



Cavanaugh Macdonald
CONSULTING, LLC

The experience and dedication you deserve

Montana Teachers' Retirement System

Valuation Results
July 1, 2021

Presented October 8, 2021





Benefit Financing



- Basic Retirement Funding Equation

$$C + I = B + E$$

C = Contributions

I = Investment Income

B = Benefits Paid

E = Expenses (administration)



Benefit Financing



$$C + I = B + E$$

B depends on

- Plan Provisions
- Experience

C depends on

- Short Term: Actuarial Assumptions
Actuarial Cost Method
- Long Term: I, B, E



Results



Comments on Valuation



- Asset returns
 - Market asset return 27.73% vs. 7.50% expected (20.23% more than expected).
 - Actuarial asset return 10.68% vs. 7.50% expected (3.18% more than expected).
- Market value of assets are \$500,474,681 more than the actuarial value of assets. This unrecognized investment gain will be recognized over the next three years
 - 2022 Investment Gain of \$137.4 million
 - 2023 Investment Gain of \$156.8 million
 - 2024 Investment Gain of \$206.2 million



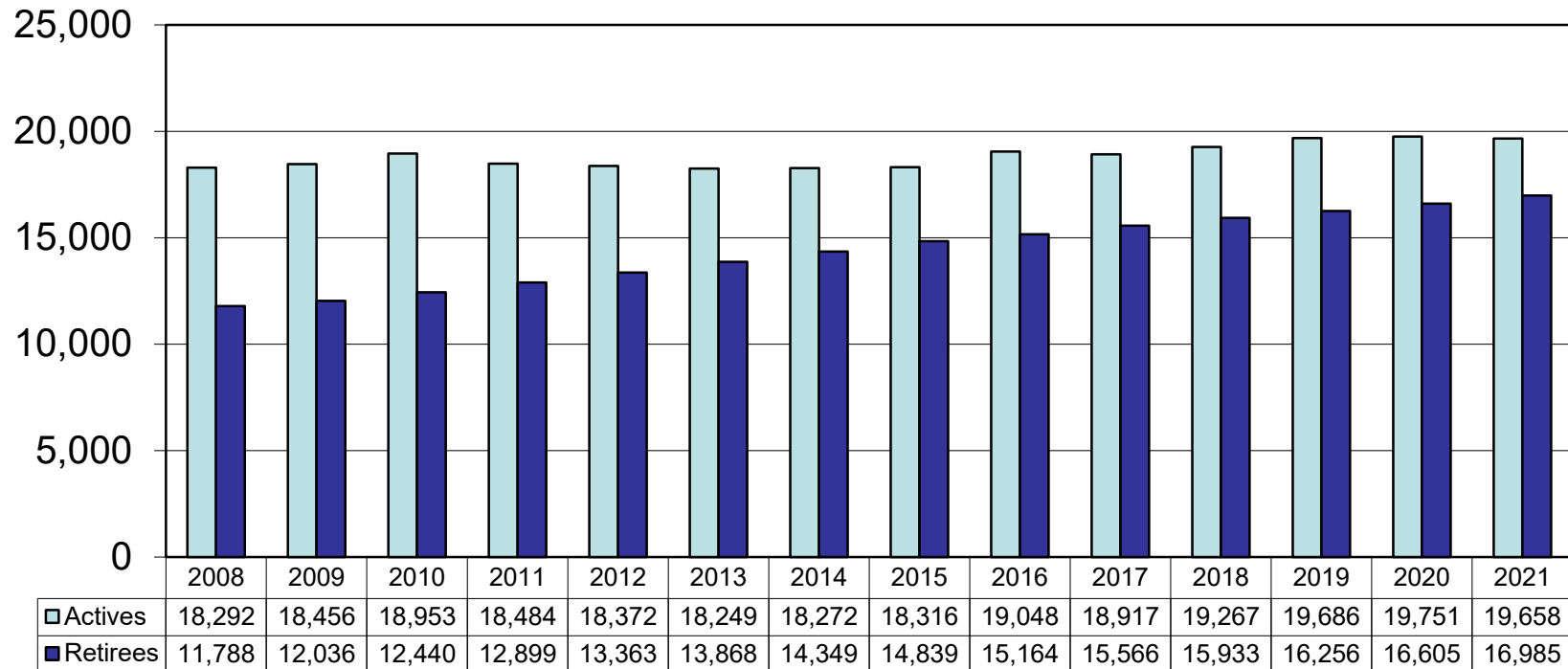
Comments on Valuation



- Funded Ratio
 - Funding increased from 68.84% to 71.43%
- Amortization Period
 - Amortization period decreased from 29 years to 24 years



