



**Benefits and Actuarial Committee (B&A) Meeting**

**GOTOWEBINAR**

**Wednesday, 10/14/2020**

**1:00 - 4:00 PM ET**

**I. Welcome and Introductions**

**II. Public Comment**

**III. Approve Minutes**

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**IV. Election of Committee Vice Chair**

**V. Cavanaugh Macdonald Consulting, LLC, 2020 Actuarial Valuation results for Five Statewide Retirement Plans, Group Life Insurance, State and Teacher Retiree Health Insurance Credit, and the Virginia Sickness & Disability Program (includes self-funded LTC)**

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**VI. Information Items**

• **Upcoming B&A Committee Meetings**

- November 16, 2020 at 1:00 p.m. (Local Valuations and Line of Duty Act)

**VII. Other Business**

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## Minutes

An electronic meeting of the Benefits and Actuarial Committee of the VRS Board of Trustees was held on June 10, 2020 in accordance with § 2.2-3708.2(A)(3) of the *Code of Virginia* and in accordance with guidance provided in § 4-0.01 of Chapters 1283 and 1289 of the 2020 Acts of Assembly, with the following members participating:

Wallace G. Harris, Ph.D., Chair  
Troilen G. Seward, Vice Chair  
O'Kelly E. McWilliams, III  
Board members present:  
Hon. J. Brandon Bell, II  
William A. Garrett  
William Leighty

Also present:

Trish Bishop, Jennifer Schreck, Rory Badura, Judy Bolt, Jeanne Chenault, Cassandra Coles, Michael Cooper, Sara Denson, Valerie Disanto, Barry Faison, Andrew Feagans, Krystal Groff, Robert Irving, Ryan LaRoche, Angela Payne, Cat Pelletier, Steve Peterson, Kathryn Quiriconi, Jillian Sherman, Virginia Sowers and Cindy Wilkinson of the VRS Staff; Adam Rosatelli, Senate Finance and Appropriations Committee; Kimberly Sarte, Joint Legislative Audit and Review Commission; and Bea Snidow, Virginia Education Association.

The meeting convened at 1:04 p.m.

### Opening Remarks

Mr. Harris called the meeting to order and welcomed everyone to the June 10, 2020 meeting of the Benefits and Actuarial Committee.

Mr. Harris noted that given the current circumstances related to COVID-19, the Committee is unable to meet in person and, therefore, is using electronic means to hold the meeting. The meeting is being held in accordance with § 2.2-3708(A)(3) of the *Code of Virginia* and Chapter 1283 of the 2020 Acts Assembly as it relates to conducting business during the pandemic.

Next, Mr. Harris took attendance with the following roll call:

Mr. McWilliams: Here  
Ms. Seward: Here  
Mr. Garrett: Here  
Mr. Leighty: Here  
Mr. Bell: Here  
Mr. Harris: Here

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### Public Comment

In accordance with Item 4-0.01(g) of Chapters 1283 and 1289 of the 2020 Acts of Assembly, the Committee opened the floor for public comment. Mr. Harris noted that no members of the public requested to comment at the electronic meeting.

### Approval of Minutes

Upon a motion by Ms. Seward, with a second by Mr. McWilliams, the Committee approved the minutes of its February 12, 2020 meeting upon the following roll call vote:

Mr. McWilliams: Aye  
Ms. Seward: Aye  
Mr. Garrett: Aye  
Mr. Leighty: Aye  
Mr. Bell: Aye  
Mr. Harris: Aye

### Health Insurance Credit for Local School Divisions

Mr. Badura presented the revisions to the June 30, 2019 valuation reports for the Health Insurance Credit (HIC) for political subdivisions as a result of changes made by House Bill 1513 (HB 1513). Mr. Badura explained that the current monthly HIC for local employees is \$1.50 per year of service and only retirees with at least fifteen (15) years of service in participating localities or school divisions that have elected the benefit are eligible.

Beginning July 1, 2021, HB 1513 requires school divisions providing retirement benefits to non-teacher employees to also provide a health insurance credit of \$1.50 per year of service to all employees who retire with at least 15 years of service. Eligible non-teacher employees who retired prior to July 1, 2021 may begin receiving the benefit in the August 1, 2021 benefit payment. HB 1513 also removes the \$45 per month cap for local school division plans and adds an option to provide an additional \$1 health insurance credit, for a total HIC of \$2.50 per year of service if elected.

The Department of Education is expected to provide some state general fund support for the new HIC benefit by including a portion of the expense in the Standards of Quality (SOQ) reimbursement for non-professional positions DOE estimates an additional state general fund cost of \$976,000 in FY 2021 and \$1,024,000 in FY 2022 to provide funding support for the \$1.50 per year of service HIC. Mr. Badura noted that the new benefit is payable beginning July 1, 2021; however, the legislation is effective July 1, 2020, so benefit funding begins then.

**RBA: Approve Revised Contribution Rates for the Health Insurance Credit for Political Subdivisions, Effective for FY 2021 and FY 2022, to Implement HB 1513 (Chapter 1091, 2020 Virginia Acts of Assembly).**

**Request for Board Action:** *After considering the recommendations of its Plan Actuary to implement the provisions of HB 1513 (Chapter 1091, 2020 Virginia Acts of Assembly), the Board accepts the revised June 30, 2019 valuation reports for the Health Insurance Credit (HIC) for political subdivisions, which set employer contribution rates for both FY 2021 and FY 2022, effective July 1, 2020.*

Upon a motion by Mr. Harris, with a second by Ms. Seward, the Committee recommended approval of the action to the full Board of Trustees upon the following roll call vote:

Mr. McWilliams: Aye  
Ms. Seward: Aye  
Mr. Garrett: Aye  
Mr. Leighty: Aye  
Mr. Bell: Aye  
Mr. Harris: Aye

### **SPORS and VaLORS Rates and LODA Premiums**

Mr. Badura presented the revised contribution rates for the State Police Officers' Retirement System (SPORS) and the Virginia Law Officers' Retirement System (VaLORS) and the revised LODA Fund premium.

HB 1495 and SB 54 permit retired sworn law enforcement officers to return to work as a school security officer after a break in service of at least 12 calendar months. Individuals who return to work under this provision would not be eligible for any cash match as detailed in Chapter 6.1 (§51.1-607 et seq., cash match plans) of Title 51.1, nor would any additional service be earned, and employers must pay contributions for these positions. As a result of this legislation, the SPORS contribution rate for employers was increased from 26.26% to 26.33%, and VaLORS employer contribution rates were increased from 21.88% to 21.90% in the 2020 Appropriation Act.

Legislation from the 2020 session also impacted the currently certified LODA premium for fiscal years 2021 and 2002. The Governor's introduced budget included increased LODA Fund premiums to cover natural or adopted children of LODA participants who were previously provided health insurance coverage, but later became ineligible under the new LODA Health Benefits Plans. In addition, the General Assembly increased the LODA premium to reflect the following:

- Chapters 1150 & 1152: Adding corrections officers and full-time sworn members of the DMV enforcement division to those entitled to a presumption of certain infectious diseases that are compensable occupational diseases.
- Chapters 498 and 499: Adding colon, brain and testes to the list of cancers presumed to be an occupational disease covered by the Virginia Workers' Compensation Act.
- Chapters 1206 & 1262: Adding post-traumatic stress disorder incurred by law enforcement officers or firefighters as an occupational disease covered by the Virginia Workers' Compensation Act.

As a result, the General Assembly provided funding for an adjusted LODA premium of \$717.31, an increase from the original June 30, 2019 valuation premium of \$695.18.

**RBA: Accept Revised Contribution Rates for SPORS and VaLORS and Revised LODA Premium as set out in the Appropriation Act, Effective July 1, 2020.**

***Request for Board Action:*** The Board accepts the revised contribution rates for the State Police Officers' Retirement System (SPORS) and the Virginia Law Officers' Retirement System (VaLORS) and the increased

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*premium for the Line of Duty Death and Health Benefits Trust Fund that are set out in the Appropriation Act for the 2020-2022 biennium.*

Upon a motion by Mr. Harris, with a second by Ms. Seward, the Committee recommended approval of the action to the full Board of Trustees upon the following roll call vote:

Mr. McWilliams: Aye  
Ms. Seward: Aye  
Mr. Garrett: Aye  
Mr. Leighty: Aye  
Mr. Bell: Aye  
Mr. Harris: Aye

### **Information Items**

#### Review Stress Test and Sensitivity Analysis Report

Mr. Badura presented the findings of the draft VRS Stress Test and Sensitivity Analysis report. He noted that the report is based on the June 30, 2019 actuarial valuation and focused on the current and future impacts of COVID-19 and other risks to long-term funding including investment volatility, contribution risk and longevity risk.

The report contains illustrative COVID-19 economic recovery scenarios, which were used to derive estimated results for the VRS plans to show the magnitude of potential impacts on plan funding. While the full extent is unknown at this time, COVID-19 is expected to have an impact on fund returns and possibly cause challenges related to plan funding for employers over the next several years. Due to the uncertainty surrounding the COVID-19 recovery and the corresponding impacts on the economy at large, analysis of future impacts on the VRS fund will continue as new information becomes available.

Mr. Harris thanked Mr. Badura for his presentation.

#### Upcoming B&A Committee Meetings

Mr. Harris noted the B&A Committee meeting schedule for 2020:

- October 14, 2020 at 1:00 p.m.
- November 16, 2020 at 1:00 p.m.

Lastly, Mr. Harris advised that the Committee plans to schedule a brown bag session to review the Funding Policy and an Actuarial 101 overview.

### **Adjournment**

Upon a motion by Mr. Leighty, with a second by Mr. McWilliams, the Committee agreed to adjourn the meeting upon the following roll call vote:

Mr. McWilliams: Aye  
Ms. Seward: Aye  
Mr. Garrett: Aye

Mr. Leighty: Aye  
Mr. Bell: Aye  
Mr. Harris: Aye

There being no further business, the meeting concluded at 1:40 p.m.

\_\_\_\_\_ Date

\_\_\_\_\_ Wallace G. Harris, Chair  
Benefits and Actuarial Committee



**Accept the Plan Actuary's Valuations as of June 30, 2020 for the Five Statewide Retirement Plans, Group Life Insurance, Health Insurance Credit Plans for State and Teachers, and VSDP**

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**Requested Action**

The Virginia Retirement System Board of Trustees accepts the June 30, 2020 Actuarial Valuations conducted by the VRS plan actuary, Cavanaugh Macdonald Consulting, LLC, for the Five Statewide Retirement Plans, Group Life Insurance, Health Insurance Credit plans for both State and Teachers, and the Virginia Sickness and Disability Program.

**Description/Background**

The VRS plan actuary conducts actuarial valuations annually as of the close of the fiscal year (June 30). The results of the valuations are used to establish employer contribution rates in odd-numbered years. The results in even-numbered years are shared with the Board of Trustees to inform the Board of any emerging trends or indications of the magnitude and direction of contribution rates.

**Authority for Requested Action**

*Code of Virginia* § 51.1-124.22(A)(3) authorizes the Board to employ an actuary as its technical advisor for the administration of the Retirement System.

The above action is approved.

\_\_\_\_\_  
O'Kelly E. McWilliams, III, Chairman  
VRS Board of Trustees

\_\_\_\_\_  
Date



**Cavanaugh Macdonald**  
CONSULTING, LLC

*The experience and dedication you deserve*



Virginia  
Retirement  
System

# Virginia Retirement System June 30, 2020 Actuarial Valuations

October 14, 2020

Larry Langer, ASA, FCA, MAAA, EA  
Principal and Consulting Actuary

Alisa Bennett, FSA, FCA, MAAA, EA  
President





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- Executive Summary
- Funded Status
- Pension Results
- Health Insurance Credit (HIC) Program Results
- Virginia Sickness and Disability Program (VSDP) Results
  - Long-Term Disability
  - Long-Term Care
- Group Life Insurance Results

**Basic funding equation for benefits:**

$$\mathbf{C + I = B + E}$$

**Contributions + Investment returns = Benefits + Expenses**

- Over the long term, actual investment returns, benefits and expenses determine the amount of contributions
- Over the short term, estimated investment returns, benefits and expenses developed in an actuarial valuation will determine the amount of contribution

# The Actuarial Valuation Process

- To the right are the inputs and results of the valuation process.
- The valuation process can be viewed as a budgeting process. Like a budget, we make use of information we know as of a certain date, and using assumptions, we estimate what we think will happen in the future.
- Member data, asset data and benefit provisions are provided by Staff. Thank you!!
- Assumptions and funding methodology are determined by the Board of Trustees, Code of Virginia and GASB, with input from the actuary and other professionals.

## Inputs

Member Data  
Asset Data  
Benefit Provisions  
Assumptions  
Funding Methodology



## Results

Actuarial Value of Assets  
Actuarial Accrued Liability  
Net Actuarial Gain or Loss  
Funded Ratio  
Employer Contribution Rates  
Projections

- The June 30, 2020 valuations are used for informational purposes
  - Odd year valuations are for rate setting; even year valuations are for informational purposes.
- Actual returns were less than the 6.75% assumed return:
  - The market value return for the total fund of 1.40% fell short of the long-term assumed rate of return of 6.75%.
  - The corresponding actuarial value asset return for statewide plans ranged from 5.80% to 5.83% due to smoothing of investment gains/losses observed over the previous five years.

- Funded status on actuarial value basis improved for all pension plans but was lower for all pension plans on market value basis
- Total pension employer contribution rates increased for all plans, but the Defined Benefit employer contribution rates decreased for State, Teachers, and JRS
- Although this is not a rate-setting year, pension employer contribution rates trended higher
  - Lower than expected investment returns and higher Hybrid Plan contributions increased pension contribution rates
  - Lower pay increases and inflation partially offset the increases

- Funded status on both bases improved for all OPEB plans
- Investment losses have a smaller effect on OPEB plans than the Pension Plans because the funded status is lower
- Actual employer contributions exceeded expected employer contributions, leading to asset gains despite lower than expected investment returns
- OPEB employer contribution rates increased for Group Life but decreased for HIC State, HIC Teachers, and VSDP

# Funded Status



System	Actuarial Value of Assets	
	2019	2020
State	74.5%	75.1%
Teachers	73.5%	73.9%
SPORS	72.7%	73.0%
VaLORS	67.2%	68.5%
JRS	82.6%	83.5%
HIC State	10.7%	12.7%
HIC Teachers	9.1%	10.5%
VSDP	195.2%	203.0%
Group Life	51.0%	53.2%

System	Market Value of Assets	
	2019	2020
State	75.2%	72.9%
Teachers	74.1%	71.7%
SPORS	73.3%	70.9%
VaLORS	67.7%	66.4%
JRS	83.2%	81.1%
HIC State	10.6%	12.2%
HIC Teachers	9.1%	10.1%
VSDP	196.5%	197.0%
Group Life	51.6%	51.8%

VSDP funded status for combined LTD and LTC portions.

HIC State includes State, JRS, SPORS, VaLORS, ORP and UVA employees.

- The funding policy is designed to increase the funded ratio if assumptions are met
- Funded status on an actuarial basis improved because returns are phased in over five years.
- Market value returns are immediately reflected resulting in a lower funded status for pensions
- For OPEB, the funding policy is expected to result in larger increases

# Pension Results



# Unfunded Pension Liabilities (\$ in thousands)



System	Unfunded Liability Using Actuarial Value of Assets	
	2019	2020
State	\$ 6,466,084	\$ 6,417,661
Teachers	\$ 13,070,163	\$ 13,278,662
SPORS	\$ 322,488	\$ 325,590
VaLORS	\$ 726,243	\$ 712,025
JRS	\$ 116,605	\$ 111,633
Total Statewide Systems	\$ 20,701,583	\$ 20,845,571
Locals Aggregate	\$ 3,357,268	Available at November 2020 Board Meeting
Total Fund	\$ 24,058,851	

System	Unfunded Liability Using Market Value of Assets	
	2019	2020
State	\$ 6,308,078	\$ 6,981,267
Teachers	\$ 12,781,190	\$ 14,385,554
SPORS	\$ 315,847	\$ 351,662
VaLORS	\$ 715,248	\$ 758,084
JRS	\$ 112,200	\$ 128,417
Total Statewide Systems	\$ 20,232,563	\$ 22,604,984
Locals Aggregate	\$ 3,176,545	Available at November 2020 Board Meeting
Total Fund	\$ 23,409,108	

The Locals Aggregate unfunded liabilities do not include political subdivisions with no active members.

# Summary Employer Retirement Plans Contribution Rates (% of Total Covered Payroll)



System	Fiscal Years 2019/2020	Fiscal Years 2021/2022	Informational Only		
	Board & General Assembly Approved	Board & General Assembly Approved	Actuarially Determined Rate for the Defined Benefit Plan	Employer Rate for Hybrid DC Component	Total Employer Rate for Retirement Plans
	2017 Valuation	2019 Valuation	2020 Valuation		
State	13.52%	14.46%	13.58%	0.99%	14.57%
Teachers	15.68%	16.62%	15.90%	0.75%	16.65%
SPORS	24.88%	26.26%	26.72%	N/A	26.72%
VaLORS	21.61%	21.88%	22.13%	N/A	22.13%
JRS	34.39%	29.84%	27.47%	1.77%	29.24%

Contribution rates for retirement systems are net of 5% and 4% member contribution rates for Plan 1 and 2 and Hybrid Plan, respectively.

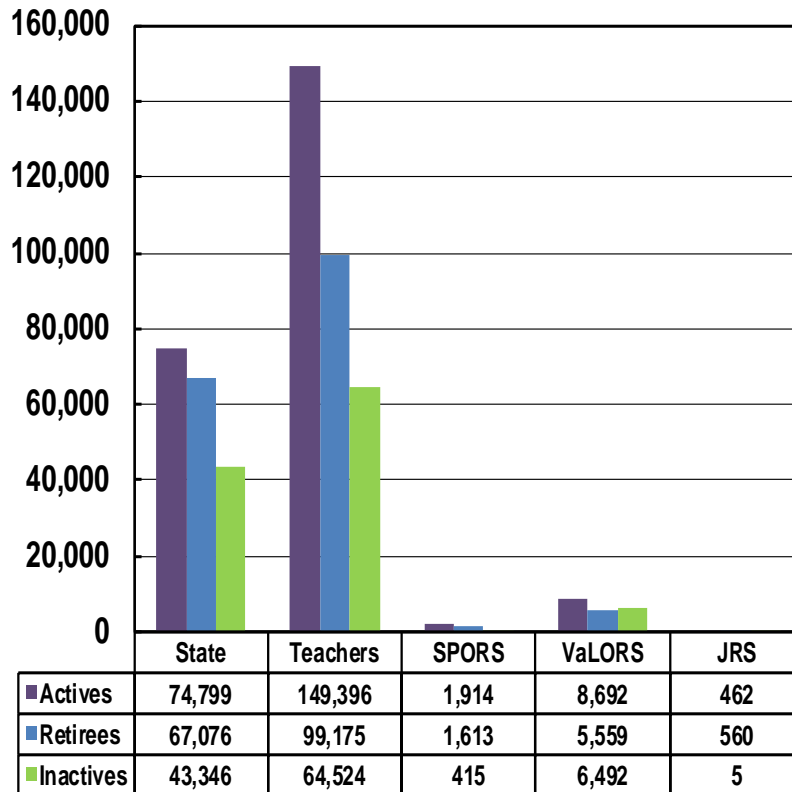
Employer rate for Hybrid defined contribution (DC) component for the 2020 valuation assumes employer match to DC portion of the Hybrid Plan of 2.28%, 2.14%, and 2.98% of payroll for members in the State, Teacher, and JRS Hybrid Plans, respectively. For the 2019 valuation, the same respective values are 2.00%, 1.78% and 2.47% and for the 2017 valuation, the respective values are 1.83%, 1.76%, and 2.98%.

For State, Teachers, and JRS pension plans, total employer rates for the 2019 valuation include employer rates for the Hybrid DC component of 0.79%, 0.56%, and 1.35% of payroll, respectively, and the total employer rates for the 2017 valuation include employer rates for the Hybrid DC component of 0.58%, 0.44%, and 1.18% of payroll, respectively.

