



# Montana SAVA

**Retirement Program DESIGNER®  
for the State of Montana Teachers'  
Retirement System**

**June 25, 2010**

[ quickly evaluate changes ]

# Retirement Program Designer<sup>®</sup>

**Pension & Medical**

For Windows XP Ver. 2009 US



Main Menu

Read Me

# RETIREMENT PROGRAM DESIGNER<sup>®</sup>

READ ME / SUPPORT | USER CONTROL | WELCOME

## ASSUMPTIONS

General Assumptions  
Medical Assumptions  
International Assumptions

1

## DATA INPUTS

Participants Data  
Distribution Data  
Cost Data

2

## PLAN PROVISIONS

Coded Plans | Parameterized Plans | Post Ret. Medical

CP1 - Current Plan /  
CP2 - Revised DB Plan /  
CP3 - / Money Purchase Plan  
CP4 - /  
CP5 - /  
CP6 - /  
CP7 - /  
CP8 - /

3

## OUTPUTS

Line Graph	Statements
Bar Graph	Data Processing
Benefit Comparison Distribution	Cost
Scatter Graph	Cost Benchmarking



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## Designer® for Teachers' Retirement System

- Three basic plan designs have been programmed into the software:
  - Current Plan
  - Revised DB Plan
  - Money Purchase Plan
- Several options on the following plan features are available to modify during the June 25 meeting:
  - Vesting schedule (Revised DB and MPP)
  - Final average salary period (Revised DB)
  - PRO (Revised DB)
  - Pay crediting rates (MPP)
  - Interest crediting rates (MPP)

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## Designer® for Teachers' Retirement System

- Options for the vesting schedule:
  - Immediate vesting
  - 5 year cliff
  - 10 year cliff
  - 3-7 year graded
  - 5-10 year graded
  - 5-15 year graded
- Options for the final average salary period are 3, 5, 7 and 10 years
- Options for the PRO:
  - No PRO
  - Increased multiplier applied to all service after reaching 30 years
  - Increased multiplier applied to service in excess of 30 years
- In addition to vesting, the member pay credits, employer pay credits and interest credits can be modified for the Money Purchase Plan

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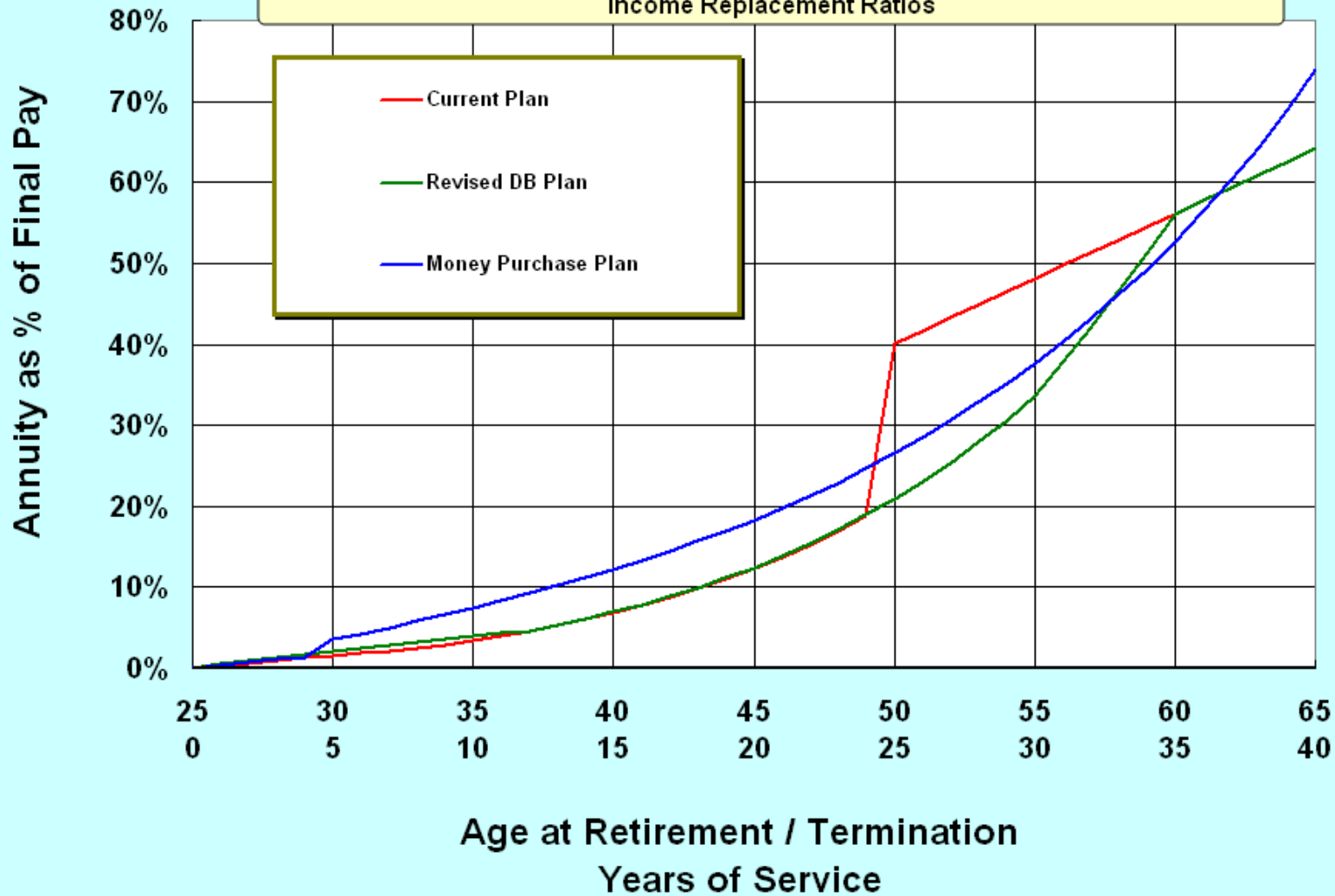
## Designer® for Teachers' Retirement System

- For the purpose of the exhibits included here, the following options have been applied:
  - Revised DB Plan:
    - 3 year final average salary period
    - No PRO
    - 5 year cliff vesting
  - MPP:
    - 7.15% member contributions
    - 7.15% employer pay credits
    - 7.00% interest credits
    - 5 year cliff vesting
- These options are a starting point to demonstrate the exhibits that will be prepared during the June 25th meeting and are not recommendations

# State of Montana Teachers' Retirement System

Current Age: 25, Past Service: 0  
 Current Pay: \$30,000, Salary Increase Rate: Variable