Active and Retired Membership



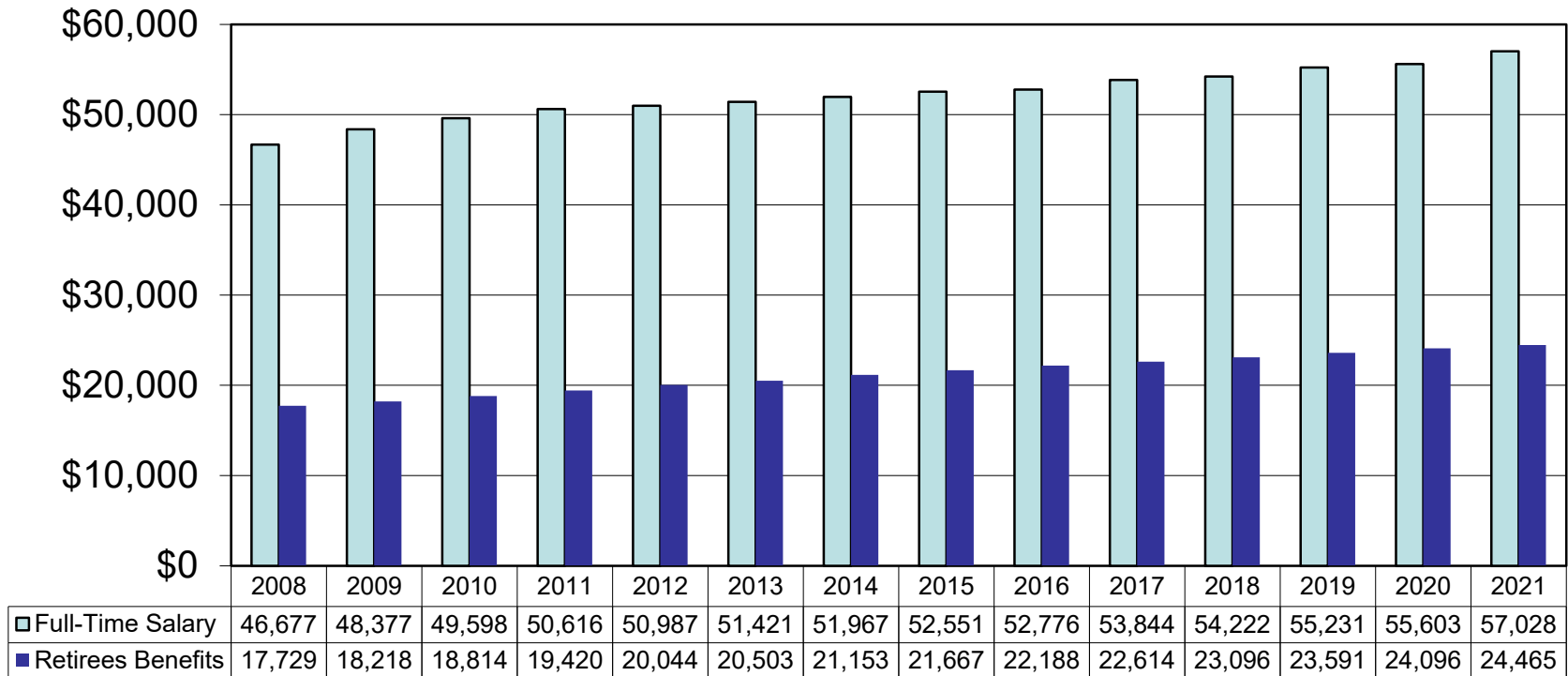
0.6% annual increase for active members since 2008; 0.5% decrease for 2021.

2.8% annual increase for retired members since 2008; 2.3% increase for 2021.

1.6 actives per retiree 13 years ago; 1.2 actives per retiree now.