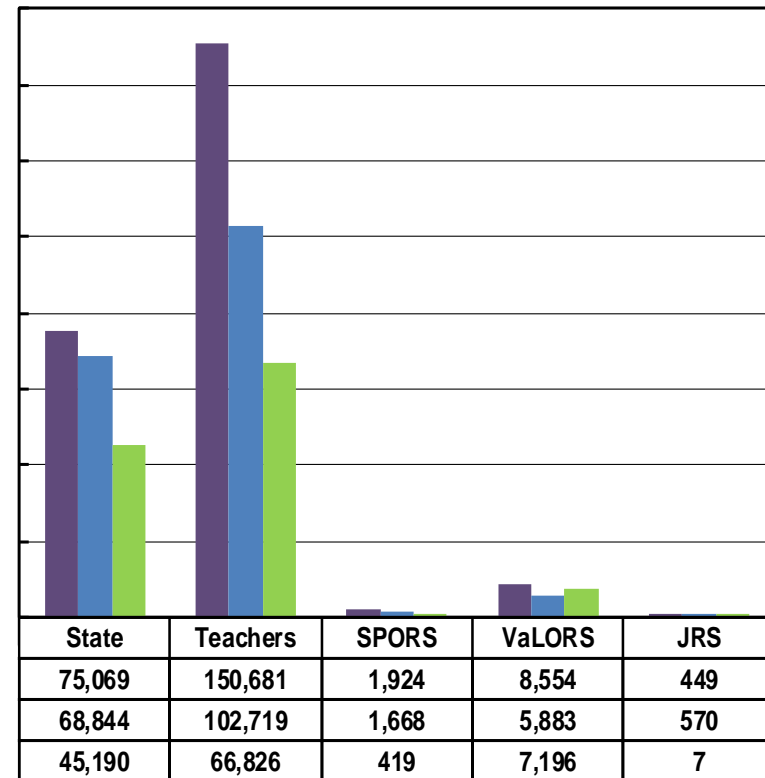
# Membership



2019 Population by System



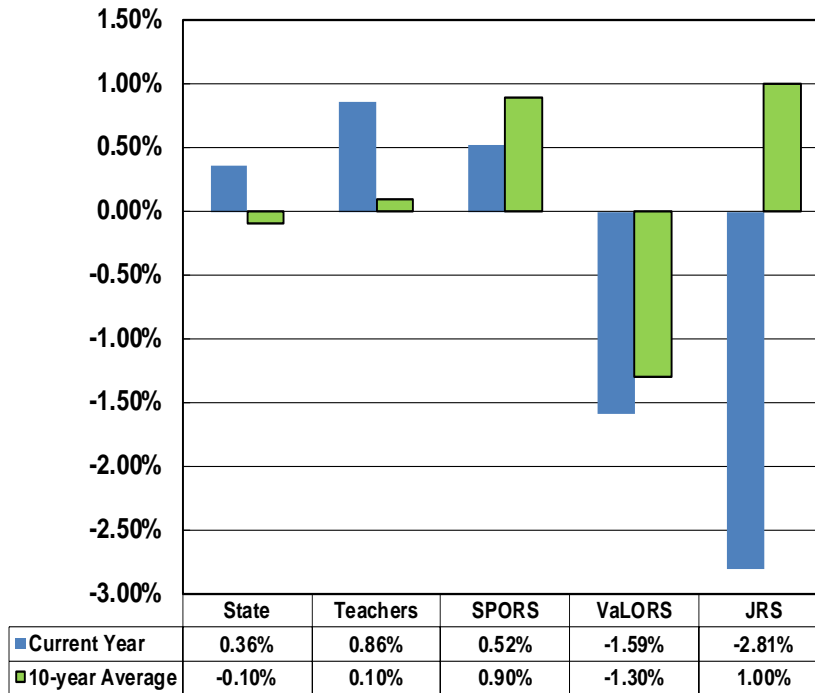
2020 Population by System



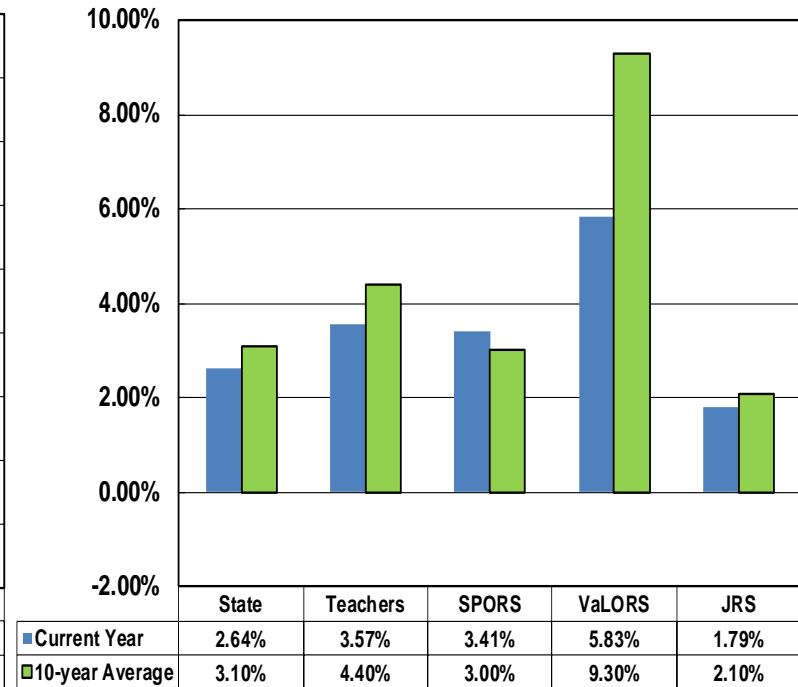
# Growth in Actives and Retirees



### Growth in Actives



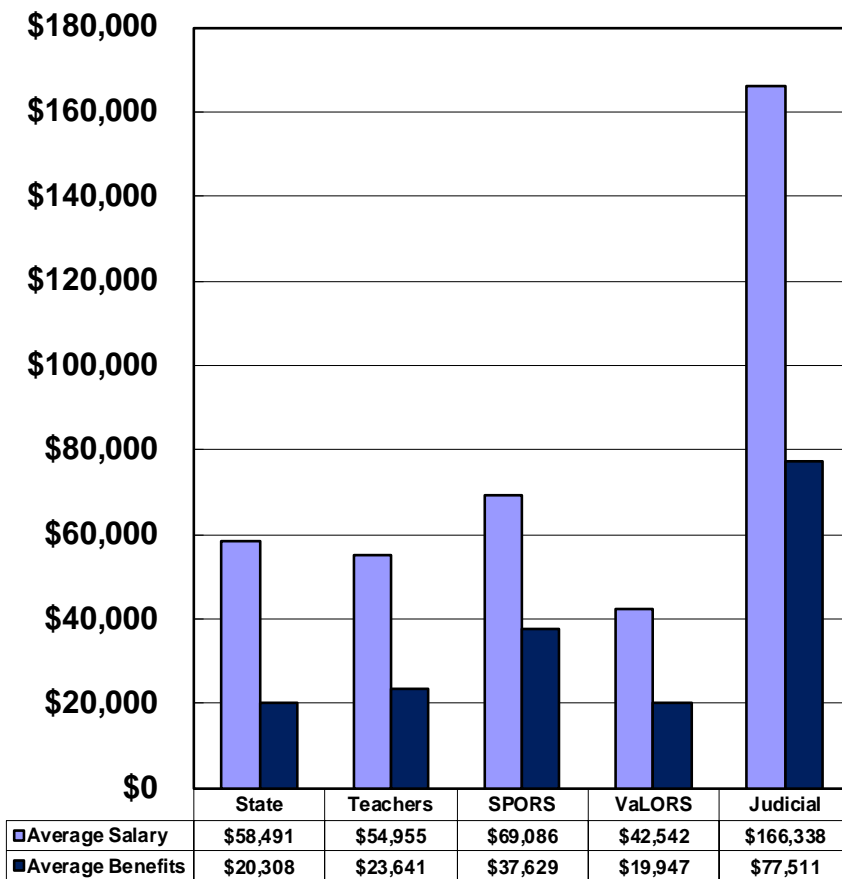
### Growth in Retirees



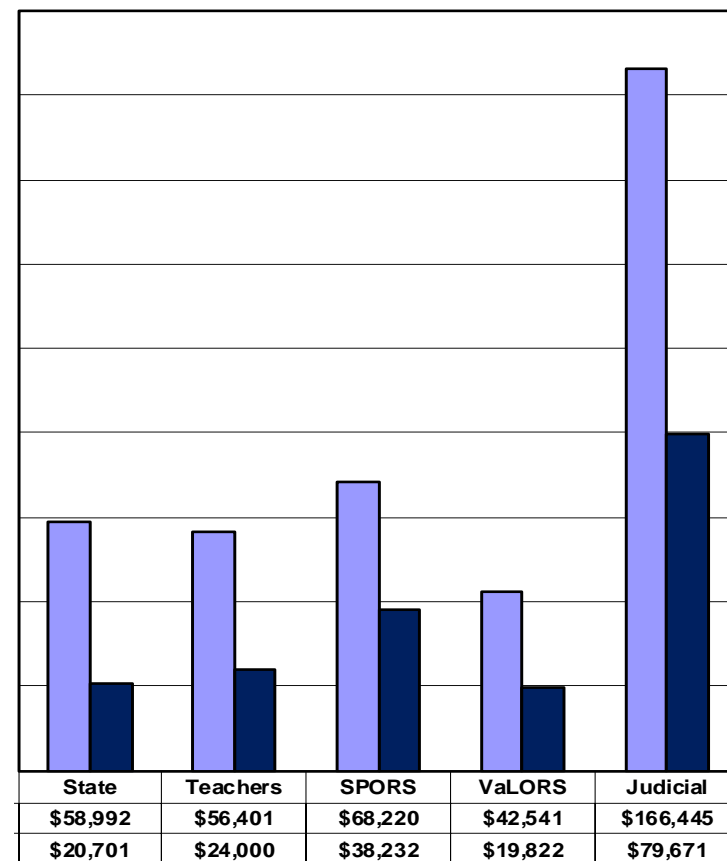
# Average Salary & Average Retirement Benefits



2019 Average Salary & Average Benefits



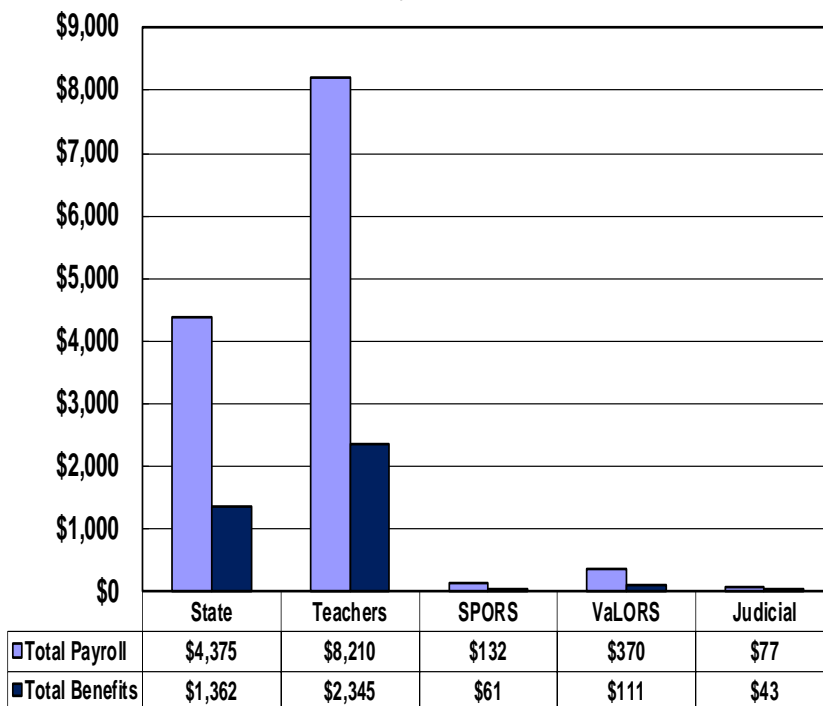
2020 Average Salary & Average Benefits



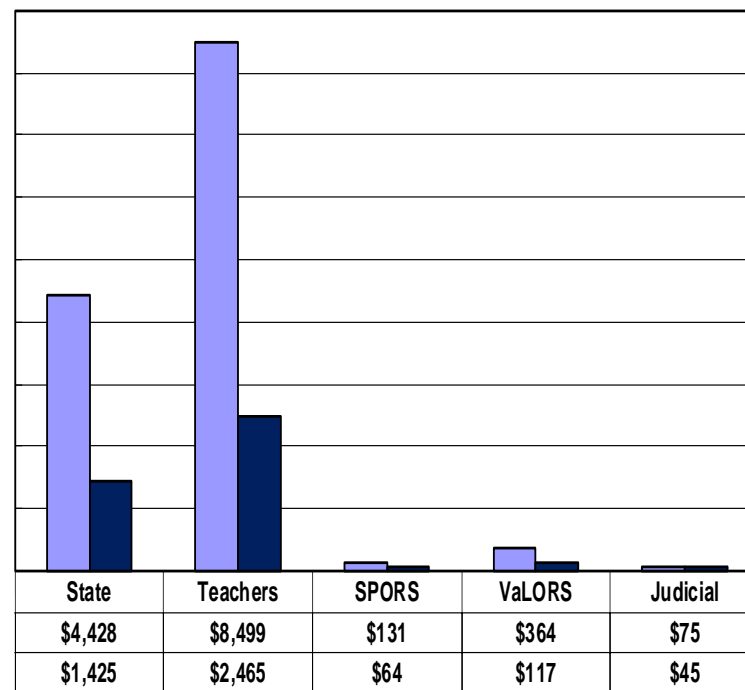
# Annual Payroll & Retirement Benefits (\$ Millions)



2019 Total Payroll & Total Benefits



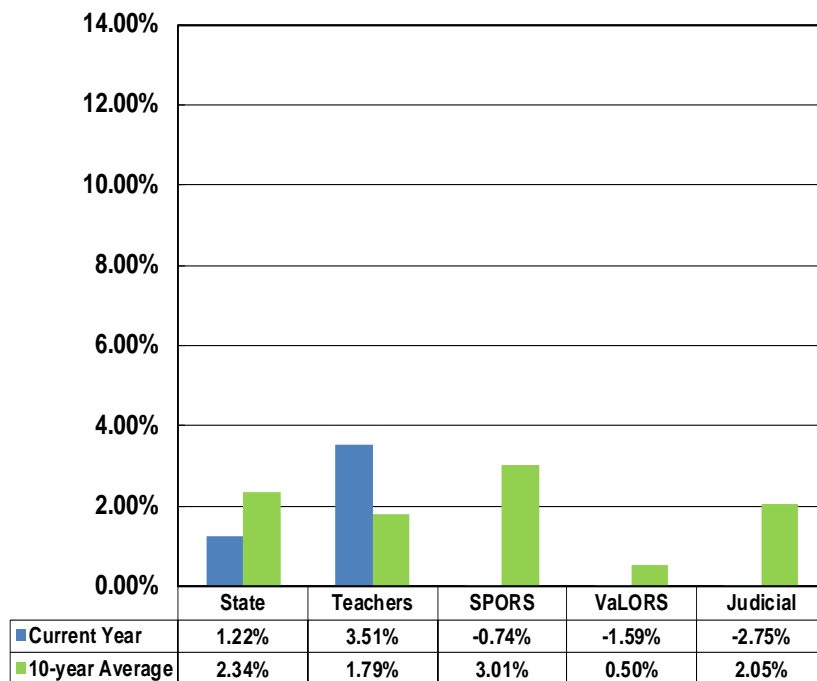
2020 Total Payroll & Total Benefits



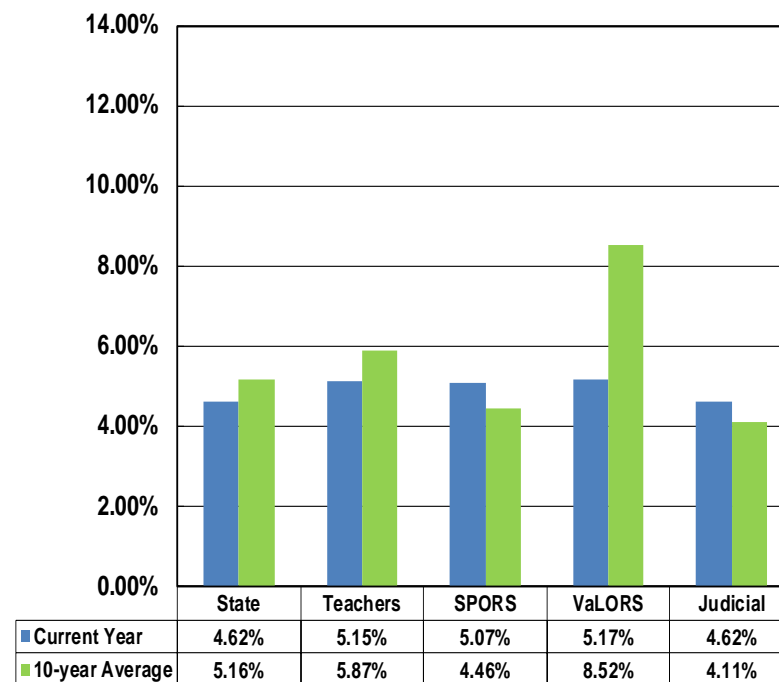
# Growth in Payroll and Retirement Benefits



### Growth in Payroll



### Growth in Benefits



# Average Age, Service, Pay & Benefits



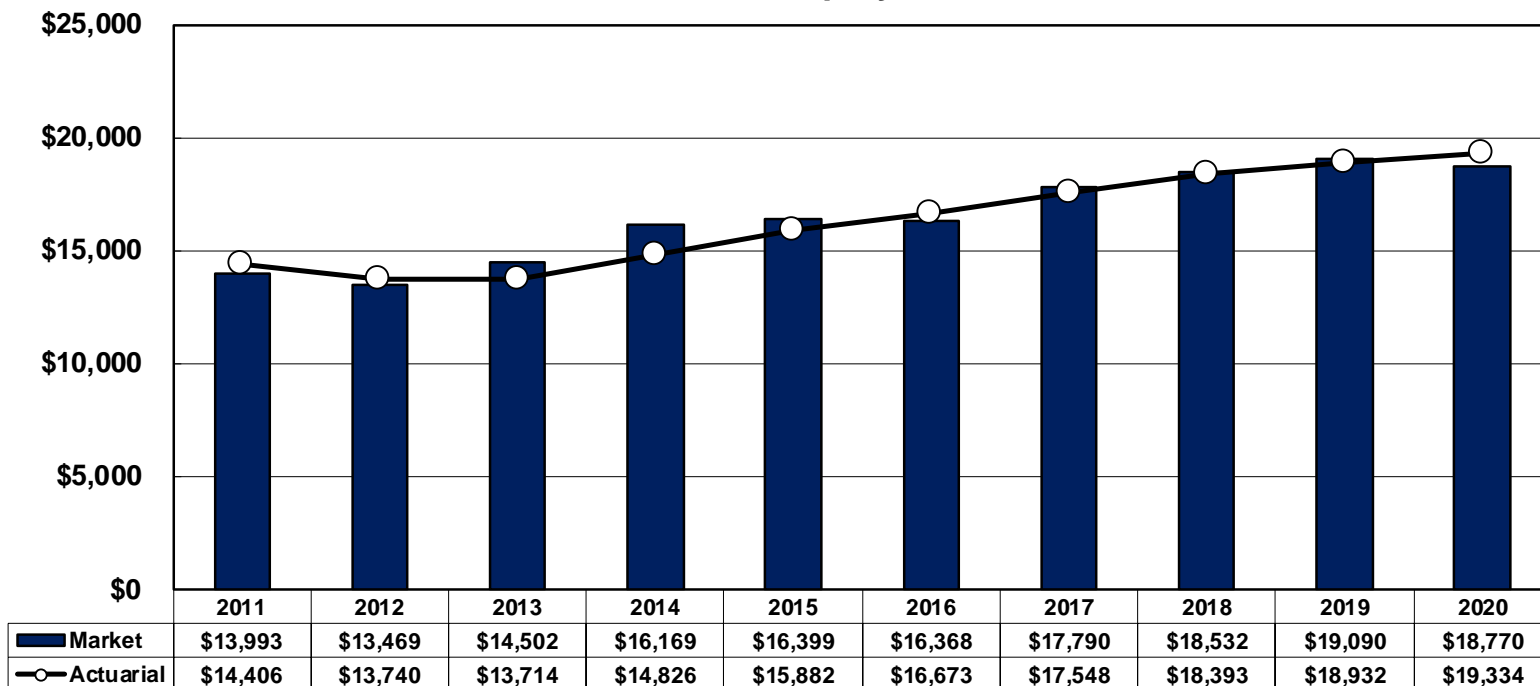
	June 30, 2020 Valuation				
	State	Teachers	SPORS	VaLORS	JRS
<b>Actives:</b>					
Average Age	47.7	45.0	40.9	39.6	58.2
Average Credited Service	11.5	11.7	14.2	8.2	9.3
Average Entry Age	36.2	33.3	26.7	31.4	48.9
Average Pay	\$58,992	\$56,401	\$68,220	\$42,541	\$166,445
<b>Retirees in the Past Year:</b>					
Average Age at Retirement	64.2	63.0	57.6	57.5	66.8
Average Service at Retirement	23.4	23.1	\$28	18.8	33.4
Average AFC at Retirement	\$60,431	\$62,709	\$84,841	\$45,679	\$162,869
Average VRS Benefit at Retirement as a Percent of Pay	41.3%	38.5%	52.5%	36.3%	56.7%
Average Benefit at Retirement	\$24,987	\$24,124	\$44,546	\$16,571	\$92,377
Average Social Security Benefit at Age 62 or Average Retirement Age if later	\$22,608	\$20,532	\$21,384	\$14,736	\$34,452

Average retirement age has been trending upward for many years. Average service at retirement is computed as the sum of the retirees' total VRS service at retirement divided by retiree headcounts. For JRS members, actual service at retirement is increased by a factor of 1.5, 2.0, 2.5 or 3.5 depending on age at appointment/election and date of appointment/election.



