



El Paso County Retirement Plan

Presentation to the Retirement Board
January 1, 2020 Actuarial Valuation Results
June 22, 2020

BUCK

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Highlights of Valuation Results

Highlights of 2020 Valuation Results

The plan's unfunded liability increased by \$10.6M (5.3%) from last year.

The \$207.8M unfunded liability will continue to grow over time absent (i) additional contributions in excess of 16% of salary, (ii) favorable experience (e.g., investment returns greater than 7.5%), and/or (ii) reductions in benefit levels.

	1/1/19	1/1/20
Unfunded Actuarial Accrued Liability	\$197.2M	\$207.8M
Funded Ratio*	66.2%	65.6%
Actuarially Determined Contribution		
- Amount	\$29.0M	\$30.3M
- Percent of Salary	18.3%	18.6%

* Comparison of Actuarial Value of Assets to Actuarial Accrued Liability. The funded ratio is different based on Market Value of Assets.

Summary of Valuation Results

Summary of Valuation Results

(\$000's)	As of January 1	
	2019	2020
1. Present Value of Future Benefits (PVFB)	\$ 700,570	\$ 725,836
2. Present Value of Future Normal Costs (PVFNC)	<u>117,572</u>	<u>122,036</u>
3. Actuarial Accrued Liability (AAL = PVFB - PVFNC)	\$ 582,998	\$ 603,800
4. Actuarial Value of Assets (AVA)	<u>385,753</u>	<u>396,034</u>
5. Unfunded Actuarial Accrued Liability (UAAL = AAL - AVA)	\$ 197,245	\$ 207,766
6. Funded Ratio – Actuarial Value of Assets (AVA/AAL)	66.2%	65.6%

Summary of Valuation Results (cont'd)

(\$000's)	As of January 1	
	2019	2020
1. Actuarially Determined Contribution (including 8% member contributions)		
1a. Normal Cost		
o Amount	\$ 16,250	\$ 16,657
o % of Salary	10.2%	10.2%
1b. Amortization of Unfunded Actuarial Accrued Liability	\$ 12,065	\$ 12,948
1c. Administrative Expenses	<u>697</u>	<u>715</u>
1d. Actuarially Determined Contribution		
o Amount	\$ 29,012	\$ 30,320
o % of Salary	18.3%	18.6%
2. Actual Contribution Rates as % of Salary		
2a. Member	8.0%	8.0%
2b. Employer	<u>8.0%</u>	<u>8.0%</u>
2c. Total	16.0%	16.0%
3. Contribution Shortfall as % of Salary [1d – 2c]	2.3%	2.6%

ASOP 51 Risk Discussion

ASOP 51 Risk Discussion*

- The risk factors that are expected to have the most significant impact on the plan's future funded status and contribution rates are:
 - Invested assets not earning the assumed rate of 7.5% per year
 - Not contributing the actuarially determined contribution rate
 - Longevity of plan participants beyond life expectancies predicted by the current mortality assumption
- Currently, the employer and members each contribute 8% of pay annually, for a total annual contribution of 16% of pay
 - The Actuarially Determined Contribution rate for 2020 is 18.6% of pay (inclusive of the 8% member contributions)
 - **By not contributing the Actuarially Determined Contribution, the liabilities of the plan will grow faster than the assets, which will cause the unfunded liability to continue to increase over time**

* See the Appendix and the actuarial valuation report for additional details regarding ASOP 51.

Projections

Projections

- Projection #1: Members and employer each contribute 8% of salary each year
- Projection #2: Members contribute 8% of salary each year, employer contributes the Actuarially Determined Contribution (ADC) each year
 - Components of the ADC
 - Normal Cost (cost of active members' benefit accruals in upcoming year)
 - Amortization of the unfunded liability
 - Administrative expenses expected to be paid from the trust in upcoming year
- New hires are included to maintain a stable active population. Future experience assumed to match valuation assumptions (which remain unchanged throughout the projection period).
- Amounts under bar charts are in \$millions and may not add due to rounding.
- The final projection slide shows the projected number of retirees (those currently in pay status only, with future retirees from current actives, and with future retirees from current actives and new hires). 2,899 is the highest projected number, including future retirees from current actives, which occurs in 2036.

Projection Results

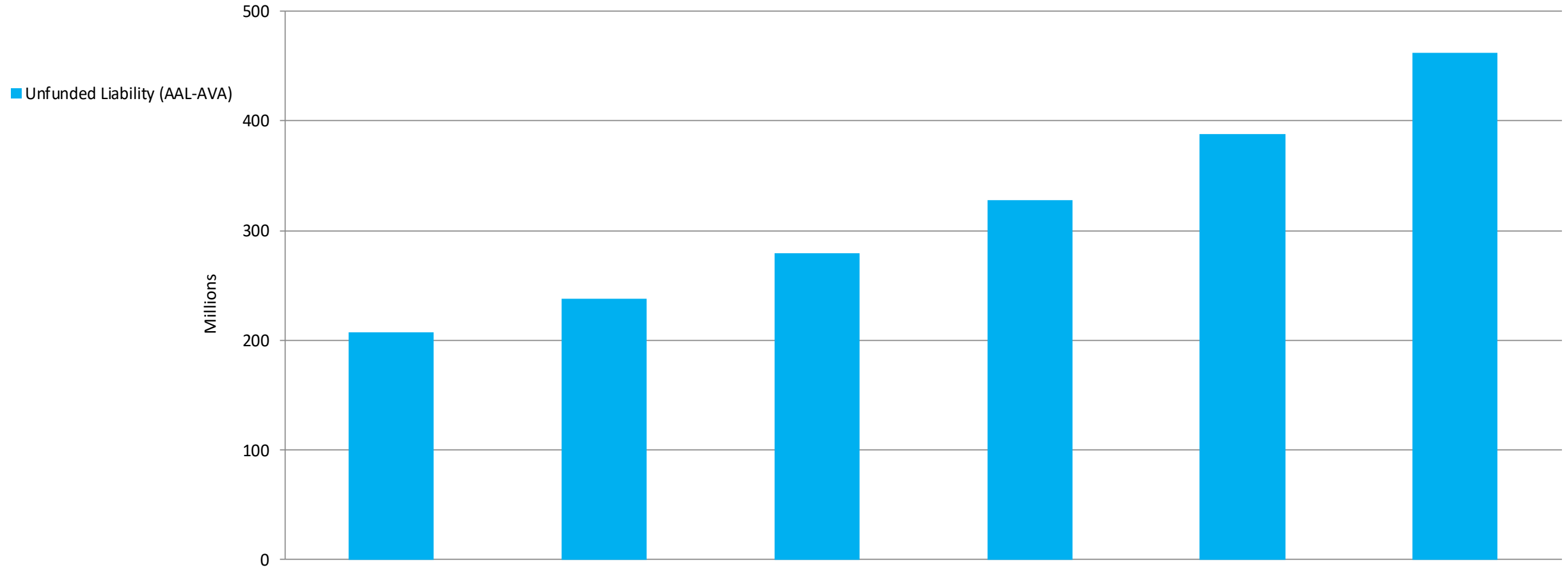
	Employer contribution:	#1 8% of salary	#2 ADC
1. Unfunded liability at 1/1/45		\$462M	\$84M*
2. Funded ratio at 1/1/45		65%	94%
3. 25-year total employer contributions**		\$468M	\$571M
4. Additional County contributions needed for funded ratio of 100% at 1/1/45 - Annual amount - 25-year total		\$6.6M \$164M	not available since additional amounts impact each year's ADC

An additional **\$103M** in employer contributions over 25 years reduces the unfunded liability in 25 years by **\$378M**. This is why contributing the ADC is so important.

