



Welcome to the Employee Trust Funds Board

June 18, 2020



Announcements

Item 1 – No Memo



Consideration of Open Minutes of March 26, 2020



Item 2 - Memo Only



Election of Officers



Item 3 – Employee Trust Funds Board





Committee Reports

Item 4 - Employee Trust Funds Board



Executive Committee – Wayne Koessl

Audit Committee – Bill Ford

Budget and Operations Committee – Roberta Rasmus



Wisconsin Retirement System 39th Annual Valuation of Active Lives and Gain/Loss Analysis – December 31, 2019



Item 5A - Employee Trust Funds Board

Gabriel Roeder Smith & Company
Brian Murphy, Senior Consultant
Jim Anderson, Senior Consultant
Mark Buis, Senior Consultant

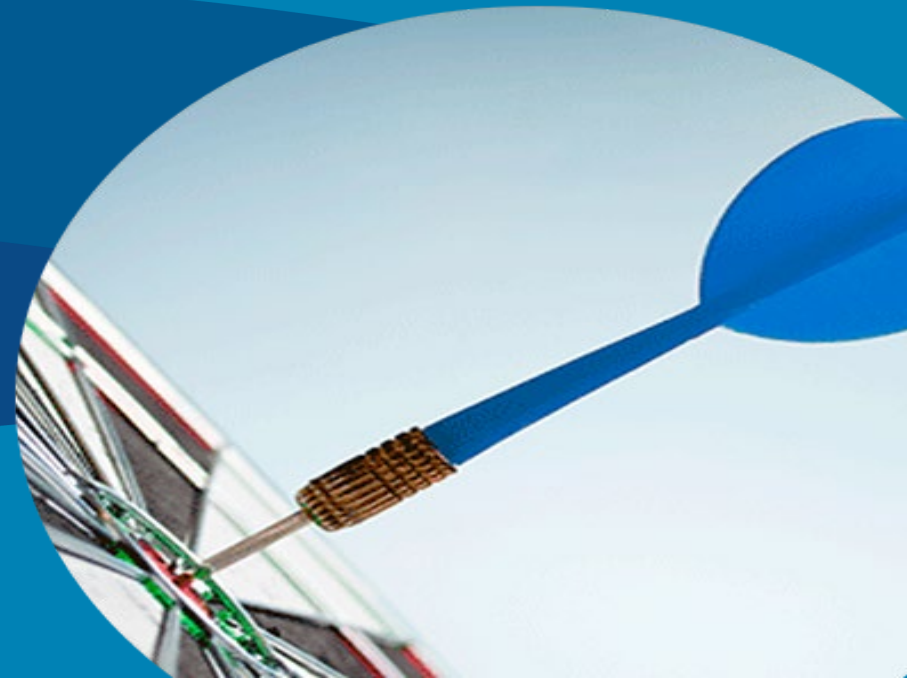




Wisconsin Retirement System

39th Annual Actuarial Valuation as of
December 31, 2019 and Gain/Loss Analysis

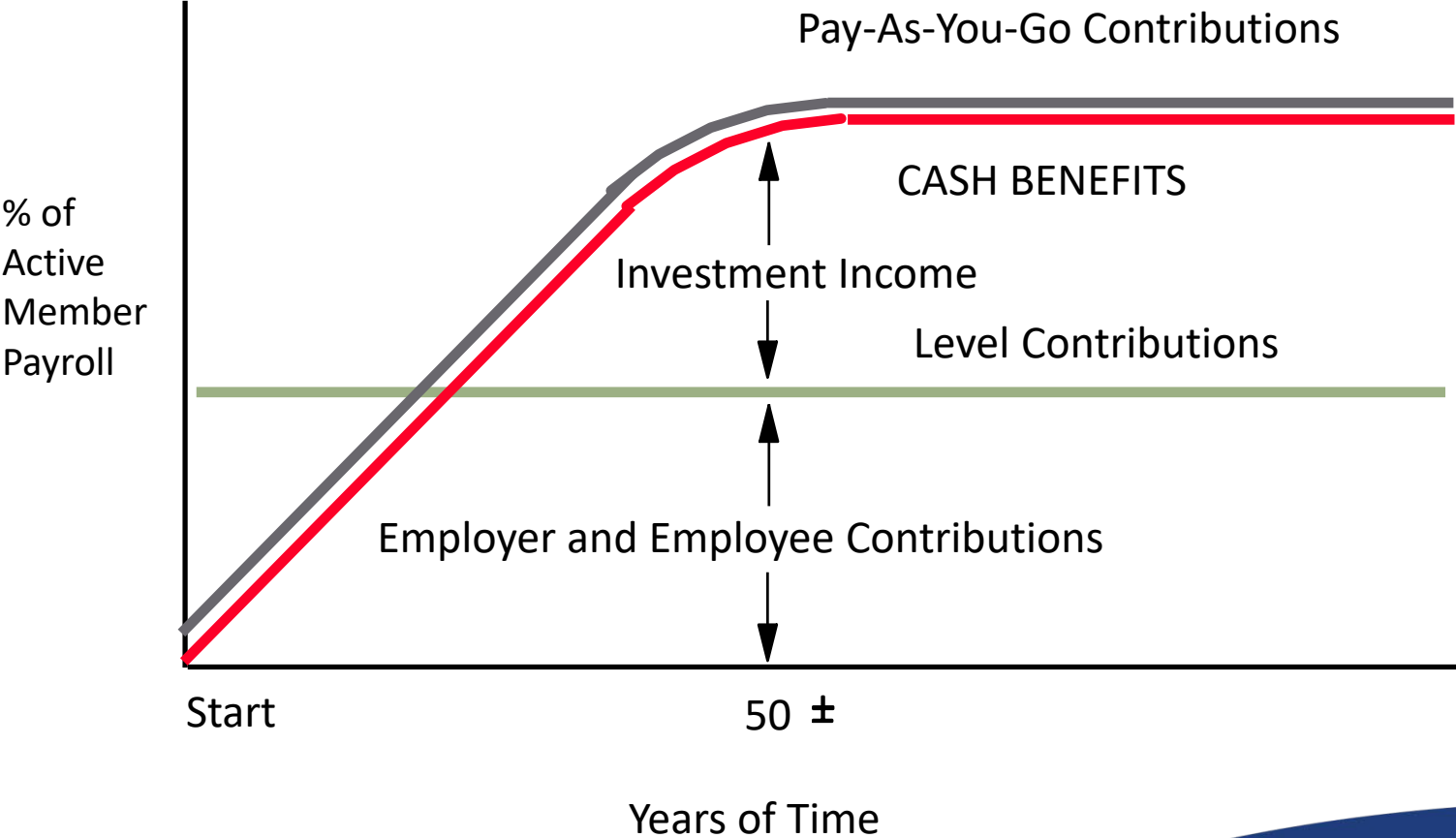
June 2020



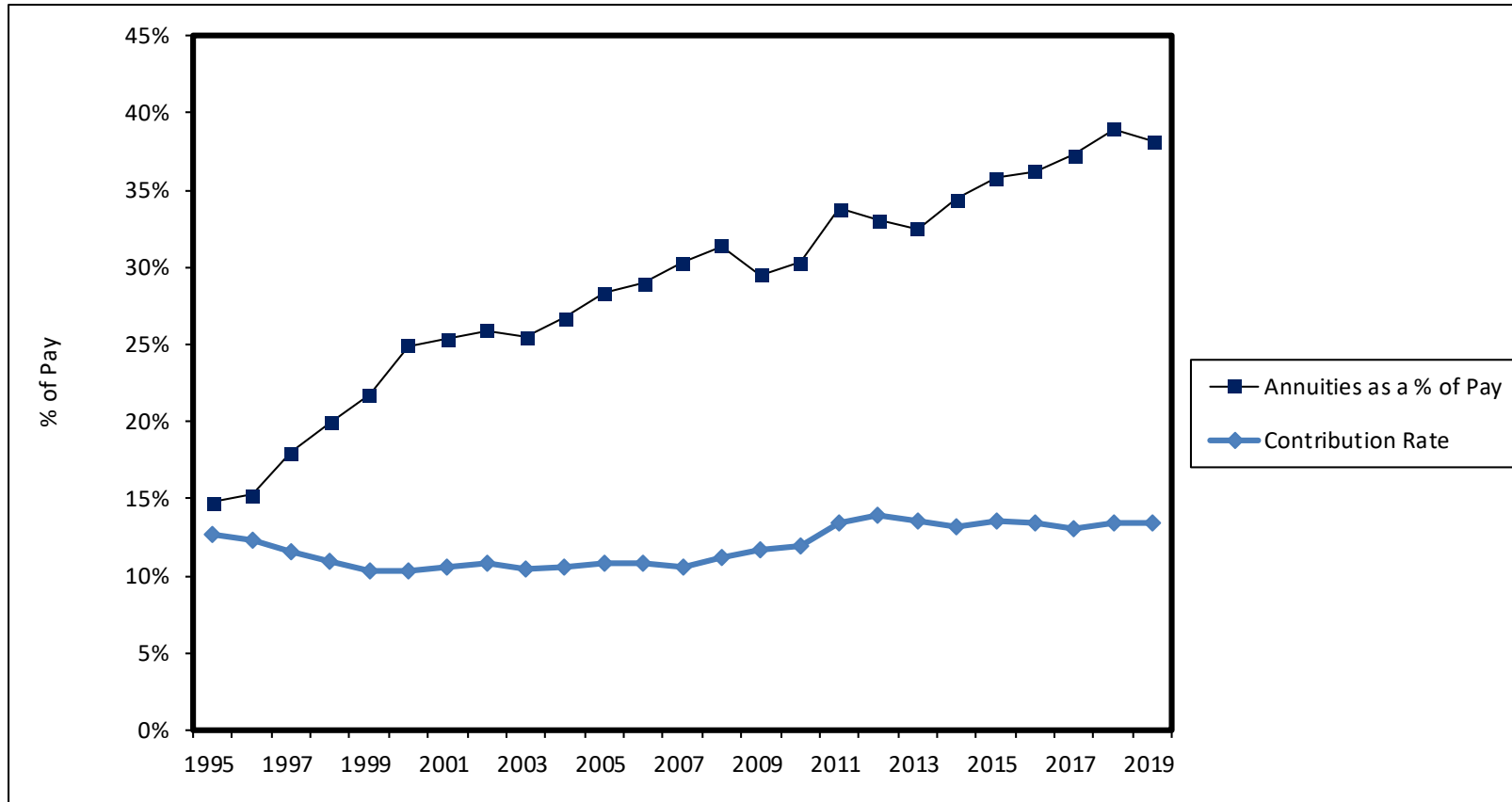
Funding Objectives

- Intergenerational equity with respect to plan costs
- Stable or increasing ratio of assets to liabilities
- Stable pattern of contribution rates

Financing Diagram



Annuities as a % of Payroll and WRS Average Total Contribution Rate*



Annuities are expected to continue to increase as a percent of payroll for several more decades.