# Assets (\$ Millions)

## State Employees



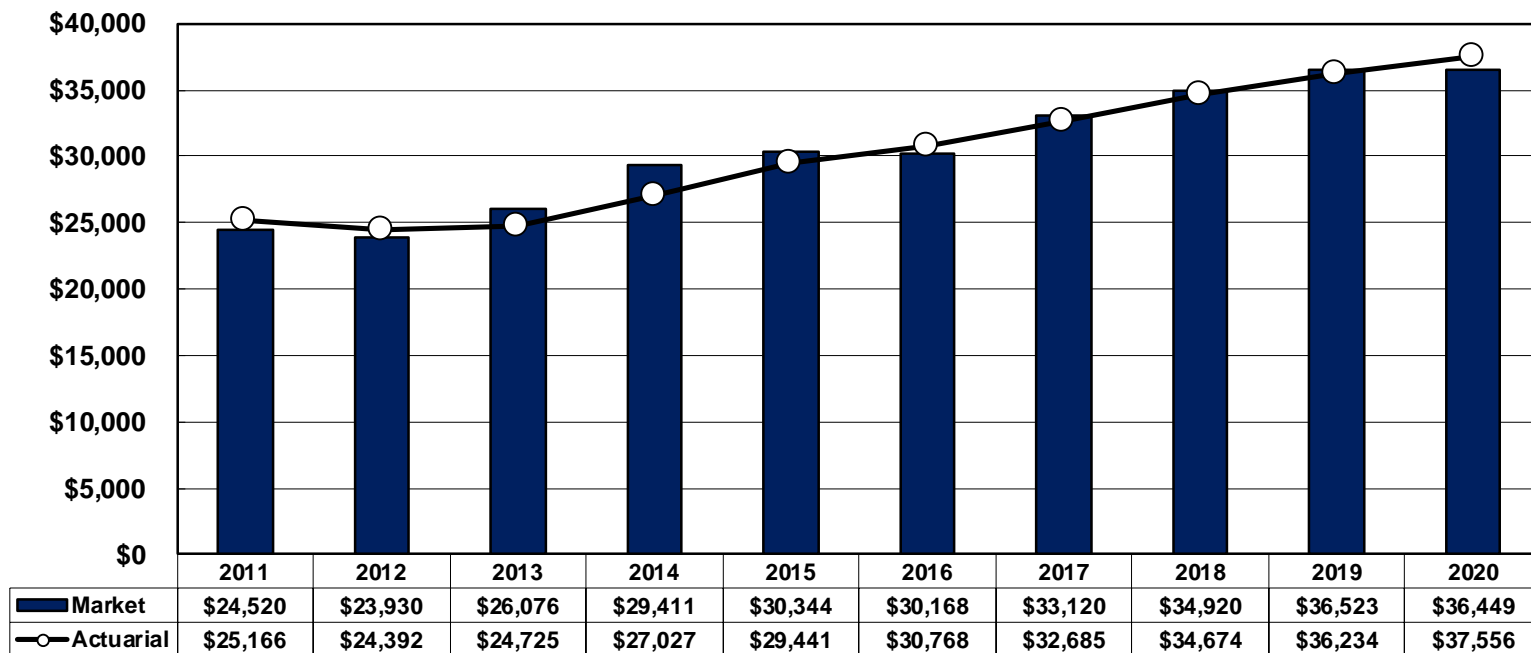
	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Market Return	19.24%	1.12%	11.80%	15.69%	4.51%	1.90%	12.10%	7.50%	6.70%	1.40%
Actuarial Return	2.87%	0.08%	3.70%	12.49%	10.58%	6.99%	8.64%	8.32%	6.60%	5.82%

The reported net investment return for the year 2020 was 1.4% as reported by VRS.

Note: To achieve a 6.75% AVA return in 2021 will require approximately an 8.1% MVA return

# Assets (\$ Millions)

## Teachers



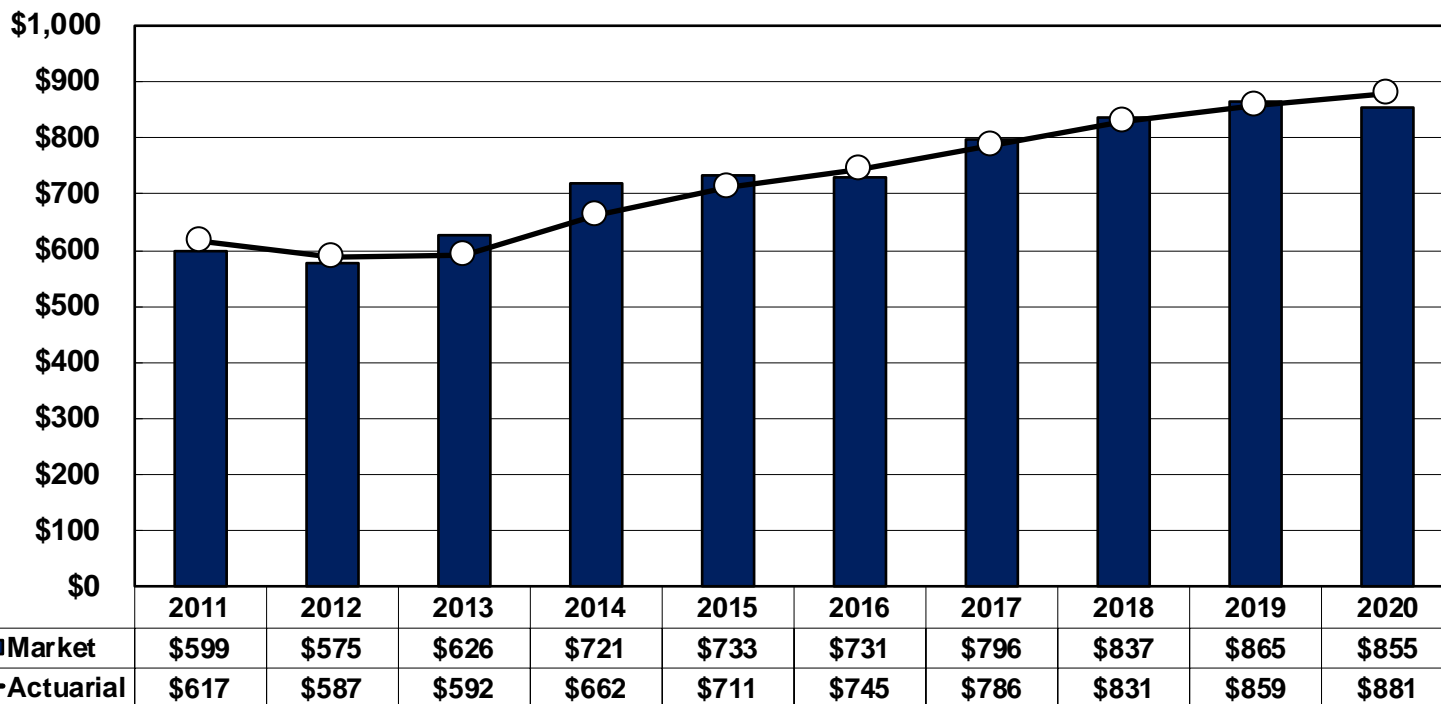
	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
<b>Market Return</b>	19.11%	1.16%	11.68%	15.62%	4.48%	1.90%	12.10%	7.50%	6.70%	1.40%
<b>Actuarial Return</b>	2.93%	0.39%	3.92%	12.25%	10.40%	6.94%	8.54%	8.06%	6.61%	5.82%

The reported net investment return for the year 2020 was 1.4% as reported by VRS.

Note: To achieve a 6.75% AVA return in 2021 will require approximately an 8.1% MVA return

# Assets (\$ Millions)

## State Police



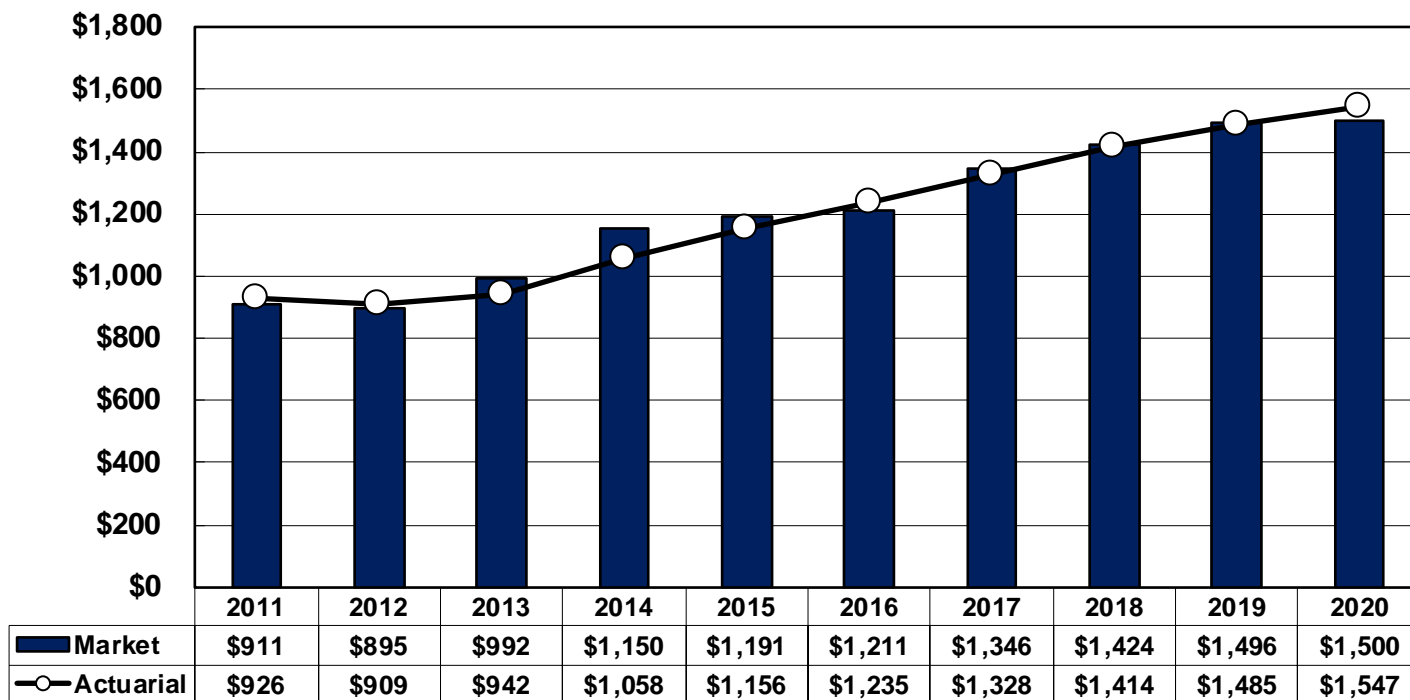
	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
<b>Market Return</b>	19.14%	1.13%	11.78%	15.74%	4.50%	1.90%	12.10%	7.50%	6.70%	1.40%
<b>Actuarial Return</b>	2.82%	0.06%	3.72%	12.38%	10.46%	6.98%	8.57%	8.09%	6.59%	5.80%

The reported net investment return for the year 2020 was 1.4% as reported by VRS.

Note: To achieve a 6.75% AVA return in 2021 will require approximately an 8.1% MVA return

# Assets (\$ Millions)

## Virginia Law Officers



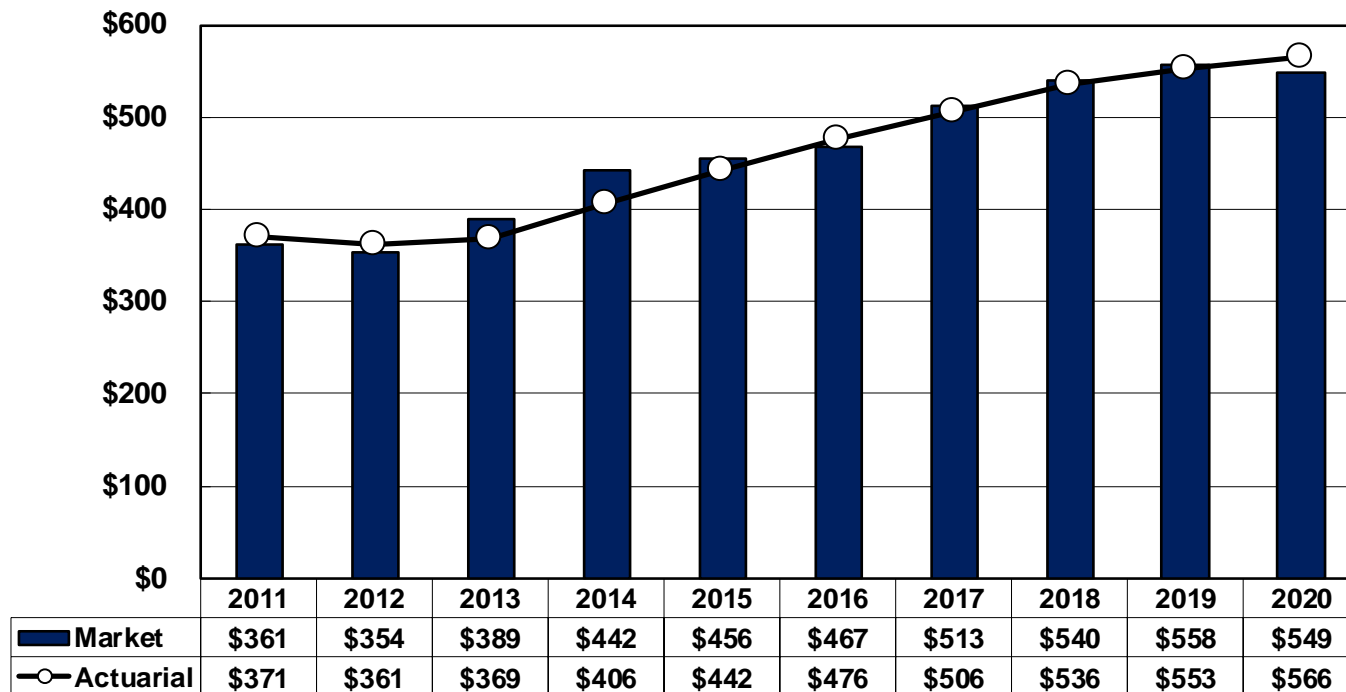
	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
<b>Market Return</b>	18.96%	1.21%	11.74%	15.72%	4.50%	1.90%	12.10%	7.50%	6.70%	1.40%
<b>Actuarial Return</b>	3.28%	1.08%	4.43%	12.06%	10.30%	6.97%	8.48%	8.03%	6.63%	5.81%

The reported net investment return for the year 2020 was 1.4% as reported by VRS.

Note: To achieve a 6.75% AVA return in 2021 will require approximately an 8.1% MVA return

# Assets (\$ Millions)

## JRS

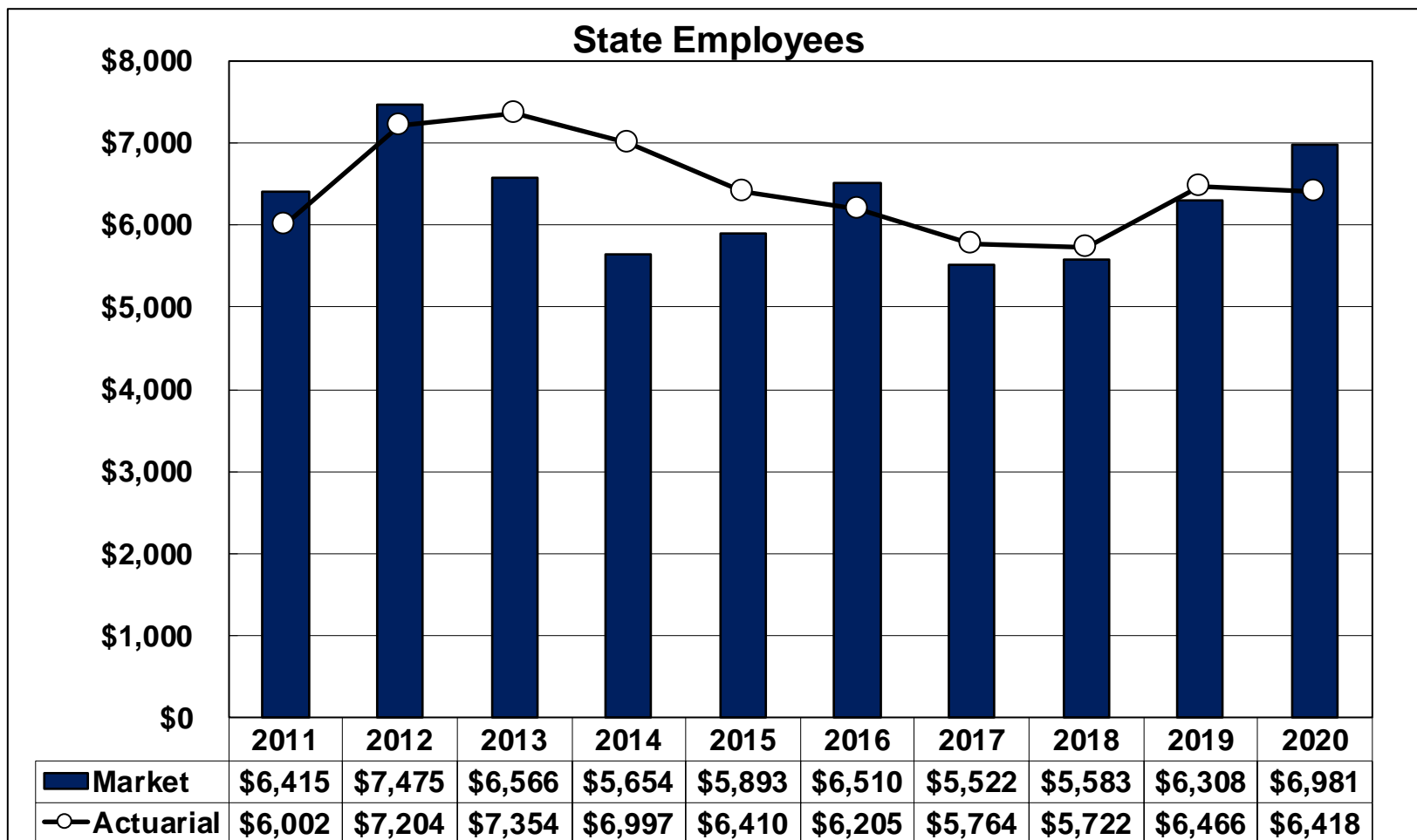


	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
<b>Market Return</b>	18.90%	1.25%	11.80%	15.72%	4.50%	1.90%	12.10%	7.50%	6.70%	1.40%
<b>Actuarial Return</b>	2.93%	0.44%	4.02%	12.21%	10.39%	7.00%	8.53%	8.07%	6.63%	5.83%

The reported net investment return for the year 2020 was 1.4% as reported by VRS.