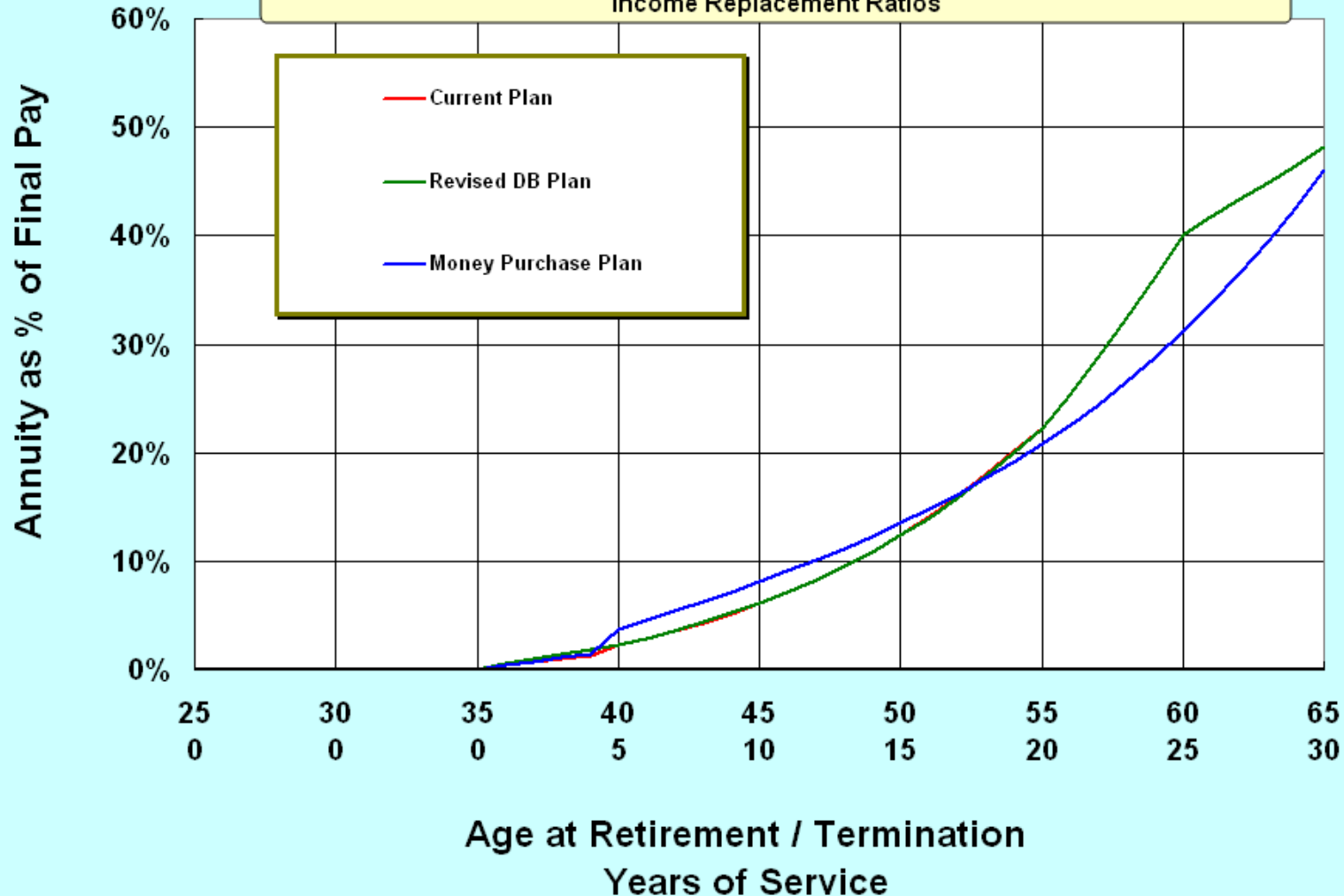
Income Replacement Ratios



# State of Montana Teachers' Retirement System

Current Age: 35, Past Service: 0  
Current Pay: \$40,000, Salary Increase Rate: Variable