**Average total rate shown is for General Participants.*

Active Participants

Valuation Group	Number	Annual Earnings (\$Millions)	Group Averages			
			Earnings	Age	Years of Service	Contribs.
General	235,645	\$12,926.3	\$54,855	45.3	11.2	\$59,406
Executive Group & Elected Officials	1,302	112.3	86,269	55.3	13.8	108,499
Protective Occupation with Social Security	19,528	1,314.4	67,310	39.8	12.1	69,228
Protective Occupation without Social Security	2,759	230.7	83,619	40.9	14.0	87,765
Total Active Participants	259,234	\$14,583.7	\$56,257	44.9	11.3	\$60,694
Prior Year	256,933	\$14,041.3	\$54,650	45.0	11.4	\$59,186



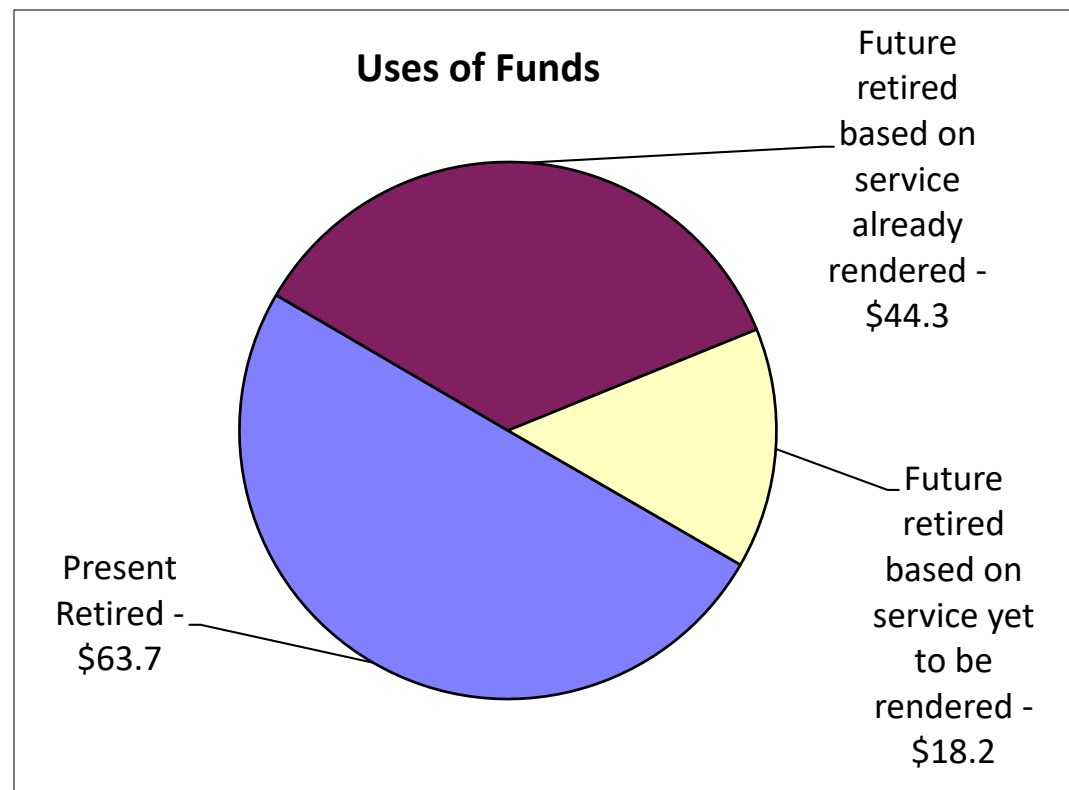
All Participants

Valuation Group	Number	Average Annual Earnings/Benefits*
Actives	259,234	\$56,257
Inactives	169,471	\$16,861
Retirees & Beneficiaries	216,944	\$25,645
Total Participants	645,649	

** For inactives, average money purchase balance.*



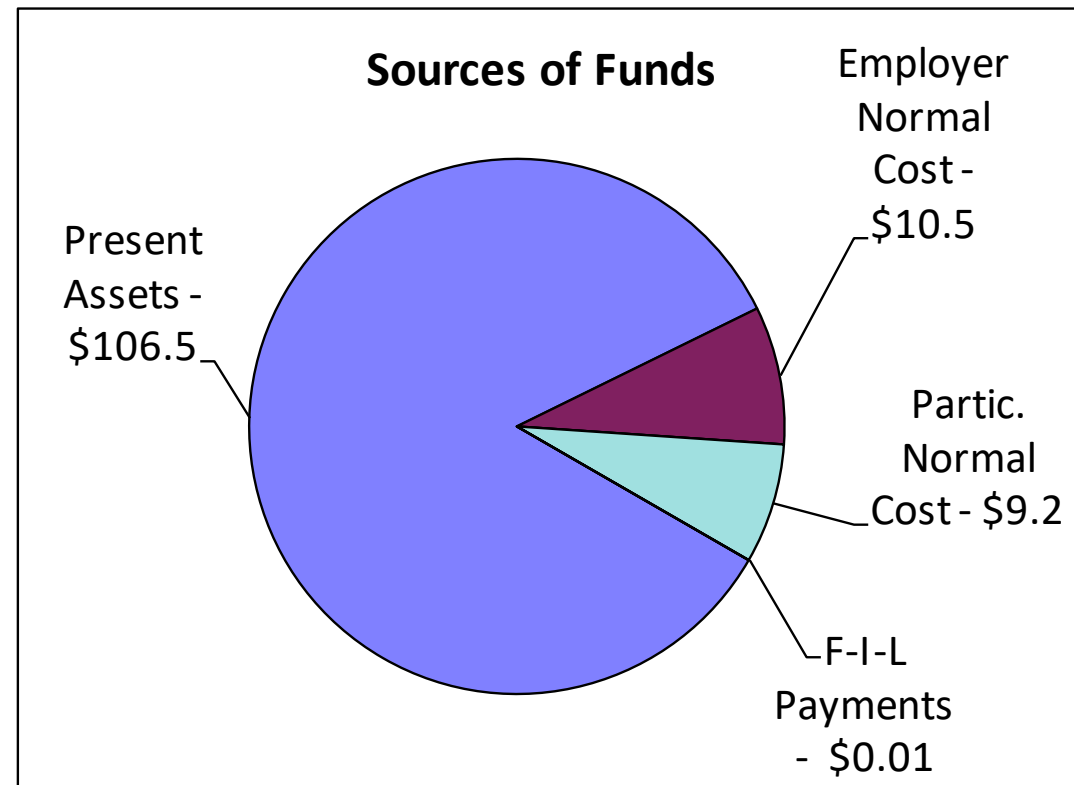
\$126.2 Billion* of Benefit Promises to Present Active and Retired Members



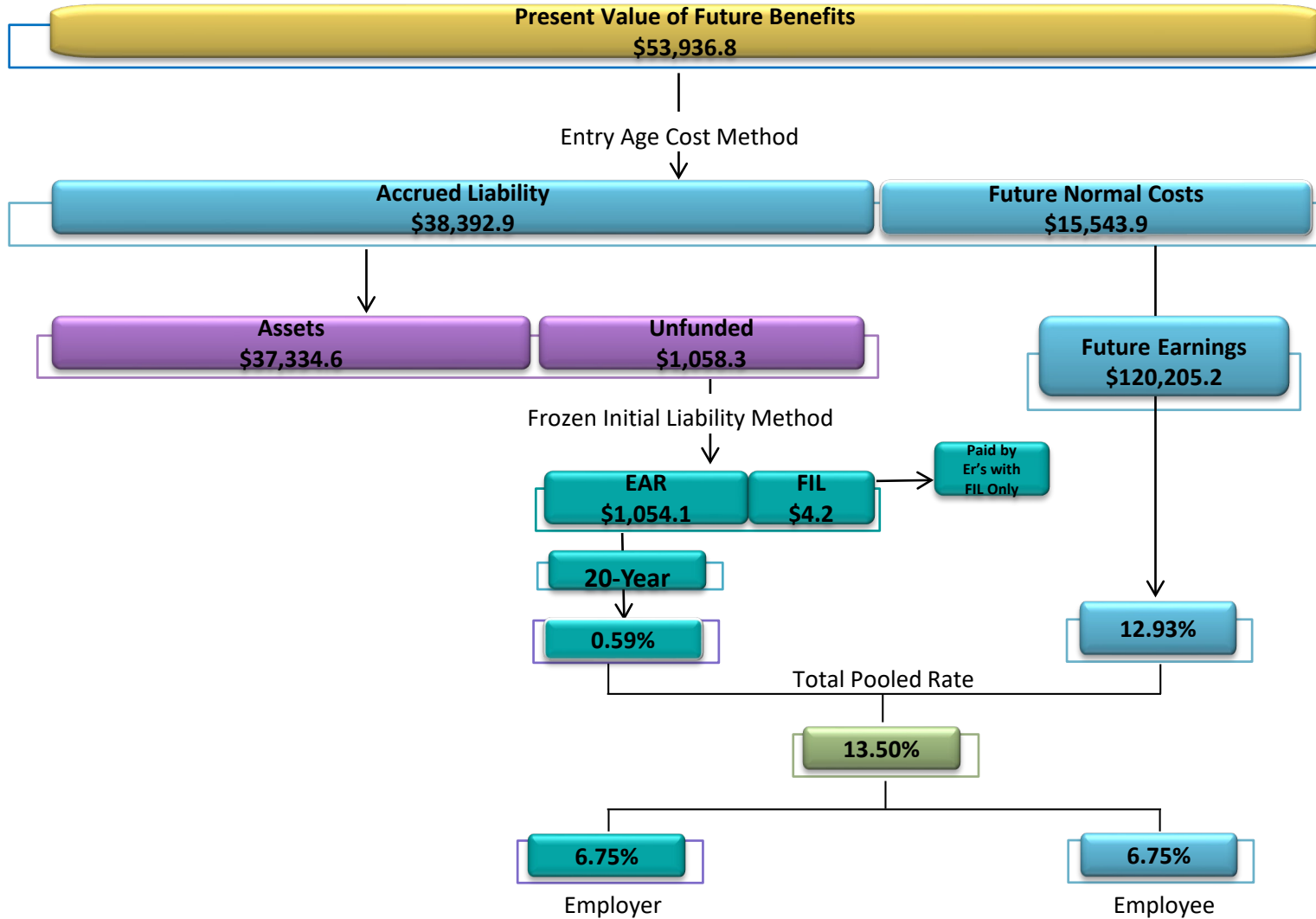
* Present value of future benefits; all divisions combined.



Sources of Funds for Financing \$126.2 Billion of Benefit Promises



Actuarial Valuation Process Illustration for General/Elected Group (\$ Millions)



Summary of December 31, 2019 Valuation Results

	General, Executive & Elected Officials		Protective Occupation				Average 2021
			With Soc. Sec.		Without Soc. Sec.		
	2021	2020	2021	2020	2021	2020	
Employer Normal Cost	6.75%	6.75%	11.75%	11.65%	16.35%	16.25%	7.45%
Participant Normal Cost	6.75%	6.75%	6.75%	6.75%	6.75%	6.75%	6.75%
Total Normal Cost	13.5%	13.5%	18.5%	18.4%	23.1%	23.0%	14.2%
Estimated Total NC (\$ millions)*	\$1,867.4	\$1,797.9	\$258.0	\$246.6	\$56.5	\$54.9	

* Based on payroll projected from valuation date to fiscal year using the payroll growth assumption.

Comparative Statement of Total Average Contribution Rates

Valuation 12/31	General	Executive & Elected	Protective with Soc. Sec.	Protective without Soc. Sec.
1999	10.30%	14.30%	11.40%	15.50%
2004	10.63%	11.37%	13.19%	14.41%
2009	11.72%	13.35%	14.74%	17.26%
2014	13.20%	15.60%	16.00%	20.00%
2015	13.67%	13.67%	17.50%	21.80%
2016	13.43%	13.43%	17.43%	21.65%
2017	13.12%	13.12%	17.10%	21.59%
2018	13.54%	13.54%	18.41%	23.02%
2019	13.53%	13.53%	18.51%	23.11%

Executive and Elected employee and employer rates for CY 2016 and beyond are made in accordance with the combined General/Exec & Elected results.



