



**SERS Retirement Board
Pension Sustainability Discussion
Agenda
April 16, 2021
8:30 AM**

Join Zoom Meeting

<https://ohsers.zoom.us/j/97360511767?pwd=Qlp0WEo0UjBIZGQvelVaQXRMZDgyQT09>

Meeting ID: 973 6051 1767 **Password:** 250659

To join by phone dial: (301) 715-8592 enter meeting ID: **973 6051 1767** and password: **250659**

1. Year of Service (120 – 180 Days)
2. Mitigation of Benefit Inflation
3. Benefit Factor Alternatives
4. Eligibility and Vesting
5. Risks to Sustainability
6. Adjournment (R)

END OF PRESENTATION



PENSION SUSTAINABILITY

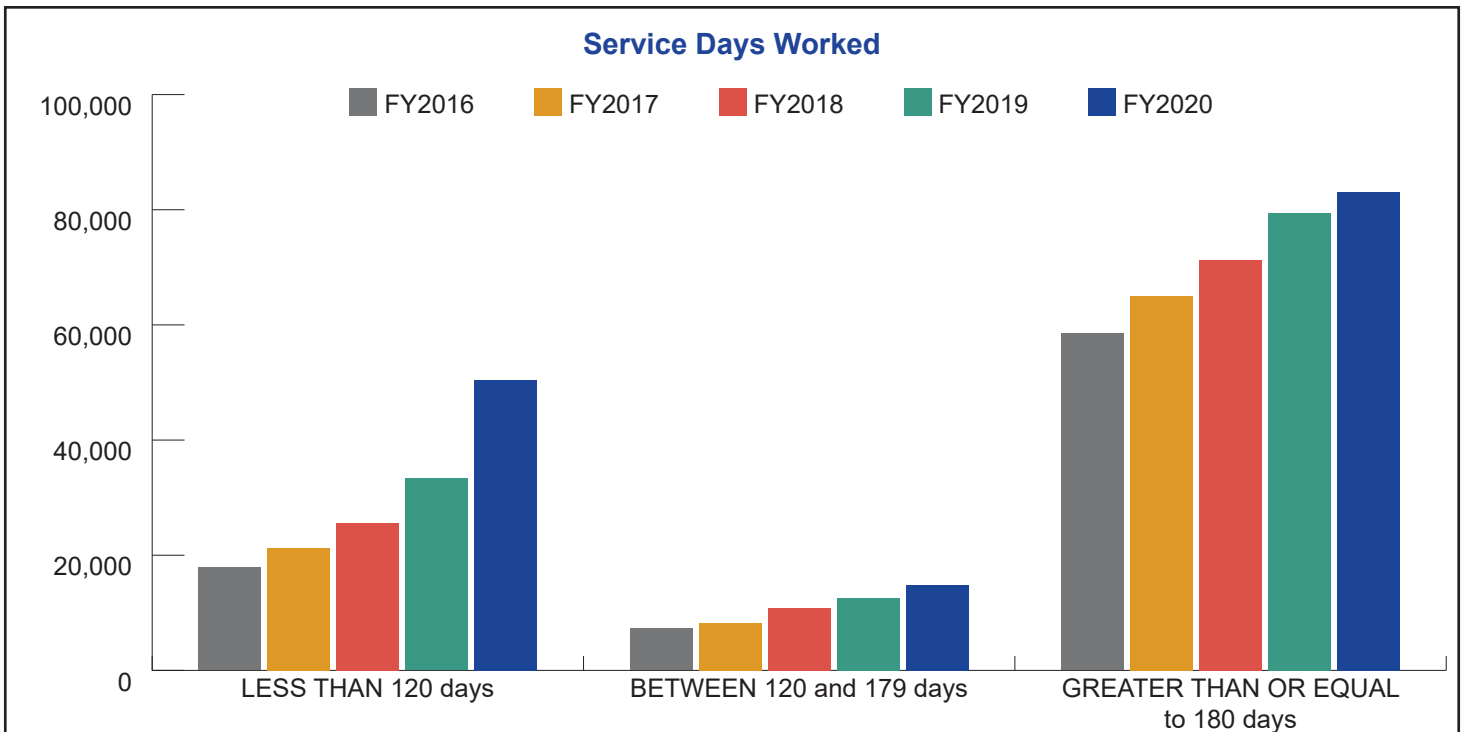
April 2021

What qualifies as a year of service?	2
What is the impact of changing to a 180-day service year?	2
Population of members who work 179 days or less.....	3
Population of members who work 120-179 days	3



WHAT QUALIFIES AS A YEAR OF SERVICE?

What is the impact of changing to a 180-day service year?



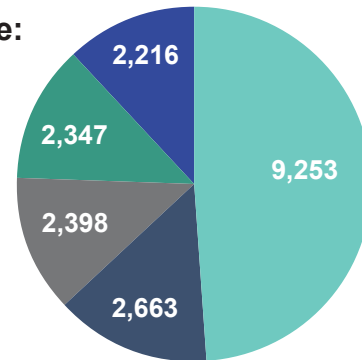
Service Days Worked							
Fiscal Year	LESS THAN 120 Days		Between 120 and 179 Days		GREATER THAN or EQUAL to 180 Days		Total*
	Count	Percentage	Count	Percentage	Count	Percentage	
2016	17,879	21%	7,265	9%	58,491	70%	83,635
2017	21,273	23%	8,257	9%	64,962	69%	94,492
2018	25,557	24%	10,797	10%	71,318	66%	107,672
2019	33,316	27%	12,522	10%	79,370	63%	125,208
2020	50,365	34%	14,884	10%	83,071	56%	148,320

*This is a snapshot of current active members in our database as of April 2021. If a member's status changed to retiree, benefit recipient, refund, inactive, deceased, etc., their days worked are not included in this chart.

Population of members who work 179 days or less

- The average number of years for members who have 179 or less days worked is 2.156.
- The five most common days worked FY2016-2020 are:

Days Worked	Members
60 days	9,253
178 days	2,663
90 days	2,398
30 days	2,347
40 days	2,216



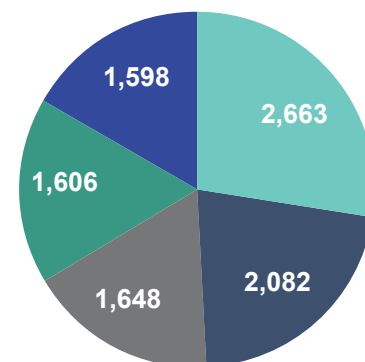
- Impact of changing to 180 days for the five most common days worked.

Days Worked	Service Credit Granted Based on 120 Day Year	Service Credit Granted Based on 180 Day Year
60 days	0.333	0.333
178 days	1.000	0.989
90 days	0.500	0.500
30 days	0.167	0.167
40 days	0.222	0.222

Population of members who work 120-179 days

- The average number of years for members who have 120-179 days worked is 1.539.
- The five most common days worked FY2016-2020 are:

Days Worked	Members
178 days	2,663
177 days	2,082
120 days	1,648
176 days	1,606
175 days	1,598



- Impact of changing to 180 days for the five most common days worked.

