of service credit; or • **30 years** of membership service **or more**: 2% of HAC x years of service credit; and • Benefit is payable to age 65 for disabilities occurring prior to age 65, or no more than five years for disabilities occurring after age 65.

Disability eligibility and benefit continued	Members cannot receive distributions from their individual defined contribution account while receiving payments from the PERS-DCRP Disability OPEB. Participants may choose to receive a distribution from their individual account instead of applying for and receiving a disability benefit.
Survivor's benefit	• Disability benefits cease after death of a member, and their beneficiary is entitled to death benefits only as provided from the member's vested defined contribution account balance.
Form of payment	• Normal form of payment is an annuity • No other forms of payment are available
Post retirement benefit	• None
Changes since last valuation	PERS members hired **after** July 1, 2011 have a normal retirement age of 65. PERS DC members hired after July 1, 2011 who became disabled were previously only eligible for a disability benefit until age 65. Effective July 1, 2017, these individuals will be eligible for a disability benefit until they reach age 70, thus ensuring the same 5 year time period available to PERS DC disabled members hired **prior to** July 1, 2011 who have a normal retirement age of 60 and are eligible for a disability benefit until age 65.

Valuation Data

This valuation is based upon the membership of the Plan as of June 30, 2017. Membership data was supplied by the Plan and has been accepted for valuation purposes without audit. However, tests were performed to ensure that the data is sufficiently accurate for valuation purposes.

The salaries used in the tables and charts which follow are different than the salaries used for the Summary of Results on page 1. The valuation projected salaries to be paid for the following fiscal year, whereas the Summary of Results, salaries are applicable in the year ending on the valuation date.

Active Members	Number	Valuation Projected Salaries
Full-Time Members	1,906	$ 109,625,665
Part-Time Members	635	$ 35,529,178
Total Active Members	2,541	$ 145,154,843

Table D-1 contains summaries of the data for active members. For full-time members, values shown in the tables are the numbers of members and their total and average annual salaries. For part-time members, only the numbers of members are shown.

Table D-2 presents distributions of the following:

- Members receiving service retirement benefits.
- Members receiving disability retirement benefits.
- Survivors of deceased retired members receiving benefits.
- Survivors of deceased active members.
- Terminated vested members.

Table D-3 is a reconciliation of membership data from June 30, 2016 to June 30, 2017.

The following is a summary of retired members and beneficiaries currently receiving benefits:

Type of Annuitant	Number	Annual Benefits	Average Annual Benefits
Service Retirement	0	$ -	$ -
Survivors and Beneficiaries	0	-	-
Total Retirees and Beneficiaries	0	$ -	$ -
Disability Retirement	3	25,829	8,610
Total Annuitants	3	$ 25,829	$ 8,610

Terminated Members with Contributions Not Withdrawn	Number
Vested Terminated Members	0
Non-Vested Terminated Members	0
Total Terminated Members	0

Table D-1:
Active Members Distribution of
Full-Time Employees and Salaries
as of June 30, 2017

Number of Employees

	Completed Years of Service												
Age	0	1	2	3 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39	40+	Totals
<25	5	14	6	6									31
25 to 29	15	45	30	25	10								125
30 to 34	10	49	32	59	54	15							219
35 to 39	14	42	31	64	65	63	7						286
40 to 44	15	36	17	34	63	83	28	1					277
45 to 49	19	24	17	31	69	71	28	16	1				276
50 to 54	6	25	18	18	63	63	28	15	5	1			242
55 to 59	5	20	17	41	61	72	28	16	6				266
60 to 64	4	4	6	26	32	43	18	4	2				139
65 to 69	1		5	4	11	16	1	1	1				40
70 and up	1		1		2	1							5
Totals	95	259	180	308	430	427	138	53	15	1	-	-	1,906

Table D-1:
Active Members Distribution of
Full-Time Employees and Salaries
as of June 30, 2017

Annual Salaries in Thousands

	Completed Years of Service												
Age	0	1	2	3 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39	40+	Totals
<25	209	458	253	218									1,137
25 to 29	698	1,702	1,480	1,402	446								5,728
30 to 34	751	1,963	1,811	3,285	2,976	970							11,756
35 to 39	741	1,935	1,709	3,725	4,223	4,157	518						17,007
40 to 44	907	1,703	1,025	1,940	3,876	5,575	2,160	52					17,238
45 to 49	721	1,014	785	1,664	4,510	5,033	2,125	1,153	47				17,052
50 to 54	235	1,137	956	1,014	3,625	3,967	1,939	1,022	292	49			14,237
55 to 59	298	864	813	2,009	3,434	4,588	1,850	1,091	430				15,378
60 to 64	163	177	274	1,345	1,837	2,402	957	253	103				7,513
65 to 69	93		364	212	600	883	96	34	52				2,334
70 and up	48		38		124	34							245
Totals	4,865	10,953	9,508	16,815	25,652	27,610	9,646	3,606	924	49	-	-	109,626

The salary shown in the above chart was used for valuation purposes and assumes pay increases for the year.