Protective Contribution Rate Levels

- Higher contribution rates compared to General Employees
 - Higher benefit multipliers
 - Protective = 2% or 2.5% (with or without Soc. Security)
 - General & Executive/Elected = 1.6%
 - Earlier Normal Retirement Eligibility
 - Protective at Age 54 or Age 53 with 25 years of service
 - General & Executive/Elected at Age 65/62 or Age 57 with 30 years of service

Protective Contribution Rate Levels

- More volatile contribution rates compared to General Employees
 - Asset/Payroll ratios¹
 - Protective = 328% - 434% (with - without Soc. Security)
 - General & Executive/Elected = 286%
 - Liability/Payroll ratios¹
 - Protective = 359% - 463% (with - without Soc. Security)
 - General & Executive/Elected = 294%

¹ From active lives valuation

Reasons for Contribution Changes

	General, Executive & Elected	Protective with Soc. Sec.	Protective without Soc. Sec.
2020 Normal Cost Rate	13.50%	18.40%	23.00%
Effect of Benefit Change	0.00%	0.00%	0.00%
Effect of Assumption Change	0.00%	0.00%	0.00%
Effect of Asset Performance	(0.06)%	(0.18)%	(0.27)%
Effect of Salary Experience	0.02%	0.14%	0.06%
Effect of Money Purchase Benefit	0.00%	0.00%	0.00%
Demographic and Other Experience	0.04%	0.14%	0.31%
2021 Normal Cost Rate	13.50%	18.50%	23.10%

The effect of Asset Performance is different for each group because the ratio of assets to payroll is different for each group.



Impact of Asset Gains/Losses

- Asset gains and losses above or below the assumed rate of return are smoothed in over the current year and four future years
- Four years after a valuation date, all asset gains or losses known at valuation date are fully recognized
- Statutory smoothing method in WRS is referred to as the Market Recognition Account (MRA)

Operation of Market Recognition Account (MRA) - \$ Millions

	<u>2019</u>	<u>2020</u>	<u>2021</u>	<u>2022</u>	<u>2023</u>
Actual Investment Return	\$ 17,765				
Assumed Investment Return	6,744				
Gain/(Loss) to be phased-in	11,021				
Phased-in recognition					
• Current year	\$ 2,204	?	?	?	?
• First prior year	(2,049)	\$ 2,204	?	?	?
• Second prior year	1,461	(2,049)	\$ 2,204	?	?
• Third prior year	120	1,461	(2,049)	\$ 2,204	?
• Fourth prior year	<u>(1,344)</u>	<u>120</u>	<u>1,461</u>	<u>(2,049)</u>	<u>\$ 2,204</u>
Total recognized gain (loss)	\$ 392	\$ 1,736	\$ 1,616	\$ 155	\$ 2,204

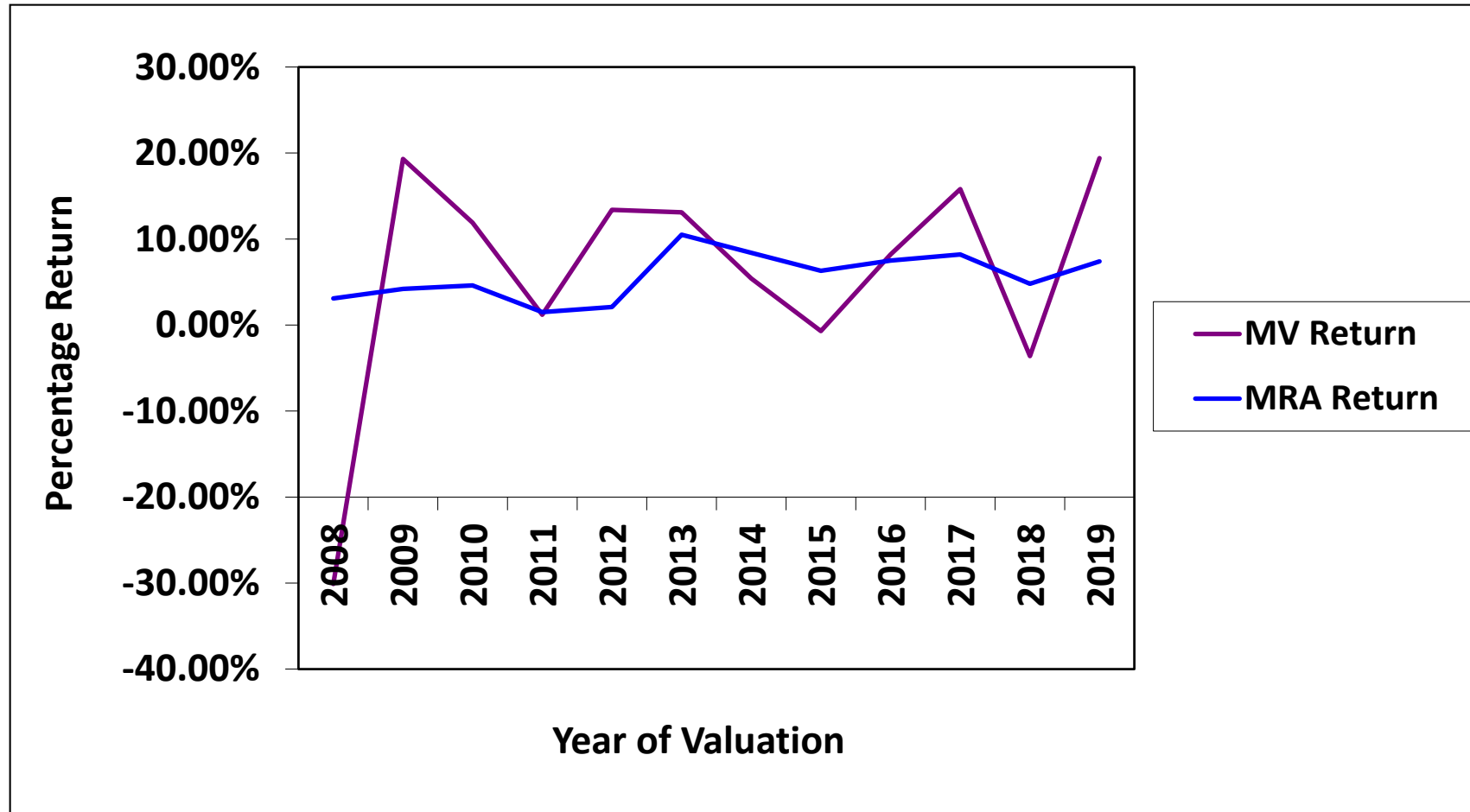
Reconciliation of Market Recognition Account (MRA)

	<u>\$ Millions</u>
MRA at Beginning of Year	\$ 98,081.7
Non-Investment Cash Flow	(3,481.2)
Assumed Return (at 7.0%)	6,743.9
Phase-in of Gains/(losses)	392.2
MRA at End of Year	\$101,736.6
MRA Rate of Return	7.40%
Market Value Rate of Return	19.40%

Assets in MRA include non WRS programs such as Sick Leave, Duty Disability, etc.



Market Value Return vs. Market Recognition (Actuarial) Return



WRS Funded Status

	Frozen Initial	Entry Age
2016	100.0%	99.0%
2017	100.0%	99.5%
2018	100.0%	98.6%
2019	100.0%	98.6%

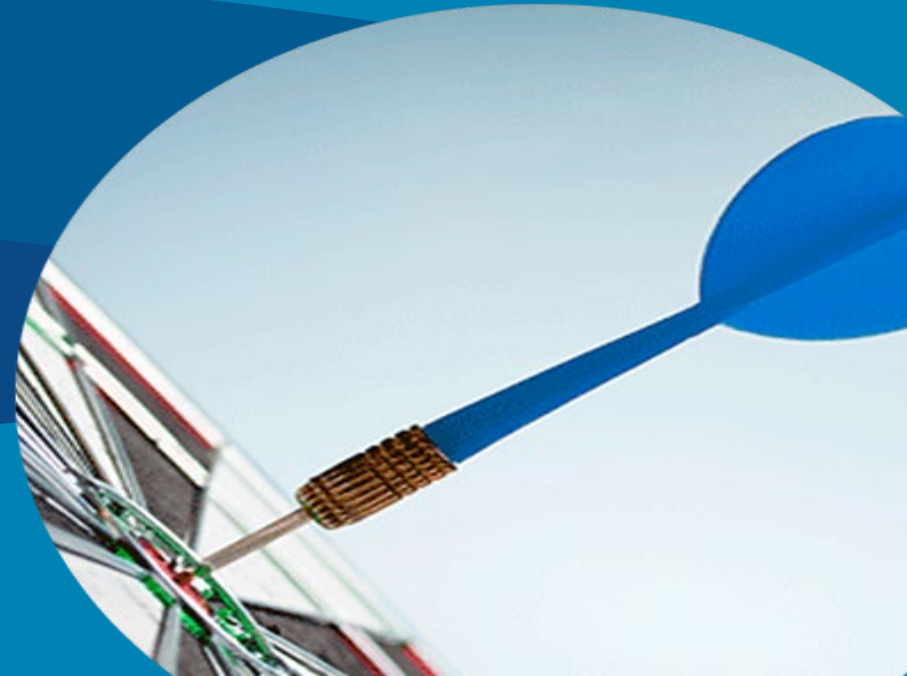


Concluding Remarks

- There are \$5.7 billion of unrecognized gains in the MRA
- Due to the cost sharing nature of WRS, asset gains have been traditionally shared by:
 - Employees (through increased money purchase benefits and decreases in contributions)
 - Employers (through decreases in contributions)
 - Retirees (through increased dividends)



Gain/Loss Analysis



2019 Gain/Loss Analysis

A Gain/Loss Analysis measures differences between actual and assumed experience in each Risk Area.

WRS Assumption Risk Areas

Primary Risks

Demographic

Normal retirement

Early retirement

Death-in-service

Disability

Other separations

Economic

Salary increases

Investment return

Why Have a Gain/Loss Analysis?

- To gain an understanding of reasons for contribution rate changes
- It is a year-by-year measure of the operation of assumptions
- To determine when assumption changes are needed
- To understand the nature of risk

The Nature of Defined Benefit Plan Risk

Investment Risk

- The risk that actual returns will differ from assumed returns.

Asset/Liability Mismatch

- The potential that changes in assets are not offset by changes in liabilities. Because of the way assets are invested in most public plans this is almost synonymous with investment risk.

Contribution Risk

- The risk that actual contributions will differ from expected contributions. This could occur, for example, if the plan's funding policy is not followed, or if there are changes in the covered population.

Retirement Sustainability Equation

- Asset/Liability Mismatch

$$C + I = B + E$$

B depends on

- ▶ Plan Provisions – at retirement, member receives x% of Final Average Pay times years of service
- ▶ Participant Experience – tenure, pay increases, etc.

Most Systems do not have asset changes offset by liability changes

Retirement Sustainability Equation

- Smaller Asset/Liability Mismatch in WRS

$$C + I = B + E$$

B depends on plan provisions, which incorporates **I** Experience

- ▶ Money Purchase DC benefit (changes with I results)
- ▶ Annual post-retirement adjustments to the monthly annuity benefit are based solely on investment returns
 - ▶ Dividends can increase or decrease

The Nature of Defined Benefit Plan Risk

Salary and Payroll Risk

- Individual pays and/or total covered payroll may not grow at the assumed rate. If covered payroll grows more slowly than assumed, or shrinks, actual contributions may fall short of expected contributions.

Longevity Risk

- Members may live for more or fewer years than expected, affecting the amount of pension income they will receive from the plan.

Other Demographic Risks

- Members may terminate, retire, or become disabled at rates other than expected, affecting both contribution rates and funded status.