Days Worked	Service Credit Granted Based on 180 Day Year
178 days	0.989
177 days	0.983
120 days	0.667
176 days	0.978
175 days	0.972

- **Impact of changing to 180 days for members who work more than 120 days but less than 180 days.**

Days Worked	180 Day Year
120	0.667
121	0.672
122	0.678
123	0.683
124	0.689
125	0.694
126	0.700
127	0.706
128	0.711
129	0.717
130	0.722
131	0.728
132	0.733
133	0.739
134	0.744
135	0.750
136	0.756
137	0.761
138	0.767
139	0.772
140	0.778
141	0.783
142	0.789
143	0.794
144	0.800
145	0.806
146	0.811
147	0.817
148	0.822
149	0.828
150	0.833

Days Worked	180 Day Year
151	0.839
152	0.844
153	0.850
154	0.856
155	0.861
156	0.867
157	0.872
158	0.878
159	0.883
160	0.889
161	0.894
162	0.900
163	0.906
164	0.911
165	0.917
166	0.922
167	0.928
168	0.933
169	0.939
170	0.944
171	0.950
172	0.956
173	0.961
174	0.967
175	0.972
176	0.978
177	0.983
178	0.989
179	0.994
180	1.000

15 Year Employee Impact Examples

Example 1			
Member consistently working 120 days each fiscal year for the last 15 years			
	Under 120-day service year	Under 180-day service year	Impact
Works additional 5 years	20	18.335	Would need to work an additional 2.5 fiscal years to reach 20 years of service
Works additional 10	25	21.670	Would need to work an additional 5 fiscal years to reach 25 years of service
Works additional 15 years	30	25.005	Would need to work an additional 7.5 fiscal years to reach 30 years of service

Example 2			
Member consistently working 178 days each fiscal year for the last 15 years			
	Under 120-day service year	Under 180-day service year	Impact
Works additional 5 years	20	19.945	Would need to work an additional 10 days in the following fiscal year to reach 20 years of service
Works additional 10	25	24.890	Would need to work an additional 20 days in the following fiscal year to reach 25 years of service
Works additional 15 years	30	29.835	Would need to work an additional 30 days in the following fiscal year to reach 30 years of service

Example 3			
Member consistently working 150 days each fiscal year for the last 15 years			
	Under 120-day service year	Under 180-day service year	Impact
Works additional 5 years	20	19.165	Would need to work 1 additional fiscal year and 1 day to reach 20 years of service
Works additional 10	25	23.330	Would need to work 2 additional fiscal years and 1 day to reach 25 years of service
Works additional 15 years	30	2.505	Would need to work 3 additional fiscal years and 1 day to reach 30 years of service

Example 4			
Member consistently working 175 days each fiscal year for the last 15 years			
	Under 120-day service year	Under 180-day service year	Impact
Works additional 5 years	20	15.000	Would need to work an additional 26 days to reach 20 years of service
Works additional 10	25	24.720	Would need to work an additional 51 days to reach 25 years of service
Works additional 15 years	30	29.580	Would need to work an additional 76 days to reach 30 years of service

10 Year Employee Impact Examples

Example 5			
Member consistently working 120 days each fiscal year for the last 10 years			
	Under 120-day service year	Under 180-day service year	Impact
Works additional 10 years	20	16.670	Would need to work an additional 5 fiscal years to reach 20 years of service
Works additional 15 years	25	20.005	Would need to work an additional 7.5 fiscal years to reach 25 years of service
Works additional 20 years	30	23.340	Would need to work an additional 10 fiscal years to reach 30 years of service

Example 6			
Member consistently working 150 days each fiscal year for the last 10 years			
	Under 120-day service year	Under 180-day service year	Impact
Works additional 10 years	20	18.330	Would need to work 2 additional fiscal years and 1 day to reach 20 years of service
Works additional 15 years	25	22.495	Would need to work 3 additional fiscal years and 1 day to reach 25 years of service
Works additional 20 years	30	26.660	Would need to work 4 additional fiscal years and 2 days to reach 30 years of service

Example 7			
Member consistently working 178 days each fiscal year for the last 10 years			
	Under 120-day service year	Under 180-day service year	Impact
Works additional 10 years	20	19.890	Would need to work an additional 20 days to reach 20 years of service
Works additional 15 years	25	24.835	Would need to work an additional 30 days to reach 25 years of service
Works additional 20 years	30	29.780	Would need to work an additional 40 days to reach 30 years of service

Example 8			
Member consistently working 175 days each fiscal year for the last 10 years			
	Under 120-day service year	Under 180-day service year	Impact
Works additional 10 years	20	19.720	Would need to work an additional 51 days to reach 20 years of service
Works additional 15 years	25	24.580	Would need to work an additional 76 days to reach 25 years of service
Works additional 20 years	30	29.440	Would need to work an additional 101 days to reach 30 years of service

END OF PRESENTATION



ANTI-SPIKING DISCUSSION AND RECOMMENDATION

Pensions and Compensation – Compensation is used to calculate pensions

- Single life allowance formula: $(2.2\% \text{ of FAS}) \times \text{years of service credit}$
- Final Average Salary (FAS): The sum of the three highest years of compensation divided by three

Pensions and funding

- Contributions are a % of an employee's compensation (10% employee and 14% employer)
- Contributions plus earnings (and the time value of money) should fund an individual's pension and other benefits

Underfunded pensions due to spiking

- Spiking refers to an increase in pension benefits due to a substantial increase in the FAS beyond what is expected from normal salary increases.
- When a person's contributions do not support their benefit the pension system subsidizes the pension of this person

Common anti-spiking tools

- Increase number of years used to calculate Final Average Salary (FAS) - SERS does
- Limit types of remuneration included in pensionable compensation - SERS does
- Limit percent of "pensionable compensation" growth in final average salary years - SERS does not

SERS, STRS and OPERS - anti-spiking measures

- SERS
 - FAS calculated over 3 years
 - Definition of compensation
- STRS
 - FAS calculated over 5 years.
 - Definition of compensation
 - FAS calculation cap
 - If the percentage increase in the highest two years exceed the highest percentage increase during any of the three years immediately preceding the earlier of the two highest years of earnings the excess is not included when calculating FAS.
- OPERS
 - FAS calculated over 3 or 5 years
 - Definition of earnable salary
 - Contribution Based Benefit Cap (CBBC) (Adopted in 2013)

OPERS CBBC Contribution Based Benefit Cap

Staff recommends this approach because

- It is fair and aligns with the basic premise that a member's contributions plus earnings over time should fund the member's pension.
- General Assembly is familiar with the concept and therefore more likely to support it.