*Although the Actuarially Determined Contributions (ADC's) are assumed to be made each year, there are outstanding unfunded liability "layers" at 1/1/45: (i) the unfunded liability at 1/1/19 is being amortized over 30 years, so there are 4 years of amortization remaining at 1/1/45, and (ii) new 25-year layers for deferred asset gains/losses that are being recognized in the four years after 2020 will not be fully amortized by 1/1/45.

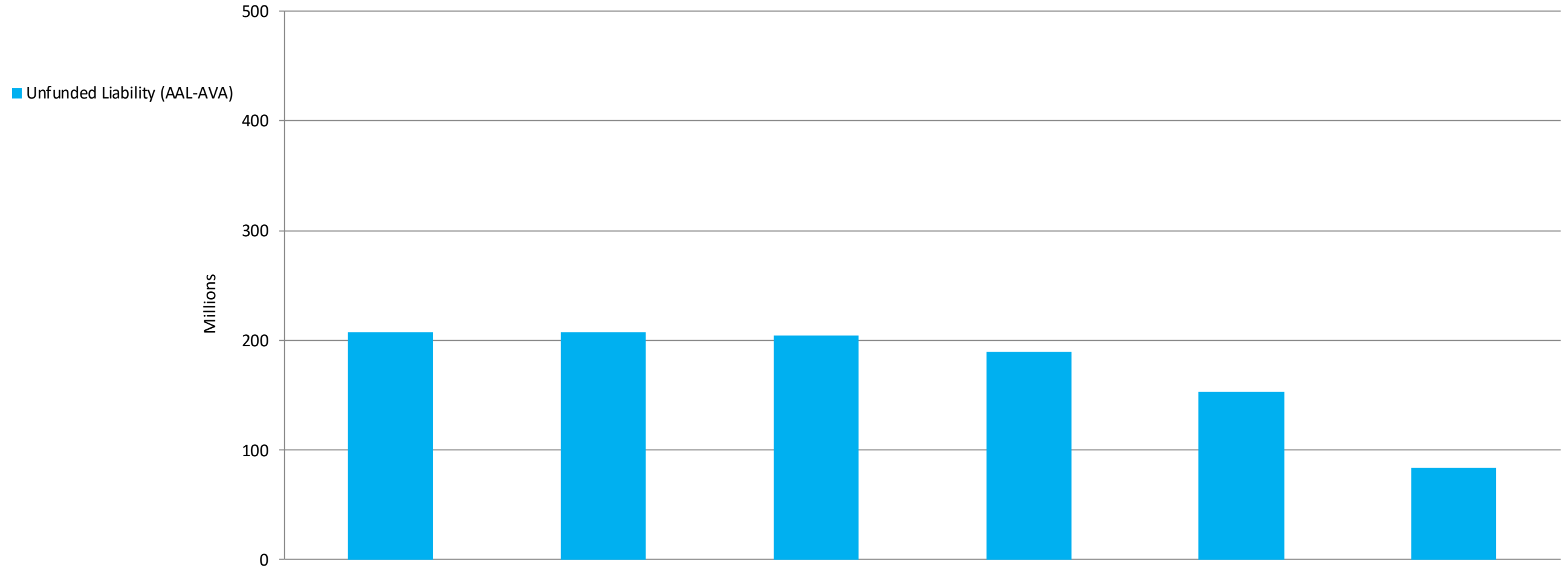
** Excluding the additional County contributions in item 4.

Projection #1 – Employer contributes 8% of salary



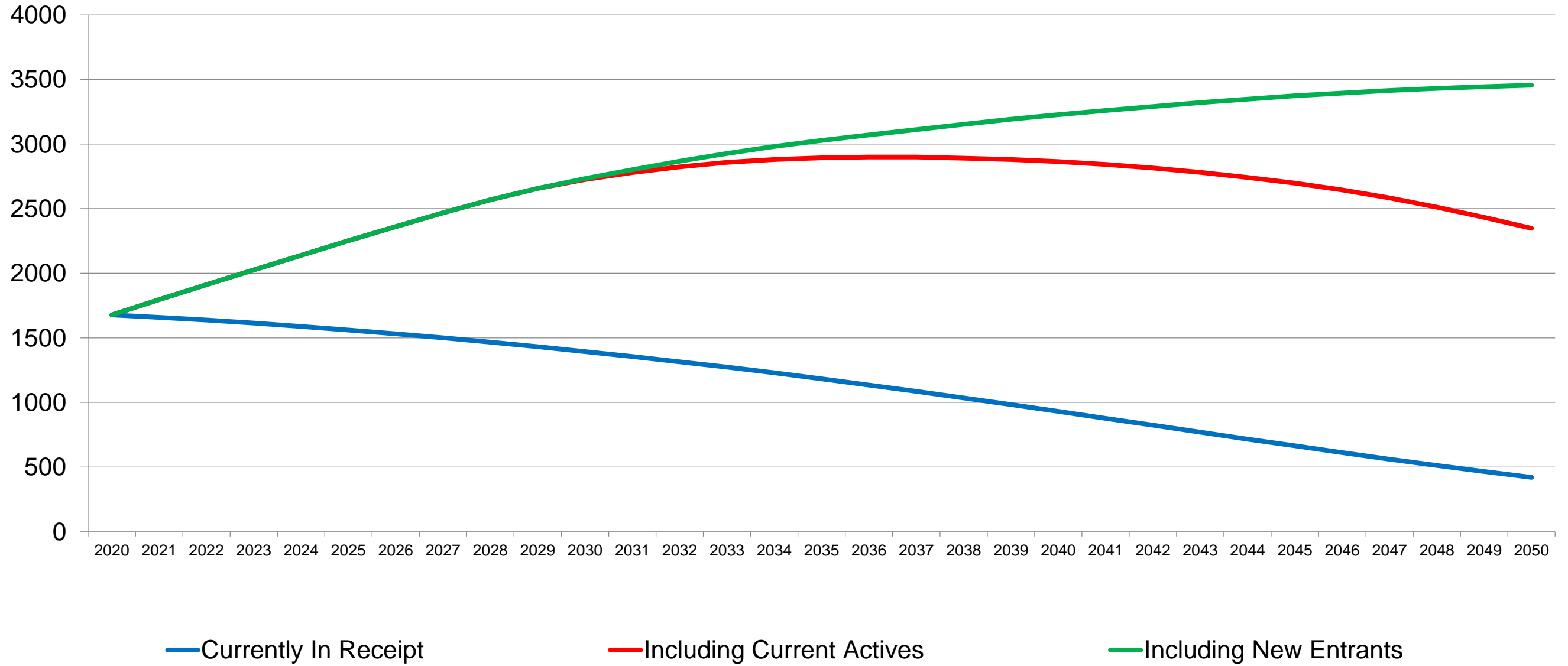
Year	2020	2025	2030	2035	2040	2045
Actuarial Accrued Liability (AAL)	\$ 604	\$ 717	\$ 840	\$ 974	\$ 1129	\$ 1306
Actuarial Value of Assets (AVA)	\$ 396	\$ 479	\$ 560	\$ 645	\$ 742	\$ 844
Unfunded Liability (AAL-AVA)	\$ 208	\$ 238	\$ 279	\$ 328	\$ 388	\$ 462
Funded Ratio (AVA/AAL)	65.6%	66.8%	66.7%	66.3%	65.7%	64.6%
ADC Rate	18.6%	19.1%	20.3%	22.0%	24.7%	28.2%