Population Development During 2019

	<u>Actual</u>	<u>Expected</u>
Beginning Census	256,933	
(-) Normal Retirement	4,267	4,577
(-) Early Retirement	3,490	4,209
(-) Death	109	240
(-) Disability Retirement		
- Total Approved	282	193
- Less Pending	87	
- Net New	195	
(-) Other Separations	14,553	13,463
(-) Transfers Out	2,041	
(+) Transfers In	2,041	
(+) New Entrants	24,915	
Ending Census	259,234	

Population Development During 2019

Normal Retirements: Varied by group and gender. Overall, slightly lower than expected, but net result on liabilities is a small loss.

Early Retirements: Lower than expected, overall producing a small loss.

Deaths: Among active participants were lower than expected. The net result for the past year was a small loss.

Disabilities: Greater than expected, producing a loss.

Other Separations: Varied by group, gender and service. The net result was a small loss.

Components of Total Gain/(Loss)

	<u>Gain/(Loss) in Millions</u>	
	<u>2018</u>	<u>2019</u>
Economic Risk Areas	\$(379)	\$95
Decrement Risk Areas	(57)	(61)
Other Activity	<u>(89)</u>	<u>(122)</u>
Total Gain/(Loss)	\$(525)	\$(89)

Investment Earnings in 2019 (Active Participants)

	<u>\$ Millions</u>
A. Average balance on Participant and Employer Accumulation Reserves	\$40,008
B. Expected earnings: 7.0%	2,800
C. Earnings credited to Participant and Employer Accumulation Reserves	3,636
D. Gain (loss) from earnings: C - B	\$ 836



Investment Earnings in 2019

(Active Participants)

- \$836 million is the total recognized asset gain for the year for active participants
- However, part of the total gain/loss is allocated to Variable Excess accounts
- Some of the gain flows through to members via the operation of Money Purchase minimum benefits
- Must net these out to determine remaining core fund gain or loss
- Remaining portion affects contribution rates

Investment Earnings in 2019 (Active Participants)

	<u>\$ Millions</u>
Gross Gain/(Loss) for the Year (for Actives)	\$836
Less Estimated Gain/(Loss) due to Money Purchase	35
Less Estimated Gain/(Loss) due to Variable Excess	<u>641</u>
Net Core Fund Asset Gain/(Loss)	\$160



Comparative Schedule of Experience Gains/Losses by Decrement

Divisions Combined (Millions)

	<u>2018</u>	<u>2019</u>
Normal Retirement	\$(14.5)	\$(25.1)
Early Retirement	(18.3)	(13.3)
Disability Retirement	(7.7)	(5.5)
Death with Benefit	(2.9)	(3.7)
Other Separations	<u>(13.8)</u>	<u>(13.5)</u>
Total	\$(57.2)	\$(61.1)
As % of Liabilities	-0.15%	-0.14%



Salary Related Gain/Loss

- Pay increases were overall higher than expected, resulting in a loss

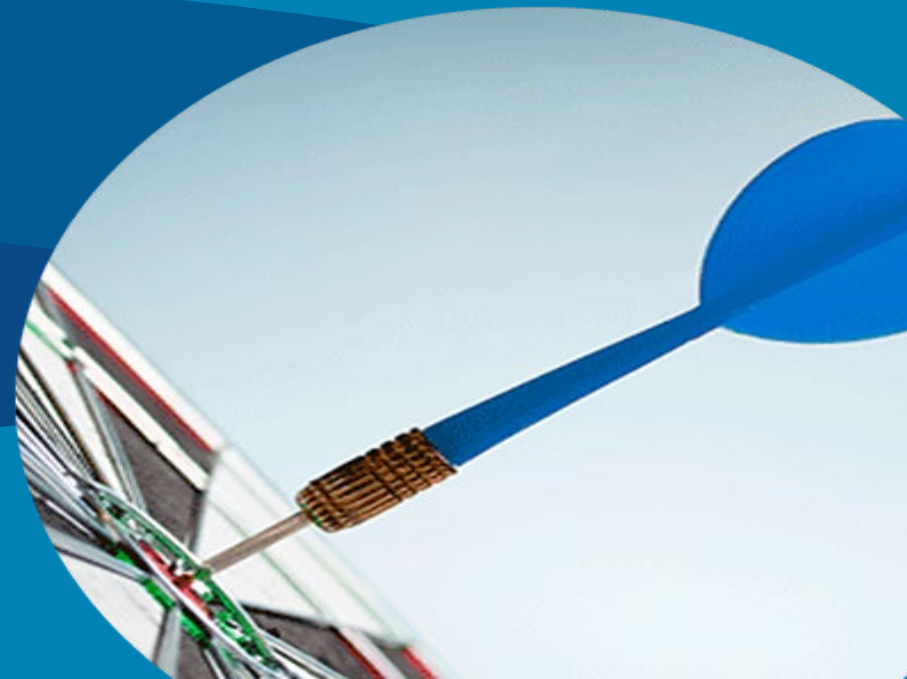
	Gain/Loss	% of Group
	\$ Millions	Liabilities
General, Executive & Elected	\$(34.4)	(0.1)%
Protective w/Soc. Sec.	(26.6)	(0.6)%
Protective w/o Soc. Sec.	(4.5)	(0.4)%
	\$(65.5)	(0.2)%

Concluding Remarks

- Recognition of remaining prior asset gains and losses are expected over the next few years
- This Gain/Loss Analysis is the second in a regular 3-year experience cycle
- This study, together with the 2018 and 2020 results, will form the basis for the next experience study – to be performed after the December 31, 2020 valuation cycle



Current Events



COVID Implications for the WRS

- GRS-ETF Study
- Where We Stand Today
- Potential Impact from Mortality
- Impact of Economic Volatility on Future Funding Results

COVID Implications for the WRS

- GRS-ETF Study
- Deterministic projections will investigate various areas of interest
- Stochastic projections will model impact on retiree dividends
- Commentary re: Pros/cons, consequences of implementing changes

Where We Stand Today

- We obviously do not yet know the full scope of the impact of the COVID-19 pandemic
 - On asset markets
 - Markets are still a roller coaster
 - Major US equity indexes lost 30-35% of their value from February 14 through March 23
 - Recovered almost one-third by the end of March
 - Recovered almost two-thirds by the end of April
 - Flat through May 21
 - What will the next month/quarter/year hold?

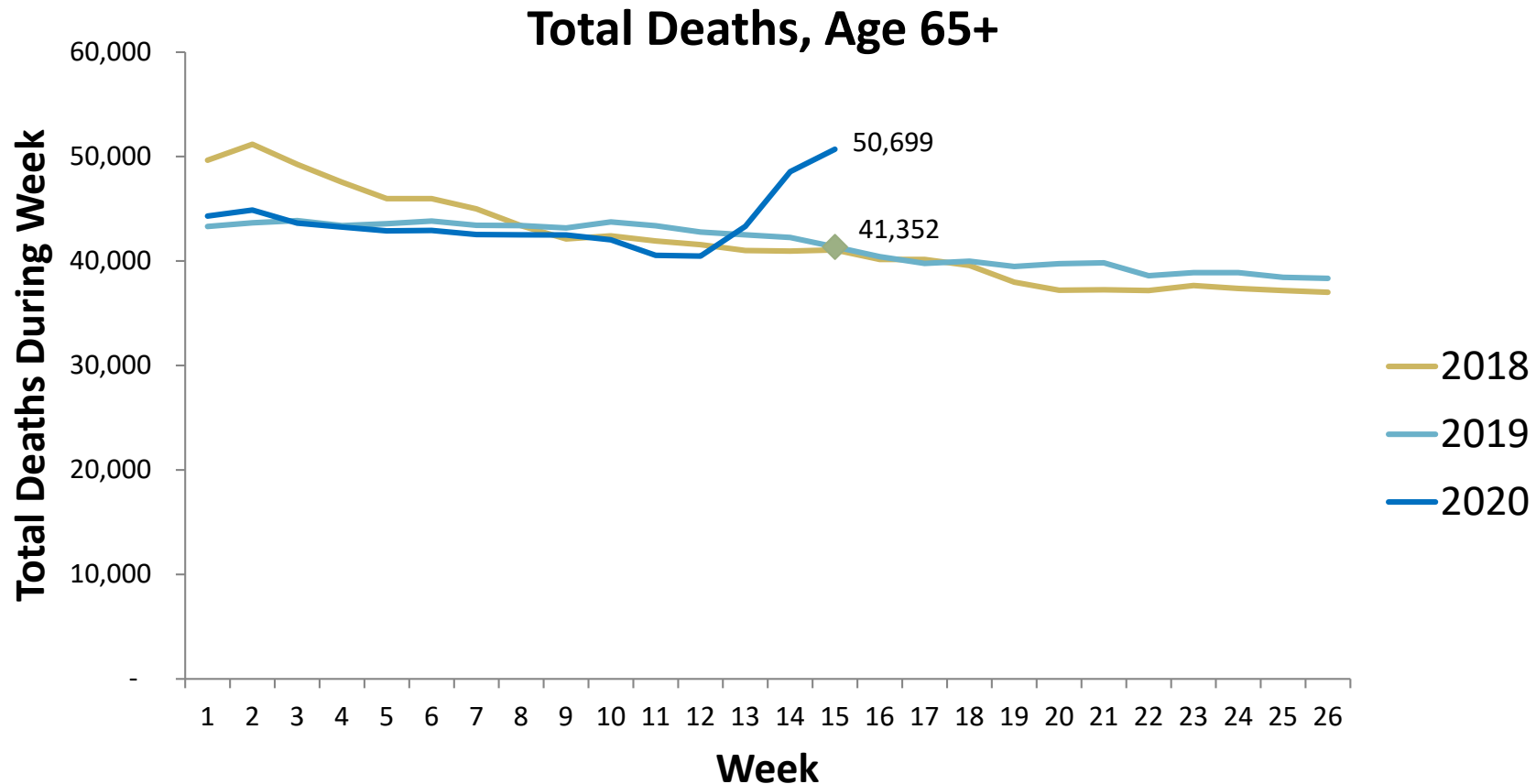
Where We Stand Today

- We obviously do not yet know the full scope of the impact of the COVID-19 pandemic
 - On the Wisconsin Retirement System
 - Primarily focused on
 - Continuity of administrative functions
 - Monitoring asset allocation and liquidity needs
 - Investment earnings and contribution dollars are the concern
 - Actuarial metrics of your plan changes more slowly than most -- given the sharing of asset losses among actives, retirees and employers

Demographics: Mortality

- What will the ultimate impact of COVID-19 be on Wisconsin mortality?
 - How much delay is in the real-time statistics being published?
 - What long-term trends will emerge going forward on plan mortality?
 - Consider two extremes