Note: To achieve a 6.75% AVA return in 2021 will require approximately an 8.1% MVA return

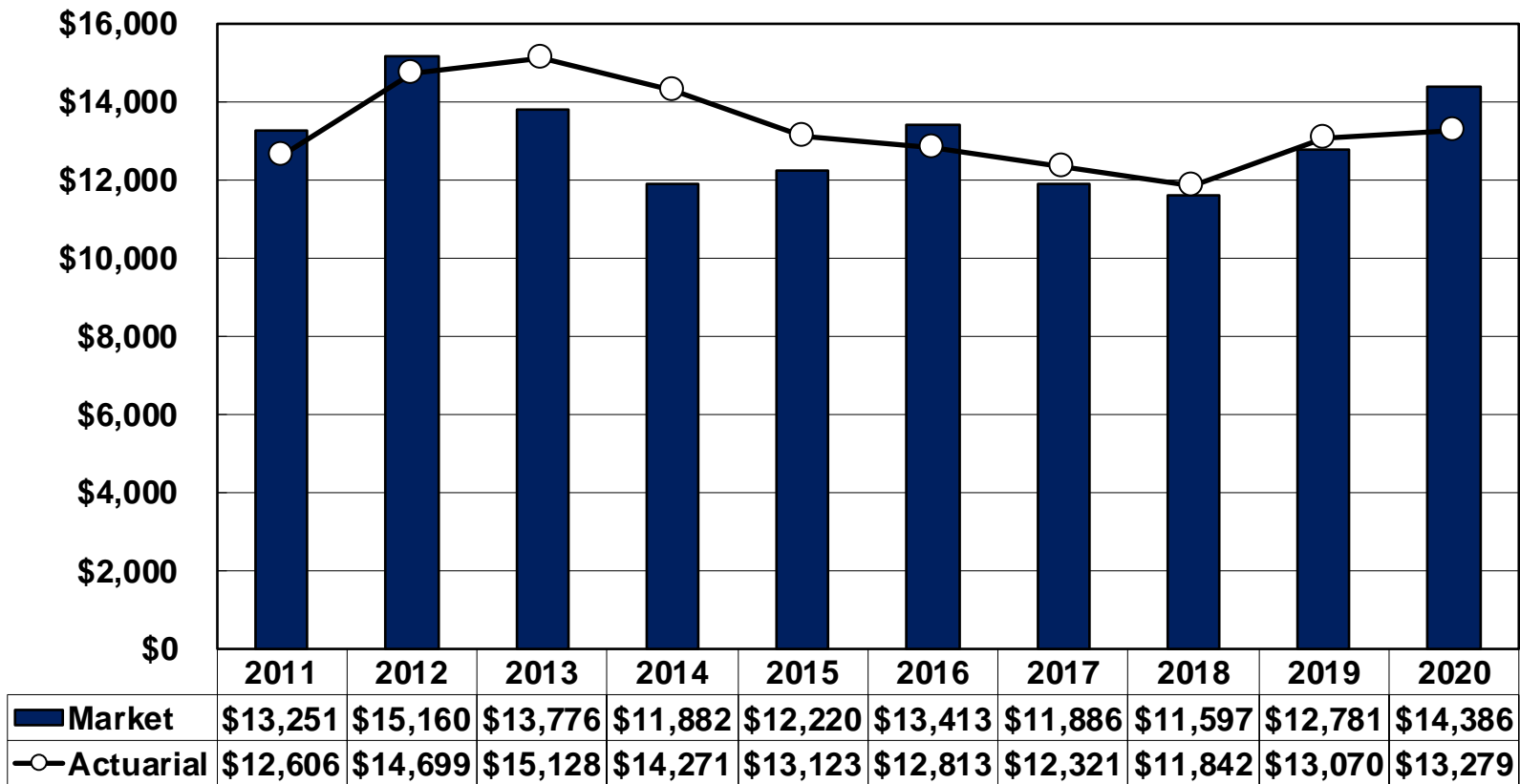
# Unfunded Accrued Liability (\$ Millions)



# Unfunded Accrued Liability (\$ Millions)



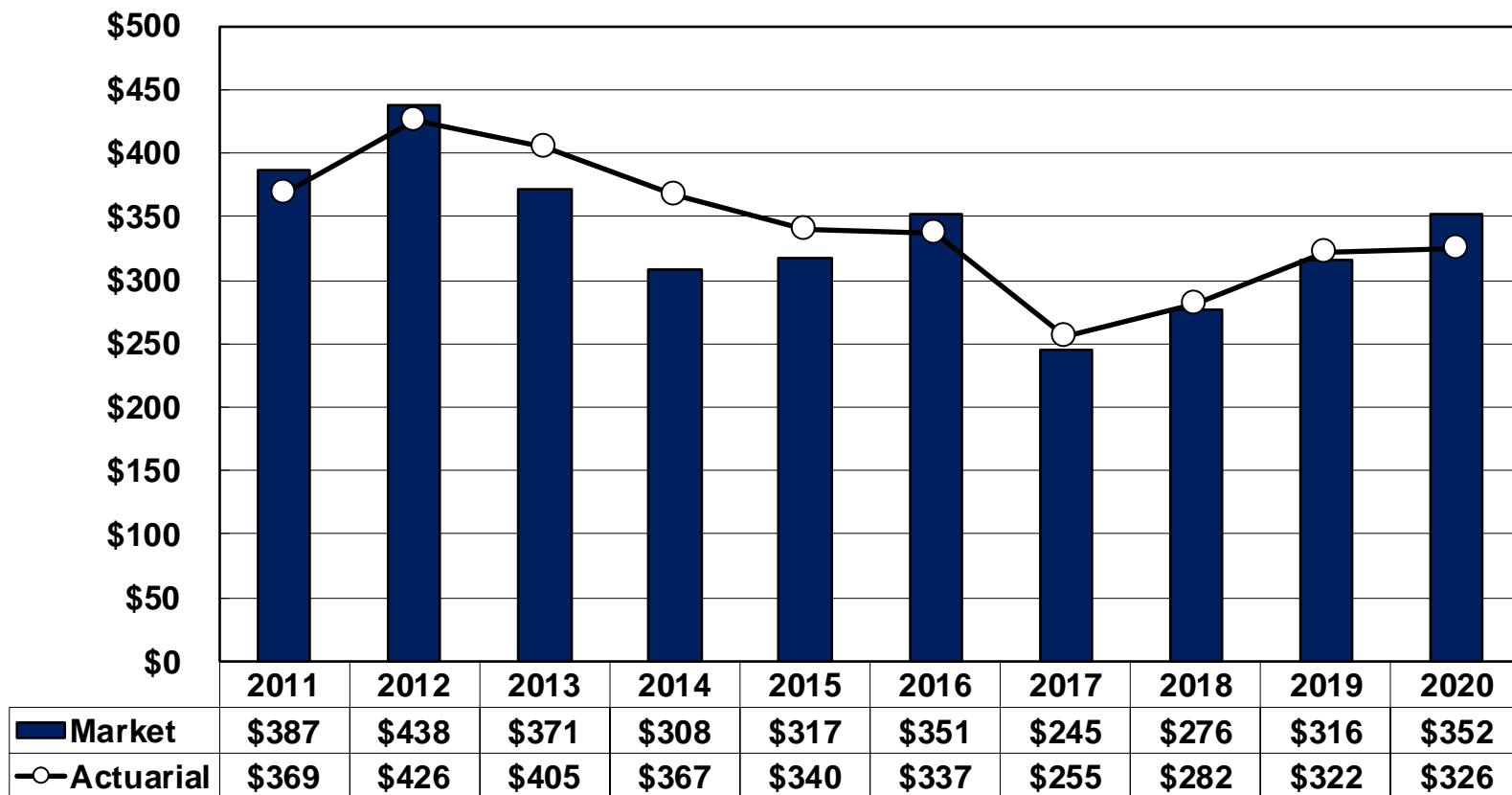
## Teachers



# Unfunded Accrued Liability (\$ Millions)



## State Police

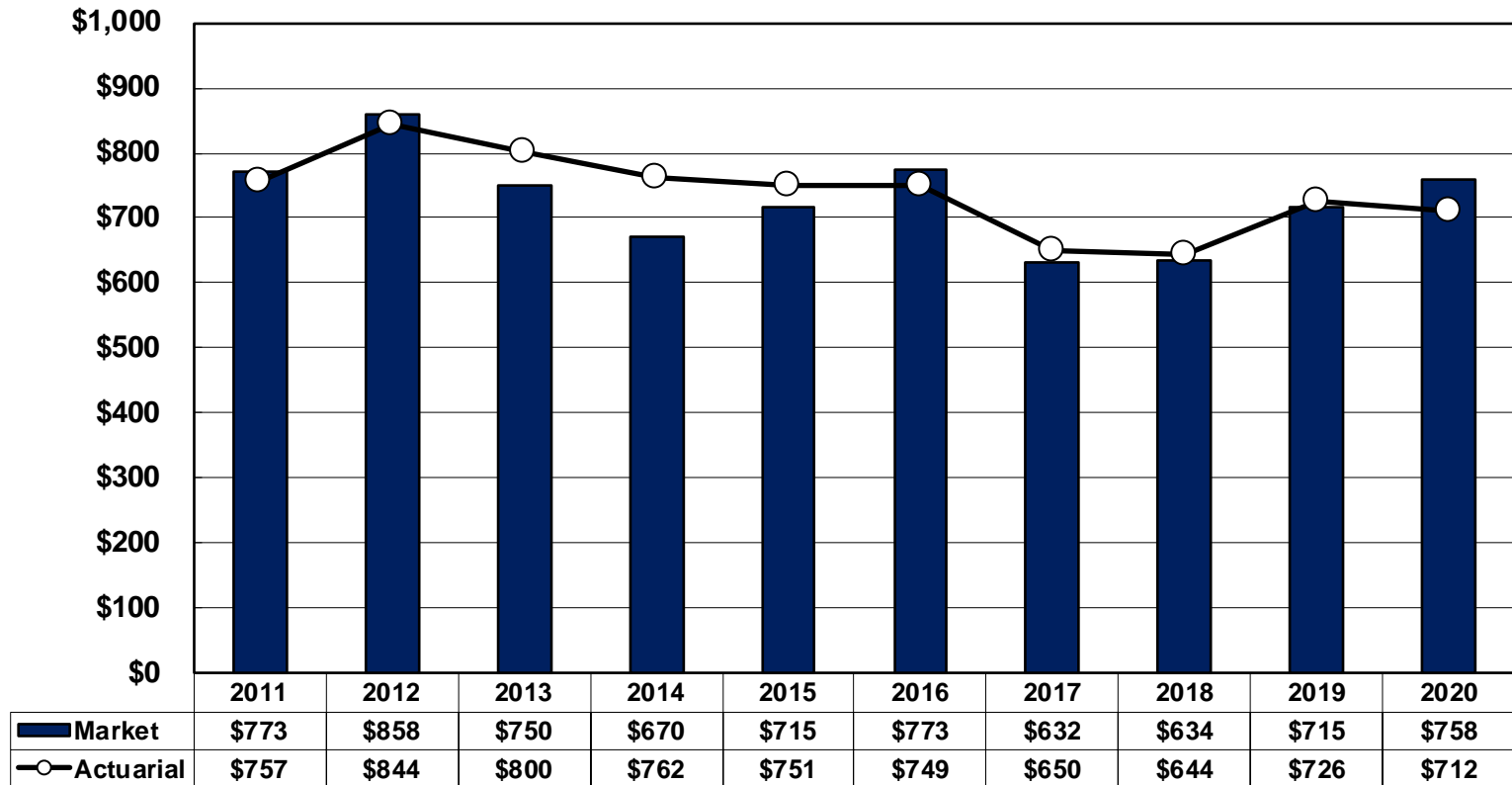




# Unfunded Accrued Liability (\$ Millions)



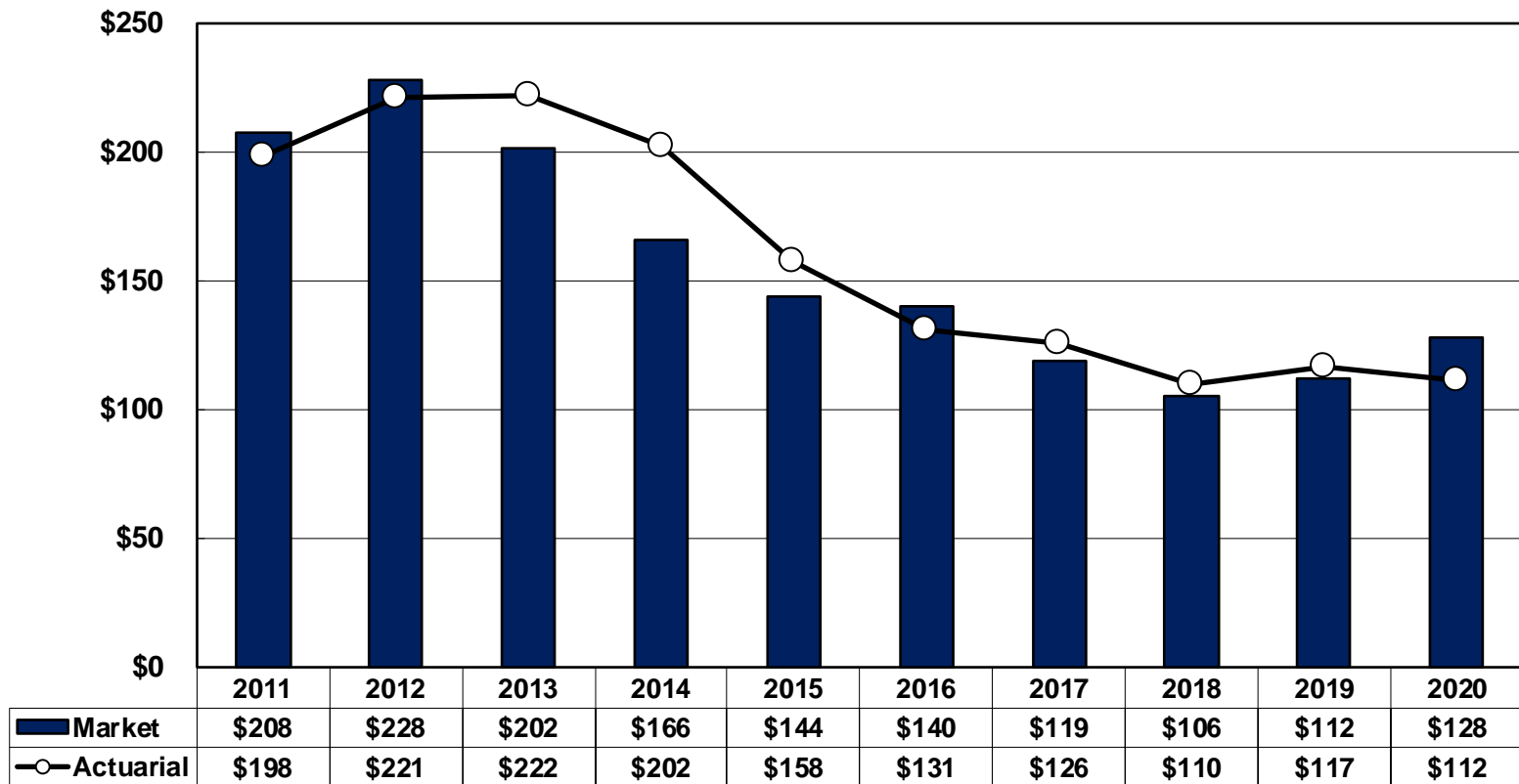
## Virginia Law Officers



# Unfunded Accrued Liability (\$ Millions)



JRS



# Unfunded Liability Amortization



- Unfunded liability contribution in several layers
  - Unfunded liability amortized separately using valuation interest rate and 3% annual payroll growth assumption.
    - As of June 30, 2020 there are 23 years remaining on the 30-year amortization of the legacy unfunded liability established June 30, 2013.
    - There are 14, 15, 16, 17, 18, 19 and 20 years remaining for changes in unfunded liability for years ending June 30, 2014, 2015, 2016, 2017, 2018, 2019 and 2020, respectively.

System	Unfunded Accrued Liability (UAL) (\$'s Thousands)			
	Legacy UAL 6/30/2013	UAL After 6/30/2013	Deferred Contributions	Total UAL
State	\$7,495,073	(\$1,077,412)	\$0	\$6,417,661
Teachers	\$15,262,009	(\$2,044,691)	\$61,344	\$13,278,662
SPORS	\$405,412	(\$79,822)	\$0	\$325,590
VaLORS	\$799,807	(\$87,782)	\$0	\$712,025
JRS	\$220,739	(\$109,106)	\$0	\$111,633
Total	\$24,183,040	(\$3,398,813)	\$61,344	\$20,845,571

- The legacy UAL is a big portion of the contribution rate; the negative amortization is expected to go away in 2022.
- Deferred contributions discussed on next slide

# Unfunded Liability Amortization (continued)



- Balance remaining on deferred contributions from the 2010-2012 biennium is \$61.3 million as of June 30, 2020. Below is the expected remaining amortization schedule for the deferred contributions.

### Teacher Plan Deferred Contributions from 2010-2012 Biennium

Fiscal Year End	Outstanding Balance	Amortization Payment
6/30/2020	\$61,344,275	\$61,344,275
6/30/2021	\$0	\$0

- The amortization payment represents approximately 0.73% of future covered payroll in the 2021/2022 teacher rate

# Statewide Pension Plans Funding Results (Informational Purposes)



	June 30, 2020 Valuation				
	State	Teachers	SPORS	VaLORS	JRS
Total Normal Cost Rate	9.26%	10.76%	17.14%	15.02%	24.90%
Blended Member Rate	<u>4.57%</u>	<u>4.65%</u>	<u>5.00%</u>	<u>5.00%</u>	<u>4.41%</u>
Employer Normal Cost Rate	4.69%	6.11%	12.14%	10.02%	20.49%
Administrative Expenses Rate	0.29%	0.27%	0.28%	0.17%	0.32%
Rate to Amortize Unfunded Actuarial Accrued Liability (UAAL)	<u>8.60%</u>	<u>9.52%</u>	<u>14.30%</u>	<u>11.94%</u>	<u>6.66%</u>
<b>Employer Full Contribution Rate Defined Benefit (DB) Plans</b>	<b>13.58%</b>	<b>15.90%</b>	<b>26.72%</b>	<b>22.13%</b>	<b>27.47%</b>
<b>Employer Contribution Rate Hybrid DC Component*</b>	<b><u>0.99%</u></b>	<b><u>0.75%</u></b>	<b><u>0.00%</u></b>	<b><u>0.00%</u></b>	<b><u>1.77%</u></b>
<b>Total Employer Contribution Rate for Retirement Plans (Full Contribution Rate for Defined Benefit Plans + Contribution Rate for Hybrid DC Component)</b>	<b>14.57%</b>	<b>16.65%</b>	<b>26.72%</b>	<b>22.13%</b>	<b>29.24%</b>
Unfunded Actuarial Accrued Liability (\$ Millions)	\$6,418	\$13,279	\$326	\$712	\$112
	Prior Employer Contribution Rates				
	State	Teachers	SPORS	VaLORS	JRS
<b><u>2019 Valuation (Board Certified) for FYs 2021 and 2022</u></b>					
Employer Full Contribution Rate DB Plans	13.67%	16.06%	26.26%	21.88%	28.49%
Employer Contribution Rate Hybrid DC Component	0.79%	0.56%	N/A	N/A	1.35%
Total Employer Contribution Rate for Retirement Plans	14.46%	16.62%	26.26%	21.88%	29.84%
<b><u>Approved by General Assembly FYs 2021 and 2022</u></b>	14.46%	16.62%	26.26%	21.88%	29.84%

\* Not funded through pension trust but part of employer cost for VRS Retirement Plans.