Projection #2 – Employer contributes Actuarially Determined Contribution (ADC)



Year	2020	2025	2030	2035	2040	2045
Actuarial Accrued Liability (AAL)	\$ 604	\$ 717	\$ 840	\$ 974	\$ 1129	\$ 1306
Actuarial Value of Assets (AVA)	\$ 396	\$ 510	\$ 635	\$ 785	\$ 977	\$ 1222
Unfunded Liability (AAL-AVA)	\$ 208	\$ 207	\$ 205	\$ 189	\$ 152	\$ 84
Funded Ratio (AVA/AAL)	65.6%	71.1%	75.6%	80.6%	86.5%	93.6%
ADC Rate	18.6%	17.9%	17.7%	17.6%	17.7%	17.3%

Projected Counts of Retirees

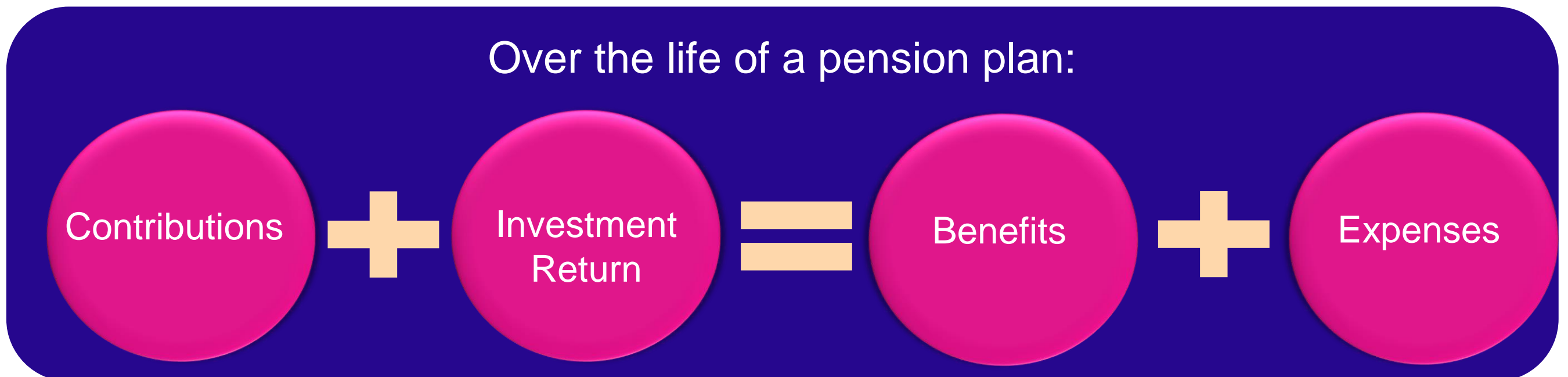


APPENDIX

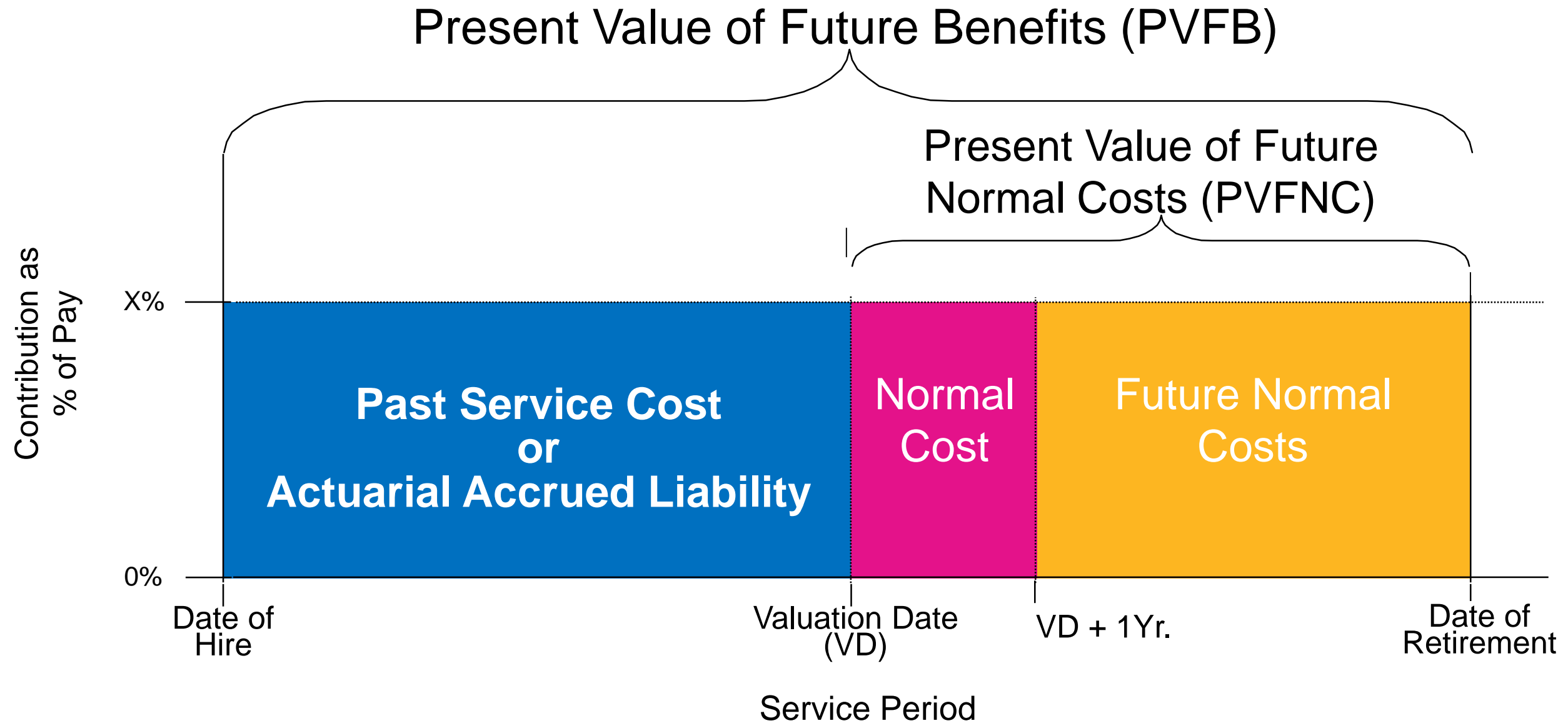
Actuarial Valuation Background

Purpose of Actuarial Valuation

- Snapshot measurement of the actuarial position of the pension plan at a given point in time
- Measures benefit obligation (liabilities) and compares it to existing plan assets
- Determines annual contribution requirement, and provides warnings of potential funding problems via long-term projections
- Projected benefits and contributions are used for annual GASB reporting
- Does not reflect the impact of future members or future plan changes



Actuarial Funding Process



2019 Actuarial Experience

2019 Actuarial Gains/(Losses)

- Gains: Experience was *favorable* relative to assumptions
- Losses: Experience was *unfavorable* relative to assumptions

Assets	\$ (5.7)M
Liabilities	\$ 1.2M
Contributions	\$ (4.0)M
Expenses	\$ (0.3)M

- Main sources of liability gains/losses:
 - Gains: Salary increases were less than expected
 - Losses: Retirement and mortality experience, unanticipated new entrants* and service purchases*

* The liability losses for unanticipated new entrants and service purchases do not reflect the corresponding amounts that have been contributed to the assets.