Average Salary and Benefits

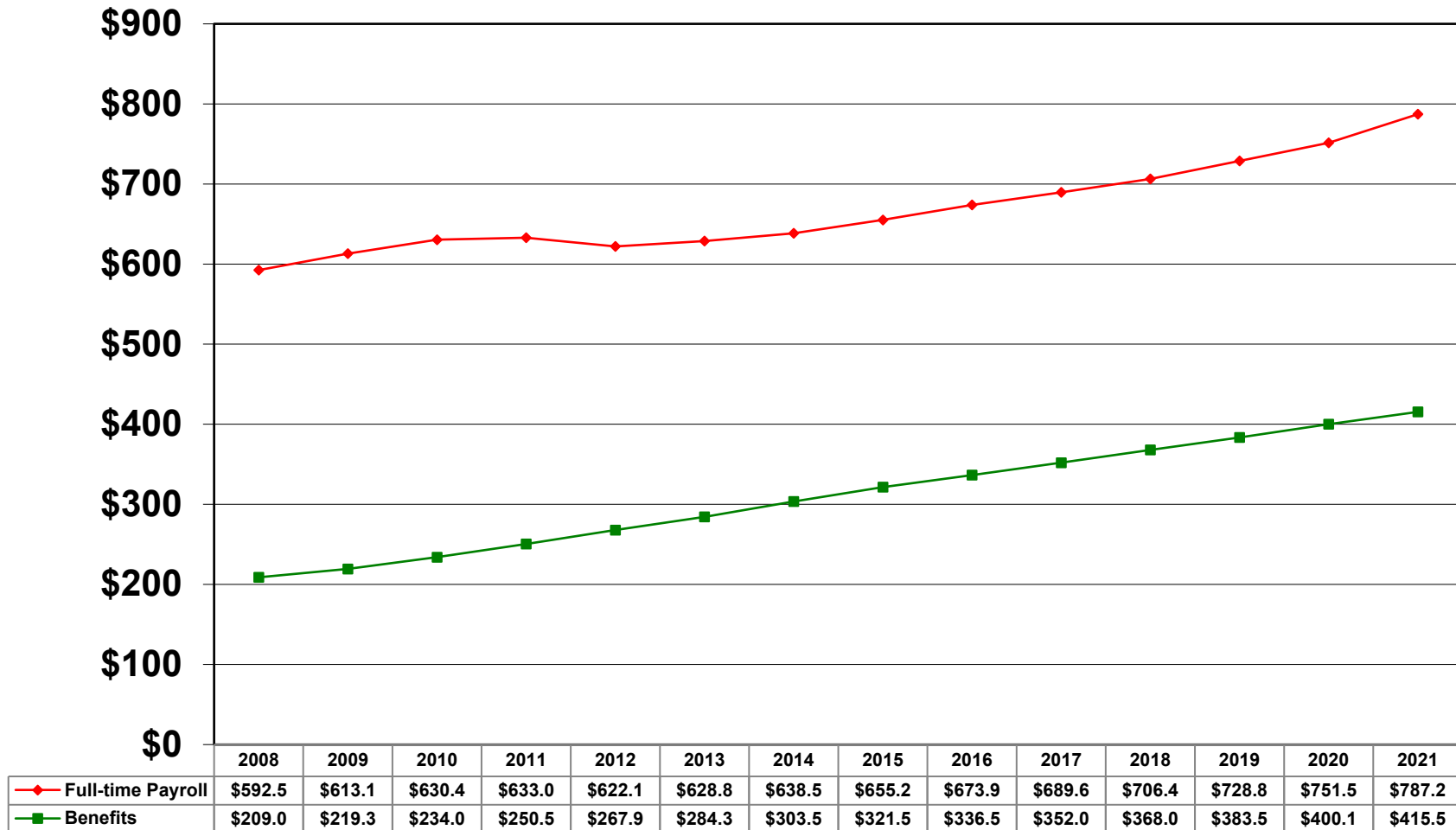


1.6% annual increase for average salary since 2008; 2.6% increase for 2021.

2.5% annual increase for average benefits since 2008; 1.5% increase for 2021.