Income Replacement Ratios

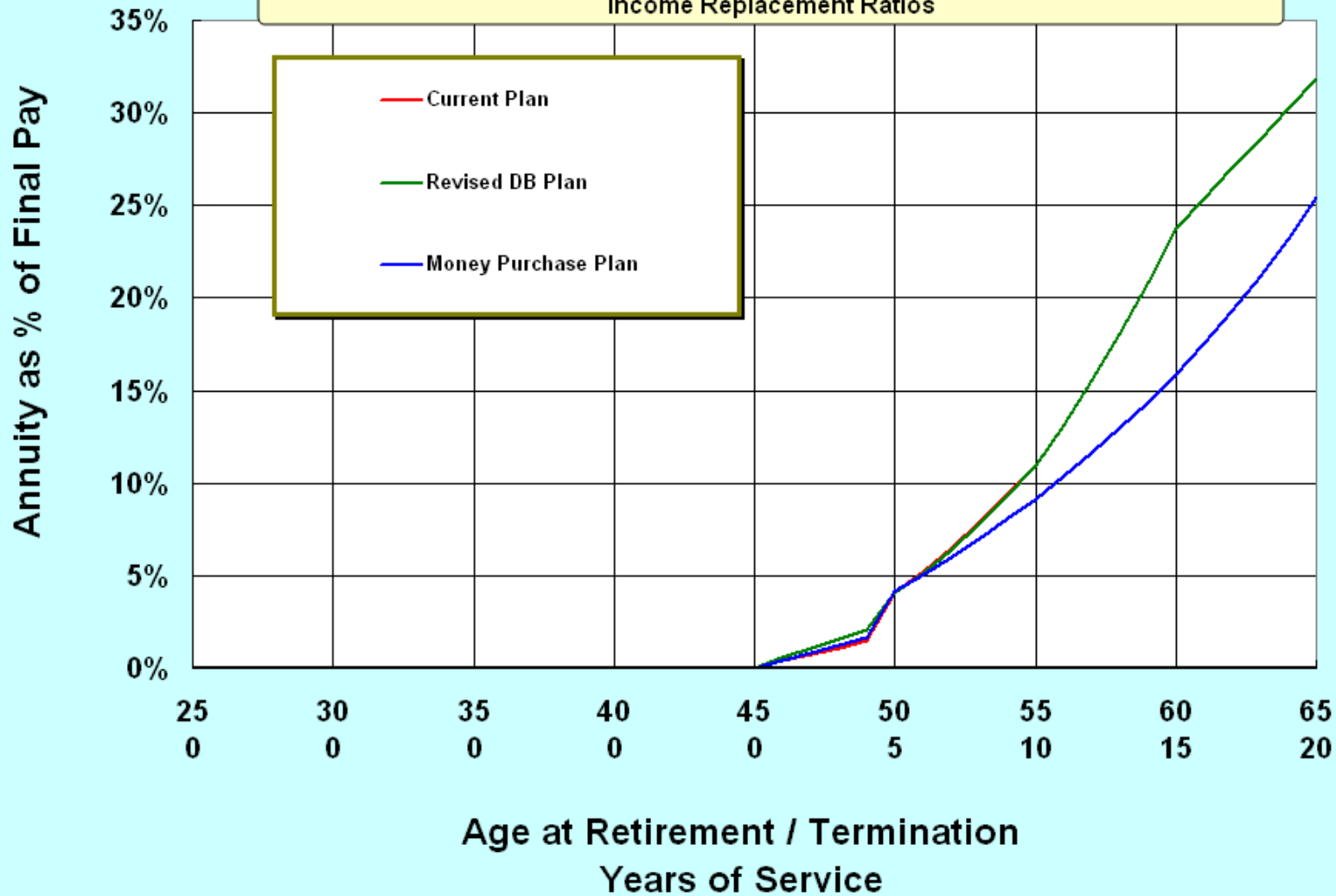




# State of Montana Teachers' Retirement System

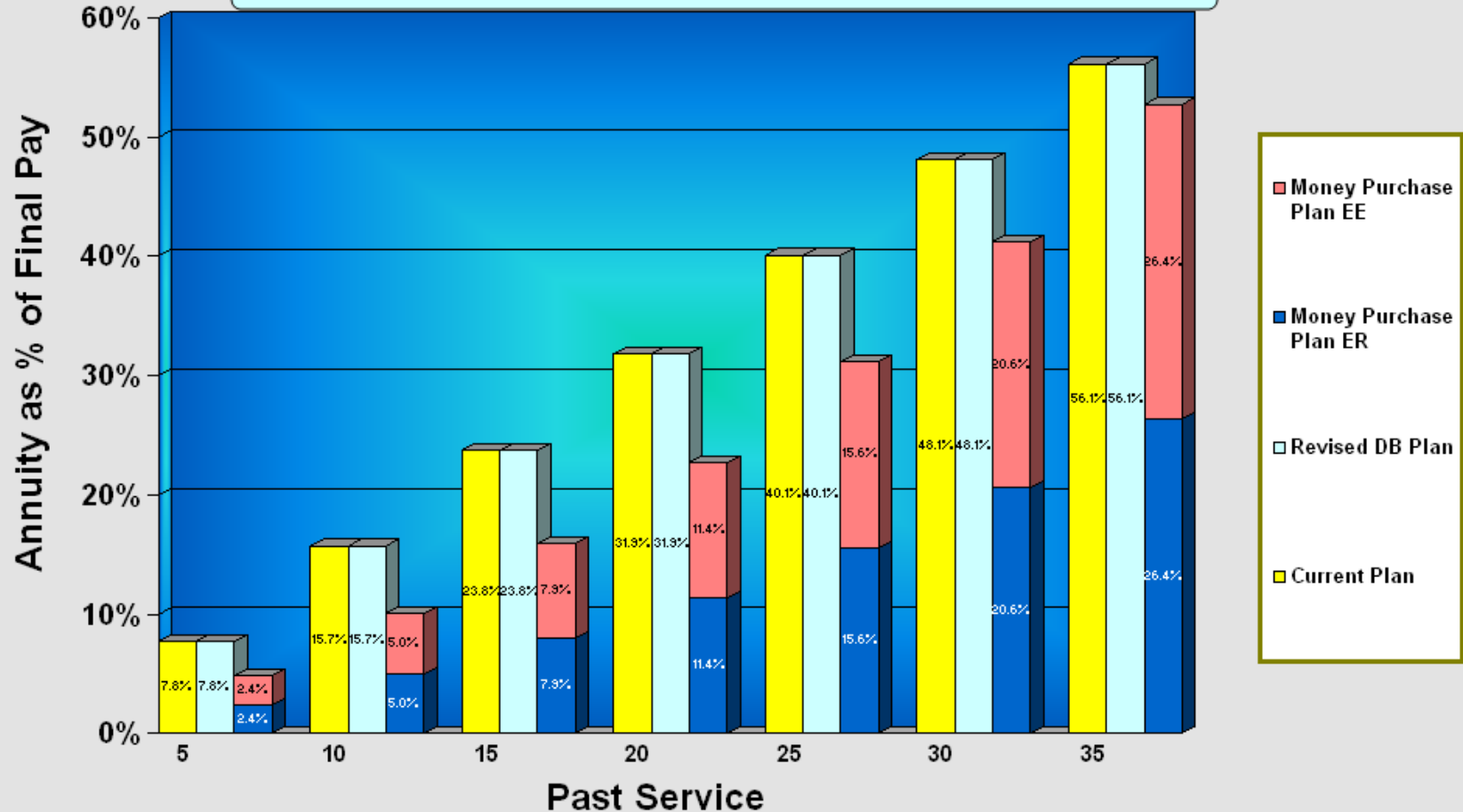
Current Age: 45, Past Service: 0  
Current Pay: \$50,000, Salary Increase Rate: Variable