Assets

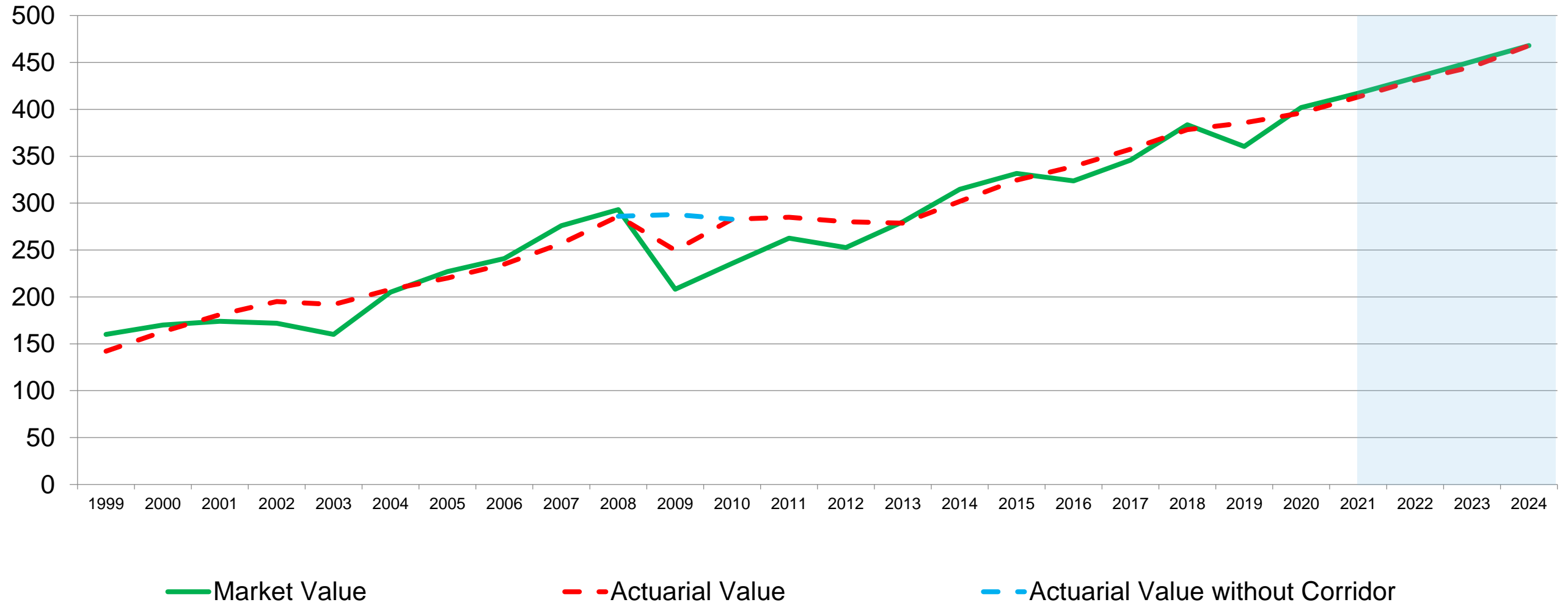
Asset Reconciliation (Market Value)

(\$000's)	2018		2019	
Market Value – beginning of year	\$	383,591	\$	360,483
Cash Flow				
• Member Contributions & Service Purchases	\$	13,242	\$	13,332
• Employer Contributions	\$	12,317	\$	12,913
• Benefit Payments				
• Annuity Payments	\$	(34,100)	\$	(34,000)
• Refunds/Lump Sums	\$	(3,489)	\$	(3,793)
• Administrative Expenses	\$	<u>(761)</u>	\$	<u>(974)</u>
• Net Cash Flow	\$	(12,791)	\$	(12,522)
Net Investment Income/(Loss)	\$	(10,317)	\$	53,976
Market Value – end of year	\$	360,483	\$	401,937
Approximate Rate of Return		(2.7%)		15.2%

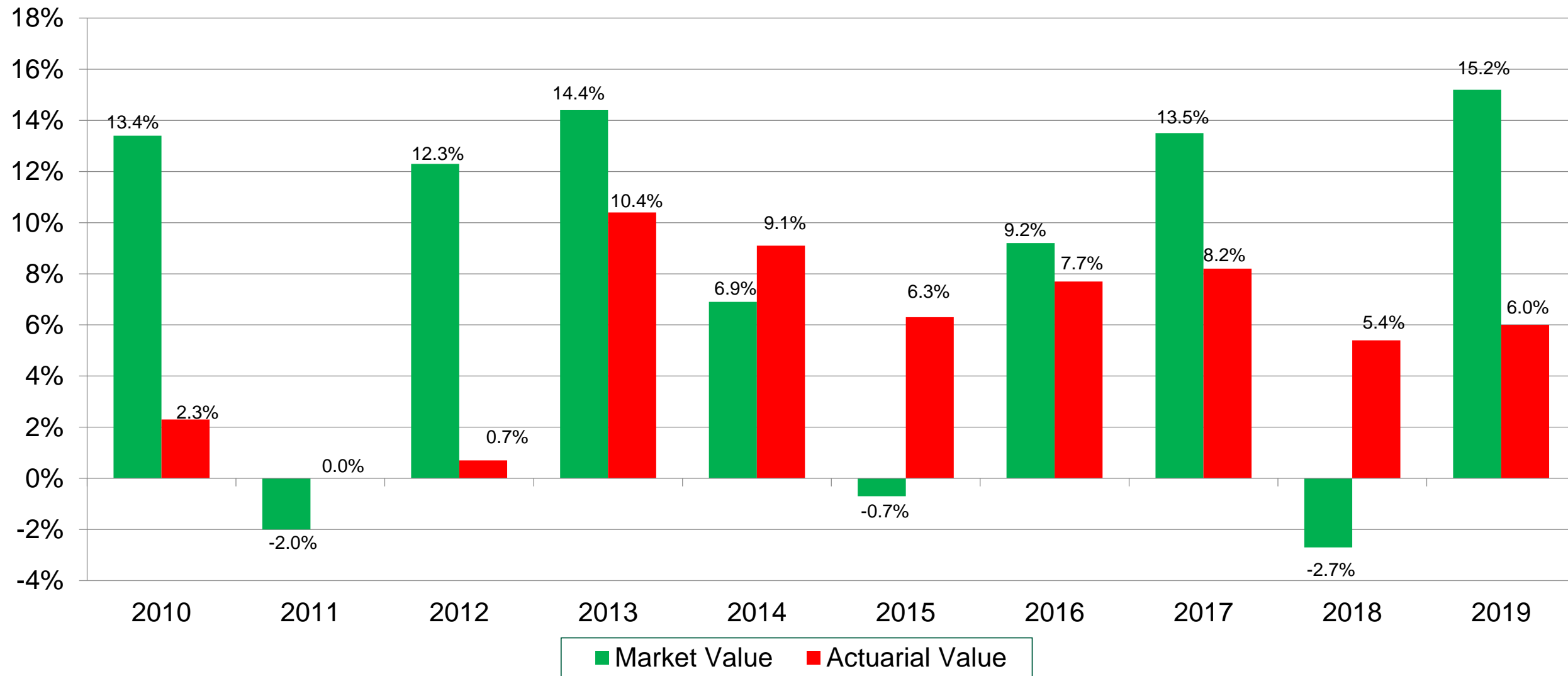
Development of Actuarial Value of Assets