Contribution Based Benefit Cap (CBBC) - How it works

- High Level: The formula benefit ((2.2% of FAS) x years of service credit) of a member who applies for retirement that is out of proportion to the member's contributions is capped.
- Nuts and bolts:
 - **Terms**
 - **Formula benefit:** Member's retirement allowance calculated under SERS formula
 - (2.2% of FAS) x years of service credit
 - **Contribution-based annuity:** A single life annuity that is the actuarial equivalent of the employee's contributions plus interest.
 - Interest would be the current assumed rate of return
 - **CBBC factor:** This is a number that reflects how much greater a member's formula benefit can be from the member's contribution-based annuity.
 - OPERS describes it as a number that reflects the size of the gap between the formula benefit and the contribution-based annuity
 - **CBBC benefit:** An amount equal to the member's contribution-based annuity multiplied by the CBBC factor.
 - For example, if a member's annual contribution-based annuity is \$10,000, and the CBBC factor is 6, the member's CBBC benefit is \$60,000. (\$10,000 x 6)
 - **The Board determines the CBBC factor.**
 - For example, OPERS' CBBC factor is 6. OPERS' stated intention in setting the factor at 6 was to only capture the most egregious spikers.
 - If a member's annual contribution-based annuity is \$10,000, the member's CBBC is \$60,000. (\$10,000 x 6) The applicant's retirement allowance will be the lower of the amount of the formula benefit or the CBBC benefit.
 - **The system calculates the CBBC benefit.**
 - The system calculates the member's contribution-based annuity amount.
 - This is accomplished using an annuity factor obtained from the actuary that is based upon the member's age at retirement.
 - The system multiplies the member's contribution-based annuity by the CBBC factor, and the result is the member's CBBC benefit.
 - **If the member's formula benefit is greater than the member's CBBC benefit, the member's retirement allowance will be the amount of the member's CBBC benefit.**

Considerations:

Around the time of its passage, OPERS' data indicated that approximately 2% of its recent retirees would have had their retirement allowance capped at their CBBC amount. Based on a sampling of 1,992 recent SERS retirements, applying a CBBC factor of 6 would have impacted 18 members, a factor of 5 would have impacted 42 members (or 2.1% of the total sample)

As noted by OPERS, the CBBC factor can be seen as arbitrary. For this reason, if SERS were to obtain a Contribution Based Benefit Cap in statute, the CBBC factor would need to be carefully selected. Once selected it should be understood that no frequent or significant adjustments to the factor will be made. It should not be viewed as a means to significantly improve SERS' funding level. Instead it is a tool to ensure that a few members do not receive a larger pension than their work history warrants at the expense of the other members.

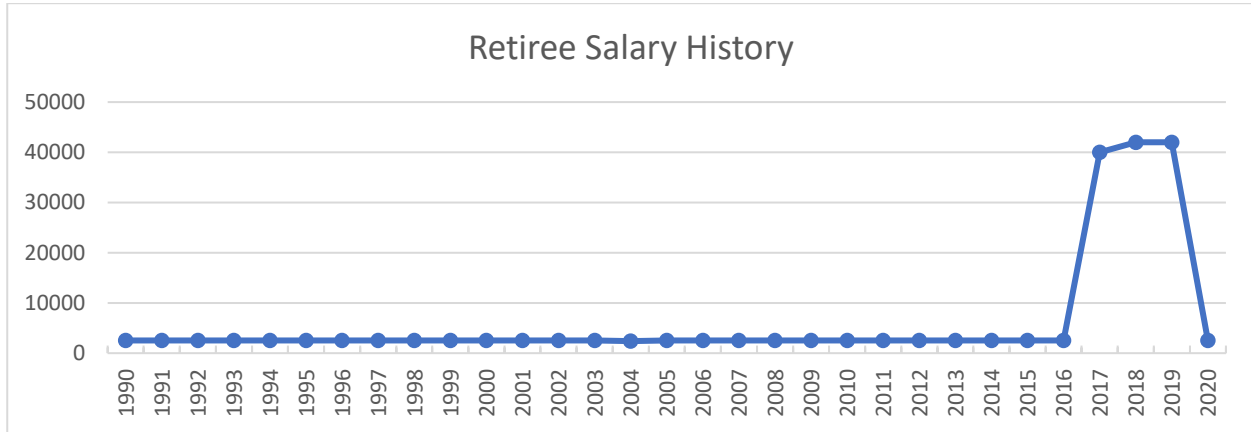
Certain fact patterns may result in unintended consequences, these could be addressed by administrative rule. (For example: a member whose account balance has been depleted/reduced due to receipt of disability benefit, a member who purchased service credit late in their career)

Obtaining a CBBC statute would allow the Board to decide to be more expansive in its definition of SERS compensation, such as accepting one time lump sum payments currently not accepted due to spiking concerns.

Unlike caps on FAS which require the system to address the contributions remitted on the capped amount, the CBBC method does not require any follow up.