National Mortality Data through Week Ending April 11th



<https://gis.cdc.gov/grasp/fluview/mortality.html>

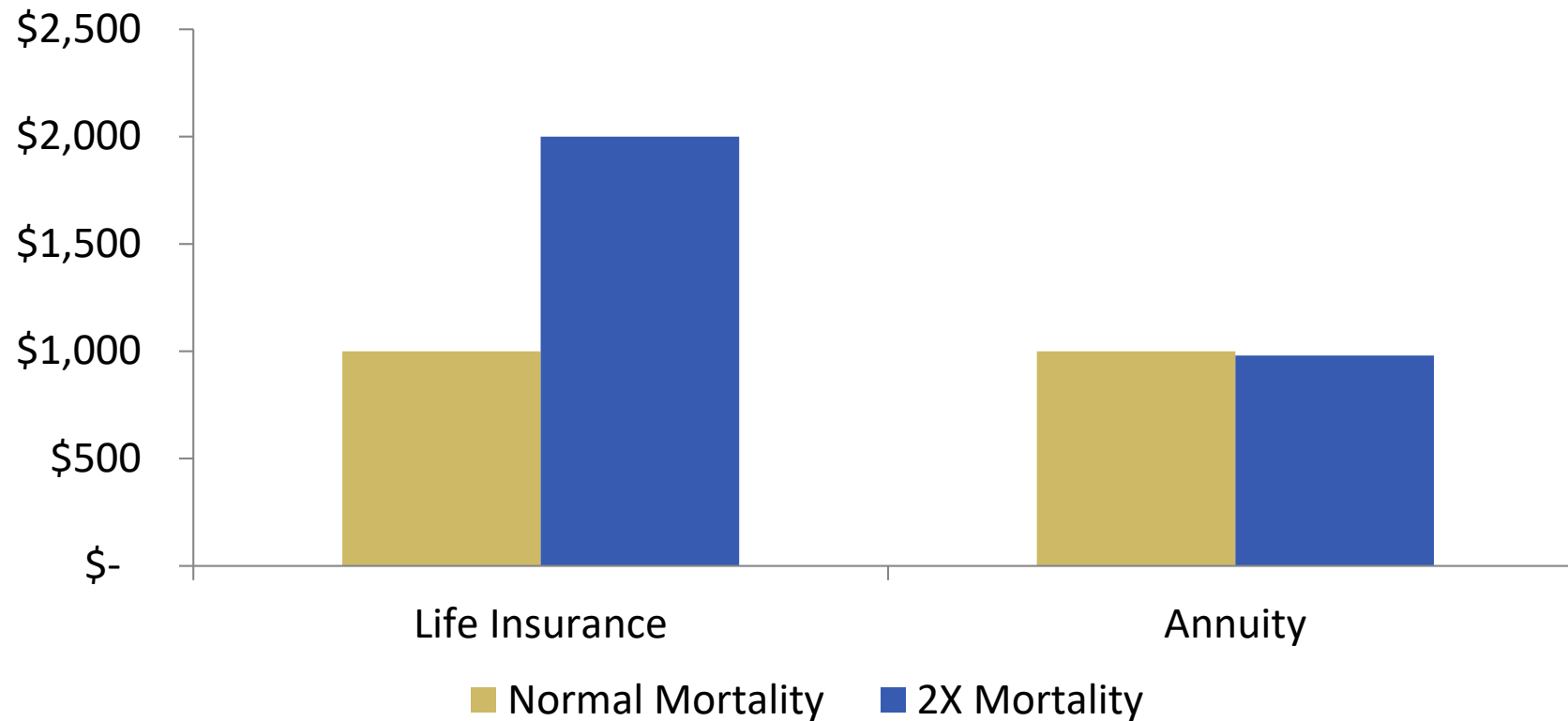


Demographics: Mortality

- Possibility #1: COVID-19 is a one-time “shock” event on plan mortality but longer-term trends are not expected to change
 - Large portion of people being significantly impacted were advanced in age with preexisting conditions
 - Will not have a major impact on WRS
 - Presumably followed by reduced mortality for the next year or two
 - Opposite of the impact this could have on life insurance

Life Insurance vs Annuity

Impact of 2X Normal Mortality over a Year on Annual Outflows



Demographics: Mortality

- Possibility #2: Current pandemic signals overall change in future mortality trends
 - COVID-19 (or another virus) will continue to impact society for years to come
 - This true change in long-term trend will have a more lasting impact on plan health
 - Not just due to shorter life expectancy
 - Could impact retirement patterns, incidence of disability, investment returns, etc.

COVID Impact on Funded Status and Asset Accumulation

- Impact could vary widely depending on the plan's starting point and length of the downturn
- In general, the impact will be driven by:
 - Investment Performance
 - Net Cash Flow
 - Actual Contributions versus Policy

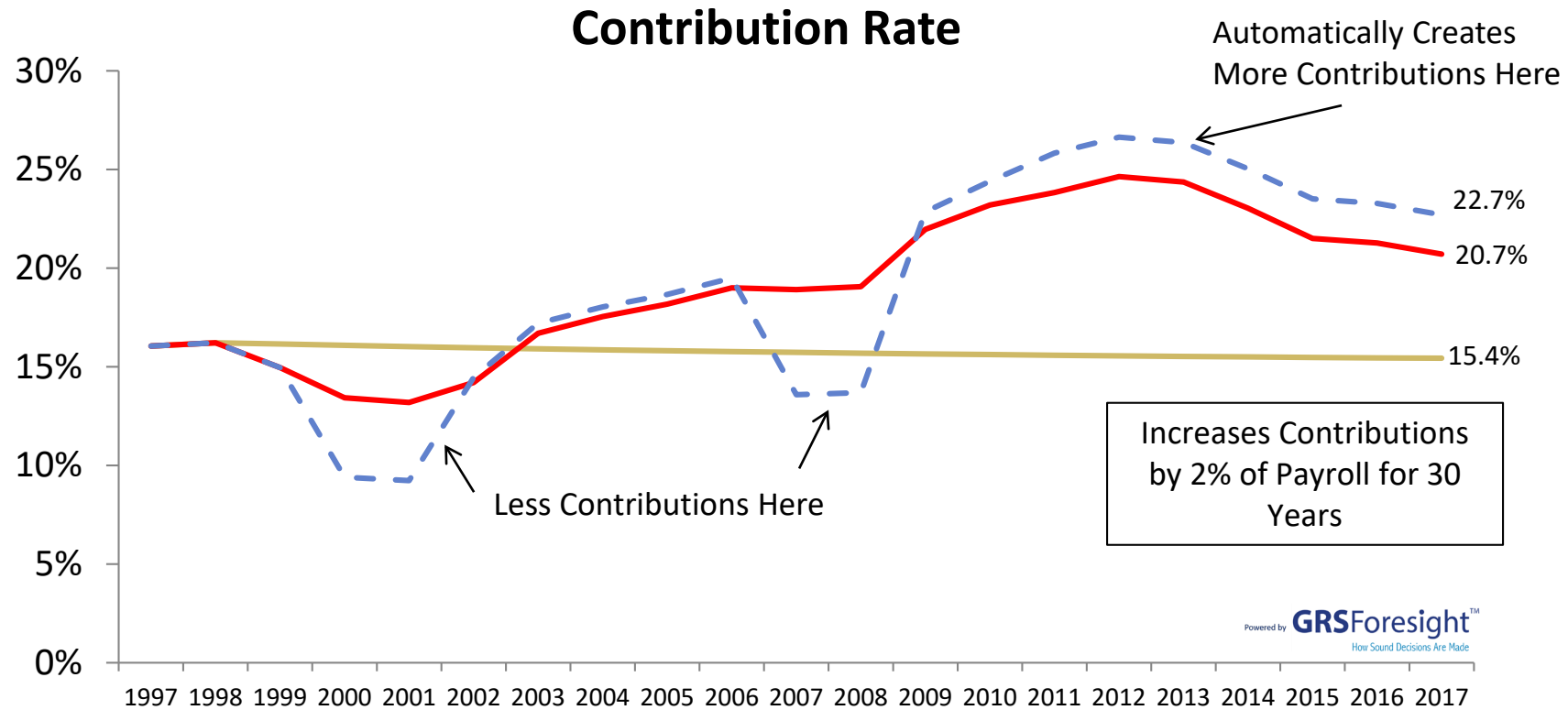
Trust the Process

- WRS survived Great Recession
 - But with first ever Dividend decreases
 - But with changes to benefit multipliers
 - Codified Funding Policy
- Wherever this pandemic leads, now is the time to trust the funding policy

COVID-19 Contribution Reductions?

- Our clients are very interested to understand how the plan's funded status in the future will be impacted by :
 - Contribution holidays
 - Contribution reductions
 - Re-amortizations
 - Headcount reductions
- This is not the first time. During the 2002/2003 recession and the 2008 financial crisis, several plan sponsors reduced contributions
- These occurrences dig a hole that is hard to emerge from

Funding Impact



- 7% Per Year (Expected)
- 7% Average Compound, Actual Pattern
- - 7% Average Compound, Actual Pattern and Contribution Holiday



Dealing With Discretionary Contribution Reductions

- Resist, Resist, Resist
 - Cost is not $(1+I)^N$, it is much more than that
 - Selling an illiquid asset, will have a MUCH higher cost than that
- Is there another source of funding?
- Get a scheduled, itemized, amortization schedule to make it up as soon as possible

In Closing

- Focus on administrative issues and investment management
- Trust the Process
- Advocate to keep the revenue stream as normal as possible
- The cost of missing contributions during a recession is much more than missing interest

Disclaimers

- This presentation shall not be construed to provide tax advice, legal advice or investment advice.
- Readers are cautioned to examine original source materials and to consult with subject matter experts before making decisions related to the subject matter of this presentation.
- This presentation expresses the views of the authors and does not necessarily express the views of Gabriel, Roeder, Smith & Company.

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- QUESTIONS?

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- This presentation shall not be construed to provide tax advice, legal advice or investment advice.
- Brian Murphy, Mark Buis and James Anderson are Members of the American Academy of Actuaries and meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinions contained herein.
- This is one of multiple documents comprising the actuarial report. Additional information regarding actuarial assumptions and methods, and important additional disclosures are provided in the full report entitled “Thirty-Ninth Annual Actuarial Valuation and Gain Loss Analysis.”
- If you need additional information to make an informed decision about the contents of this presentation or the contents of the full report, or if anything appears to be missing or incomplete, please contact us before making use of the information.

Accumulated Sick Leave Conversion Credit Program Annual Review



Item 5B - Employee Trust Funds Board

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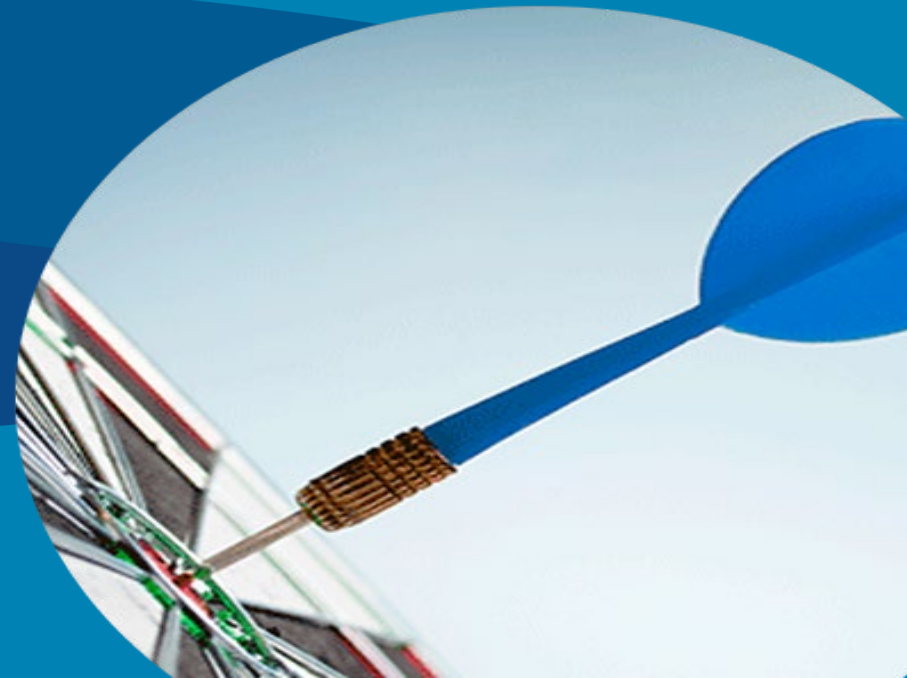




Accumulated Sick Leave Conversion Credit Programs

Annual Actuarial Valuation as of
December 31, 2019

June 2020



Accumulated Sick Leave Conversion Credit Programs - Valuation

- Benefit provided to State of Wisconsin employees and eligible dependents
 - Covers cost of health insurance premiums until sick leave credits are exhausted
- Assets based on 5-year smoothing of investment earnings known as the Market Recognition Account developed for Wisconsin Retirement System (WRS) valuation
- Assumptions & actuarial cost method consistent with WRS valuation

Accumulated Sick Leave Conversion Credit Program (ASLCC)

	<u>Base Plan</u>
Eligibility	Termination with 20 or more years of WRS creditable service (not necessarily all State Service) or eligible for an immediate annuity
ASLCC Credits	Credit computed at time of retirement, disability, or death while employed = (# days unused sick leave) x (highest basic pay rate)

Conversion credit used to cover cost of Health Insurance premiums for Employee and Dependents. Unused portion carried forward without interest.