1. Market Value of Assets at January 1, 2020	\$	401,936,533
2. Deferred Investment Gains/(Losses)		
• 2016	\$	759,257
• 2017	\$	7,510,820
• 2018	\$	(24,295,400)
• 2019	\$	21,927,429
• Total	\$	5,902,106
3. Preliminary Actuarial Value of Assets [1-2]	\$	396,034,427
4. Constraining Values		
• 80% of Market Value	\$	321,549,226
• 120% of Market Value	\$	482,323,840
5. Actuarial Value of Assets at January 1, 2020	\$	396,034,427
6. 2019 Rate of Return on Actuarial Value of Assets		6.0%

Historical and Projected Assets 1999 – 2024 (\$millions)



Historical Investment Returns



Ten-Year Geometric Mean: Market: 7.7%
 Actuarial: 5.6%

Actuarial Methods & Assumptions

Actuarial Cost Method

- Used to allocate pension costs from year to year
- Entry Age Normal Cost Method
 - Normal Cost: Cost of annual benefit accruals as a level % of salary
 - Actuarial Accrued Liability: Difference between total cost (PVFB) and future normal costs (PVFNC)
 - Unfunded Actuarial Accrued Liability (UAAL) = Actuarial Accrued liability less Actuarial Value of Assets
 - Amortized over 30-year/25-year closed periods on level % of salary basis*
 - Actuarially Determined Contribution = Normal Cost (incl admin expenses) + amortization of UAAL

* The amortization method was changed as part of the 2018 experience study. The UAAL as of 1/1/19 is amortized over a 30-year closed period; future annual changes in UAAL are separately amortized over 25-year closed periods.

Asset Valuation Method

- 5-year smoothing of Market Value to reduce volatility of contributions
- Each year, a gain/loss amount is determined equal to the difference between expected and actual Market Value
- Market gains/losses are recognized in the Actuarial Value over 5 years at a rate of 20% per year
- Actuarial Value is constrained to 80% - 120% of Market Value

Actuarial Assumptions

- Used to estimate amount and timing of future benefits (“pay me now or pay me later”)
- Each assumption should be best estimate of long-term expectations
- May reflect an element of conservatism (i.e., margin for adverse experience) given Retirement Board’s fiduciary responsibility
- Adjusted from time-to-time based on recent experience and long-term expectations
- The most recent experience study was completed for the 5-year period ending December 31, 2017, with new assumptions adopted effective for the 1/1/19 valuation

Summary of Actuarial Assumptions

Economic

- Investment Return 7.5%, net of investment expenses
- Inflation 2.5%
- Salary Scale Merit plus inflation
Graded based on service, ranges from 8.0% at 0 years of service to 3.0% at 25+ years of service

Demographic

- Mortality:
 - Healthy RP-2000, generational improvement MP-2017
 - Disabled RP-2000 Disabled, generational improvement MP-2017
- Retirement Rates Graded based on age, from 45 to 75
Rates higher when eligible for unreduced benefits
- Withdrawal Rates Graded based on service
- Disability Rates Graded based on age

Summary of Retirement Benefits

Summary of Retirement Benefits (no changes since last valuation)

- Amount
 - If hired before January 1, 2010
 - 2.22% per year of Credited Service before January 1, 2013
 - 2.00% per year of Credited Service after December 31, 2012
 - Total percentage from above multiplied by compensation averaged over highest 36 months out of last 120 months (maximum is 75% of average compensation)
 - If hired after December 31, 2009
 - 2.00% per year of Credited Service multiplied by compensation averaged over highest 36 months out of last 120 months (maximum is 75% of average compensation; 60% of average compensation if hired after December 31, 2012)
- Retirement Eligibility
 - Normal – Age 62 (5 years required if hired after December 31, 2009; 8 years required if hired after December 31, 2012). Benefit reduced by 0.25% per month before age 62).
 - Early – Age 60 (benefit reduced by 6%); Age 55 (benefit reduced by 21%)
 - Special Early – Age and Service totals 75 (benefit unreduced). 5 years required if hired after December 31, 2009; 8 years required if hired after December 31, 2012; 8 years and Age 50 if hired after December 31, 2015.
- Normal Form of Payment
 - Monthly pension for life with ten years guaranteed

Participant Data

Participant Data - Totals

	As of January 1	
	2019	2020
Participant Counts		
• Active/LOA	2,791	2,863
• Retired	1,616	1,694
• Beneficiaries	118	130
• Deferred Benefits/Refunds	<u>474</u>	<u>490</u>
• Total	4,999	5,177
Annual Salary		
• Before Retirement Age	\$158,714K	\$163,125K
• After Retirement Age/LOA	\$ <u>2,286K</u>	\$ <u>1,504K</u>
• Total	\$161,000K	\$164,629K