Pension Spiking Examples

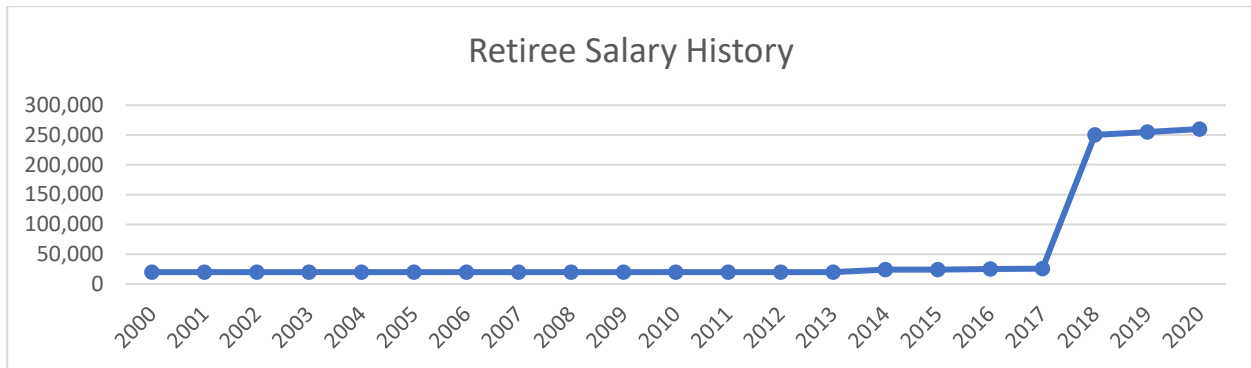
Example 1



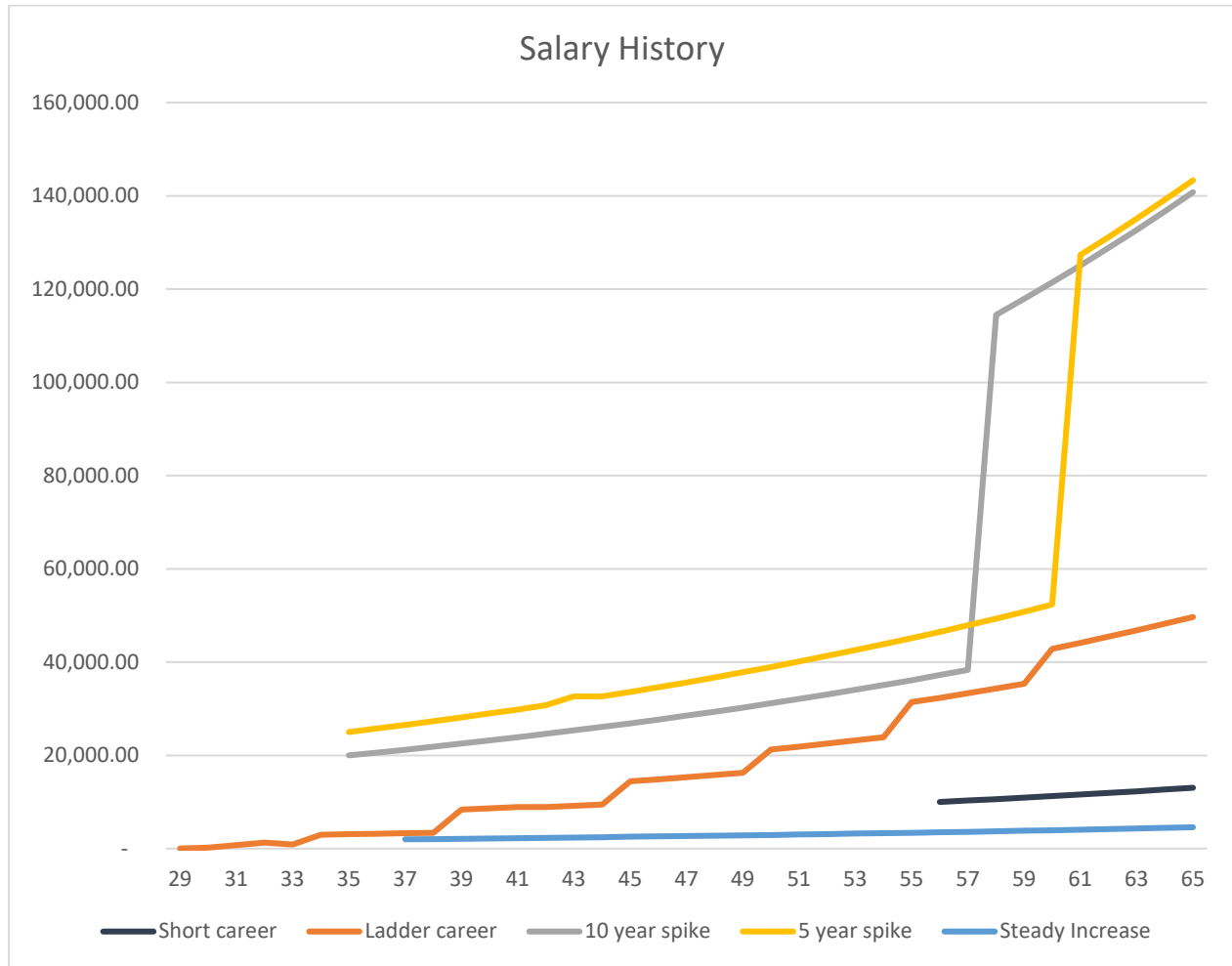
This retiree has a formula benefit of \$27,300. This exceeds accumulated contributions of \$19,400 in the first year.

Without the salary increase, the formula benefit would have been \$1,650.

Example 2



This retiree has a formula benefit of \$168,000 compared to total contributions of \$114,400. Without the salary increase, the formula benefit would have been \$16,500.

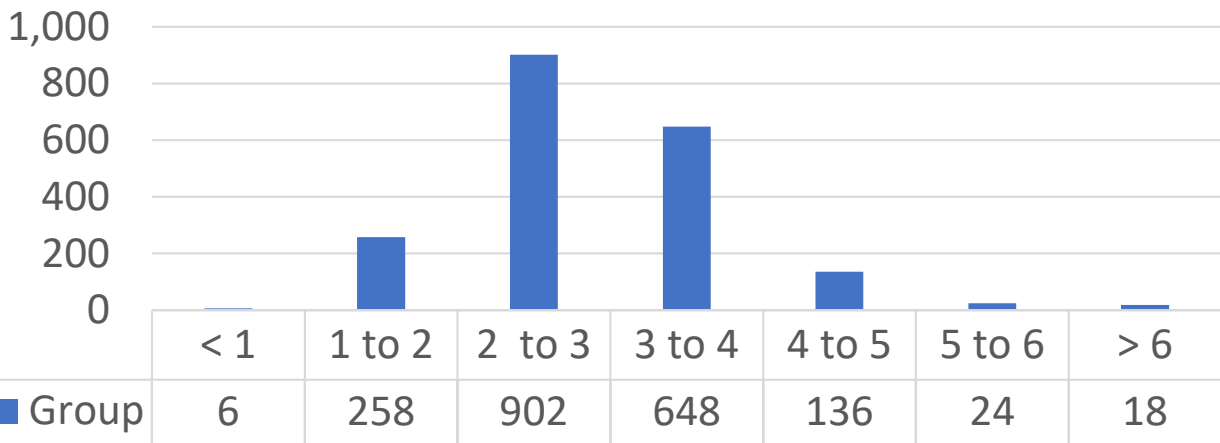


Pension Benefit

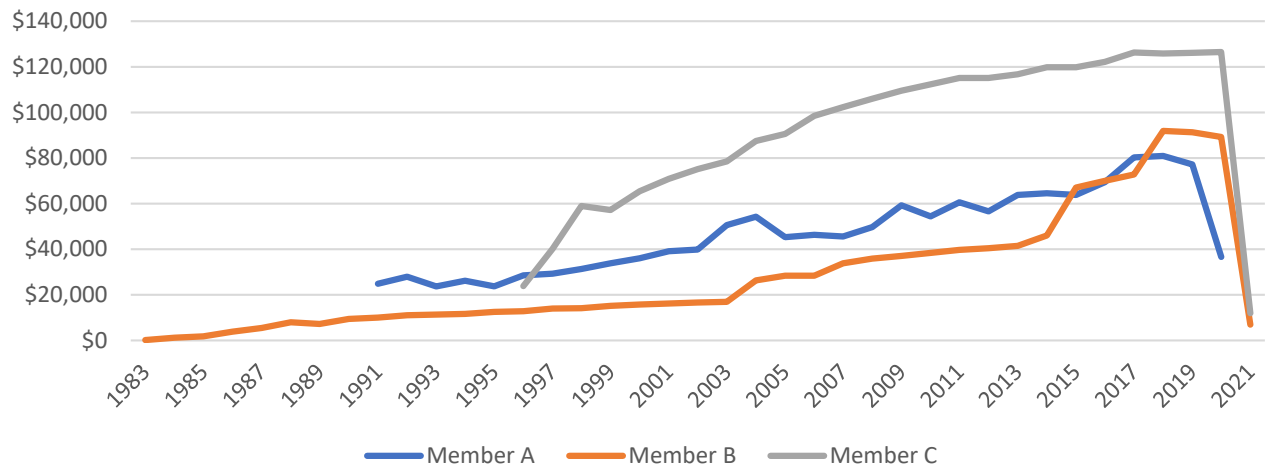
Member	Short Career	Ladder Career	10-Year Spike	5-Year Spike	Steady Career
Formula Benefit	\$9,000	\$33,000	\$90,200	\$92,000	\$2,200
CBBC Benefit	\$7,700	\$49,000	\$88,400	\$87,000	\$6,600
Accumulated Contributions	\$12,000	\$77,300	\$167,000	\$164,000	\$10,300

Benefit Cap Impact

(Retirees from January 1, 2020 through August 30, 2020)



Salary History



Pension Benefit

Member	Member A	Member B	Member C
Formula Benefit	\$54,400	\$65,700	\$70,000
CBBC Benefit	\$59,000	\$54,000	\$92,000
Accumulated Contributions	\$87,000	\$80,600	\$165,000

Applying Formula Benefit to the CBBC Benefit

- Formula Benefit ((FAS * 2.2%) * Years of Service)
- CBBC Benefit (Accumulated Contributions * Annuity Factor * CBBC Factor)
- Retirement allowance will be the lesser of the two amounts

END OF PRESENTATION



FORMULA FACTORS

Multiplier Examples

All examples provided are prospective and would not apply to existing benefit recipients.