Supplemental Health Insurance Conversion Credit Program (SHICC)

	<u>Supplemental Plan</u>		
Eligibility	Termination with at least 15 years of continuous service with State of Wisconsin (completely separate from WRS creditable service)		
SHICC Matching Credits	<u>Employment Category</u>	<u>First 24 Years of Service</u>	<u>Over 24 Years of Service</u>
	Protective	78 Hours/year	104 Hours/year
	Non-Protective	52 Hours/year	104 Hours/year

Conversion credit used to cover cost of Health Insurance premiums for Employee and Dependents. Unused portion carried forward without interest.



Summary of Participant Data Report Page 3

Active Participants

	State Employees (Non-University)	University	University Hospital	Total
Number	32,307	31,536	9,316	73,159
Annual Payroll	\$1,902,377,085	\$2,641,849,124	\$633,238,868	\$5,177,465,077
Accrued Unused Sick Days	2,636,678 days	2,777,033 days	358,822 days	5,772,533 days
Averages: Age	44.7 years	46.3 years	40.6 years	44.9 years
Service	11.4 years	10.7 years	8.0 years	10.7 years
Sick Leave Days	81.6 days	88.1 days	38.5 days	78.9 days

Terminated Vested Participants

Number	Base Sick Leave Balance	Supplemental Sick Leave Balance	Total Sick Leave Balance
414	\$16,393,605	\$10,617,579	\$27,011,184



Summary of Participant Data Report Page 3

Retirees & Beneficiaries

Status	Number	Base Sick Leave Balance	Supplemental Sick Leave Balance	Total Sick Leave Balance
Premium > \$0 and account status of active	17,593	\$580,695,137	\$946,189,682	\$1,526,884,819
Premium > \$0, sick leave balance >\$0, and account status other than active	4,910	49,712,437	58,651,054	108,363,491
Premium = \$0, sick leave balance > \$0	6,293	234,640,331	163,942,329	398,582,660
Sick leave balance = \$0	8,462	0	0	0
Total	37,258	\$865,047,905	\$1,168,783,065	\$2,033,830,970

Average Premium Calculation Report Page 4

	Rate Category		
	Total	Pre-65	Post-65
1. Number*	17,559	4,275	13,284
2. Monthly Premium Amounts for Retirees Currently in Pay Status*	\$12,660,218	\$5,253,731	\$7,406,487
3. Annual Premiums for Retirees Currently in Pay Status: (2)x12	\$151,922,616		
4. Reported Premiums from Financial Statements	\$164,580,396		
5. Ratio of Reported to Annualized Premium Amounts: (4)/(3)	1.0833		
6. Adjusted Monthly Premiums: (2)/(1)x(5)		\$1,331.31	\$603.99
First Prior Year		\$1,227.59	\$663.64
Second Prior Year		\$1,191.82	\$711.16

** Retirees with an account status of active and currently using sick leave to cover the cost of health insurance premiums. Excludes pre-65 retirees currently enrolled in a Medicare health care plan.*

Summary of ASLCC Asset Data Report Page 5

	Base Program	Supplemental Program	Total
Beginning Balance	\$1,552,453,297	\$998,973,301	\$2,551,426,598
Adjustment	1,052	3,932	4,984
Adjusted Beginning Balance	<u>\$1,552,454,349</u>	<u>\$998,977,233</u>	<u>\$2,551,431,582</u>
Revenues			
Contributions	\$ 38,356,314	\$ 14,368,898	\$ 52,725,212
Investment Income	111,957,710	72,389,678	184,347,388
Total Revenues	<u>\$ 150,314,024</u>	<u>\$ 86,758,576</u>	<u>\$ 237,072,600</u>
Expenses			
Insurance Premiums	\$ 110,339,837	\$ 54,240,559	\$ 164,580,396
Other	127,630	54,861	182,491
Administration	528,131	339,791	867,922
Total Expenses	<u>\$ 110,995,598</u>	<u>\$ 54,635,211</u>	<u>\$ 165,630,809</u>
Ending Balance - December 31, 2019	<u><u>\$1,591,772,775</u></u>	<u><u>\$1,031,100,598</u></u>	<u><u>\$2,622,873,373</u></u>
Internal Rate of Return	7.4%	7.4%	7.4%

Based on Market Recognition Account and provided by ETF.



December 31, 2019 ASLCC Valuation Results – Employer Contribution Rates Report Page 1

Valuation Date December 31	Base	Supplemental	Total	UAAL* Amortization Years
2010^	0.8%	0.4%	1.2%	15
2011	0.9%	0.4%	1.3%	14
2012^	0.9%	0.5%	1.4%	13
2013	0.8%	0.4%	1.2%	12
2014	0.8%	0.4%	1.2%	11
2015^	0.9%	0.4%	1.3%	10
2016	0.8%	0.4%	1.2%	9
2017	0.8%	0.3%	1.1%	8
2018^	0.9%	0.3%	1.2%	7
2019	0.8%	0.3%	1.1%	6

* *Unfunded Actuarial Accrued Liabilities*

^ *Assumption change*



Concluding Remarks

- This year's results were affected by an approximate 9.0% decrease in the average post-65 premium. While this decrease may be partly due to a differing mix of plan selection, the 2020 post-65 Group Health Insurance Plan rates were lower than the 2019 rates.
- During 2019, investment return on a market value basis was greater than the assumed level of 7.0%
- The Market Recognition Account phases-in gains and losses over 5 years -- resulting in a 7.4% return on a smoothed basis
 - This led to contribution rates decreasing relative to the prior year
 - If actuarial assumptions are realized, there will be downward contribution pressure in future years
 - This is a big if given the current volatility in the investment markets

Disclaimers

- This presentation shall not be construed to provide tax advice, legal advice or investment advice.
- Brian Murphy, Mark Buis and James Anderson are Members of the American Academy of Actuaries (MAAA) and meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinions contained herein.
- This is one of multiple documents comprising the actuarial report. Additional information regarding actuarial assumptions and methods, and important additional disclosures are provided in the full report entitled “Accumulated Sick Leave Conversion Credit Programs Annual Actuarial Valuation, December 31, 2019.”
- If you need additional information to make an informed decision about the contents of this presentation or the contents of the full report, or if anything appears to be missing or incomplete, please contact us before making use of the information.

Lunch Break



40.65 Disability Actuarial Review



Item 5C- Employee Trust Funds Board

Milliman, Inc.

Paul Correia, Principal and Consulting Actuary



Actuarial Valuation of the State of Wisconsin Duty Disability Program

As of December 31, 2019

**State of Wisconsin Employee Trust Funds
Board Meeting
June 18, 2020**

Paul L. Correia, FSA, MAAA
Milliman, Inc.

Actuarial Valuation of Duty Disability Program

Limitations of Analysis

- We relied on information provided by the Department of Employee Trust Funds (ETF). If it is inaccurate or incomplete, our results may be affected.
- The valuation uses actuarial assumptions that are individually reasonable and which, in combination, offer our best estimate of anticipated experience.
- To the extent that actual experience varies from the assumptions, the emerging costs of the plan will vary from the projections we have prepared.
- The calculations in this presentation are consistent with our understanding of ETF funding requirements and goals. Additional determinations may be needed for other purposes.
- Milliman's work product was prepared exclusively for ETF for a specific and limited purpose. It is not for the use or benefit of any third party for any purpose.
- I, Paul Correia, am a Consulting Actuary with Milliman. I am a member of the American Academy of Actuaries, and I meet its Qualification Standards to render the actuarial opinion contained herein.

Duty Disability

Summary of Benefits

- Member Benefits:** 80% of salary (75% for local employees who are not eligible for a Social Security disability benefits and not eligible for a WRS disability benefit or LTDI)
- Benefit Offsets:** Social Security benefits
Unemployment compensation
Workers' Compensation
WRS retirement, separation, or disability benefits
Earnings from employer where the disability occurred
Earnings from other employment
- Benefit Increases:** Annual increases based on either Social Security salary index or WRS core annuity index, depending on the member's age and retirement status
- Survivor Benefits:** Survivor benefits are payable if the disabled member dies from the same condition that triggered Duty Disability benefits
- Survivor benefit amounts vary depending on disability date and disabling condition (cancer versus all other conditions)

Duty Disability

Liabilities as of December 31, 2019

Liability Component	Estimated Liability
Open Claims	\$412,357,049
Future Survivors	\$20,390,585
IBNR Claims	\$24,400,599
Loss Adjustment Expense	\$9,173,828
Total	\$466,322,061

- Open Claims: Liability reflects 968 disabled members and 58 survivors (i.e. spouses and domestic partners) who were receiving benefits as of December 31, 2019
- Future Survivors: Liability reflects future benefits payable to survivors of currently disabled members
- Incurred but not Reported (IBNR) Claims: Liability reflects expected future benefit payments to members and survivors whose claims were incurred but had not been reported as of December 31, 2019
- Loss Adjustment Expenses: Liability for future expenses related to ongoing management and payment of Duty Disability claims

Duty Disability

Comparison to Prior Year

Liability Component	12/31/2018	12/31/2019
Open Claims	\$398,952,462	\$412,357,049
Future Survivors	\$27,044,242	\$20,390,585
IBNR Claims	\$19,725,319	\$24,400,599
Loss Adjustment Expense	\$8,863,225	\$9,173,828
Total	\$454,585,247	\$466,322,061

- Claim termination rate and offset assumptions were updated for the 12/31/2019 valuation
- Liability for open claims increased by approximately 3.4%
 - Number of open claims relatively steady (1,025 at 12/31/2018 vs 1,026 at 12/31/2019)
 - Average monthly benefit increased by approximately 3.2%
- Liability for Future Survivors decreased due to a change in valuation assumptions
- Liability for IBNR claims increased due to increase in annual incurred claims estimate
- Liability for loss adjustment expenses increased slightly

Duty Disability

Retrospective Adequacy Study

Experience Period	Average Annual Margin	
	Disabled Members	Survivors
2015	0.90%	3.54%
2016	1.21 %	4.07%
2017	1.23%	2.44%
2018	0.65%	0.22%
2019	1.00%	0.34%
Total	1.00%	2.13%

- Experience: Claims from disabled members and survivors within the period 2015 - 2019
- Positive overall margins (i.e., 1.00% and 2.13%) indicate the liabilities were adequate to cover the runoff of open claims during the study period

Duty Disability

Fund Balance and Surplus Position

Balance Sheet Component	2019
Beginning of Year Balance	\$642,041,947
+ Investment Income	\$46,303,564
+ Premium Contributions and Miscellaneous Income	\$7,599,226
- Insurance Claims	\$36,350,818
<u>- Administrative Expenses</u>	<u>\$588,120</u>
End of Year Balance	\$659,005,799
<u>Actuarial Liability as of December 31, 2019</u>	<u>\$466,322,061</u>
Surplus	\$192,683,738

- The plan was in a surplus position of \$192.7 million as of December 31, 2019
- Surplus is 41% of estimated liability as of December 31, 2019
- In 2019, the Board approved a surplus target range of 25% to 35% of the estimated liability

Duty Disability Funding Analysis

Modeled Scenario	Assumptions		Expected Surplus as of 12/31/2028
	Investment Income	Contribution Rate	
Baseline	7.0%	Current rates	\$269M (51% of 2028 liability)
Scenario 1	7.0%	Waived in 2021 and beyond	\$225M (43% of 2028 liability)
Scenario 2	-18% in 2020, 7.0% thereafter	Current Rates	-\$14M (-3% of 2028 liability)

- Fund and surplus projections take into consideration potential future claims of active employees (even though estimated liability does not under GASB10)

Duty Disability

Conclusions

- Reserve margin analysis supports the updated valuation assumptions
- The funding analysis indicates Duty Disability Program surplus is sensitive to investment income and contributions, however it is expected to grow in the baseline scenario
- We would not recommend a premium holiday at this time due to current economic and health uncertainty, and because there could be a prolonged period of uncertain market returns, and uncertainty around disability and life claims.