# Breakdown of Plan 1 and 2 and Hybrid Plan Employer Contribution Rates

Blended Contribution Rates (Plan 1 / Plan 2 / Hybrid)		
	State	Teachers
Total Normal Cost Rate	9.26%	10.76%
Blended Member Rate	<u>4.57%</u>	<u>4.65%</u>
Employer Normal Cost Rate	4.69%	6.11%
Administrative Expenses	0.29%	0.27%
Rate to Amortize Unfunded Actuarial Accrued Liability (UAAL)	<u>8.60%</u>	<u>9.52%</u>
<b>Employer Full Contribution Rate Defined Benefit Plans</b>	<b>13.58%</b>	<b>15.90%</b>
Employer Contribution Rate Hybrid DC Component*	<u>0.99%</u>	<u>0.75%</u>
<b>Total Employer Contribution Rate for Retirement Plans (Full Contribution Rate for Defined Benefit Plans + Contribution Rate for Hybrid DC Component)</b>	<b>14.57%</b>	<b>16.65%</b>
Plan 1 and Plan 2 Contribution Rates		
	State	Teachers
Total Normal Cost Rate	11.29%	12.83%
Member Rate	<u>5.00%</u>	<u>5.00%</u>
Employer Normal Cost Rate	6.29%	7.83%
Administrative Expenses	0.29%	0.27%
Rate to Amortize Unfunded Actuarial Accrued Liability (UAAL)	<u>8.60%</u>	<u>9.52%</u>
<b>Employer Full Contribution Rate Defined Benefit Plans</b>	<b>15.18%</b>	<b>17.62%</b>
Employer Contribution Rate Hybrid DC Component*	0.00%	0.00%
<b>Total Employer Contribution Rate for Retirement Plans (Full Contribution Rate for Defined Benefit Plans + Contribution Rate for Hybrid DC Component)</b>	<b>15.18%</b>	<b>17.62%</b>
Hybrid Plan Contribution Rates		
	State	Teachers
Total Normal Cost Rate	6.61%	6.91%
Member Rate	<u>4.00%</u>	<u>4.00%</u>
Employer Normal Cost Rate	2.61%	2.91%
Administrative Expenses	0.29%	0.27%
Rate to Amortize Unfunded Actuarial Accrued Liability (UAAL)	<u>8.60%</u>	<u>9.52%</u>
<b>Employer Full Contribution Rate Defined Benefit Plans</b>	<b>11.50%</b>	<b>12.70%</b>
Employer Contribution Rate Hybrid DC Component*	<u>2.28%</u>	<u>2.14%</u>
<b>Total Employer Contribution Rate for Retirement Plans (Full Contribution Rate for Defined Benefit Plans + Contribution Rate for Hybrid DC Component)</b>	<b>13.78%</b>	<b>14.84%</b>

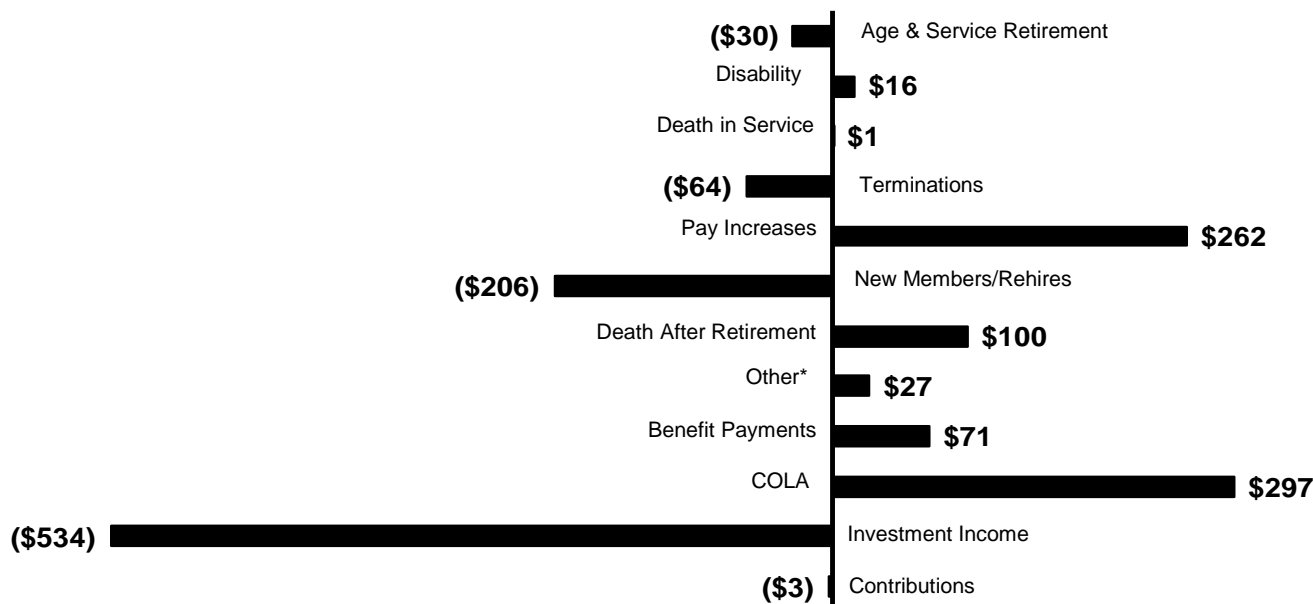
\* Assumes employer match to defined contribution portion of the Hybrid plan of 2.28% (State) and 2.14% (Teachers) of payroll for members in the Hybrid plan.

# 2020 Gain/Loss Analysis for all Statewide Pension Plans (\$ Millions)



## Losses

## Gains



Losses are events which increase the UAAL more than expected while gains are events which decrease the UAAL more than expected.

\* e.g., data remediation, service purchase, demographic changes, etc.

- Losses were primarily due to lower than expected investment return but were offset by gains from lower than expected inflation and lower than expected pay increases

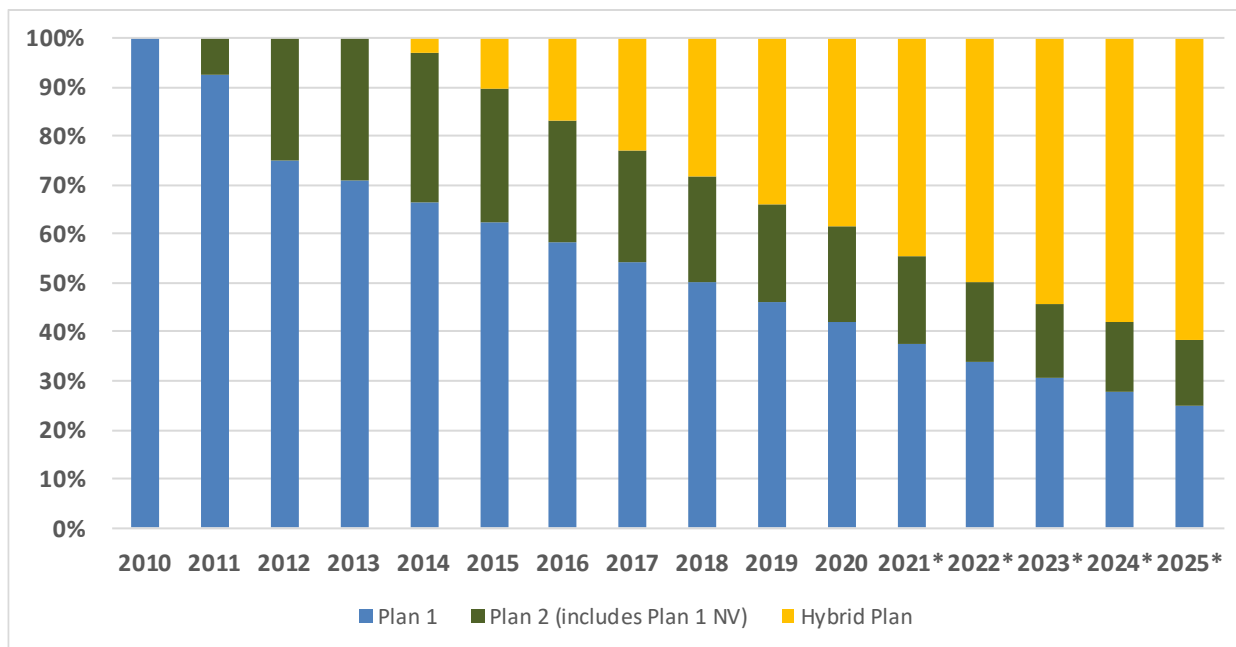
# Active Members Demographics by Plan Data Summary (Payroll in Millions)



June 30, 2020 Valuation	State	Teachers	SPORS	VaLORS	JRS
<b><u>Number Active Members</u></b>					
Plan 1 vested 1/1/2013	31,574	68,018	1,106	2,836	198
Plan 1 non-vested 1/1/2013	5,188	11,255	62	514	4
Plan 2	9,353	19,624	756	5,204	43
Hybrid Plan	<u>28,954</u>	<u>51,784</u>	<u>0</u>	<u>0</u>	<u>204</u>
Pension Reform Plan Total	43,495	82,663	818	5,718	251
Total	75,069	150,681	1,924	8,554	449
Pension Reform Plan % of Total	57.94%	54.86%	42.52%	66.85%	55.90%
<b><u>Payroll</u></b>					
Plan 1 vested 1/1/2013	\$2,100	\$4,417	\$87	\$138	\$34
Plan 1 non-vested 1/1/2013	\$310	\$620	\$4	\$23	\$1
Plan 2	\$547	\$1,078	\$40	\$203	\$7
Hybrid Plan	<u>\$1,471</u>	<u>\$2,384</u>	<u>\$0</u>	<u>\$0</u>	<u>\$33</u>
Pension Reform Plan Total	\$2,328	\$4,082	\$44	\$226	\$41
Total	\$4,428	\$8,499	\$131	\$364	\$75
Pension Reform Plan % of Total	52.57%	48.03%	33.59%	62.09%	54.67%

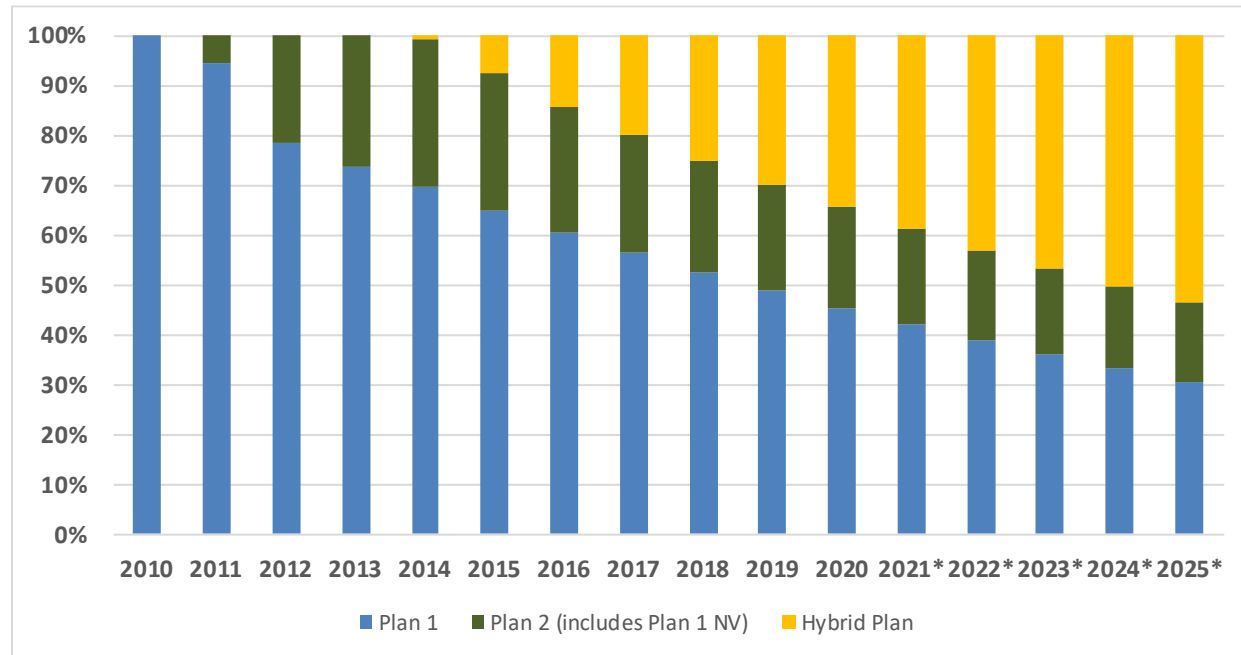


# State Active Member Breakdown



\* Fiscal years 2021-2025 show projected membership breakdown based on historical turnover experience.

# Teacher Active Member Breakdown

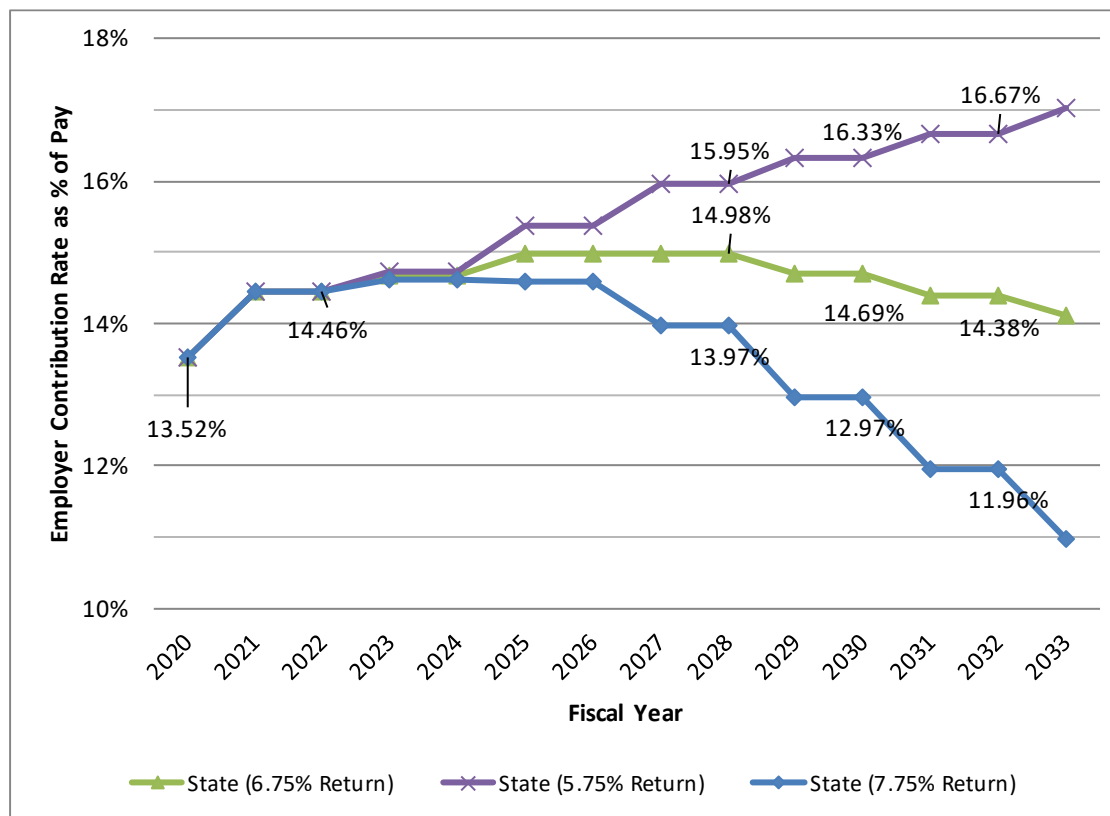


\* Fiscal years 2021-2025 show projected membership breakdown based on historical turnover experience.

Note: The turnover experienced in the Teacher Plan has been less than the turnover experienced by the State Plan. Thus, the Teacher Plan is migrating to the Hybrid Plan slower than the State Plan.

# State Projected Employer Contribution Rates Including Defined Contribution Hybrid

## Investment Return Sensitivity

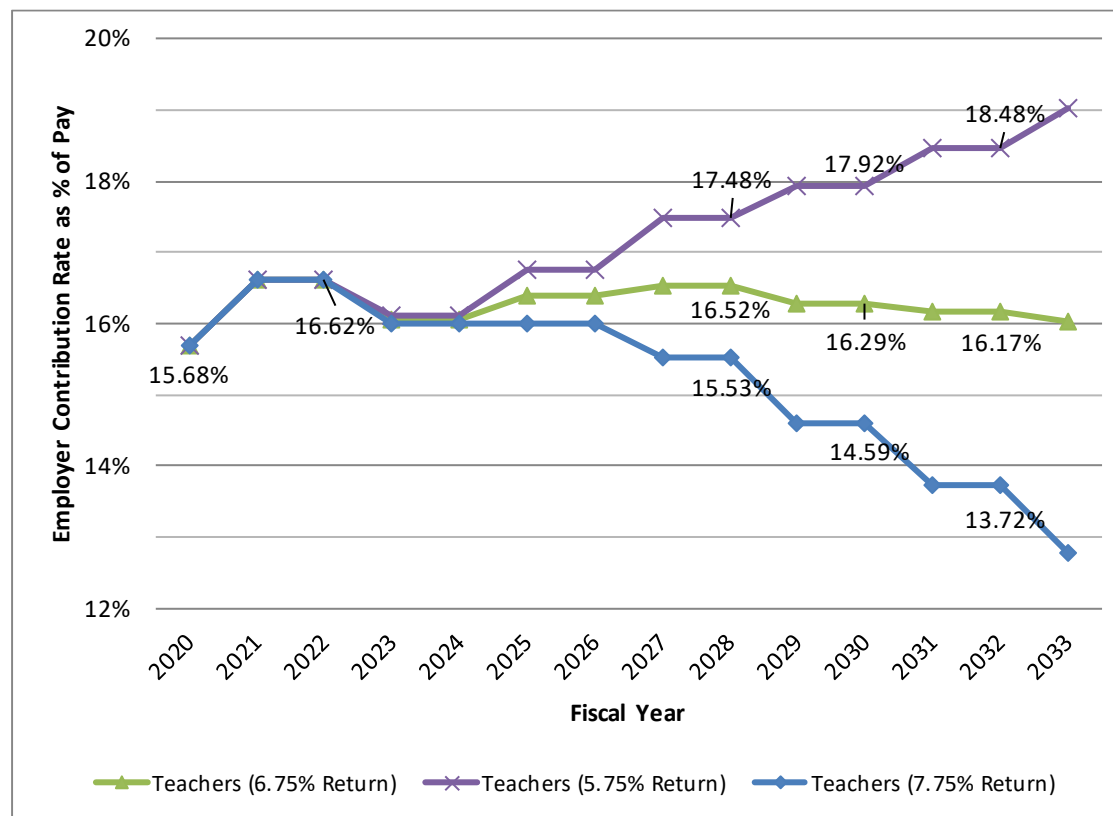


Assumes employer match to defined contribution portion of the Hybrid Plan of 2.28% for members in the Hybrid Plan.

Rates above are for alternative investment return scenarios only. Liabilities are calculated at 6.75% under all scenarios.