REVISED BENEFIT FORMULAS

(Fixed Formula for Years of Service)

30 Years of Service						
	FAS \$	2.2%	2.1%	% Change	2.0%	% Change
Retiree A	30,000	19,800	18,900		18,000	
Retiree B	50,000	33,000	31,500			
Retiree C	75,000	49,500	47,250			
Retiree D	100,000	66,000	63,000			

2.2% Replacement Ratio	2.1% Replacement Ratio	2.0% Replacement Ratio

25 Years of Service						
	FAS \$	2.2%	2.1%	% Change	2.0%	% Change
Retiree A	30,000	16,500	15,750		15,000	
Retiree B	50,000	27,500	26,250			
Retiree C	75,000	41,250	39,375			
Retiree D	100,000	55,000	52,500			

2.2% Replacement Ratio	2.1% Replacement Ratio	2.0% Replacement Ratio

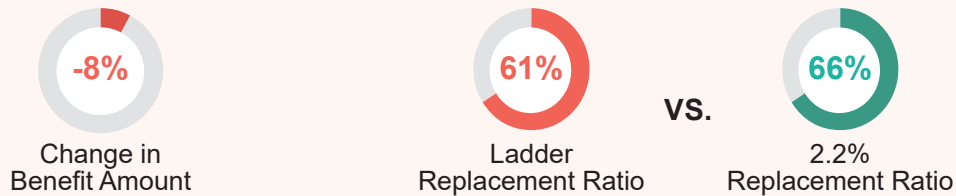
20 Years of Service						
	FAS \$	2.2%	2.1%	% Change	2.0%	% Change
Retiree A	30,000	13,200	12,600		12,000	
Retiree B	50,000	22,000	21,000			
Retiree C	75,000	33,000	31,500			
Retiree D	100,000	44,000	42,000			

2.2% Replacement Ratio	2.1% Replacement Ratio	2.0% Replacement Ratio

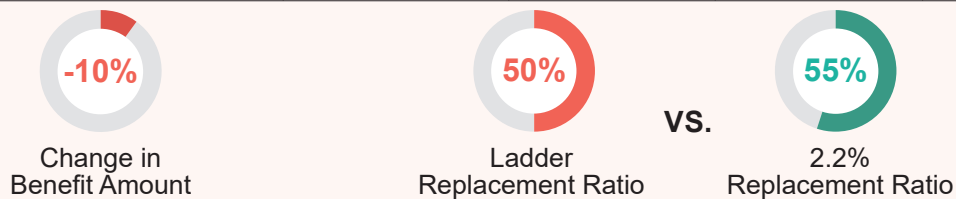
LADDERED CALCULATION FORMULA

(A different formula factor used for years of service grouped in tiers, with later years of service having a higher factor, and added together at retirement)

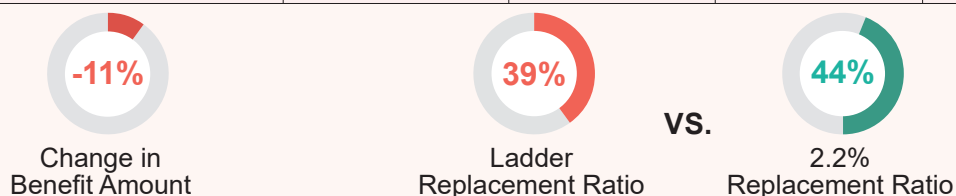
30 Years of Service					
FAS \$		30,000	50,000	75,000	100,000
Year 1 - 10	1.9%	5,700	9,500	14,250	19,000
Year 11 - 20	2.0%	6,000	10,000	15,000	20,000
Year 21 - 25	2.1%	3,150	5,250	7,875	10,500
Year 26 - 30	2.2%	3,300	5,500	8,250	11,000
Year 30+	2.3%	-	-	-	-
With Laddered No Bump Formula		18,150	30,250	45,375	60,500
With Current 2.2% Formula		19,800	33,000	49,500	66,000



25 Years of Service					
FAS \$		30,000	50,000	75,000	100,000
Year 1 - 10	1.9%	5,700	9,500	14,250	19,000
Year 11 - 20	2.0%	6,000	10,000	15,000	20,000
Year 21 - 25	2.1%	3,150	5,250	7,875	10,500
Year 26 - 30	2.2%	-	-	-	-
Year 30+	2.3%	-	-	-	-
With Laddered No Bump Formula		14,850	24,750	37,125	49,500
With Current 2.2% Formula		16,500	27,500	41,250	55,000



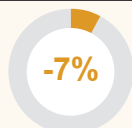
20 Years of Service					
FAS \$		30,000	50,000	75,000	100,000
Year 1 - 10	1.9%	5,700	9,500	14,250	19,000
Year 11 - 20	2.0%	6,000	10,000	15,000	20,000
Year 21 - 25	2.1%	-	-	-	-
Year 26 - 30	2.2%	-	-	-	-
Year 30+	2.3%	-	-	-	-
With Laddered No Bump Formula		11,700	19,500	29,250	39,000
With Current 2.2% Formula		13,200	22,000	33,000	44,000



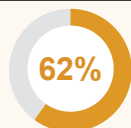
LADDERED CALCULATION FORMULA

(A different formula factor used for year of service grouped in tiers, with later years of service having a higher factor, but all previous YOS are calculated on highest tier reached)

30 Years of Service					
FAS \$		30,000	50,000	75,000	100,000
Year 1 - 10	1.9%	5,700	9,500	14,250	19,000
Year 11 - 15	2.0%	3,000	5,000	7,500	10,000
Year 16 - 20	2.1%	3,150	5,250	7,875	10,500
Year 21 - 30	2.2%	6,600	11,000	16,500	22,000
Year 31+	2.3%	-	-	-	-
With Laddered No Bump Formula		18,450	30,750	46,125	61,500
With Current 2.2% Formula		19,800	33,000	49,500	66,000

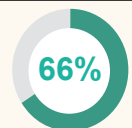


-7%
Change in
Benefit Amount



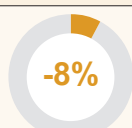
62%
Ladder
Replacement Ratio

VS.

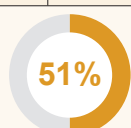


66%
2.2%
Replacement Ratio

25 Years of Service					
FAS \$		30,000	50,000	75,000	100,000
Year 1 - 10	1.9%	5,700	9,500	14,250	19,000
Year 11 - 15	2.0%	3,000	5,000	7,500	10,000
Year 16 - 20	2.1%	3,150	5,250	7,875	10,500
Year 21 - 30	2.2%	3,300	5,500	8,250	11,000
Year 31+	2.3%	-	-	-	-
With Laddered No Bump Formula		15,150	25,250	37,875	50,500
With Current 2.2% Formula		16,500	27,500	41,250	55,000

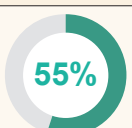


-8%
Change in
Benefit Amount



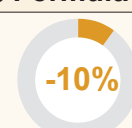
51%
Ladder
Replacement Ratio

VS.

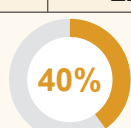


55%
2.2%
Replacement Ratio

20 Years of Service					
FAS \$		30,000	50,000	75,000	100,000
Year 1 - 10	1.9%	5,700	9,500	14,250	19,000
Year 11 - 15	2.0%	3,000	5,000	7,500	10,000
Year 16 - 20	2.1%	3,150	5,250	7,875	10,500
Year 21 - 30	2.2%	-	-	-	-
Year 31+	2.3%	-	-	-	-
With Laddered No Bump Formula		11,850	19,750	29,625	39,500
With Current 2.2% Formula		13,200	22,000	33,000	44,000

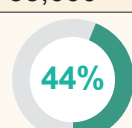


-10%
Change in
Benefit Amount



40%
Ladder
Replacement Ratio

VS.