Duty Disability

Appendix – New Valuation Assumptions

- An audit of Milliman’s Duty Disability valuation methods in 2019 included recommendations to update claim termination and estimated offset assumptions
- New termination rates are based on mortality rates from the *2015-2017 Wisconsin Retirement System Three-Year Experience Study* report adjusted to reflect Duty Disability claim trends
 - Disabled member mortality – 40% of the average of disabled and healthy life retiree mortality rates
 - Survivor mortality – 80% of the WRS annuitant mortality rates
- New offset assumptions are based on a recent study of offset approval rates

Procurement of Outside Tax Counsel



Item 5D- Employee Trust Funds Board

Monica Anderson, Attorney

Office of Legal Services



Designing a Model WRS Governing Board

Item 5E- Employee Trust Funds Board

Laura Patterson

Office of Policy, Privacy & Compliance



Agenda

- Board Structure Review
- Board Composition Review
- Designing a Governing Board

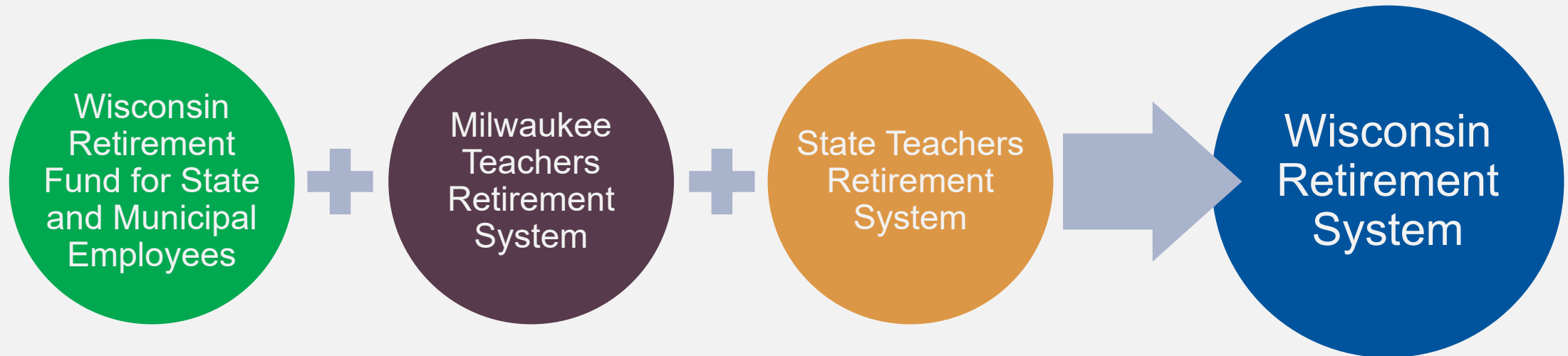


A photograph of a family of three—a woman, a man, and a young girl—walking together on a path through a lush, green forest. The woman is on the left, the man is on the right, and the girl is in the center foreground. They are all smiling and appear to be enjoying their time outdoors. The image is overlaid with a semi-transparent dark blue filter.

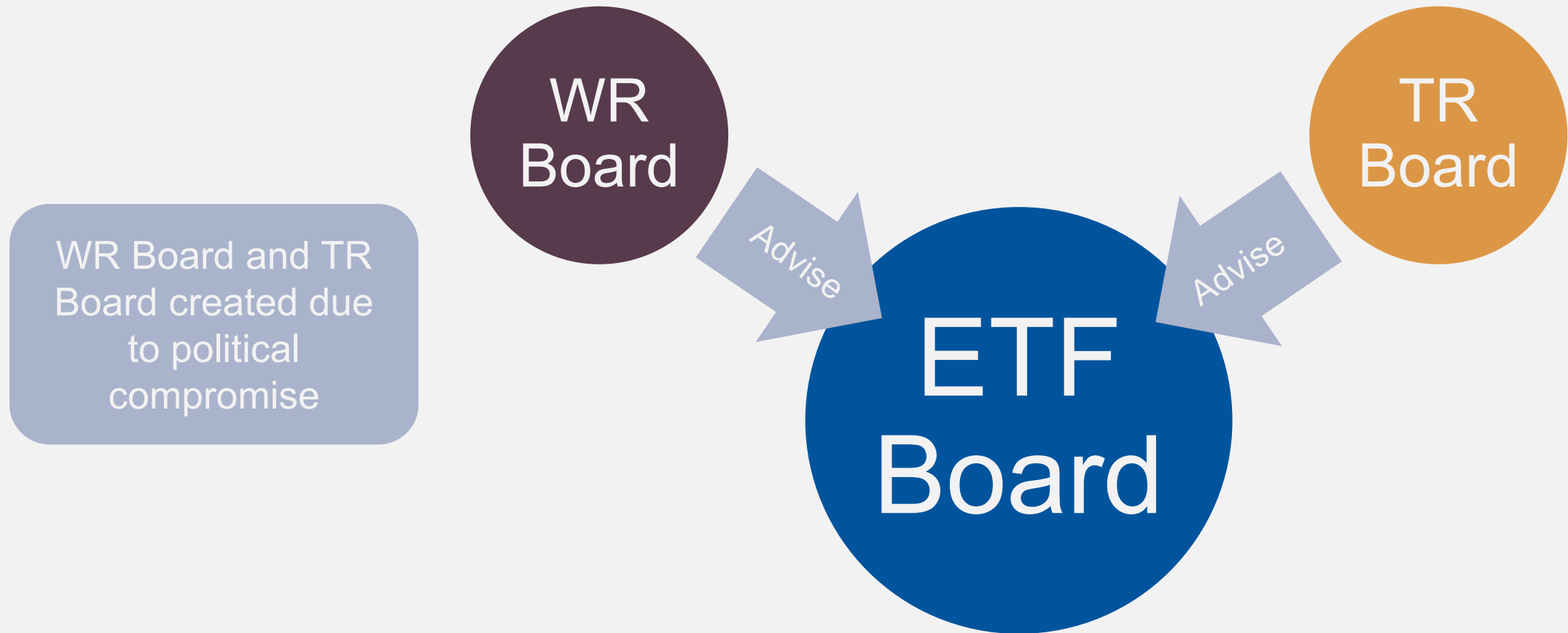
Board Structure Review

Wisconsin Retirement System

- Established 1982
- Merger of several smaller plans
- Uniform benefits today



WRS Board Establishment



WRS Board Powers

All Boards

- Hear appeals
- Authorize benefit payments
- Approve administrative rules

ETF Board

- Appoints the ETF Secretary
- Approves actuarial tables
- Contracts with actuarial legal medical and other independent contractors
- Several other powers and delegates as necessary

WR & TR Boards

- Appoint members to the ETF Board and SWIB
- May amend any rule, created prior to 1982, to make it no longer applicable to their respective demographics

WRS Board Powers - Appeals

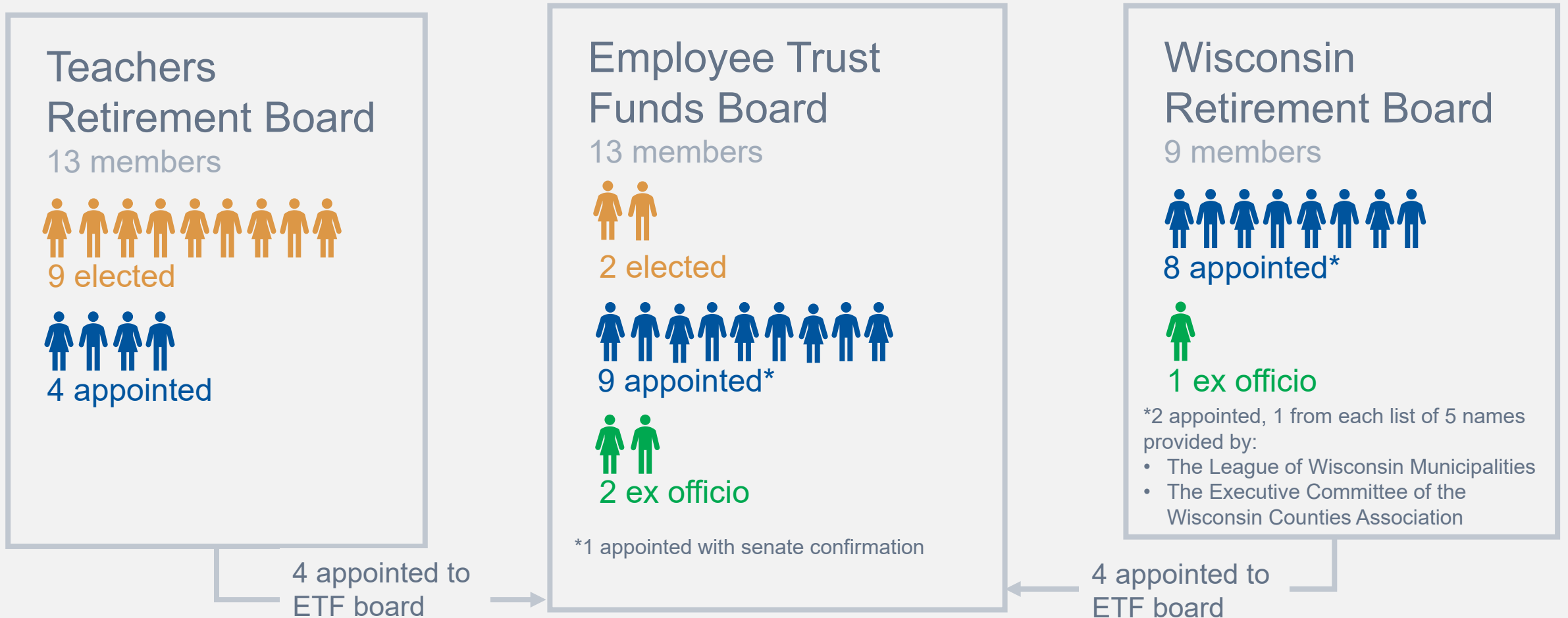
The Governing Boards' equity powers under ETF 11.03(2)(b) Limitation of Board Remedies:

- The Boards are generally limited to deciding an appeal based on the law and facts
- Benefits cannot be granted unless the member is eligible for the benefit, and meets all of the qualifications
- ETF Board has equity powers to correct inequities based on administrative errors
- TR & WR Board do not have equity powers