Income Replacement Ratios



# State of Montana Teachers' Retirement System

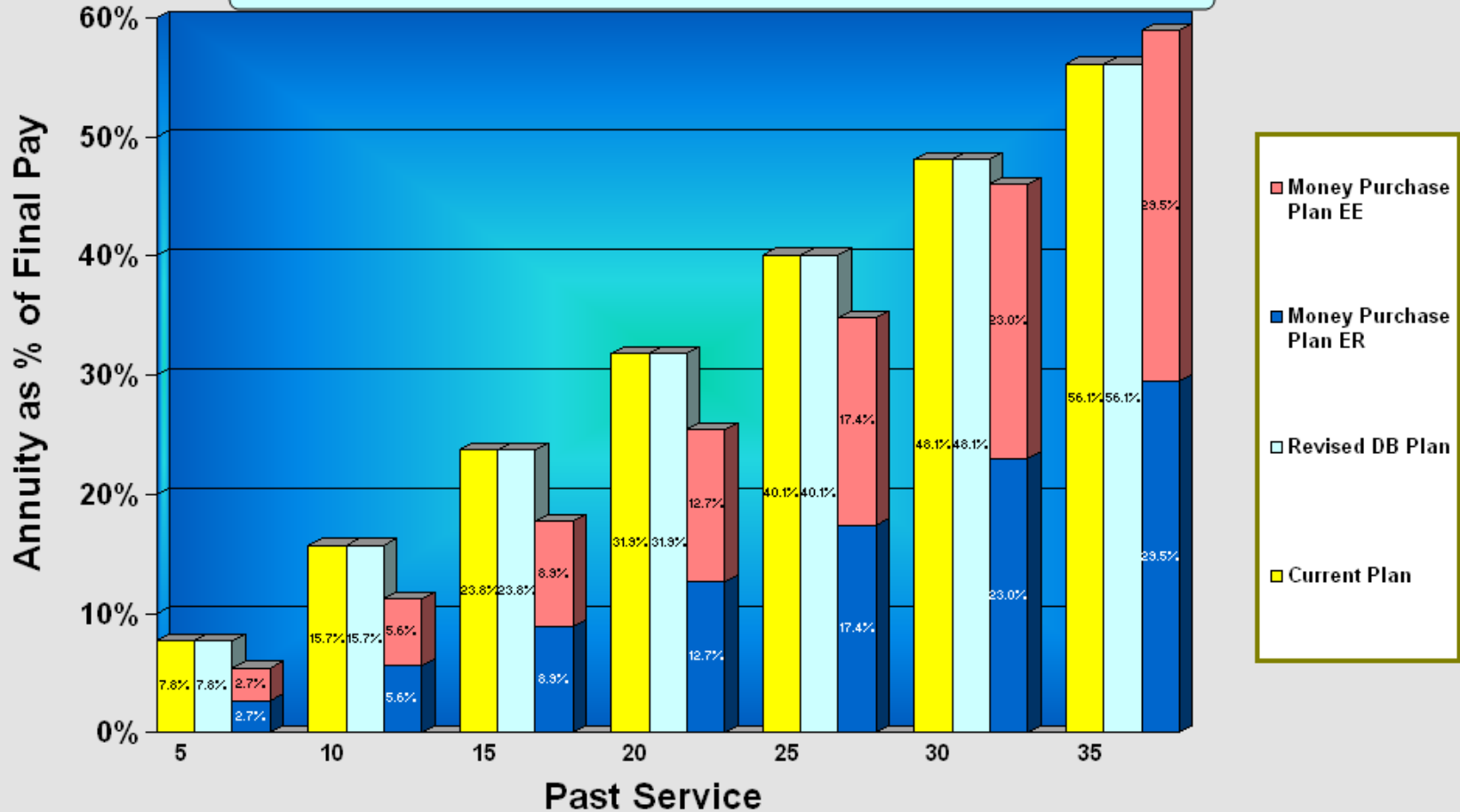
Income Replacement Ratios



Current Age: 60, Current Pay: \$60,000  
 Age at Termination: 60, Salary Increase Rate: Variable