# Teachers Projected Employer Contribution Rates Including Defined Contribution Hybrid

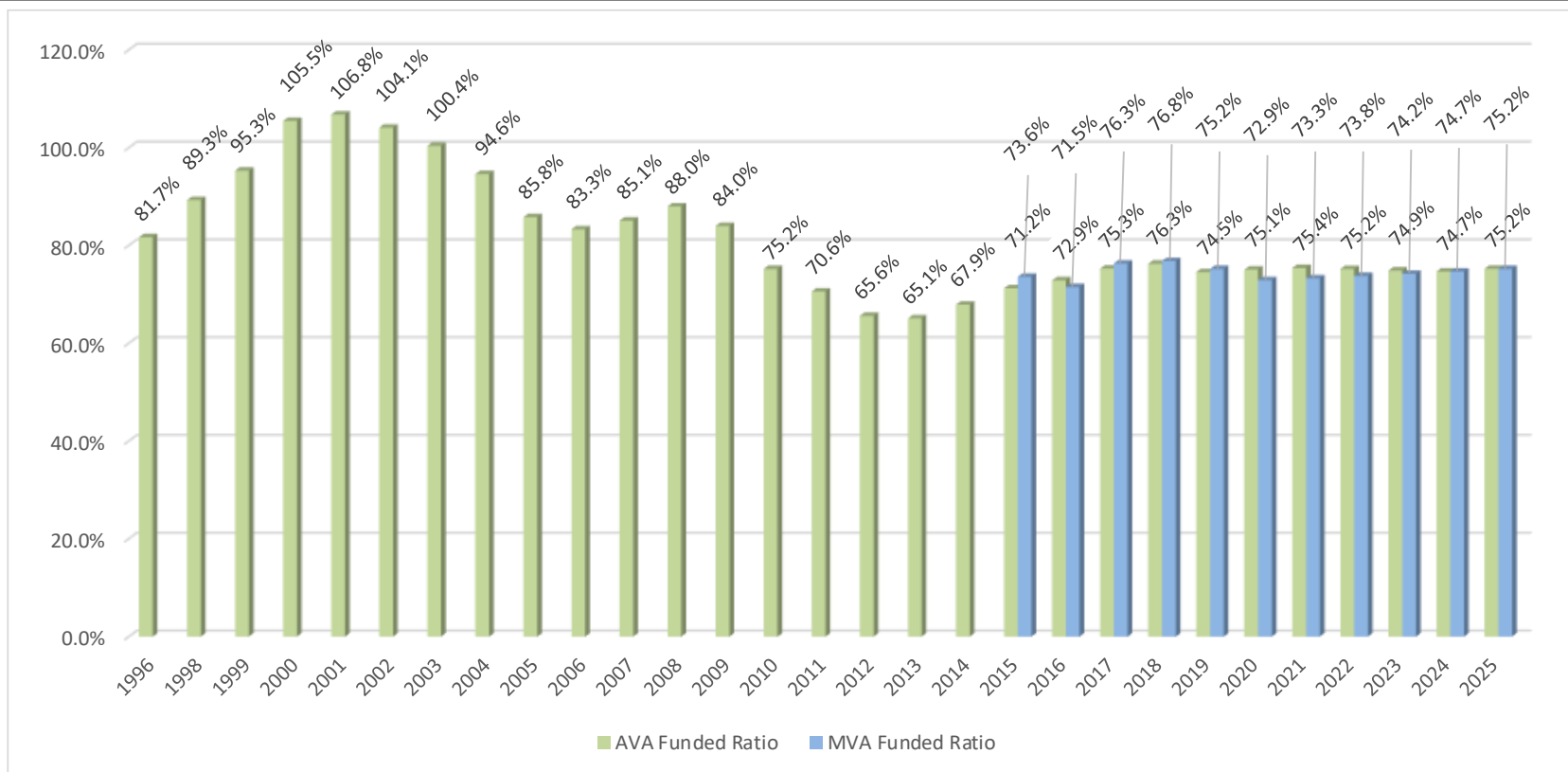
## Investment Return Sensitivity



Assumes employer match to defined contribution portion of the Hybrid Plan of 2.14% for members in the Hybrid Plan.

Rates above are for alternative investment return scenarios only. Liabilities are calculated at 6.75% under all scenarios.

# Projected Funded Status: State Employees Pension Plan



**Notes and Assumptions:**

AVA are actuarial value of assets (five-year smoothing) and MVA are market value of assets.

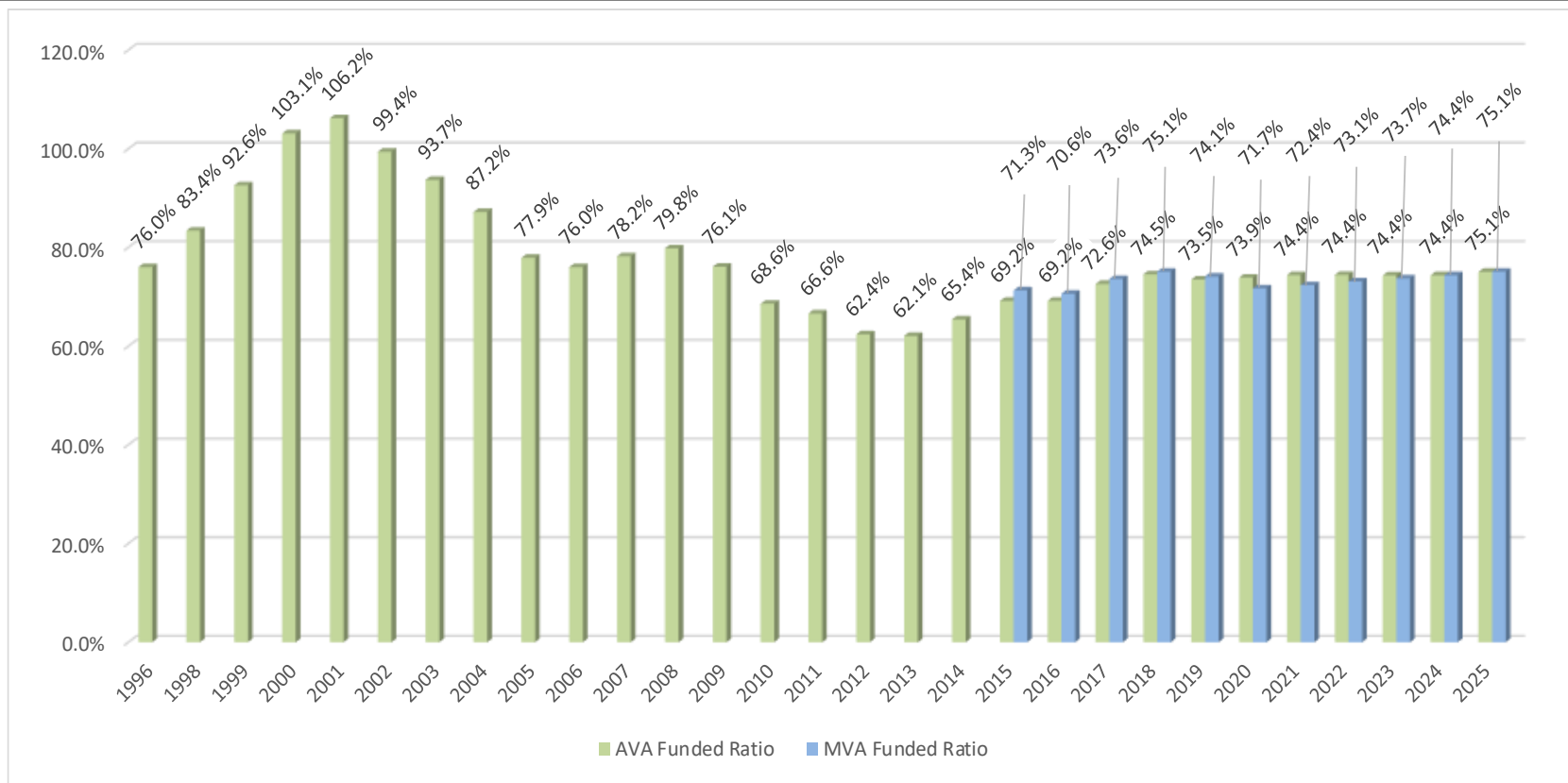
The AVA funded ratio, shown in light green, is used for funding purposes. The MVA funded ratio, shown in blue, is used for GASB 67 & 68 purposes. GASB 67 & 68 were first effective in 2015.

Projected years' investment returns assume 6.75% with 2.5% inflation rate.

Annual discount rates 8% from 1996-2004; 7.5% from 2005 – 2009; 7% from 2010 – 2018; 6.75% from 2019 on.

Projections for 2021-2025 assume 100% of future contributions are made.

# Projected Funded Status: Teachers Pension Plan



**Notes and Assumptions:**

AVA are actuarial value of assets (five-year smoothing) and MVA are market value of assets.

The AVA funded ratio, shown in light green, is used for funding purposes. The MVA funded ratio, shown in blue, is used for GASB 67 & 68 purposes. GASB 67 & 68 were first effective in 2015.

Projected years' investment returns assume 6.75% with 2.5% inflation rate.

Annual discount rates 8% from 1996-2004; 7.5% from 2005 – 2009; 7% from 2010 – 2018; 6.75% from 2019 on.

Projections for 2021-2025 assume 100% of future contributions are made.

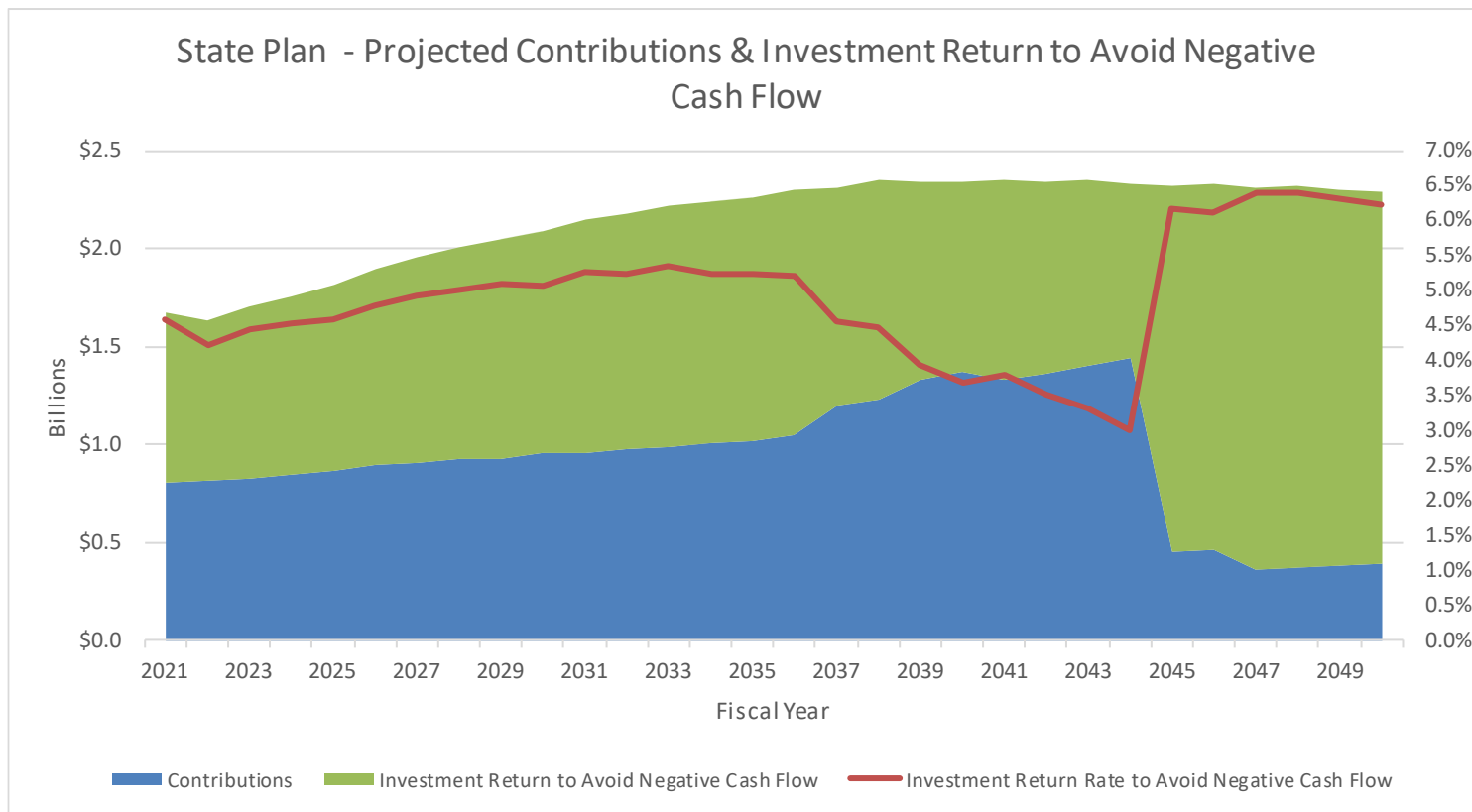
# Projected Contributions & Investment Return



- Benefit of pre-funding is that investment returns on pre-funded assets reduce the employer's long-term contributions.
- Cash flow is the difference between the contributions and benefits and expenses of the fund.
- Cash flows will vary for each plan since all plans have different demographics and maturities.
- Mature plans often have negative cash flows over time, which is considered a normal cycle of pension plans.
- Negative cash flows do not necessarily imply a plan is in trouble, in fact part of the benefit of pre-funding is the investment returns can pay a significant portion of benefit payments.

Slides on the next two pages demonstrate the investment return needed to avoid negative cash flow in the State and Teacher plans.

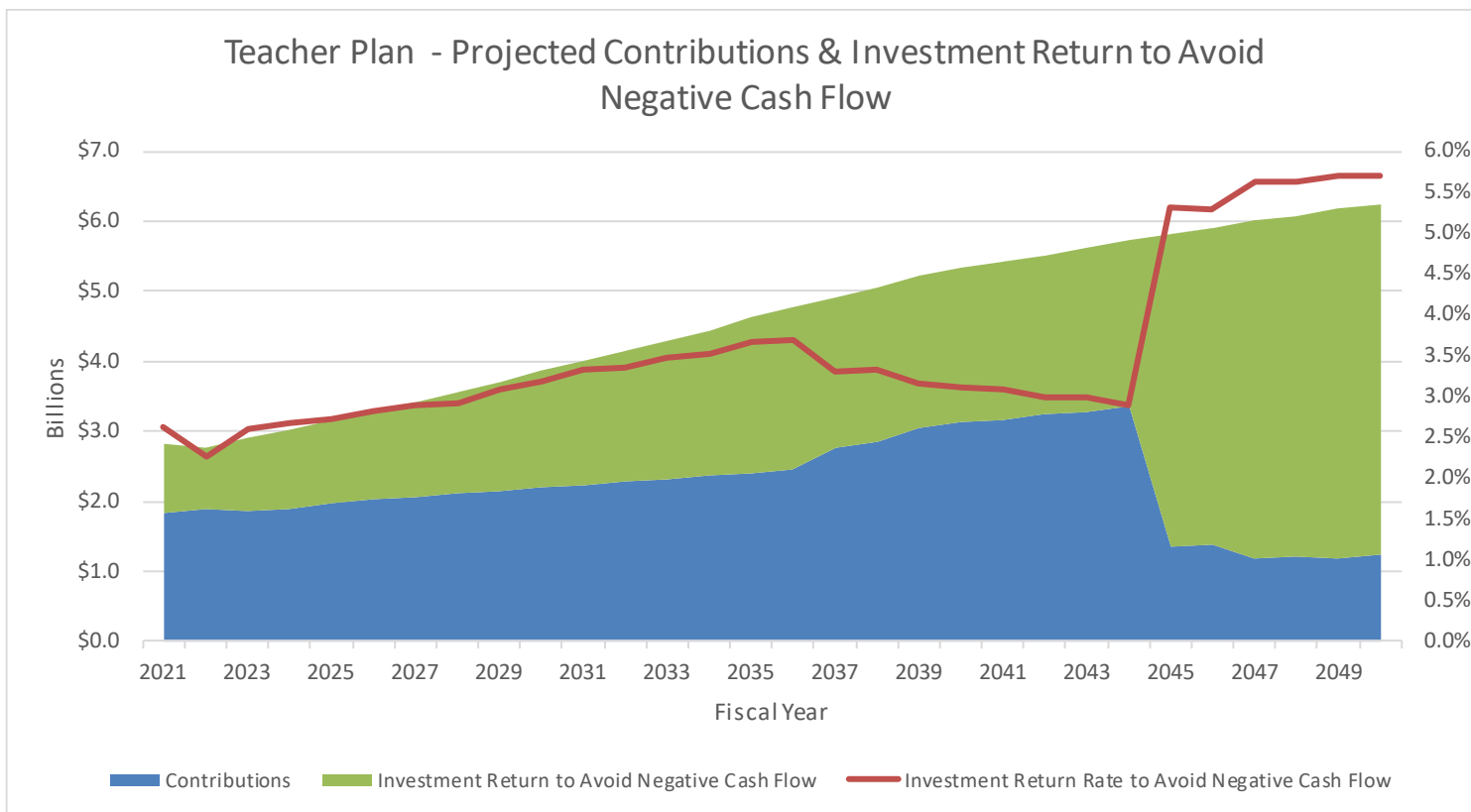
# State Projected Contributions & Investment Return



- The net (non-investment) cash flow is the difference between the contributions and benefit payments and expenses of the fund.
- When benefit payments and plan expenses exceed plan contributions, investment income can be used to avoid “negative” cash flow in the fund.
- Decrease in investment return requirement from 2036 – 2044 reflects higher contributions required to pay off legacy unfunded liability.
- The geometric average return to avoid negative cash flow (the average of the red line) is 4.68%.



# Teachers Projected Contributions & Investment Return



- The net (non-investment) cash flow is the difference between the contributions and benefit payments and expenses of the fund.
- When benefit payments and plan expenses exceed plan contributions, investment income can be used to avoid “negative” cash flow in the fund.
- Decrease in investment return requirement from 2036 – 2044 reflects higher contributions required to pay off legacy unfunded liability.
- The geometric average return to avoid negative cash flow (the average of the red line) is 3.56%.

# Employer Normal Cost Before and After Pension Reform Fully Phased-In (Changes to Current Defined Benefit & Hybrid Plan)



System	2020 Valuation			After Full Impact of 2012 Pension Reform (Hybrid Plan)		
	Employer Normal Cost Rate for Defined Benefit Plan	Employer Rate for Hybrid DC Component	Employer Normal Cost and Hybrid DC Component Rate for Retirement Plans	Normal Cost Rate for Defined Benefit Plan	Employer Rate for Hybrid DC Component	Employer Normal Cost and Hybrid DC Component Rate for Retirement Plans
State	4.69%	0.99%	5.68%	2.66%	2.28%	4.94%
Teachers	6.11%	0.75%	6.86%	3.07%	2.14%	5.21%
SPORS	12.14%	0.00%	12.14%	11.16%	0.00%	11.16%
VaLORS	10.02%	0.00%	10.02%	9.26%	0.00%	9.26%
JRS	20.49%	1.77%	22.26%	13.34%	2.98%	16.32%

Full phase-in of impact of Hybrid Plan estimated to take more than 20 years.

Net of 5% member contribution rate for Plan 1 and Plan 2.

Net of 4% member contribution rate under hybrid plan for State, Teachers and Judicial. Net of 5% member contribution for SPORS and VaLORS with no hybrid plan. Hybrid plan normal cost for State, Teachers and Judicial includes employer match to defined contribution portion of hybrid plan assuming current respective rates of 2.28%, 2.14% and 2.98% continue.

While the employer normal cost rates are not drastically different, the long-term risk associated with the fully implemented Hybrid Plan is much less as nearly half of the employer cost is associated with the defined contribution component.

# OPEB Results

# Comments on OPEB Valuation

- The funded status of all OPEB plans increased despite investment performance which was less than expected.
- Because of the smaller funded status, the actual contributions exceeding expected contributions were able to overcome investment performance.
- Total payroll increasing slightly more than expected is also contributing to the rate decrease for HIC State and Teachers.
  - HIC State includes ORPHE members
- Rate decrease for VSDP due to drop in disabled headcounts due to retirements and return to active service and also due to drop in active headcounts due to finalizing VSDP eligibility indicators.
- Lower active headcounts for VSDP leads to lower VSDP-eligible active payroll, which increases the rate offset due to the negative unfunded.

# Unfunded OPEB Liabilities (\$ in thousands)



Plan	Unfunded Liability Using Actuarial Value of Assets	
	2019	2020
Group Life	\$ 1,672,916	\$ 1,677,898
HIC State	\$ 917,335	\$ 894,542
HIC Teachers	\$ 1,295,840	\$ 1,280,589
VSDP	\$ (236,474)	\$ (256,367)
HIC Locals	\$ 48,387	Available at November 2020 Board Meeting
HIC Constitutional Officers	\$ 27,088	
HIC Social Services	\$ 12,359	
HIC Registrars	\$ 461	
VLDP Teachers	\$ 960	
VLDP Locals	\$ 846	

Plan	Unfunded Liability Using Market Value of Assets	
	2019	2020
Group Life	\$ 1,651,350	\$ 1,728,029
HIC State	\$ 917,729	\$ 899,066
HIC Teachers	\$ 1,296,868	\$ 1,286,380
VSDP	\$ (239,729)	\$ (241,350)
HIC Locals	\$ 48,387	Available at November 2020 Board Meeting
HIC Constitutional Officers	\$ 27,088	
HIC Social Services	\$ 12,359	
HIC Registrars	\$ 461	
VLDP Teachers	\$ 962	
VLDP Locals	\$ 854	

# Summary Employer OPEB Plans Contribution Rates (% of Total Covered Payroll)



System	Fiscal Years 2019/2020	Fiscal Years 2021/2022	Information Only
	Board & General Assembly Approved	Board & General Assembly Approved	Total Employer Rate for OPEB Plans
	2017 Valuation	2019 Valuation	2020 Valuation
HIC State	1.17%	1.12%	1.08%
HIC Teachers	1.20%	1.21%	1.18%
VSDP	0.62%	0.61%	0.56%
Group Life	1.31%	1.34%	1.36%

HIC State contribution rates include State, SPORS, VaLORS, JRS, ORP, and UVA members.