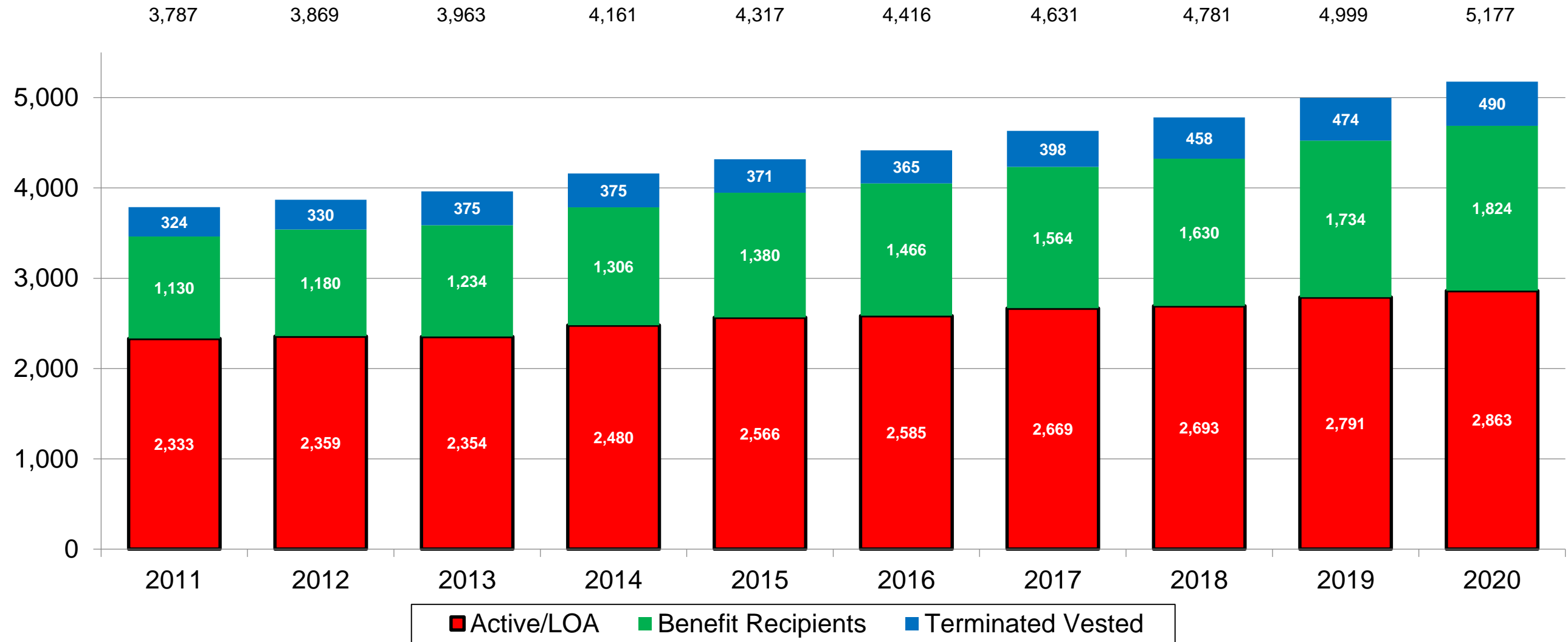
Participant Data - Averages

	As of January 1	
	2019	2020
Actives*		
• Age	43.7	43.1
• Service	7.3	7.1
• Entry Age	36.4	36.0
• Annual Salary	\$ 57,700	\$ 57,495
Retirees**		
• Age	69.4	69.7
• Annual Benefit	\$ 18,910	\$ 19,243
• Monthly Benefit	\$ 1,576	\$ 1,604

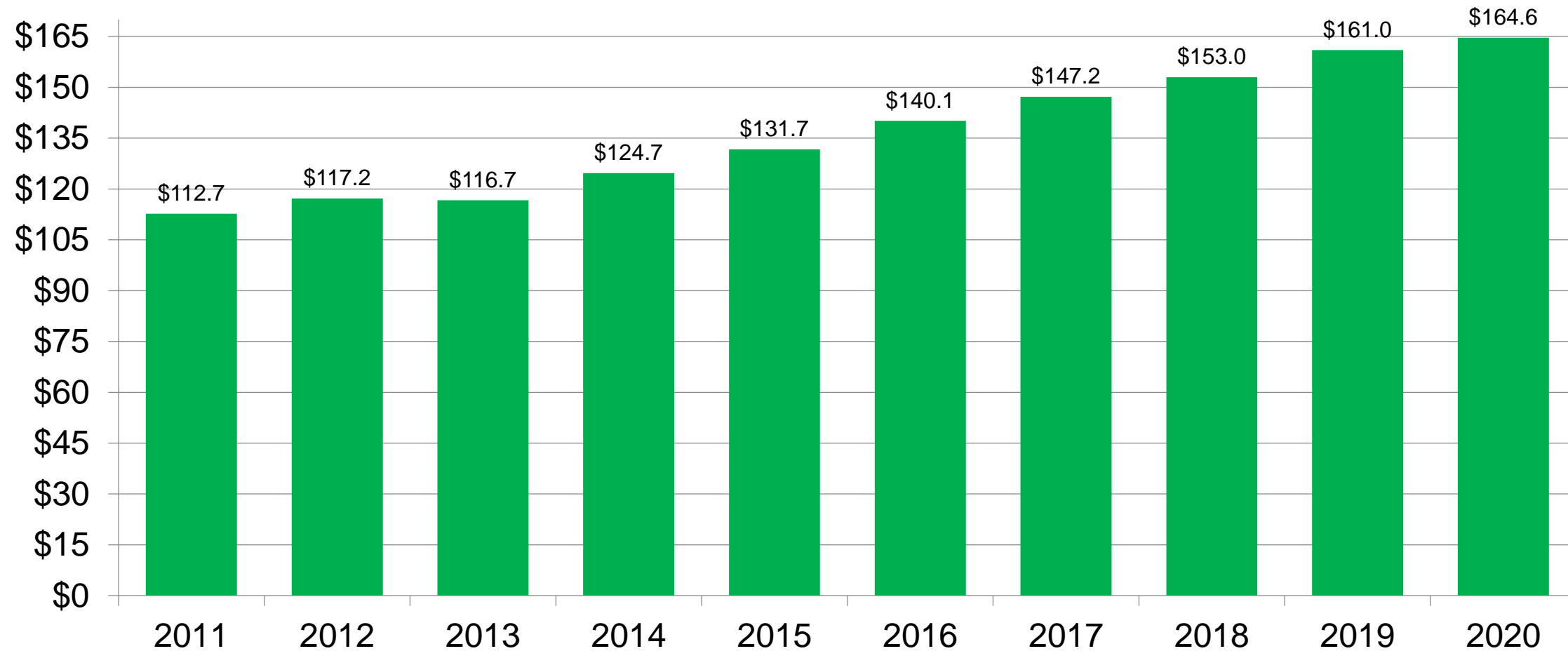
* Excludes LOA

** Includes disabled retirees and beneficiaries

Historical Participant Counts



Historical Salaries for Actives – Total (\$millions)