# State of Montana Teachers' Retirement System

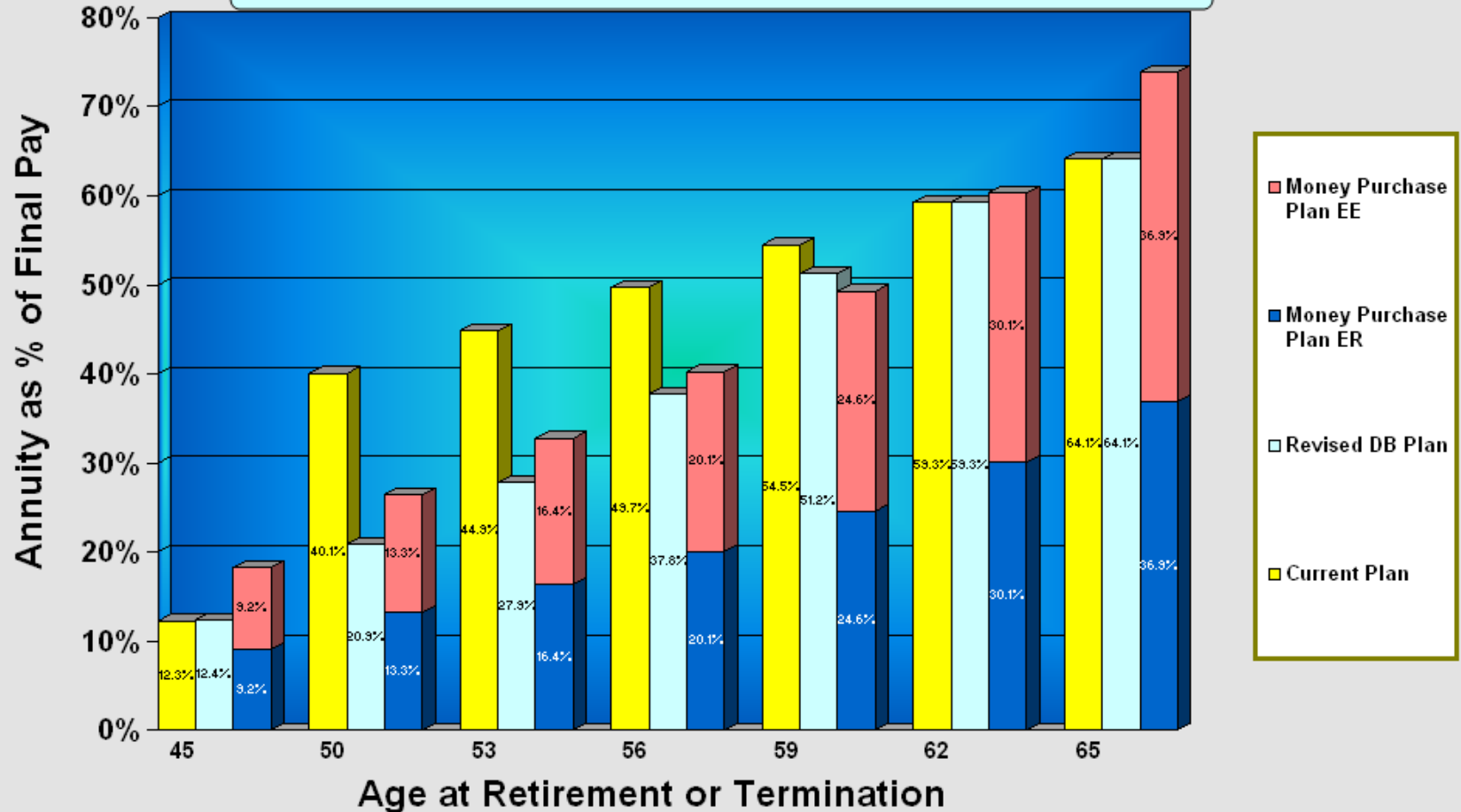
Income Replacement Ratios



**Current Age: 65, Current Pay: \$60,000**  
**Age at Termination: 65, Salary Increase Rate: Variable**

# State of Montana Teachers' Retirement System

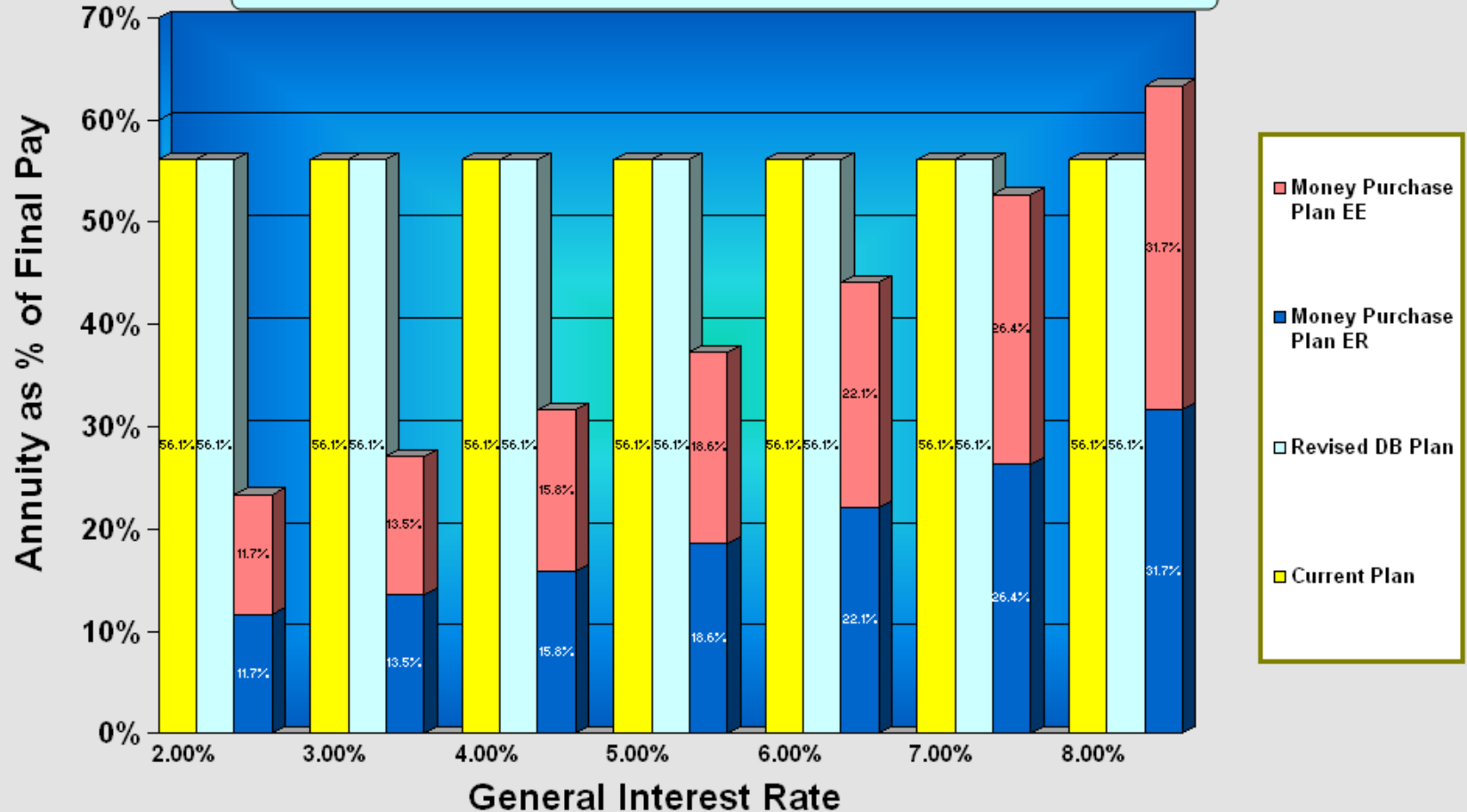
Income Replacement Ratios



Current Age: 25, Current Pay: \$30,000, Service: 0  
Salary Increase Rate: Variable