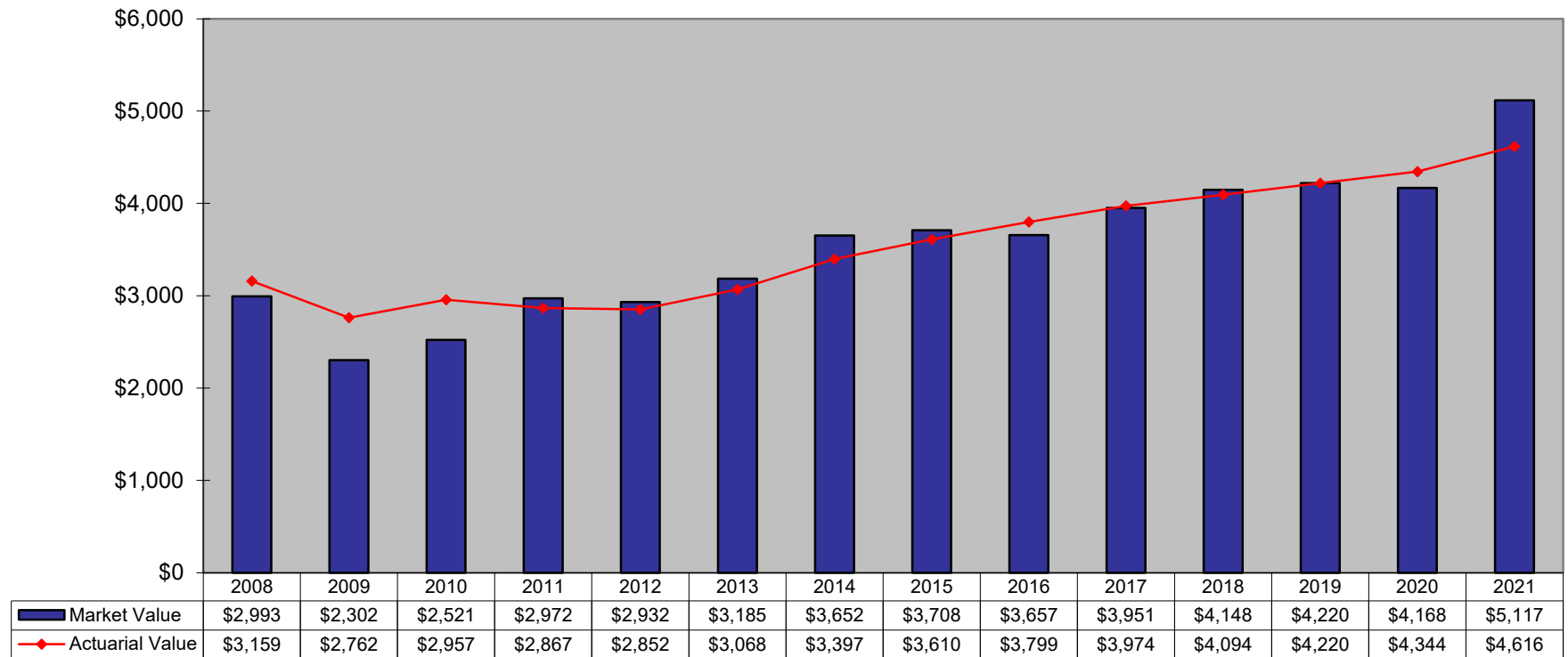


Payroll & Benefits (Millions)





Assets (\$ Millions)



	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Market Return	(4.9)%	(20.8)%	12.9%	21.7%	2.2%	12.9%	17.1%	4.6%	2.1%	11.9%	8.8%	5.7%	2.7%	27.7%
Actuarial Return	7.2%	(10.3)%	9.8%	(0.1)%	3.2%	12.0%	13.2%	9.6%	8.8%	8.2%	6.9%	7.0%	7.0%	10.7%