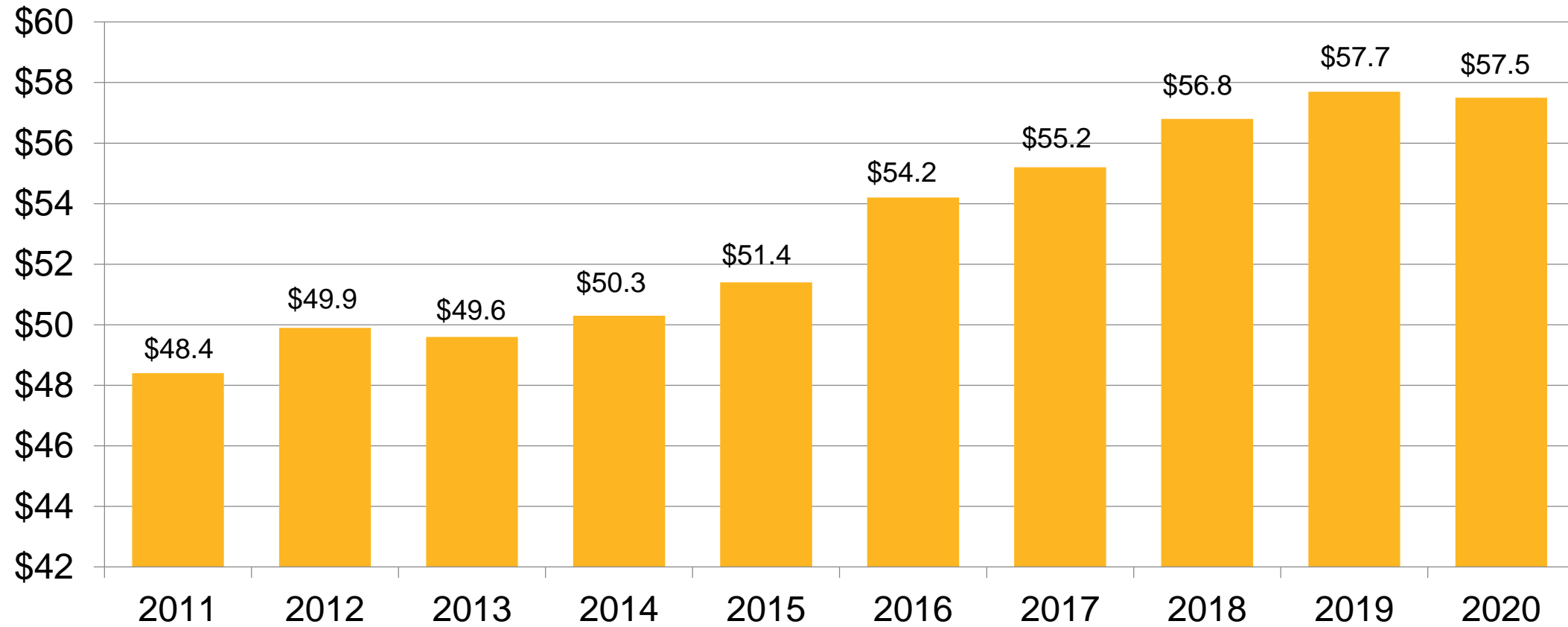


Annual Increase: 4.9% 4.0% (0.4%) 6.8% 5.7% 6.3% 5.1% 3.9% 5.2% 2.2%

10-Year Geometric Average: 4.4%

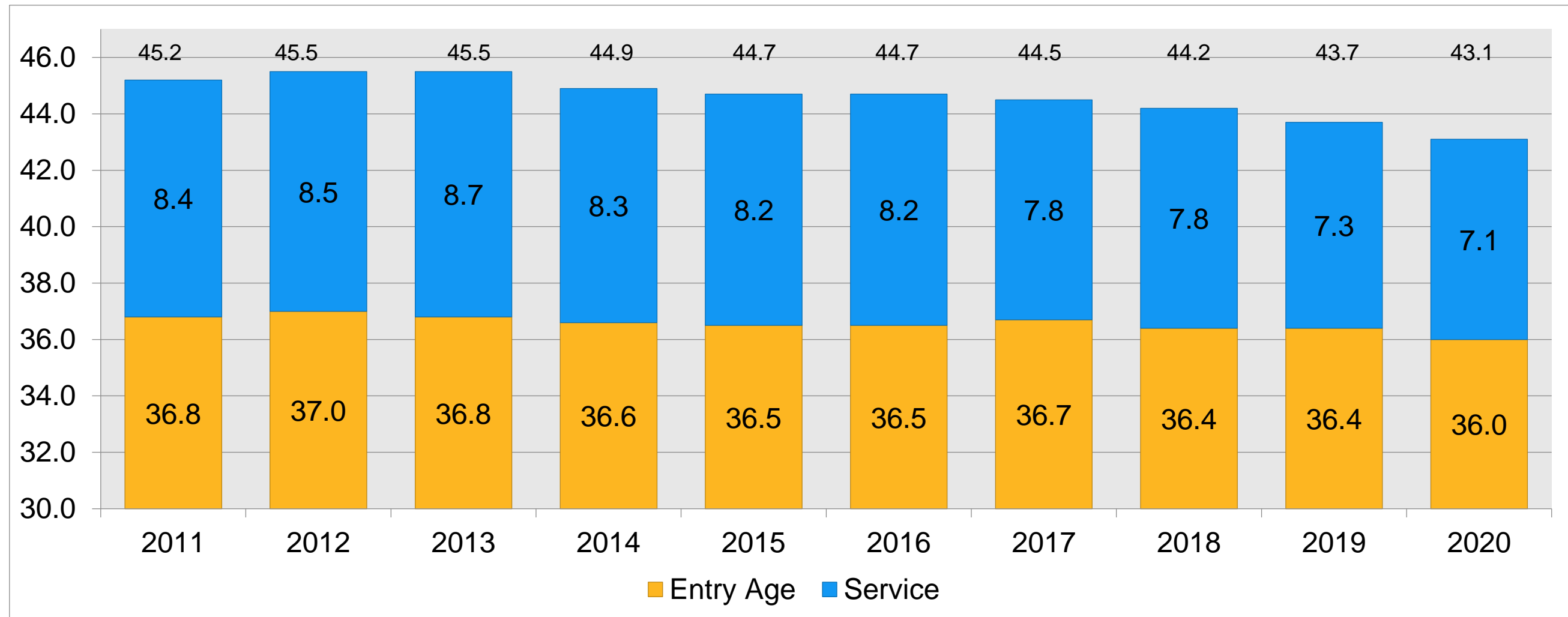
Historical Salaries for Actives – Average

(\$000's)