44%
2.2%
Replacement Ratio

LADDERED CALCULATION FORMULA

With Service Years Bump (Option 1)

A different formula factor used for years of service grouped in tiers, with later years of service having a higher factor, but all previous years of service are calculated on highest tier reached.

25 Years of Service	No Bump	W/Bump
FAS \$	50,000	50,000
Year 1 - 10 1.9%	9,500	-
Year 11 - 20 2.0%	10,000	-
Year 21 - 25 2.1%	5,250	26,250
Year 26 - 30 2.2%	-	-
Year 30+ 2.3%	-	-
Laddered Formula	24,750	26,250
With Current 2.2% Formula	27,500	27,500



2.2%
Replacement Ratio

VS.

Change in
Benefit Amount



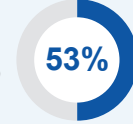
Ladder W/No Bump
Replacement Ratio



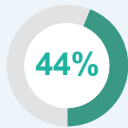
Change in
Benefit Amount



Ladder
Replacement Ratio



20 Years of Service	No Bump	W/Bump
FAS \$	50,000	50,000
Year 1 - 10 1.9%	9,500	-
Year 11 - 20 2.0%	10,000	20,000
Year 21 - 25 2.1%	-	-
Year 26 - 30 2.2%	-	-
Year 30+ 2.3%	-	-
Laddered Formula	19,500	20,000
With Current 2.2% Formula	22,000	22,000



2.2%
Replacement Ratio

VS.

Change in
Benefit Amount



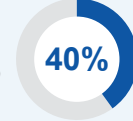
Ladder W/No Bump
Replacement Ratio



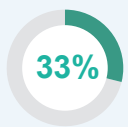
Change in
Benefit Amount



Ladder
Replacement Ratio



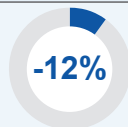
15 Years of Service	No Bump	W/Bump
FAS \$	50,000	50,000
Year 1 - 10 1.9%	9,500	-
Year 11 - 20 2.0%	5,000	15,000
Year 21 - 25 2.1%	-	-
Year 26 - 30 2.2%	-	-
Year 30+ 2.3%	-	-
Laddered Formula	14,500	15,000
With Current 2.2% Formula	16,500	16,500



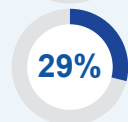
2.2%
Replacement Ratio

VS.

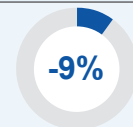
Change in
Benefit Amount



Ladder W/No Bump
Replacement Ratio



Change in
Benefit Amount



Ladder
Replacement Ratio

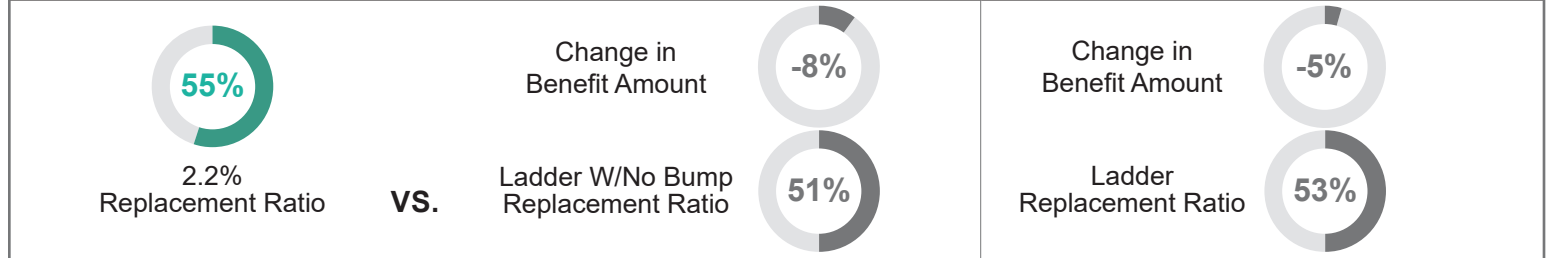


LADDERED CALCULATION FORMULA

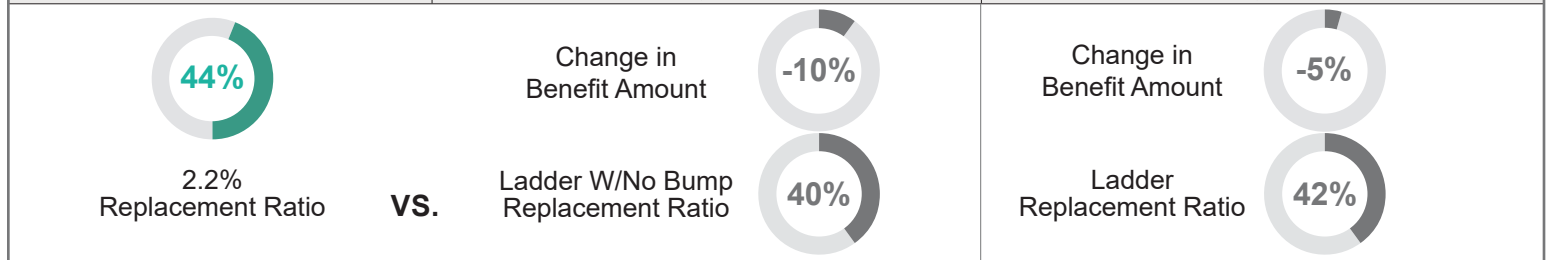
With Service Years Bump (Option 2)

A different formula factor used for years of service grouped in tiers, with later years of service having a higher factor, but all previous years of service are calculated on highest tier reached.

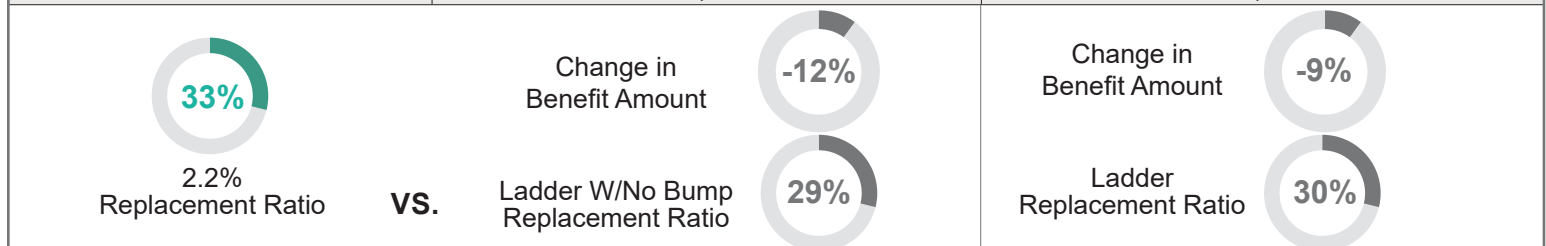
25 Years of Service	No Bump	W/Bump
FAS \$	50,000	50,000
Year 1 - 10 1.9%	9,500	-
Year 11 - 15 2.0%	5,000	-
Year 16 - 20 2.1%	5,250	-
Year 21 - 30 2.2%	5,500	26,250
Year 31+ 2.3%	-	-
Laddered Formula	25,250	26,250
With Current 2.2% Formula	27,500	27,500