Funding Results

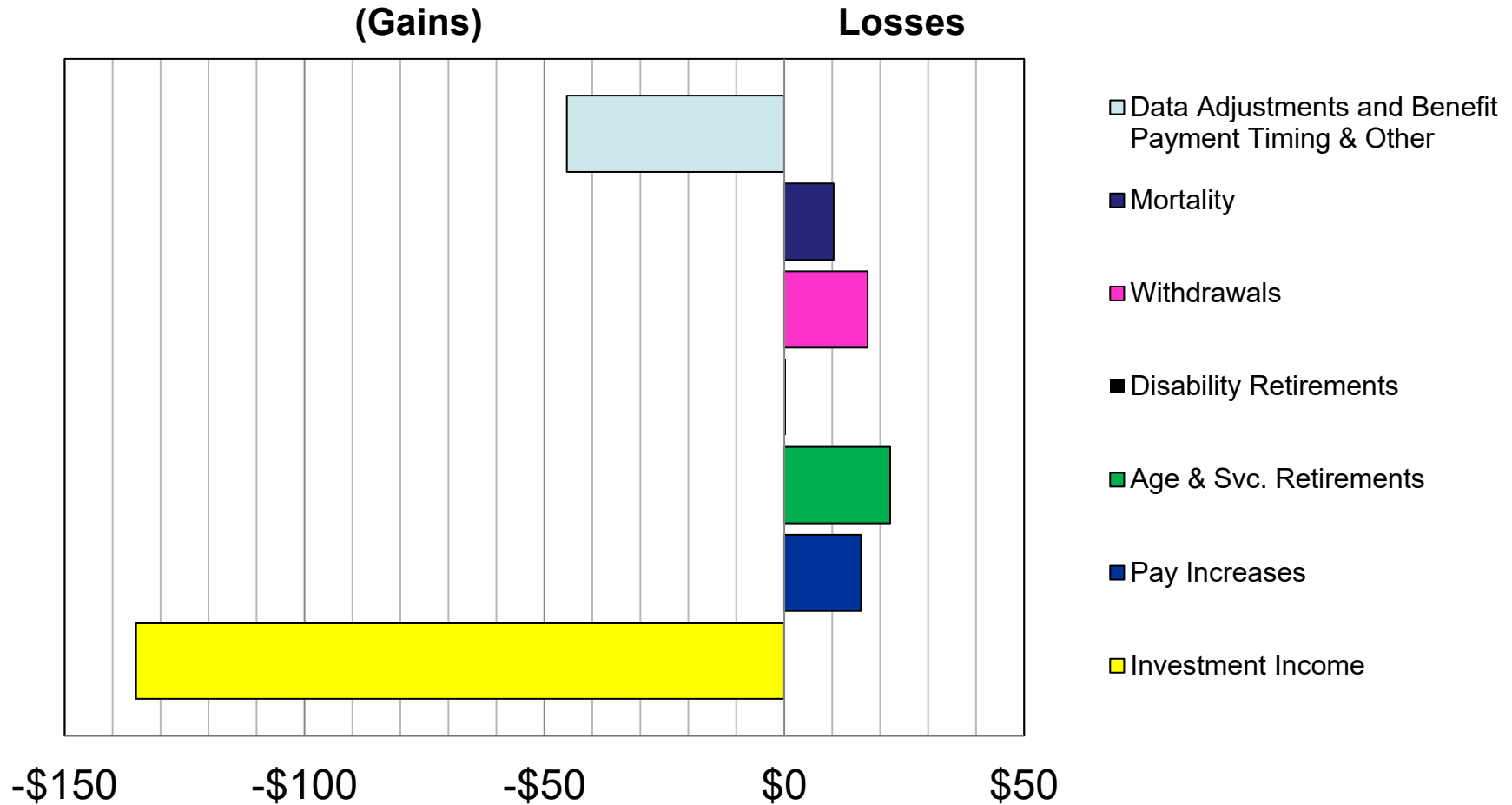


	July 1, 2020 Valuation	July 1, 2021 Valuation
Total Normal Cost Rate	9.75%	9.67%
Less Member Rate	<u>8.15%</u>	<u>8.15%</u>
Employer Normal Cost Rate	1.60%	1.52%
Administrative Expense Load	0.45%	0.46%
Rate to Amortize UAL	<u>9.61%</u>	<u>9.78%</u>
Total Employer Statutory Rate	11.66%	11.76%
Actuarial Accrued Liability	\$6,310.0 million	\$6,463.2 million
Actuarial Value of Assets	\$4,344.0 million	\$4,616.3 million
Unfunded Accrued Liability	\$1,966.0 million	\$1,846.9 million
Funded Ratio	68.84%	71.43%
Amortization Period*	29 Years	24 Years

* Reflects anticipated increase in employer supplemental contribution rate



2020 (Gain)/Loss Analysis (\$ Millions)





Upcoming Projects



- Experience Study for the five-year period ending June 30, 2021



Actuarial Certifications & Disclosures



- Todd B. Green, is a member of the American Academy of Actuaries, Associate of the Society of Actuaries, and meets the Qualification Standards of the American Academy of Actuaries to render the actuarial opinions contained herein.
- Additional information regarding the assumptions and methods can be found in the July 1, 2021 actuarial valuation report.