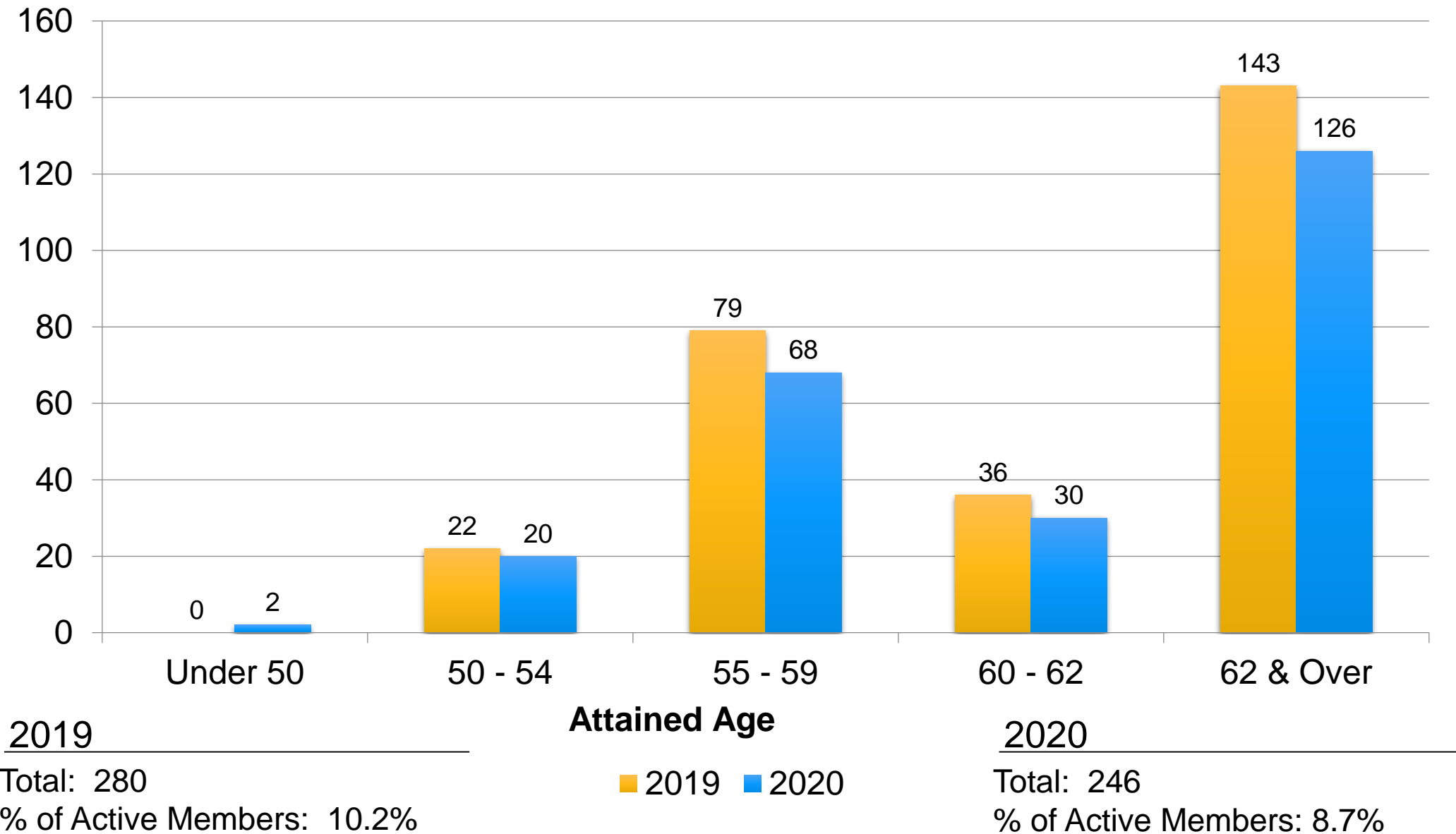


Average Increase: 1.6% 3.0% (0.5%) 1.4% 2.1% 5.5% 1.8% 2.9% 1.5% (0.3)%
10-Year Geometric Average: 1.9%

Historical Average Age/Service for Actives



Number of Actives Eligible for Unreduced Retirement Benefits & Rule of 75



ASOP 51

ASOP 51 Risk Discussion

- The Actuarial Standards Board issued a new Actuarial Standard of Practice – ASOP 51 effective for measurements on or after 11/1/18
- Deals with assessment of risks in connection with the funding of a pension plan
- The actuary is required to identify risks that, in his/her professional judgment, “may reasonably be anticipated to significantly affect the plan’s future financial condition”
 - not required to *quantify* the risks

ASOP 51 Risk Discussion (cont'd)

- In 2018, we completed a 5-year experience study for the plan. Based on that study, the Retirement Board elected to:
 - Lower the economic assumptions (investment return, inflation, salary increases)
 - Add a generational mortality improvement scale to the mortality assumption
 - Modify other demographic assumptions to better match recent experience
 - Change the unfunded liability amortization from 30-year open to 30-year closed for 1/1/19 unfunded liability and 25-year closed for future changes in unfunded liability
- The assumption change that had the largest impact on liabilities and contribution rates was the investment return (lowered from 8% to 7.5%)

ASOP 51 Risk Discussion (cont'd)

- Going forward, the risk factors that are expected to have the most significant impact on the plan's funded status and contribution rates are:
 - Invested assets not earning the assumed rate of 7.5% per year
 - Not contributing the actuarially determined contribution rate
 - Longevity of plan participants beyond life expectancies predicted by the current mortality assumption
- Currently, the employer and members each contribute 8% of pay annually, for a total annual contribution of 16% of pay
 - The Actuarially Determined Contribution rate for 2020 is 18.6% of pay (inclusive of the 8% member contributions)
 - **By not contributing the Actuarially Determined Contribution, the liabilities of the plan will grow faster than the assets, which will cause the unfunded liability to continue to increase over time**

GASB 67/68

Funding vs. GASB - Terminology

		Funding	GASB
1	Liabilities	Actuarial Accrued Liability	Total Pension Liability
2	Assets (Non-Smoothed)	Fair Value	Plan Fiduciary Net Position
3	Assets (Smoothed)	Actuarial Value	n/a
4	Unfunded Liabilities	Unfunded Actuarial Accrued Liability (1 - 3)	Net Pension Liability (1 - 2)
5	Current Year Accruals	Normal Cost	Service Cost

Funding vs. GASB

		Funding	GASB
1	Actuarial Cost Method	Entry Age Normal – Level % of Pay	Entry Age Normal – Level % of Pay
2	Liability Discount Rate	Expected Return on Assets	Expected Return on Assets*
3	Recognition of Asset Gains/Losses	25 years	5 years
4	Recognition of Liability Gains/Losses	25 years	Average future service**
5	Recognition of Effects of Assumption Changes	25 years	Average future service**
6	Recognition of Effects of Plan Changes	25 years	Immediate

* If projected to have an “asset crossover”, must use a *blend* of the Expected Return on Assets and a Municipal Bond Rate, which results in a lower discount rate (and higher liabilities).

** Currently 4.8 years.

GASB 67/68 – Plan/Employer Accounting

(\$000's)

	FYE 12/31/18	FYE 12/31/19
Discount Rate	5.23%*	5.37%**
Total Pension Liability	\$756,311	\$777,018
Plan Fiduciary Net Position	\$360,483	\$401,937
- as % of Total Pension Liability	47.7%	51.7%
Net Pension Liability	\$395,828	\$375,082
- 1% Decrease in Discount Rate	\$503,672	\$483,985
- 1% Increase in Discount Rate	\$307,425	\$285,737
Pension Expense	\$67,176	\$73,218

* Blend of 7.5% expected return and 3.64% 20-year Municipal Bond Rate. Asset “crossover” projected in 2045.

** Blend of 7.5% expected return and 3.26% 20-year Municipal Bond Rate. Asset “crossover” projected in 2050.

Disclosures

- The valuation results and projections in this presentation were developed for the El Paso County Retirement Board (Board) and staff by Buck Global, LLC (Buck) using generally accepted actuarial principles and techniques in accordance with all applicable Actuarial Standards of Practice (ASOPs). The purpose of this presentation is to provide the Board a summary of the preliminary January 1, 2020 valuation results for discussion during the Board meeting attended by the actuaries. This presentation, including the Appendix, should be considered part of the 2020 actuarial valuation services.
- The valuation and projections are based on member and financial data, actuarial assumptions and methods, and plan provisions as summarized in the 2020 actuarial valuation report (which will be provided in the next few weeks).
- Where presented, references to “funded ratio” and “unfunded accrued liability” are measured on an actuarial value of assets basis. It should be noted that the same measurements using market value of assets would result in different funded ratios and unfunded accrued liabilities. Moreover, the funded ratio presented is appropriate for evaluating the need and level of future contributions but makes no assessment regarding the funded status of the plan if the plan were to settle (i.e. purchase annuities) for a portion or all of its liabilities.
- No third party recipient of Buck’s work product should rely upon Buck’s work product absent involvement of Buck or without our approval.
- Future actuarial measurements may differ significantly from the current measurement presented in this report due to such factors as: plan experience different from that anticipated by the economic and demographic assumptions; increases or decreases expected as part of the natural operation of the methodology used for these measurements; and changes in plan provisions or applicable law. Due to the limited scope of this report, an analysis of the potential range of such future measurements has not been performed.
- David Kershner is a Fellow of the Society of Actuaries, an Enrolled Actuary, a Member of the American Academy of Actuaries, and a Fellow of the Conference of Consulting Actuaries. He meets the Qualification Standards of the American Academy of Actuaries to render the actuarial opinions contained in this report.