# State of Montana Teachers' Retirement System

## Income Replacement Ratios



Current Age: 25, Current Pay: \$30,000, Service: 0  
 Age at Termination: 60, Salary Increase Rate: Variable

# Montana SAVA

## Designer® for Teachers' Retirement System

- The following exhibits compare benefits under the current plan to those under the Revised DB plan first and then the MPP plan
- The percentage listed in each cell shows the percentage increase or decrease in the benefit based on the age and service indicated for that cell
- Below the percentage increase or decrease is the number of members with that age/service combination and the average salary of those members
- The comparisons are shown based on an age at retirement of 50, 55, 60 and 65 in successive exhibits

# Benefit Comparison Distribution ("Winners & Losers")

This section will plot the distribution of the changes in benefit in age/service groups.

**From**

1 Current Plan  
2  
3

**To**

1 Revised DB Plan  
2  
3

**Termination Point**  
Age at Termination 60

**Salary at Age 20**  
 use entered salaries N/A

**Salary Increase Rate**  
4.50%

**Inflation Adjustment**  
N/A

Comparison based on  
 Annuities  
 Lump Sums

Full Calculation  Show Participant Counts  
 Use Data1-Data4  Show Current Salaries

Build Graph  
Enter Data  
Main Menu  
Return

# State of Montana Teachers' Retirement System

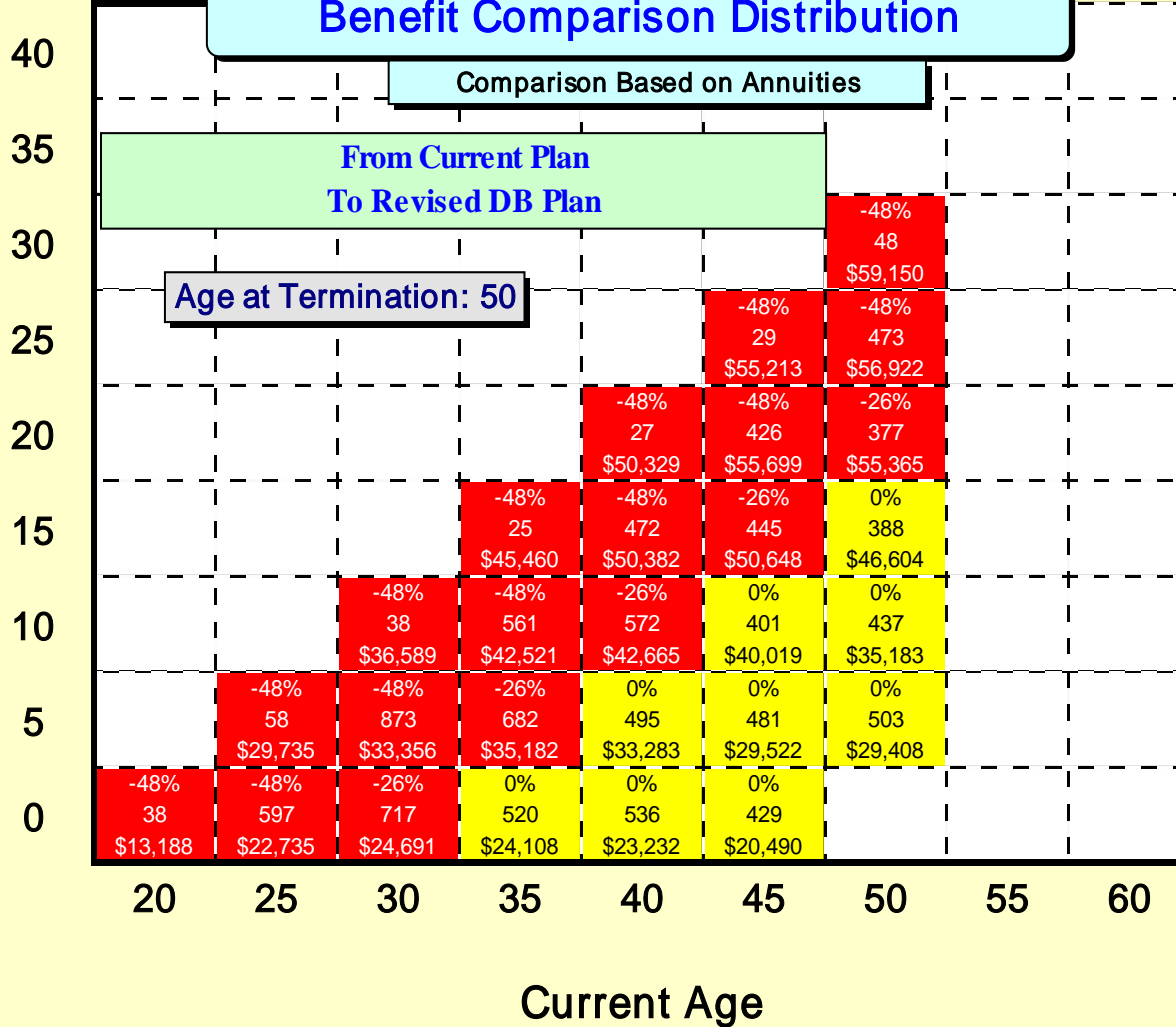
Current Service

## Benefit Comparison Distribution

Comparison Based on Annuities

From Current Plan  
To Revised DB Plan

Age at Termination: 50



**Cells Show**  
Benefit Change  
Participant Count  
Average Salary



# State of Montana Teachers' Retirement System

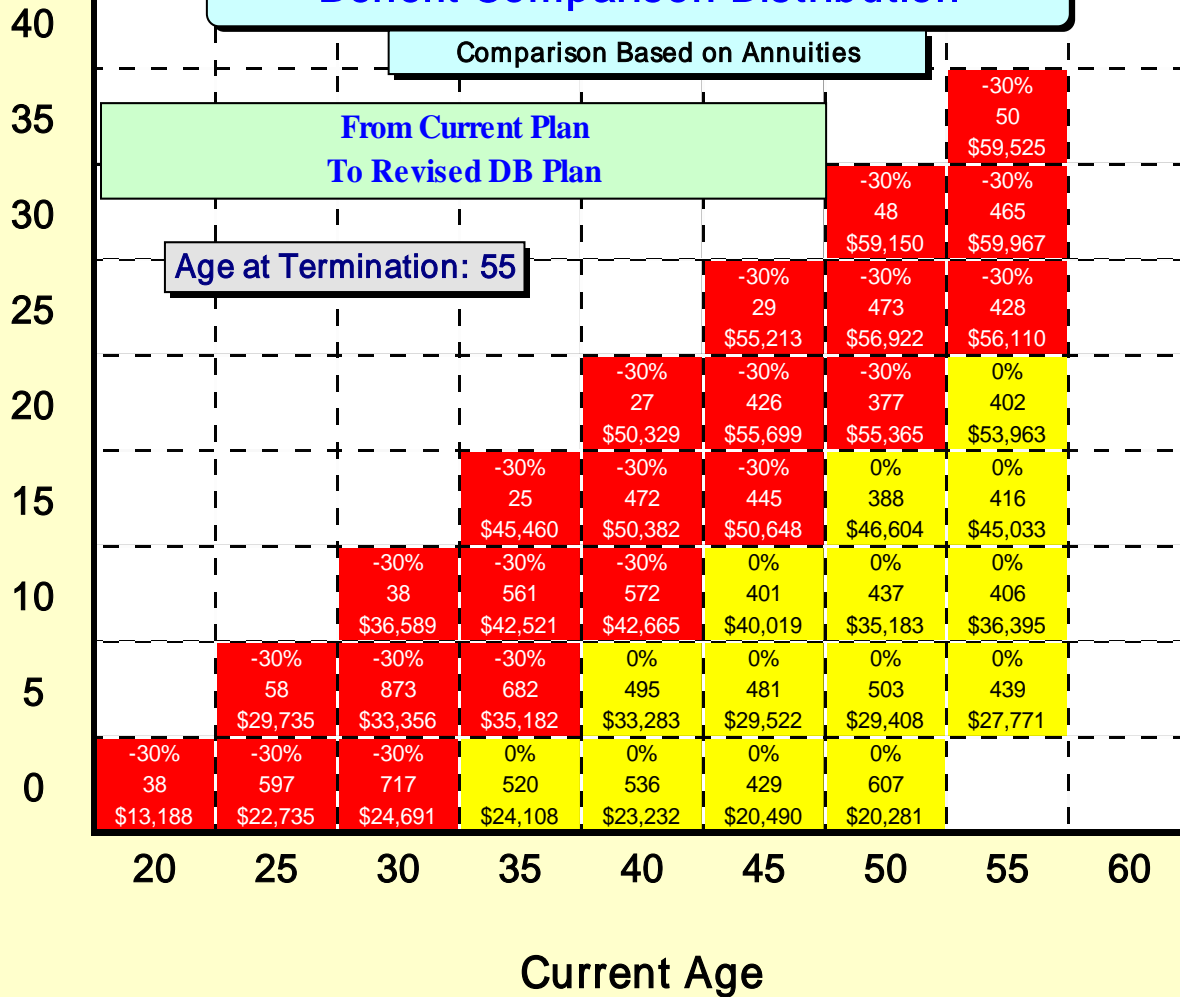
Current Service

## Benefit Comparison Distribution

Comparison Based on Annuities

From Current Plan  
To Revised DB Plan

Age at Termination: 55



**Cells Show**  
Benefit Change  
Participant Count  
Average Salary

# State of Montana Teachers' Retirement System

Current Service

## Benefit Comparison Distribution

Current Service	20	25	30	35	40	45	50	55	60
40								0%	99
								\$62,772	
35								0%	0%
								50	515
								\$59,525	\$62,941
30								0%	0%
								48	465
								\$59,150	\$59,967
25								0%	0%
								29	473
								\$55,213	\$56,922
20								0%	0%
								27	426
								\$50,329	\$55,699
15								0%	0%
								25	472
								\$45,460	\$50,648
10								0%	0%
								38	561
								\$36,589	\$42,665
5								0%	0%
								58	873
								\$29,735	\$33,356
0								0%	0%
								38	597
								\$13,188	\$22,735

Age at Termination: 60

From Current Plan  
To Revised DB Plan

Comparison Based on Annuities

**Cells Show**  
Benefit Change  
Participant Count  
Average Salary

Current Age

# State of Montana Teachers' Retirement System

Current Service

## Benefit Comparison Distribution

40								0%	99	\$62,772
								0%	0%	
35								0%	50	\$59,525
								0%	515	\$62,941
30								0%	48	\$59,150
								0%	465	\$59,967
25								0%	29	\$55,213
								0%	473	\$56,922
20								0%	27	\$50,329
								0%	426	\$55,699
15								0%	25	\$45,460
								0%	472	\$50,382
10								0%	38	\$36,589
								0%	561	\$42,521
5								0%	58	\$29,735
								0%	873	\$33,356
0								0%	38	\$13,188
								0%	597	\$22,735
								0%	717	\$24,691
								0%	520	\$24,108
								0%	536	\$23,232
								0%	429	\$20,490
								0%	607	\$20,281
								0%	333	\$21,198
								0%	392	\$20,805