VSDP contribution rates based upon covered payroll and include long-term disability and long-term care benefits.

The contribution rate for GLI includes 0.34% of covered payroll to provide active group life coverage.

Some employers may require employees to contribute a portion of the Group Life rate; however, employers must pay at least 40% of the designated rate.

Rates reflect 2013 funding policy: 30-year closed amortization of unfunded actuarial accrued liability as of 2013 with 30-years decreasing by one each year until reaching 0 years (23 years remaining as of June 30, 2020). Annual increases or decreases in unfunded liability after June 30, 2013 to be funded over closed, separate 20-year periods beginning on each valuation date.

# HIC Funding Results



	June 30, 2020 Valuation	
	State*	Teachers
Normal Cost Rate**	0.30%	0.26%
Rate to Amortize Unfunded Actuarial Accrued Liability (UAAL)**	<u>0.78%</u>	<u>0.92%</u>
<b>Employer Full Contribution Rate**</b>	<b>1.08%</b>	<b>1.18%</b>
Unfunded Actuarial Accrued Liability (\$ Millions)	\$895	\$1,281
	Prior Employer Contribution Rates	
	State*	Teachers
<b><u>2019 Valuation (Board Certified) for FYs 2021 and 2022</u></b>	1.12%	1.21%
<b><u>2017 Valuation (Board Certified) for FYs 2019 and 2020</u></b>	1.17%	1.20%

\*Includes State, SPORS, VaLORS, JRS, ORP and UVA employees.

\*\*Includes a timing adjustment factor to reflect that the plan receives contributions throughout the year.

# VSDP Funding Results (continued)



	June 30, 2020 Valuation		
	LTD combined	LTC combined	VSDP total
Normal Cost Rate*	0.73%	0.07%	0.80%
Administrative Expenses Rate	0.17%	0.00%	0.17%
Rate to Amortize Unfunded Actuarial Accrued Liability (UAAL)*	<u>-0.35%</u>	<u>-0.06%</u>	<u>-0.41%</u>
<b>Employer Full Contribution Rate*</b>	<b>0.55%</b>	<b>0.01%</b>	<b>0.56%</b>
Unfunded Actuarial Accrued Liability (\$ Millions)	(\$223)	(\$33)	(\$256)
	Prior Employer Contribution Rates		
	LTD combined	LTC combined	VSDP total
<b><u>2019 Valuation (Board Certified) for FYs 2021 and 2022</u></b>	0.59%	0.02%	0.61%
<b><u>2017 Valuation (Board Certified) for FYs 2019 and 2020</u></b>	0.61%	0.01%	0.62%

\*Timing adjustment factor to reflect that the plan receives contributions throughout the year.



# Group Life Insurance Funding Results



June 30, 2020 Valuation	
Normal Cost Rate*	0.51%
Rate to Amortize Unfunded Actuarial Accrued Liability (UAAL)*	0.51%
Adjustment for Active Group Life Insurance	<u>0.34%</u>
<b>Employer Full Contribution Rate*</b>	<b>1.36%</b>
Unfunded Actuarial Accrued Liability (\$ Millions)	\$1,678
Prior Employer Contribution Rates	
<b><u>2019 Valuation (Board Certified) for FYs 2021 and 2022</u></b>	1.34%
<b><u>2017 Valuation (Board Certified) for FYs 2019 and 2020</u></b>	1.31%

\*Includes a timing adjustment factor to reflect that the plan receives contributions throughout the year.

## ➤ Separately Rated Statewide Systems

### ▪ Retirement Plans

State	Virginia Retirement System for State Employees	State Employees
SPORS	State Police Officers' Retirement System	
VaLORS	Virginia Law Officers' Retirement System	
JRS	Judicial Retirement System	
Teachers	Virginia Retirement System for Teachers	Local Employees

### ▪ Other Postemployment Benefit (OPEB) Plans

GLI	Group Life Insurance	State and Local Employees
HIC - State	Health Insurance Credit for State Employees (Includes State, VaLORS, SPORS, JRS, ORP and UVA Members)	State Employees
HIC - Teacher	Health Insurance Credit for Teachers	Local Employees
VSDP	Virginia Sickness and Disability Program (Includes State, VaLORS, and SPORS members hired on or after January 1, 1999) - Long-Term Disability (LTD) - Long-Term Care (LTC)	State Employees

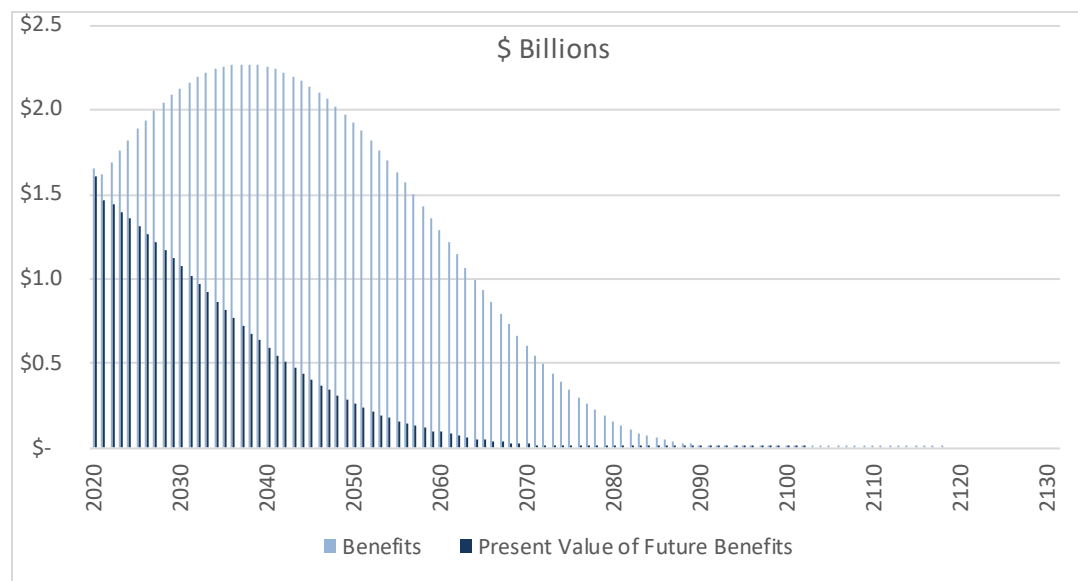
# The Actuarial Valuation

Actuarial assumptions bridge the gap between the information that we know with certainty as of the valuation date and what may happen in the future. The assumptions used include the following:

- Demographic (people assumptions)
  - Retirement
  - Termination before retirement
  - Disability
  - Death
- Economic (money assumptions)
  - Investment return – 6.75% per year
  - Salary increase – from 5.35% to 3.50% based on service
  - Inflation 2.50%
  - Total payroll growth – 3.00%

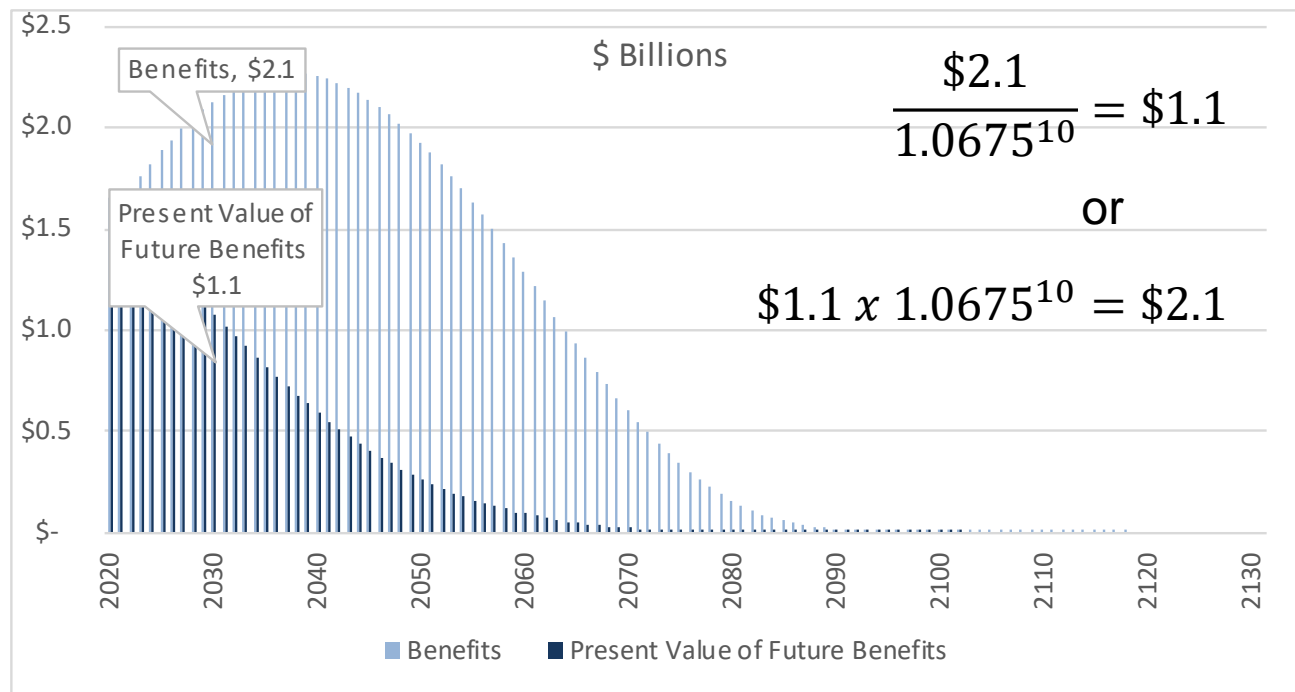
# The Actuarial Valuation Process

- Using member data, benefit provisions and assumptions we project the amount of benefits to be paid. The following example is based on data from the State plan only.
- Using the assumed investment return assumption, we discount these projected benefits into today's dollars. We refer to this dollar amount as the Present Value of Future Benefits (PVFB). If the fund has current assets equal to the PVFB and all other assumptions are met, there would be sufficient funds on hand to pay benefits to all current members when they retire. The PVFB for State is \$28.7 billion as of June 30, 2020 based on a 6.75% return assumption.



# The Actuarial Valuation Process

- The PVFB is the sum of expected benefits each year in the future discounted to June 30, 2020.
- The “2030 slice” of PVFB of \$1.1 billion is the \$2.1 billion in expected benefits discounted ten years at 6.75%.
- Alternatively, \$1.1 billion in the fund as of June 30, 2020 accumulated with 6.75% interest for 10 years will be sufficient to pay the benefits expected to be paid in 2030 of \$2.1 billion.

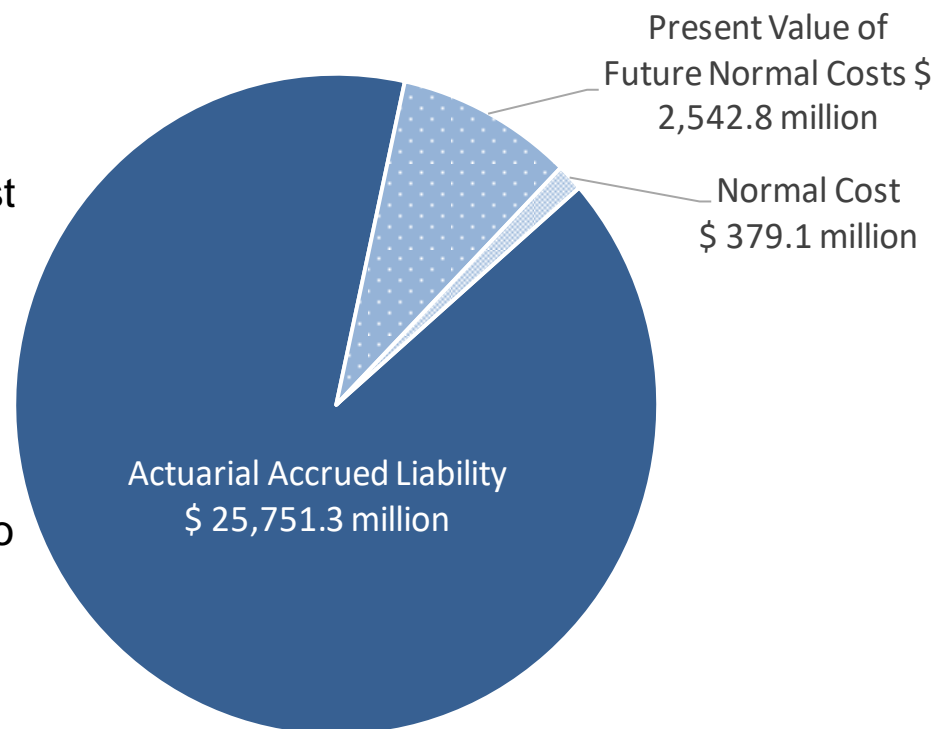


The chart below shows the allocation of the \$28,673 million in Present Value of Future Benefits (PVFB) shown on the previous slide for State pensions.

➤ An actuarial cost method known as Entry Age is used to allocate the PVFB to:

- Actuarial Accrued Liability – past service
- Present Value of Future Normal Costs – future service
- Normal Cost – current years service

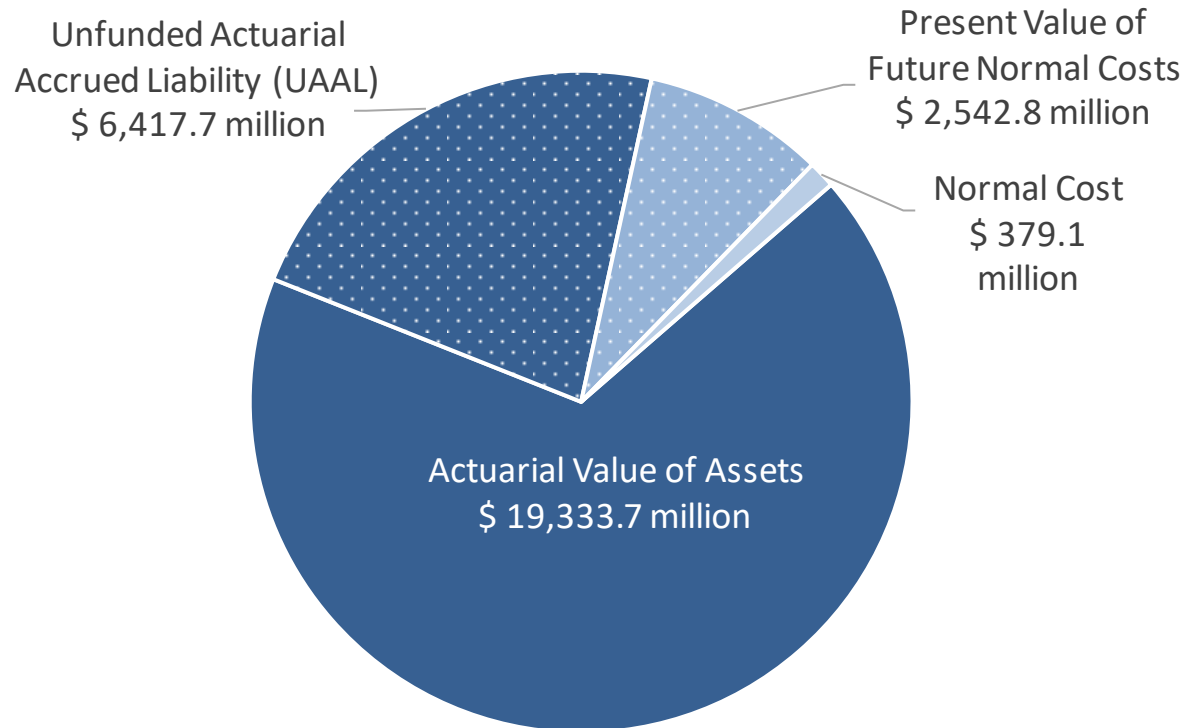
➤ The goal of actuarial funding is to pay the present value of future benefits while the member is working so that additional contributions are not needed in retirement.



# The Actuarial Valuation Process



Below we add the actuarial value of assets. The State plan's UAAL is amortized, or paid off, over a period of years according to the policy on slide 25.

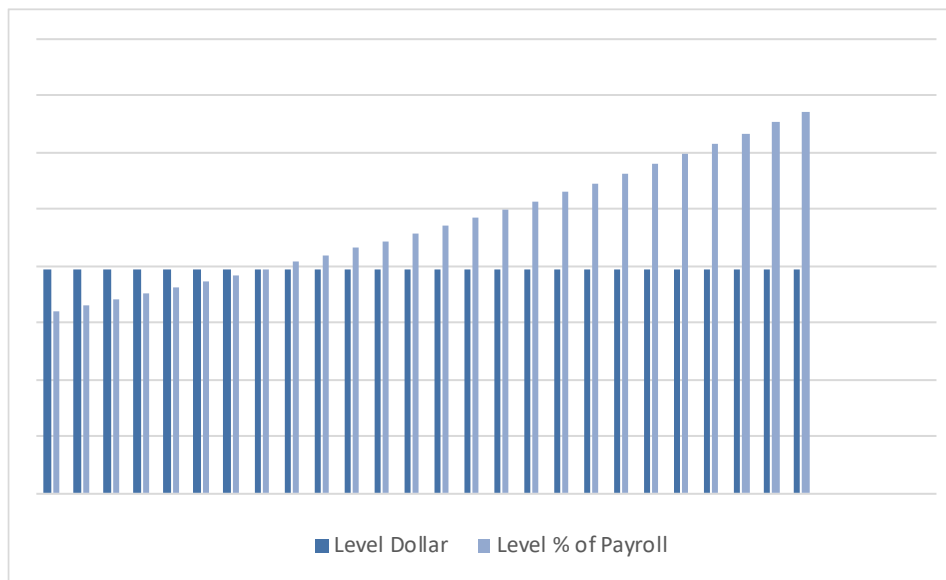




# The Actuarial Valuation Process



- The UAAL is said to be amortized as a level % of payroll. Said another way, the UAAL is paid off assuming the payments increase at 3% annually. The total payroll growth assumption is 3%.
- Note that this does not mean salaries for individuals increase at 3%. Salary increases for individuals range from 5.35% to 3.50% based on service.
- Below is a comparison of UAAL payments, one based on payments that stay level and the other based on payment which increase at 3% per year.