Table D-1:
Active Members Distribution of
Full-Time Employees and Salaries
as of June 30, 2017

Average Annual Salary

	Completed Years of Service												
Age	0	1	2	3 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39	40+	Totals
<25	41,725	32,688	42,116	36,402									36,690
25 to 29	46,560	37,812	49,344	56,064	44,623								45,825
30 to 34	75,105	40,058	56,594	55,678	55,114	64,689							53,682
35 to 39	52,938	46,077	55,123	58,201	64,969	65,978	73,938						59,466
40 to 44	60,481	47,298	60,315	57,057	61,526	67,167	77,138	51,974					62,231
45 to 49	37,946	42,261	46,188	53,667	65,367	70,887	75,889	72,080	46,534				61,783
50 to 54	39,142	45,484	53,091	56,326	57,547	62,969	69,256	68,161	58,485	48,695			58,829
55 to 59	59,592	43,219	47,800	49,010	56,294	63,726	66,086	68,182	71,689				57,812
60 to 64	40,755	44,280	45,714	51,745	57,421	55,861	53,194	63,235	51,402				54,047
65 to 69	93,151		72,754	53,119	54,507	55,197	96,216	34,115	51,781				58,356
70 and up	48,452		37,942		61,993	34,469							48,970
Totals	51,209	42,289	52,820	54,593	59,656	64,660	69,896	68,031	61,579	48,695			57,516

The salary shown in the above chart was used for valuation purposes and assumes pay increases for the year.

Table D-1:
Active Members Distribution of
Part-Time Employees
as of June 30, 2017

Number of Employees

	Completed Years of Service												
Age	0	1	2	3 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39	40+	Totals
<25	3	3		2									8
25 to 29		8	3	8	2								21
30 to 34	5	14	8	15	19	2							63
35 to 39	7	11	7	18	28	6							77
40 to 44	5	11	10	14	27	12							79
45 to 49	4	9	10	20	17	13	7	2	1				83
50 to 54	2	10	4	8	17	19	5	2	1				68
55 to 59	3	13	9	8	27	22	15	4					101
60 to 64	6	6	5	13	14	16	10	3	1				74
65 to 69	1	7	1	6	18	6	1	1	1				42
70 and up		2	2	1	5	6	1	1	1				19
Totals	36	94	59	113	174	102	39	13	5	-	-	-	635

Table D-2:
Distribution of Inactive Lives

Members Receiving Disability Retirement Benefits as of June 30, 2017

Age	Number of Persons	Annual Benefits	Average Annual Benefits
<50	2	$ 10,909	$ 5,455
50 to 54			
55 to 59	1	14,920	14,920
60 to 64			
65 to 69			
70 to 74			
75 to 79			
80 to 84			
85 to 89			
90 and up			
Totals	3	$ 25,829	$ 8,610

Table D-3:
Data Reconciliation

The following table shows a reconciliation of the participants used in the previous valuation to this valuation. This chart reflects the counts used for valuation purposes and for the Annual Financial Report.

	Active Members	Disabled Members
June 30, 2016 Valuation	2,409	6
Terminations	(223)	
Service Retirements		
Disability Retirements		
Deaths		
New Entrants	322	
Rehires	33	
Payment Stopped		(3)
June 30, 2017 Valuation	2,541	3

Comparative Schedules

This section contains tables that summarize the experience of the Plan shown in present and past valuation reports.

Table E-1 shows a summary of the active members covered as of the various valuation dates.

Table E-2 shows a summary of the retired and inactive members as of the various valuation dates.

Table E-3 summarizes the contribution rates determined by each annual actuarial valuation.

Table E-1:
Active Membership Data

Valuation Date (June 30)	Actives	Annual Salaries	Average Annual Salary	Average Age	Average Years of Service	Average Hire Age
2017	2,541	129,157,695	50,829	46.3	7.4	38.9
2016	2,409	114,883,091	47,689	46.1	6.8	39.3
2015	2,284	106,518,524	46,630			
2013	2,087	90,450,420	43,340			

Table E-2:
Disabled Membership Data

Valuation Date (June 30)	Number	Annual Benefits	Average Annual Benefit	Average Current Age
2017	3	25,829	8,610	51.8
2016	6	49,269	8,212	53.2
2015	6	43,296	7,216	
2013	4	29,460	7,365	

Table E-3:
Contribution Rates

Valuation Date (June 30)	Contribution Rates Employee	Contribution Rates Employer	Contribution Rates Total	Normal Cost Rate	UAAL Rate*
2017	0.00%	0.30%	0.30%	0.28%	0.02%
2016	0.00%	0.30%	0.30%	0.30%	0.00%
2015	0.00	0.30	0.30	0.32	(0.02)
2013	0.00	0.30	0.30	0.33	(0.03)

* The UAAL rate is the amount available to amortize the UAAL. It is equal to the total contribution rate, minus the normal cost rate.