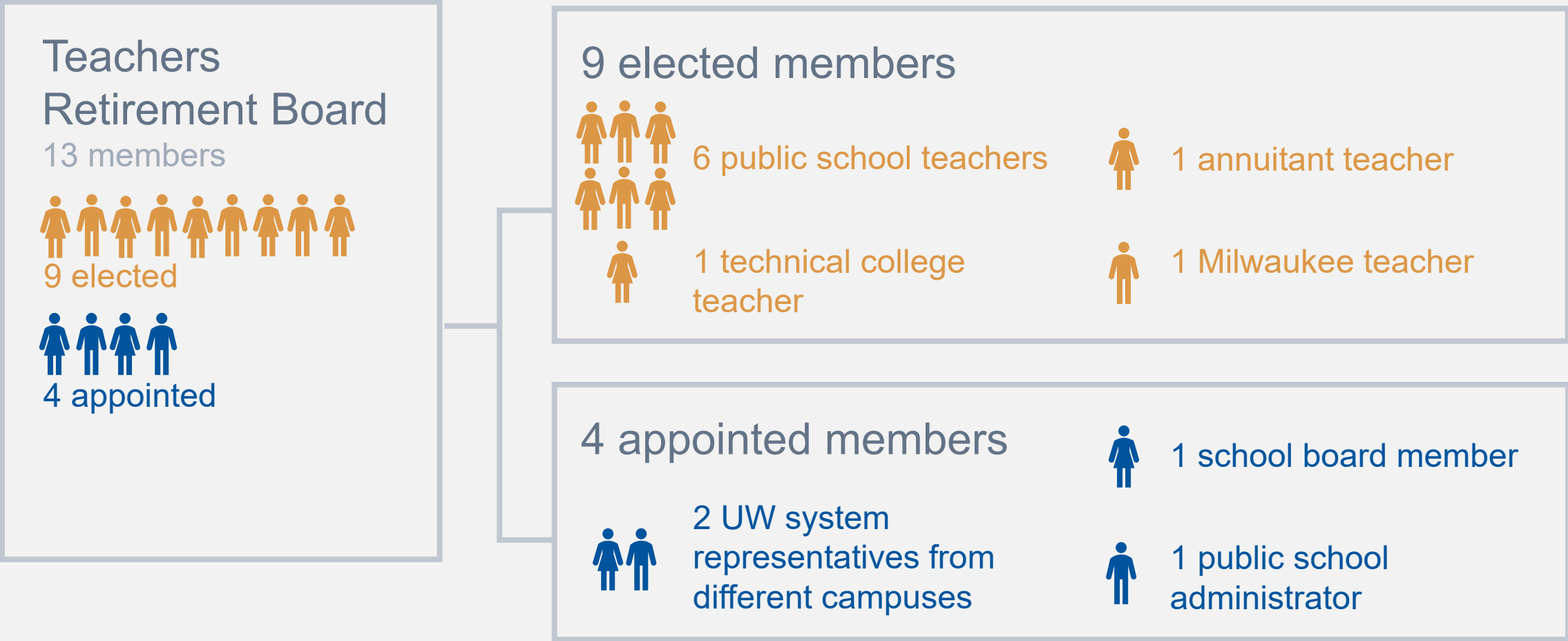
A photograph of a family of three walking on a dirt path in a forest. The mother is on the left, the father is on the right, and a young girl is in the center. They are all smiling and holding hands. The image is overlaid with a dark blue semi-transparent filter.

Board Composition Review

Current WRS Board Composition



Current Teachers Retirement Board



Current Wisconsin Retirement Board

Wisconsin Retirement Board

9 members



8 appointed*



1 ex officio

*2 appointed:

- ** 1 from a list of 5 names provided by The League of Wisconsin Municipalities
- *** 1 from a list of 5 names provided by The Executive Committee of the Wisconsin Counties Association

8 appointed members



1 governing body member of a WRS city or village**



1 WRS principal financial officer of a WRS city or village



1 WRS employee of a WRS city or village



1 WRS state employee



1 non-WRS member of the public to represent taxpayers



1 chairperson of a WRS county or town***



1 deputy or county clerk of a WRS county



1 WRS employee of a local employer (not city or village)

From different counties

From different counties

1 ex officio



Commissioner of insurance or an experienced actuary designee

Current Employee Trust Funds Board

Employee Trust Funds Board

13 members



2 elected



9 appointed*



2 ex officio

*1 appointed with Senate confirmation
** 2 appointed from elected members on the TR Board

2 elected members



1 WRS annuitant



1 public school or technical college support personnel employee

2 ex officio members



1 governor or governor's designee on GIB



1 DOA-DPM administrator or designee

9 appointed members



1 public member with 5 years related experience*



1 WRS state or local employee



1 WRS state employee or non-member taxpayer



1 WR board member



1 public school administrator or school board member



1 UW teacher participant



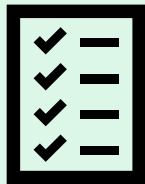
1 public school or technical college teacher participant**



1 Milwaukee teacher participant**

Membership Observations

Specific Board seat requirements



WRS demographics not fully reflected



Including profession, status and employer type

Protective participants do not have a designated seat



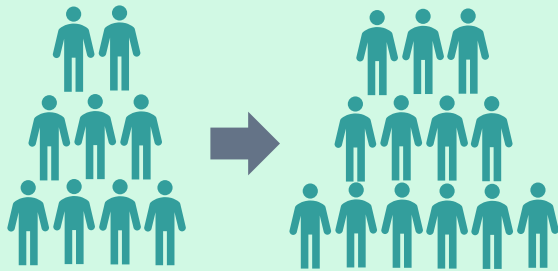
Protectives have the most unique benefits of any group



Designing a Governing Board

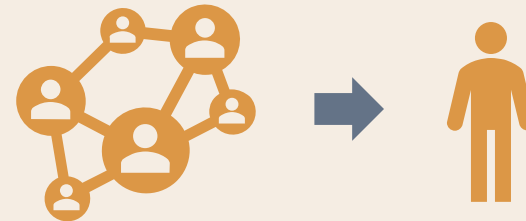
Composition Considerations

Number & Size



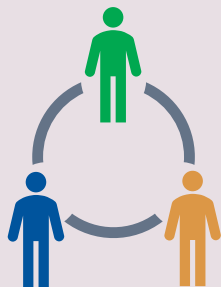
A single board with 9 to 13 members

Representation



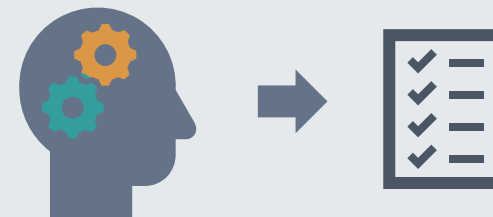
Base elected seats by plan demographics

Balance



Include ex officio, elected, and appointed members

Experience

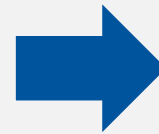


Align board member experience requirements with needed skill set

Number & Size Considerations

13 Members

- Within recommended size of 9 -13 members
- Maintains current level of representation on the ETF Board
- Aligns with typical single board structure of public pension plans



Balance Considerations

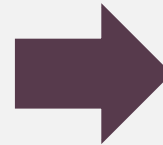
Mix of Ex Officio, Elected & Appointed Members

Typical Pension Plan Membership

- 33% elected
- 44% appointed
- 22% ex officio

Model WRS Board Membership

- 46% elected
- 38% appointed
- 15% ex officio



Model WRS Board
13 members

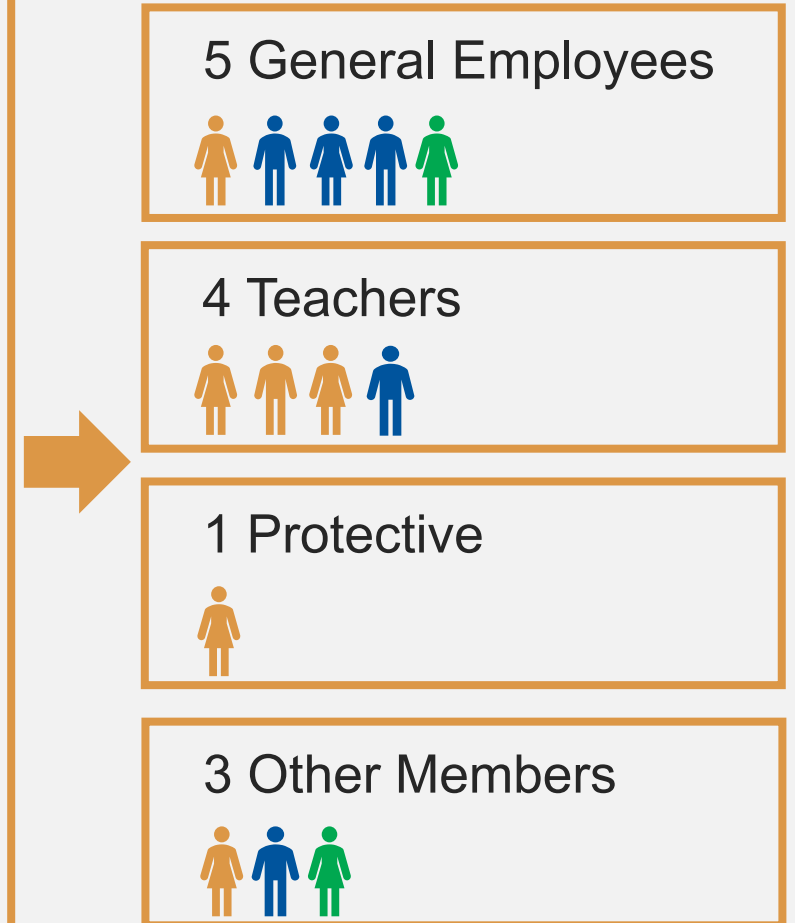


*1 appointed with Senate confirmation

Representation Considerations

* Educational Support Staff make up 32% of General Employees

- General Employees*
 - Current WRS Demographic = 52%
 - Current ETF Board = 62%
 - Model WRS Board = 38%
- Teachers
 - Current WRS Demographic = 39%
 - Current ETF Board = 23%
 - Model WRS Board = 31%
- Protectives
 - Current WRS Plan Demographic = 10%
 - Current ETF Board = 0
 - Model WRS Board = 8%
- Other Members
 - Annuitant – general, teacher or protective = 8%
 - Governor or their Designee – general, teacher, protective or non-participant = 8%
 - Non-Participant with audit, actuarial or finance experience = 8%



Experience Considerations

- Align appointed board member experience requirements with needed skill set
- Experience on the topics the board makes decisions on
- Flexible requirements to all diverse perspectives



Local Government Experience

- School Administrator or Local Unit of Government Administrator



Human Resource or Financial Experience

- Participating State or Local Chief Human Resources or Financial Officer (not from a school district)



Audit, Actuarial or Financial Experience

- Non-Participant with 5 years audit, actuarial benefit or financial experience



State, Governing or Employer Experience

- Elected Chief Executive Officer from a Participating Employer or an Elected Member of a Governing Board

Model WRS Board

Model ETF Board 13 members



6 elected



5 appointed*



2 ex officio

* 1 appointed with Senate confirmation

6 elected members



1 annuitant



1 annuitant – teacher



1 active participant –
educational support staff



2 active participants – teachers



1 protective – active participant

2 ex officio members



1 Governor or Governor's
designee on the GIB



1 DPM-DOA Administrator or
designee

5 appointed members



1 UW Active Representative



1 school administrator or local unit of
government administrator



1 participating state or local chief human
resources or financial officer (not from
a school district)



1 elected chief executive officer from a
participating employer or an elected
member of a governing board



1 non-participant with 5 years audit,
actuarial benefit or financial
experience*



Questions?

Thank you



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Secretary's Report

Item 6A - Employee Trust Funds Board




Bob Conlin, Secretary





ETF Board Metrics

Item 6B - Employee Trust Funds Board



John Voelker, Deputy Secretary



Operational Updates

Items 6C – 6L - Memo Only



Future Items for Discussion

Item 7A – Employee Trust Funds Board



Closed Session

Item 8 – Appeal



Closed Session

Item 9 – Secretary’s Annual Evaluation and Compensation



Announcement of Action Taken on Personnel Matters and Appeals Deliberated During Closed Session

Item 10 – Employee Trust Funds Board



Adjournment

Item 11 – No Memo



Thank you



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