Age at Termination: 65

From Current Plan  
To Revised DB Plan

Comparison Based on Annuities

**Cells Show**  
Benefit Change  
Participant Count  
Average Salary

Current Age

# State of Montana Teachers' Retirement System

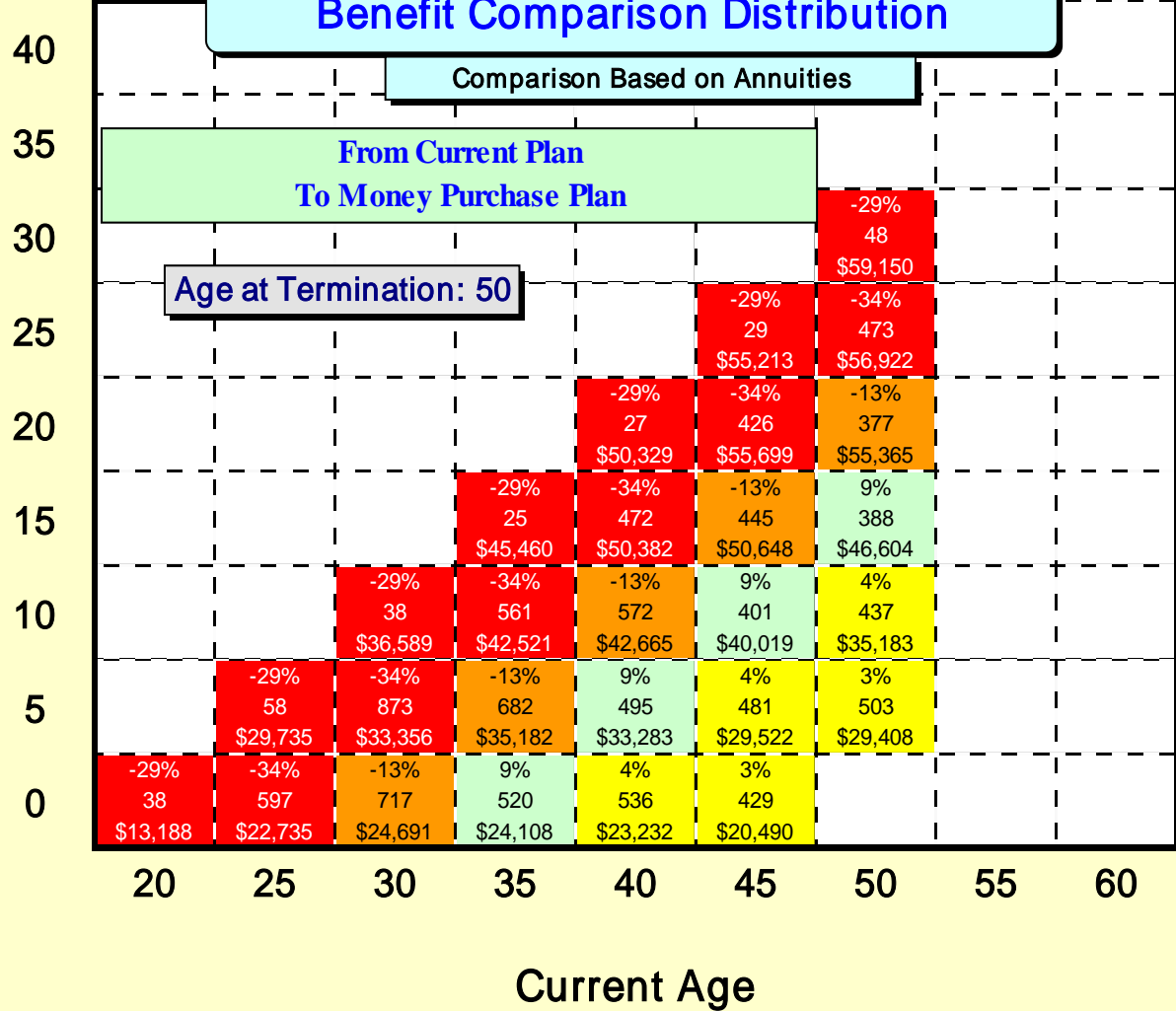
Current Service

## Benefit Comparison Distribution

Comparison Based on Annuities

From Current Plan  
To Money Purchase Plan

Age at Termination: 50



**Cells Show**  
Benefit Change  
Participant Count  
Average Salary

# State of Montana Teachers' Retirement System

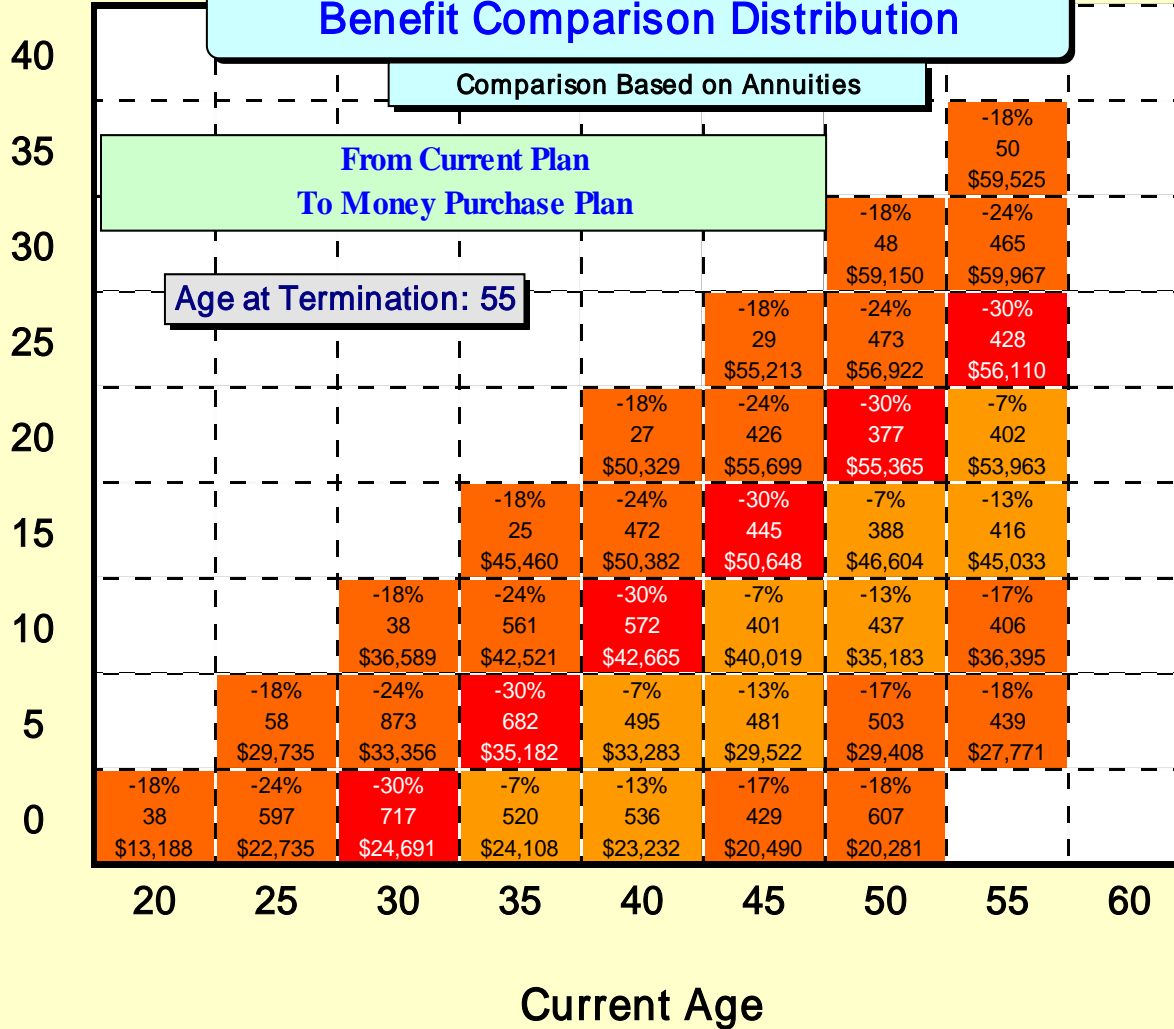
Current Service

## Benefit Comparison Distribution

Comparison Based on Annuities

From Current Plan  
To Money Purchase Plan

Age at Termination: 55

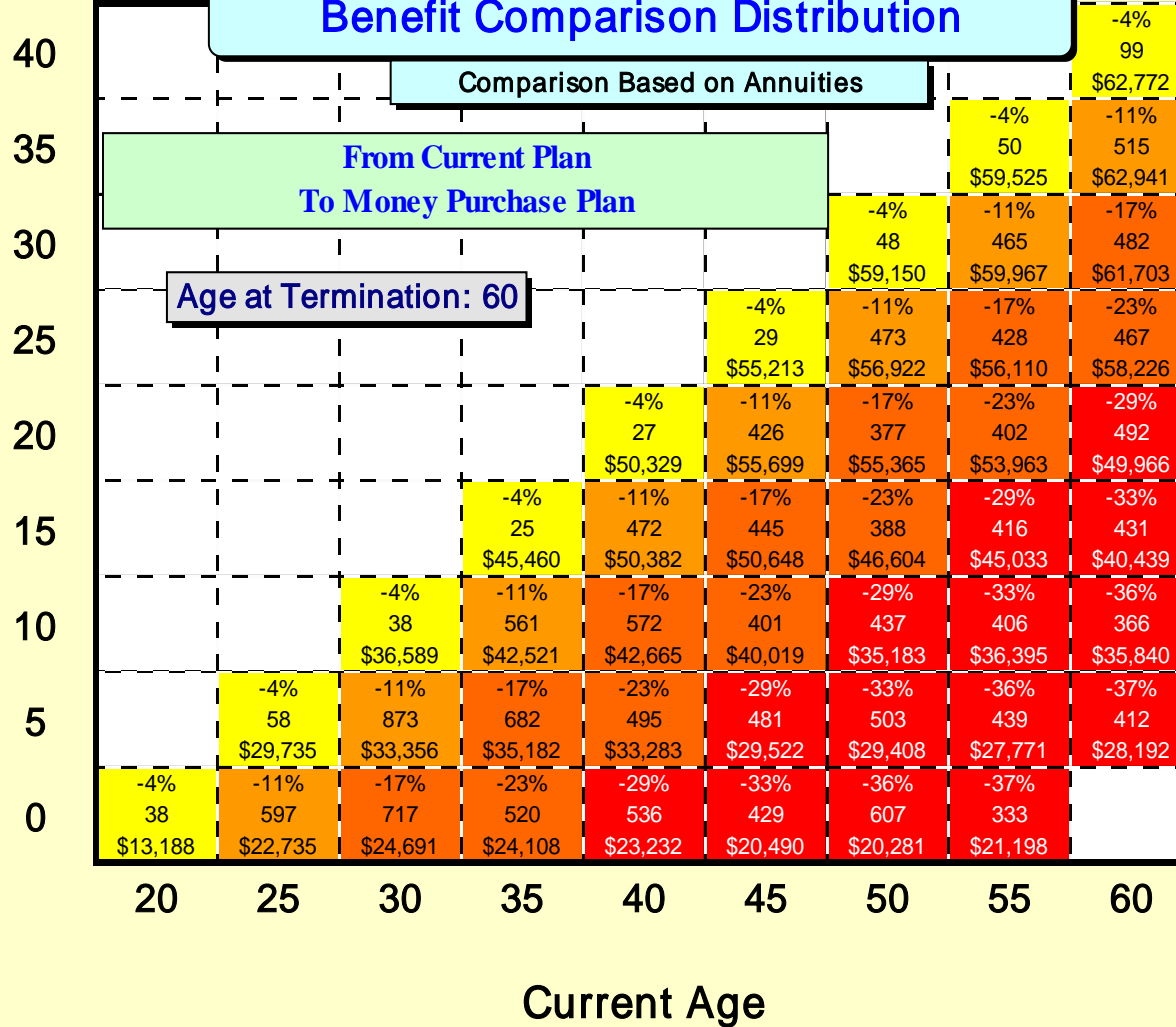


**Cells Show**  
Benefit Change  
Participant Count  
Average Salary

# State of Montana Teachers' Retirement System

Current Service

## Benefit Comparison Distribution



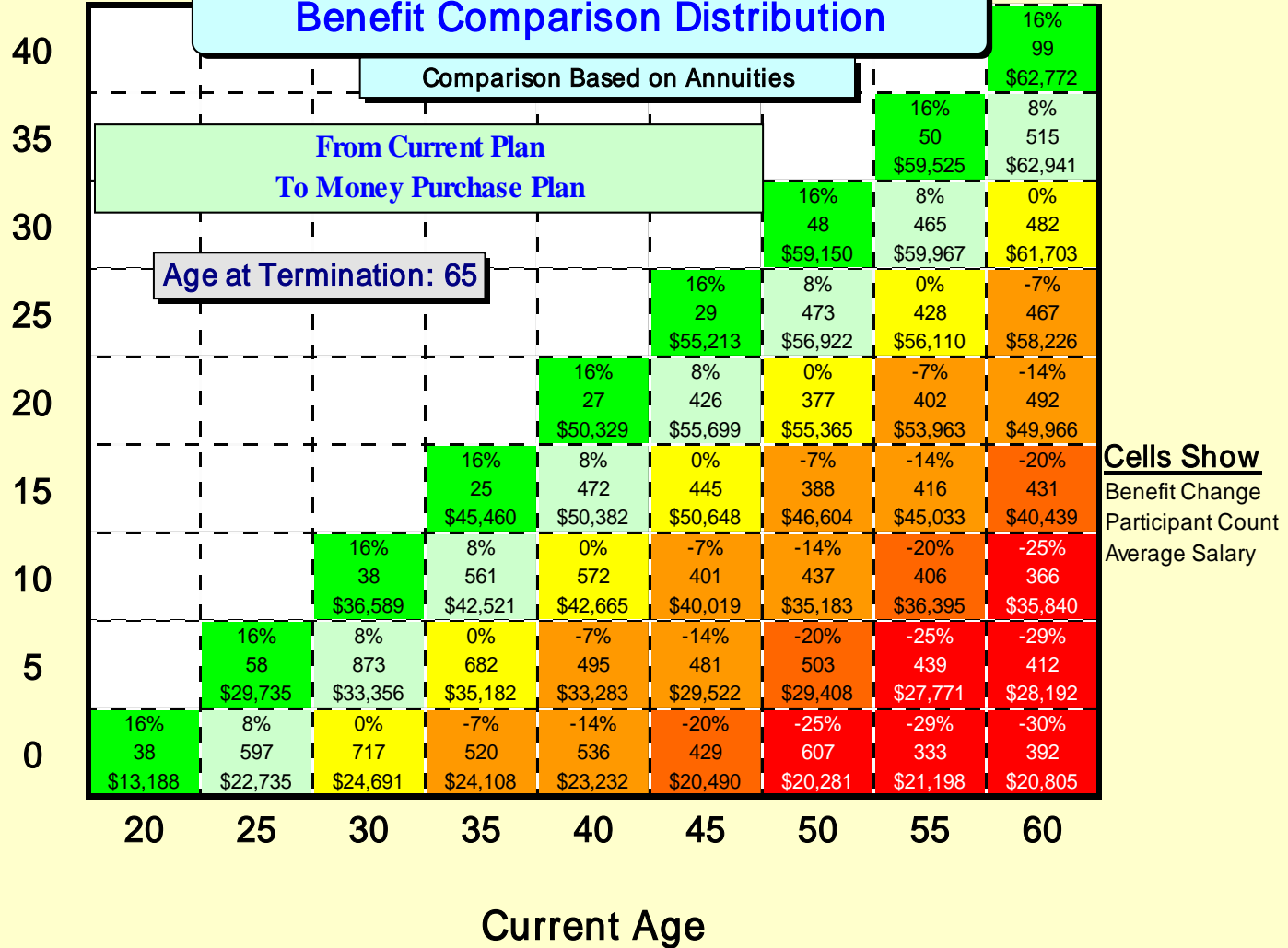
**Cells Show**  
Benefit Change  
Participant Count  
Average Salary

Current Age

# State of Montana Teachers' Retirement System

Current Service

## Benefit Comparison Distribution



**Cells Show**  
Benefit Change  
Participant Count  
Average Salary

# Montana SAVA

## Designer® for Teachers' Retirement System

- The final exhibit estimates the relative cost of the current plan and the revised DB plan