Appendix F: Accounting Statement Information

The information presented in the required supplementary schedules was determined as part of the actuarial valuation as of June 30, 2017. Additional information as of the latest actuarial valuation follows.

Valuation date	June 30, 2017
Actuarial cost method	Entry Age Normal
Amortization method	Open
Remaining amortization period	19 Years
Asset valuation method	Market Value
Actuarial assumptions:	
Investment rate of return*	3.50%
General wage growth*	3.50%
Merit salary increases	0.0% - 4.8%
*Includes inflation	2.75%

Schedule of Funding Progress (expressed in thousands)						
Valuation Date June 30,	Actuarial Value of Assets	Actuarial Accrued Liability (AAL)	Funded Ratio	Unfunded AAL (UAAL)	Covered Payroll	UAAL as a Percentage of Covered Payroll
2017	$ 3,457	$ 3,967	87%	$ 510	$129,158	0%
2016	3,118	3,591	87%	473	114,883	0%
2015	2,781	3,235	86%	454	113,750	0%
2013	2,184	2,715	80%	531	90,128	1%

Solvency Test Aggregate Accrued Liabilities for (expressed in thousands)							
					Portion of Accrued Liability Covered by Reported Assets		
Valuation Date June 30,	Active Member Contributions (1)	Retirees & Beneficiaries (2)	Active Member Employer Financed Contributions (3)	Actuarial Value of Reported Assets	(1)	(2)	(3)
2017	$ -	$ 215	$ 3,752	$ 3,457	100%	100%	86%
2016	-	401	3,190	3,118	100%	100%	85%
2015	-	405	2,830	2,781	100%	100%	84%
2013	-	294	2,421	2,184	100%	100%	78%

The following definitions are largely excerpts from a list adopted in 1981 by the major actuarial organizations in the United States. In some cases the definitions have been modified for specific applicability to the Public Employees' Retirement System of Montana (PERS) Long-Term disability plan under the Defined Contribution Retirement Plan. Defined terms are capitalized throughout this Appendix.

Accrued Benefit

The amount of an individual's benefit (whether or not vested) as of a specific date, determined in accordance with the terms of a pension plan and based on compensation and service to that date.

Actuarial Accrued Liability

That portion, as determined by a particular Actuarial Cost Method, of the Actuarial Present Value of pension plan benefits and expenses which is not provided for by future Normal Costs.

Actuarial Assumptions

Assumptions as to the occurrence of future events affecting pension costs, such as: mortality, withdrawal, disablement, and retirement; changes in compensation, rates of investment earnings, and asset appreciation or depreciation; procedures used to determine the Actuarial Value of Assets; and other relevant items.

Actuarial Cost Method

A procedure for determining the Actuarial Present Value of pension plan benefits and expenses and for developing an actuarially equivalent allocation of such value to time periods, usually in the form of a Normal Cost and an Actuarial Accrued Liability.

Actuarial Gains and Losses

A measure of the difference between actual experience and that expected based upon a set of Actuarial Assumptions during the period between two Actuarial Valuation dates, as determined in accordance with a particular Actuarial Cost Method.

Actuarial Present Value

The value of an amount or series of amounts payable or receivable at various times, determined as of a given date by the application of a particular set of Actuarial Assumptions.

Actuarial Valuation

The determination, as of a valuation date, of the Normal Cost, Actuarial Accrued Liability, Actuarial Value of Assets, and related Actuarial Present Values for a pension plan.

Actuarially Equivalent

Of equal Actuarial Present Value, determined as of a given date with each value based on the same set of Actuarial Assumptions.

Amortization Payment

That portion of the pension plan contribution which is designed to pay interest on and to amortize the Unfunded Actuarial Accrued Liability.

Entry Age Actuarial Cost Method

A method under which the Actuarial Present Value of the Projected Benefits of each individual included in an Actuarial Valuation is allocated on a level basis over the earnings of the individual between entry age and assumed exit ages. The portion of this Actuarial Present Value allocated to a valuation year is called the Normal Cost. The portion of this Actuarial Present Value not provided for at a valuation date by the Actuarial Present Value of future Normal Costs is called the Actuarial Accrued Liability.

Market Value of Assets

The fair value of cash, investments and other property belonging to a pension plan that could be acquired by exchanging them on the open market.

Normal Cost

That portion of the Actuarial Present Value of pension plan benefits and expenses which is allocated to a valuation year by the Actuarial Cost Method.

Projected Benefits

Those pension plan benefit amounts which are expected to be paid at various future times under a particular set of Actuarial Assumptions, taking into account such items as the effect of advancement in age and past and anticipated future compensation and service credits.

Unaccrued Benefit

The excess of an individual's Projected Benefits over the Accrued Benefits as of a specified date.

Unfunded Actuarial Accrued Liability

The excess of the Actuarial Accrued Liability over the Actuarial Value of Assets.