20 Years of Service	No Bump	W/Bump
FAS \$	50,000	50,000
Year 1 - 10 1.9%	9,500	-
Year 11 - 15 2.0%	5,000	-
Year 16 - 20 2.1%	5,250	21,000
Year 21 - 30 2.2%	-	-
Year 31+ 2.3%	-	-
Laddered Formula	19,750	21,000
With Current 2.2% Formula	22,000	22,000



15 Years of Service	No Bump	W/Bump
FAS \$	50,000	50,000
Year 1 - 10 1.9%	9,500	-
Year 11 - 15 2.0%	5,000	15,000
Year 16 - 20 2.1%	-	-
Year 21 - 30 2.2%	-	-
Year 31+ 2.3%	-	-
Laddered Formula	14,500	15,000
With Current 2.2% Formula	16,500	16,500



END OF PRESENTATION



ELIGIBILITY TO DRAW A BENEFIT

SERS' staff and outside advisors do not recommend increasing the retirement age or number of service years required for a member to receive an unreduced pension benefit due to uncertainty in complying with IRS minimum vesting rules resulting from such increases.

SERS must have reasonable normal retirement ages (combination of age and service credit) and increases to existing age and service credit requirements could result in exceeding what is considered reasonable.

END OF PRESENTATION



RISKS TO SUSTAINABILITY

Impact of Investment Experience

Investment Risk

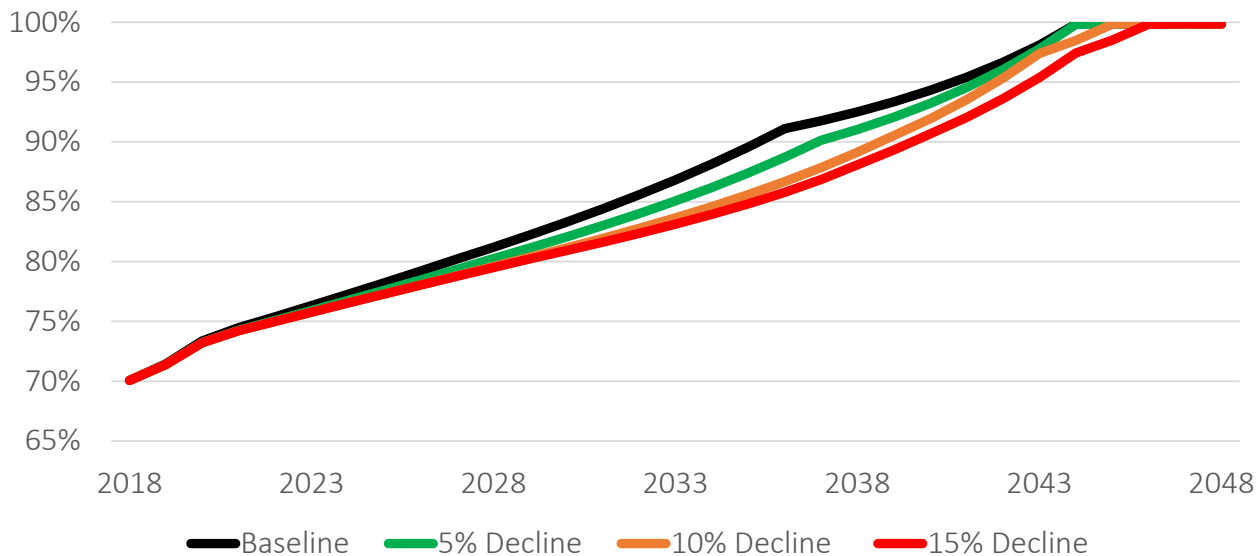
Ending	SERS Total Return	Assumed Rate of Return	Funded Status
FY1985	25.30%	7.50%	69%/36 Yrs.
FY1986	21.27%	7.50%	70%/48 Yrs.
FY1987	12.71%	7.50%	73%/34 Yrs.
FY1988	1.04%	7.50%	70%/40 Yrs.
FY1989	12.95%	7.50%	69%/40 Yrs.
FY1990	10.29%	7.75%	69%/40 Yrs.
FY1991	9.71%	7.75%	65%/40 Yrs.
FY1992	10.95%	7.75%	71%/40 Yrs.
FY1993	9.73%	7.75%	73%/40 Yrs.
FY1994	0.58%	7.75%	73%/40 Yrs.
FY1995	16.67%	7.75%	74%/35 Yrs.
FY1996	16.91%	8.25%	78%/34 Yrs.
FY1997	19.00%	8.25%	85%/24 Yrs.*
FY1998	18.58%	8.25%	91%/21 Yrs.
FY1999	12.12%	8.25%	97%/20 Yrs.
FY2000	12.50%	8.25%	102%/25 Yrs.
FY2001	-6.78%	8.25%	95%/25 Yrs.
FY2002	-7.78%	8.25%	89%/30 Yrs.
FY2003	1.81%	8.25%	82%/30 Yrs.
FY2004	16.54%	8.25%	77%/30 Yrs.
FY2005	10.50%	8.25%	74%/30 Yrs.
FY2006	13.19%	8.00%	76%/30 Yrs.
FY2007	19.26%	8.00%	80%/29 Yrs.
FY2008	-5.25%	8.00%	82%/28 Yrs.
FY2009	-21.81%	8.00%	68%/30 Yrs.
FY2010	12.30%	8.00%	71%/29 Yrs.
FY2011	20.89%	7.75%	65%/28 Yrs.
FY2012	0.88%	7.75%	63%/30 Yrs.
FY2013	13.72%	7.75%	65%/29 Yrs.
FY2014	18.04%	7.75%	68%/28 Yrs.
FY2015	4.50%	7.75%	69%/27 Yrs.
FY2016	2.03%	7.50%	67%/28 Yrs.
FY2017	13.93%	7.50%	70%/27 Yrs.
FY2018	9.86%	7.50%	70%/26 Yrs.
FY2019	7.30%	7.50%	71%/25 Yrs.
FY2020	3.58%	7.50%	71%/24 Yrs.

Impact of Reduction in Active Membership

Member Population Decline

A reduction in population will result in a reduction in covered payroll which will reduce the funding available to the System since employer contributions are limited to 14% of payroll which will ultimately increase the amount of time necessary to completely amortize the unfunded liability.