- Cost are based on the current population, assuming the eventual membership under any revised plan will have the same demographic characteristics of the current group
- Costs are compared using the present value of future benefits at entry age which will directly relate to the annual normal cost (the cost of benefits accruing in the current year) under the Entry Age cost method
- The nature of the Money Purchase Plan does not allow its cost to be estimated in the same way - for comparison purposes, the normal cost for the MPP can be estimated as the sum of the member contributions and employer pay credits, adjusted for vesting and for assumed long term investment returns above the interest credits



# Cost Analyzer

## Actuarial Assumptions for Cost Calculation

Mortality..... RP2000 Proj to 2008 SB

Setback..... 0

Interest..... 7.75%

Proportion Males..... 25%

NOTE: This Basis will override Bases 1, 4, & Retiree Medical during run time!

	Annuity	Lump
Current Plan	100%	0%
Revised DB Plan	100%	0%

Aggregate Cost	Current Plan	Revised DB Plan	Ratio
Single	-	-	#DIV/0!
Total	255,385,340	238,618,145	93%

Cell #	Age	Service	Average Salary	Frequency
168	6	0	\$2,310	1

## Vesting Requirement:

Current Plan..... 0 Years

Proposed Plan..... 0 Years

Run Initial Setup Main Menu

Cost Benchmarking Print Return

## Population Aggregate Cost