Projected Funded Ratio under
Various Population Decline Scenarios



Historical Active/Retired Population Changes

Year	Actives	Actives % Change	Retirees	Retirees % Change	Ratio (Active to Retiree)
1995	100,784	0.96%	49,017	-4.78	2.06:1
1996	101,777	0.99%	50,052	2.11%	2.03:1
1997	103,739	1.93%	51,072	2.04%	2:02:1
1998	106,878	3.03%	53,030	3.83%	2.01:1
1999	110,175	3.08%	52,818	-0.40%	2.09:1
2000	113,811	3.30%	57,824	9.48%	1.97:1
2001	115,684	1.65%	58,795	1.68%	1.97:1
2002	120,254	3.95%	59,349	0.94%	2.03:1
2003	122,315	1.71%	59,999	1.10%	2.04:1
2004	123,139	0.67%	60,569	0.95%	2.03:1
2005	122,855	-0.23%	61,443	1.44%	2.00:1
2006	123,266	0.33%	62,521	1.75%	1.97:1
2007	123,013	-0.21%	63,529	1.61%	1.94:1
2008	124,370	1.10%	64,818	2.03%	1.92:1
2009	125,465	0.88%	65,757	1.45%	1.91:1
2010	126,015	0.44%	66,127	0.56%	1.91:1
2011	125,337	-0.54%	67,221	1.65%	1.86:1
2012	121,811	-2.81%	69,038	2.70%	1.76:1

Historical Active/Retired Population Changes (continued)

Year	Actives	Actives % Change	Retirees	Retirees % Change	Ratio (Active to Retiree)
2013	121,642	-0.14%	70,771	2.51%	1.72:1
2014	121,251	-0.32%	72,605	2.59%	1.67:1
2015	122,855	1.32%	74,372	2.43%	1.65:1
2016	124,540	1.37%	76,280	2.57%	1.63:1
2017	157,981*	NA	79,157	3.77%	2.00:1
2018	158,343	0.23%	81,332	2.75%	1.95:1
2019	159,363	0.64%	81,024	-0.38%	1.97:1
2020	159,979	0.39%	80,851	-0.21%	1.98:1
TOTAL		24.6%/22 Yrs. 1.3%/4 Yrs.		64.9%/26 Yrs.	

*SERS changed the way active members were categorized, adding individuals who earned less than 0.25 of a year of service credit.

Cash Flow

See [Benefit Payment History Timeline](#)



BENEFIT PAYMENT HISTORY

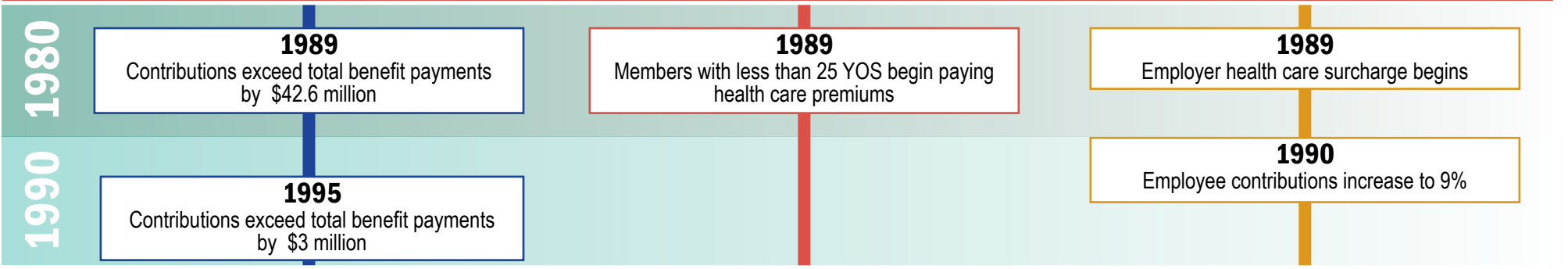
1996: SERS Becomes a Mature Pension System

Contributions/Benefit Payments*

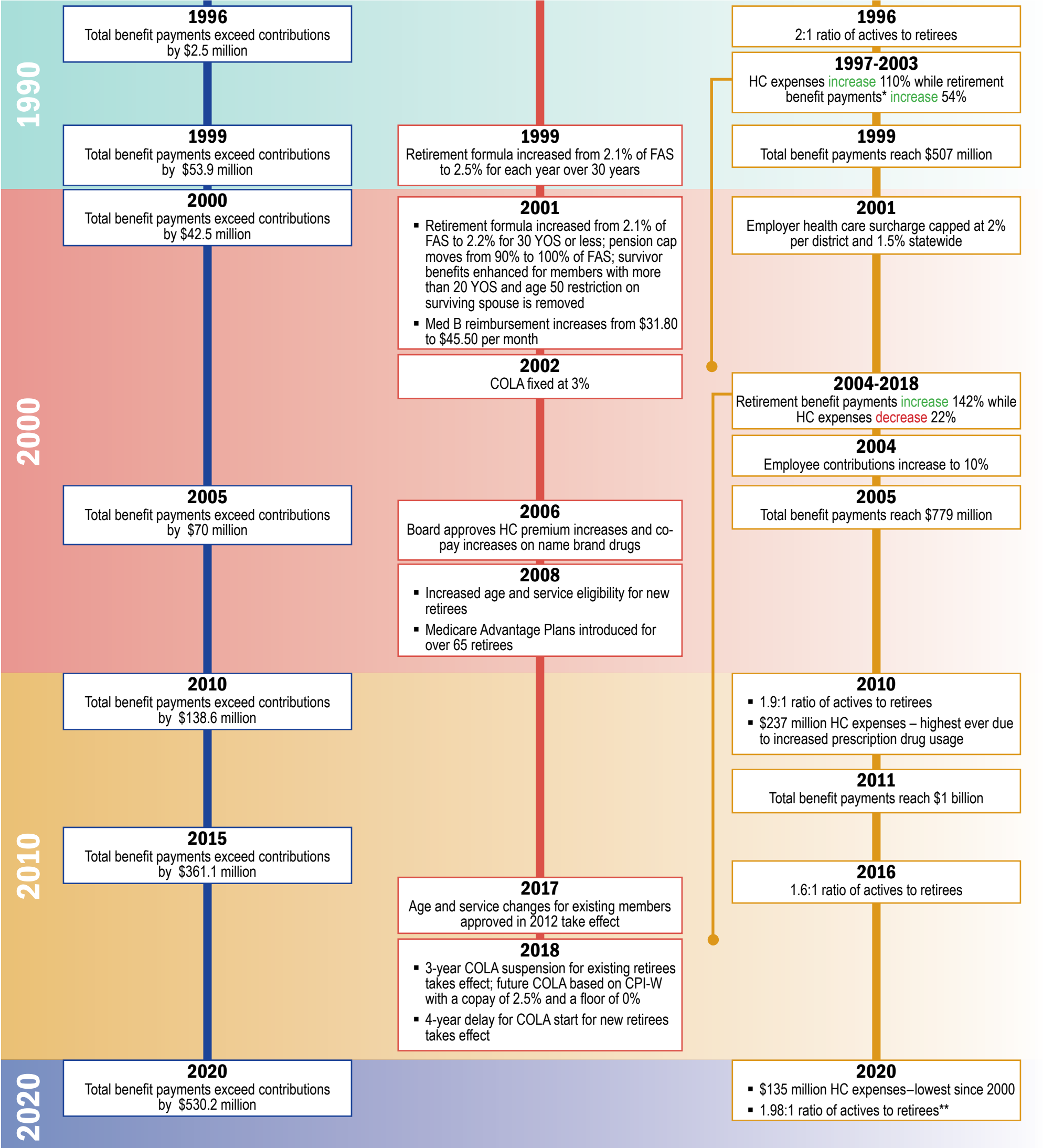
Benefit Changes

System Changes

Contributions Exceed Benefit Payments



Benefit Payments Exceed Contributions



* Retirement benefit payments include retirement, disability, survivor, and death payments.

** In 2017, SERS changed the way active members were categorized, adding individuals who earned less than 0.25 of a year of service credit.

END OF PRESENTATION