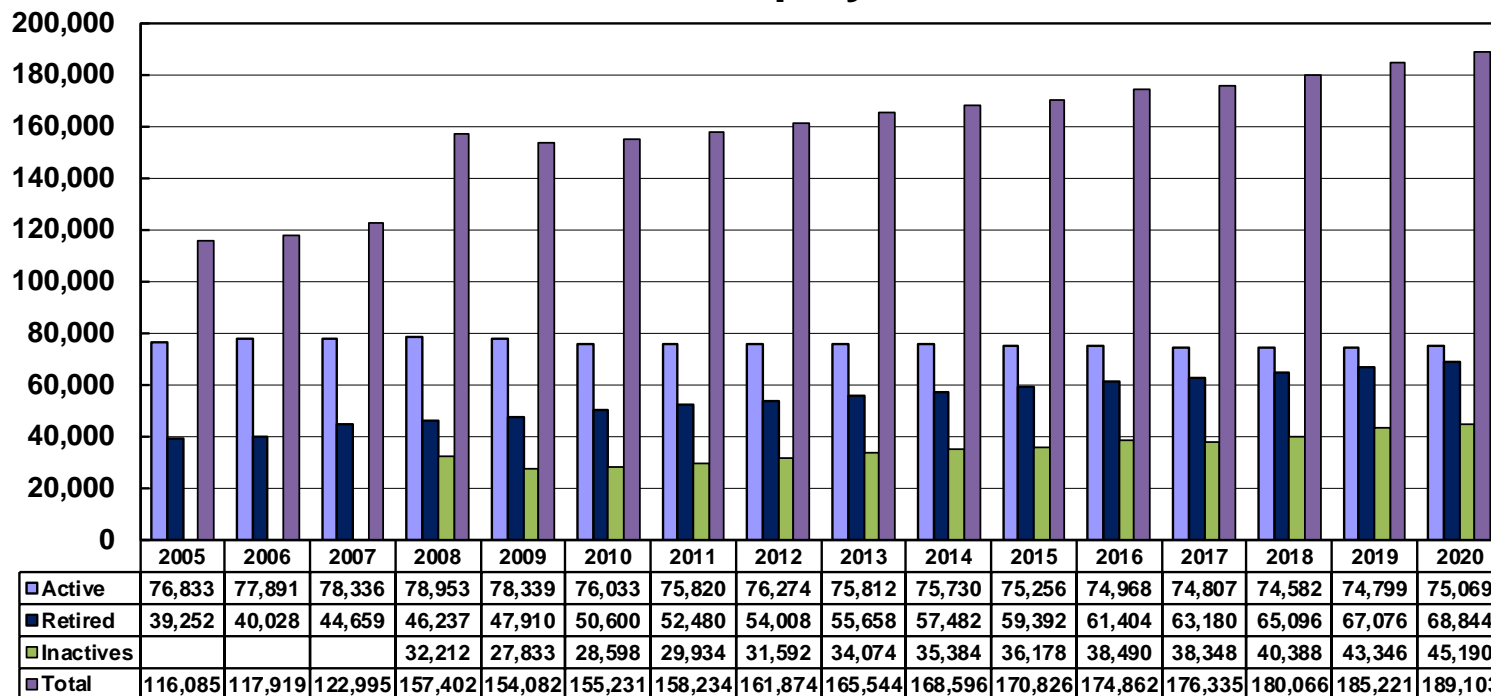


# Membership Charts

# Total Membership



## State Employees



0.1% average annual decrease for active members since 2010; 0.4% increase for 2020.

3.1% average annual increase for retired members since 2010; 2.6% increase for 2020.

2.0 actives per retiree 15 years ago; 1.1 actives per retiree now. As large plans mature, retiree population becomes larger portion of overall population.

“Retired” includes retirees, disabled retirees and beneficiaries.

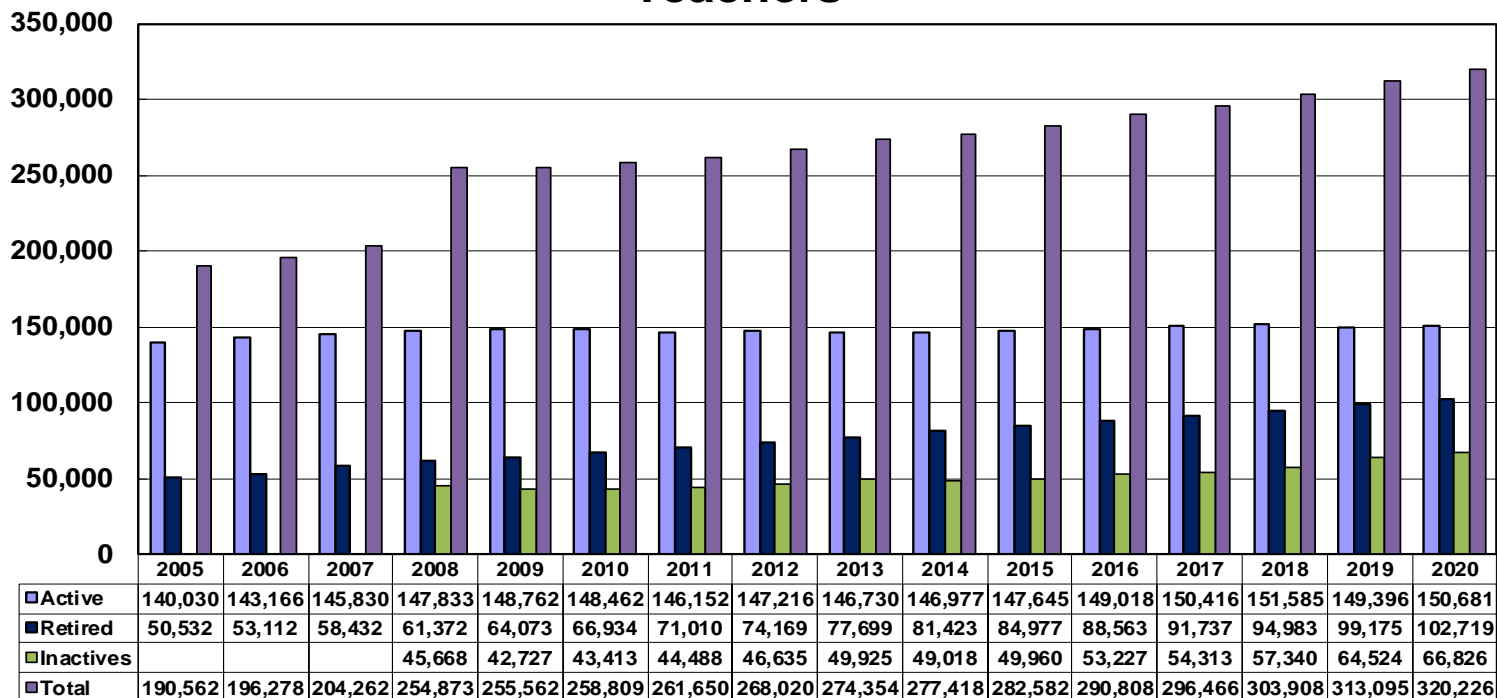
“Inactive” includes deferred vested and non-vested members with employee contributions in plan.

“Inactive” data before 2008 is not available.

# Total Membership



## Teachers



0.1% average annual increase for active members since 2010; 0.9% increase for 2020.

4.4% average annual increase for retired members since 2010; 3.6% increase for 2020.

2.8 actives per retiree 15 years ago; 1.5 actives per retiree now. As large plans mature, retiree population becomes larger portion of overall population.

“Retired” includes retirees, disabled retirees and beneficiaries.

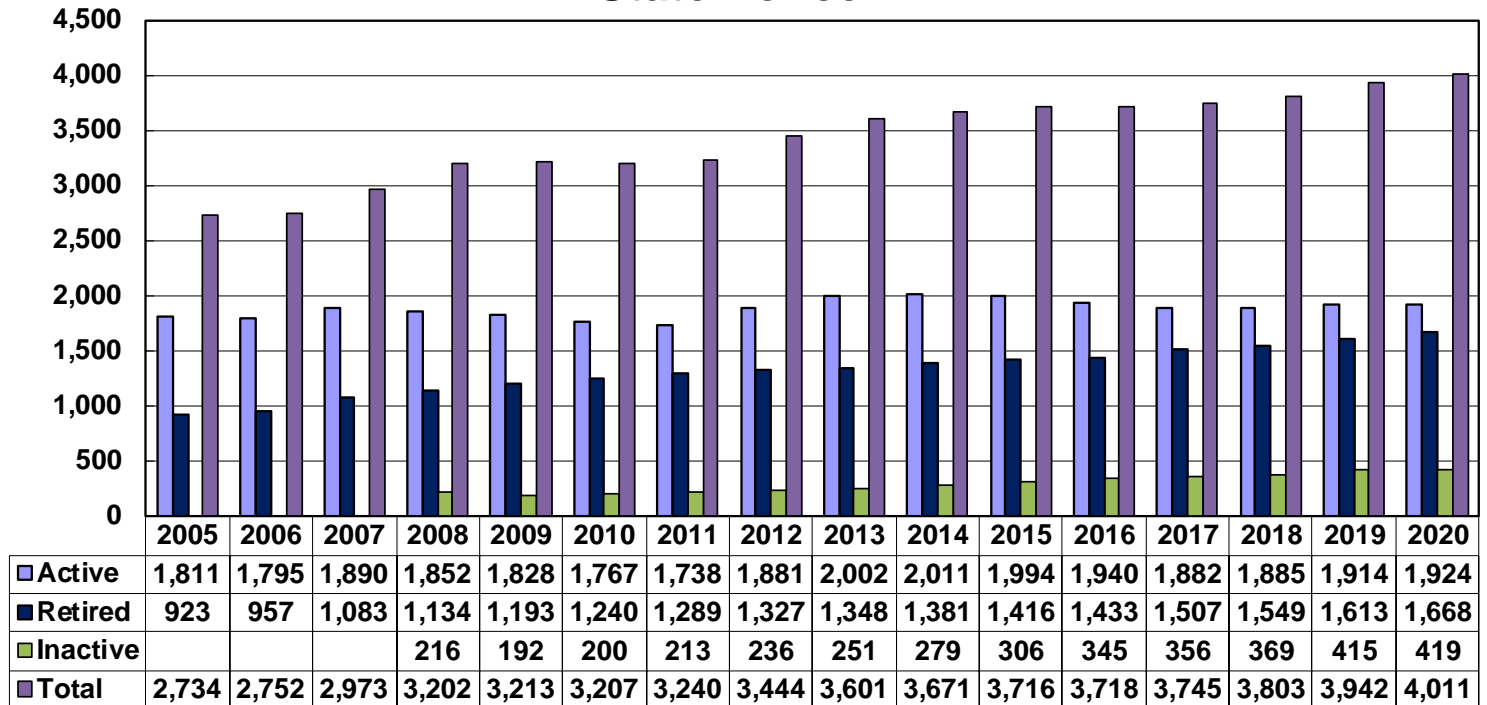
“Inactive” includes deferred vested and non-vested members with employee contributions in plan.

“Inactive” data before 2008 is not available.

# Total Membership



## State Police



0.9% average annual increase for active members since 2010; 0.5% increase for 2020.

3.0% average annual increase for retired members since 2010; 3.4% increase for 2020.

2.0 actives per retiree 15 years ago; 1.2 actives per retiree now. As large plans mature, retiree population becomes larger portion of overall population.

“Retired” includes retirees, disabled retirees and beneficiaries.

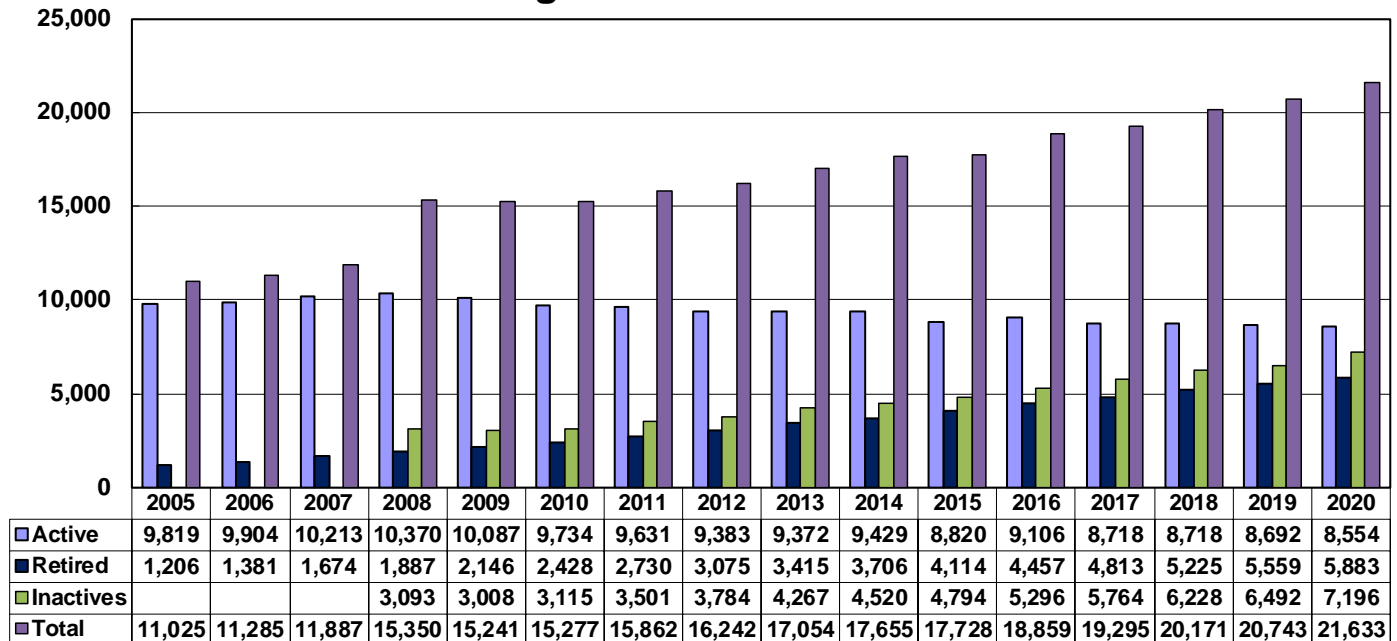
“Inactive” includes deferred vested and non-vested members with employee contributions in plan.

“Inactive” data before 2008 is not available.

# Total Membership



## Virginia Law Officers



1.3% average annual decrease for active members since 2010; 1.6% decrease for 2020.

9.3% average annual increase for retired members since 2010; 5.8% increase for 2020.

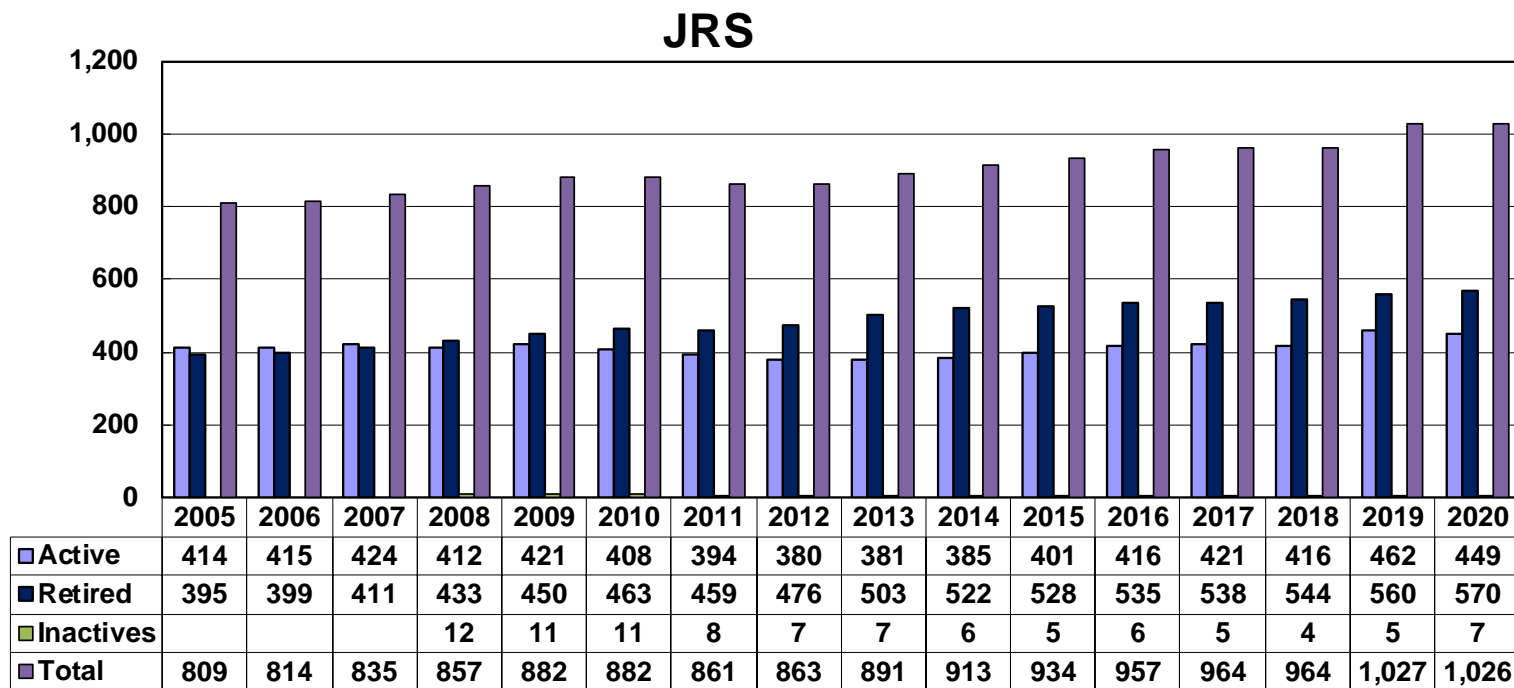
8.1 actives per retiree 15 years ago; 1.5 actives per retiree now. As large plans mature, retiree population becomes larger portion of overall population.

“Retired” includes retirees, disabled retirees and beneficiaries.

“Inactive” includes deferred vested and non-vested members with employee contributions in plan.

“Inactive” data before 2008 is not available.

# Total Membership



1.0% average annual increase for active members since 2010; 2.8% decrease for 2020.

2.1% average annual increase for retired members since 2010; 1.8% increase for 2020.

1.0 actives per retiree 15 years ago; 0.8 actives per retiree now. As large plans mature, retiree population becomes larger portion of overall population.

“Retired” includes retirees, disabled retirees and beneficiaries.

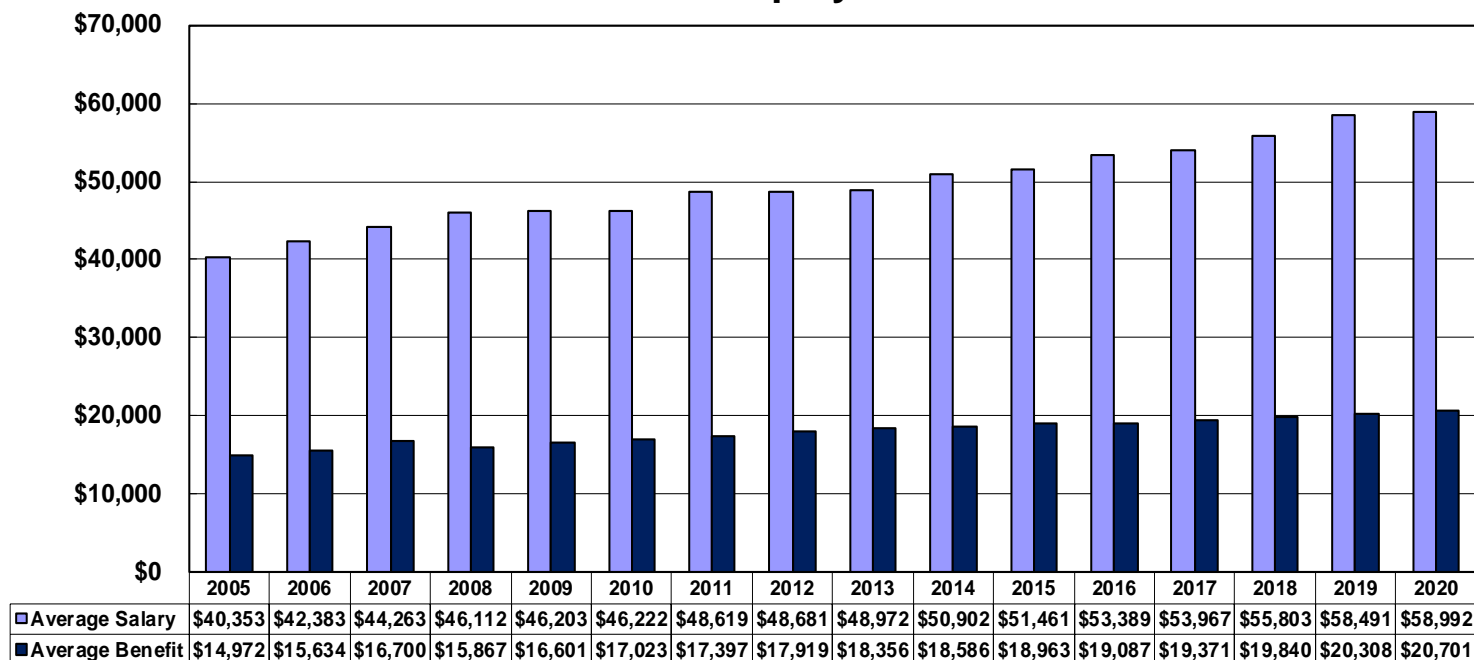
“Inactive” includes deferred vested and non-vested members with employee contributions in plan.

“Inactive” data before 2008 is not available.

# Average Salary & Average Retirement Benefits



## State Employees



2.5% average annual increase in average salary since 2010; 0.9% increase for 2020.  
 2.0% average annual increase in average benefit since 2010; 1.9% increase for 2020.

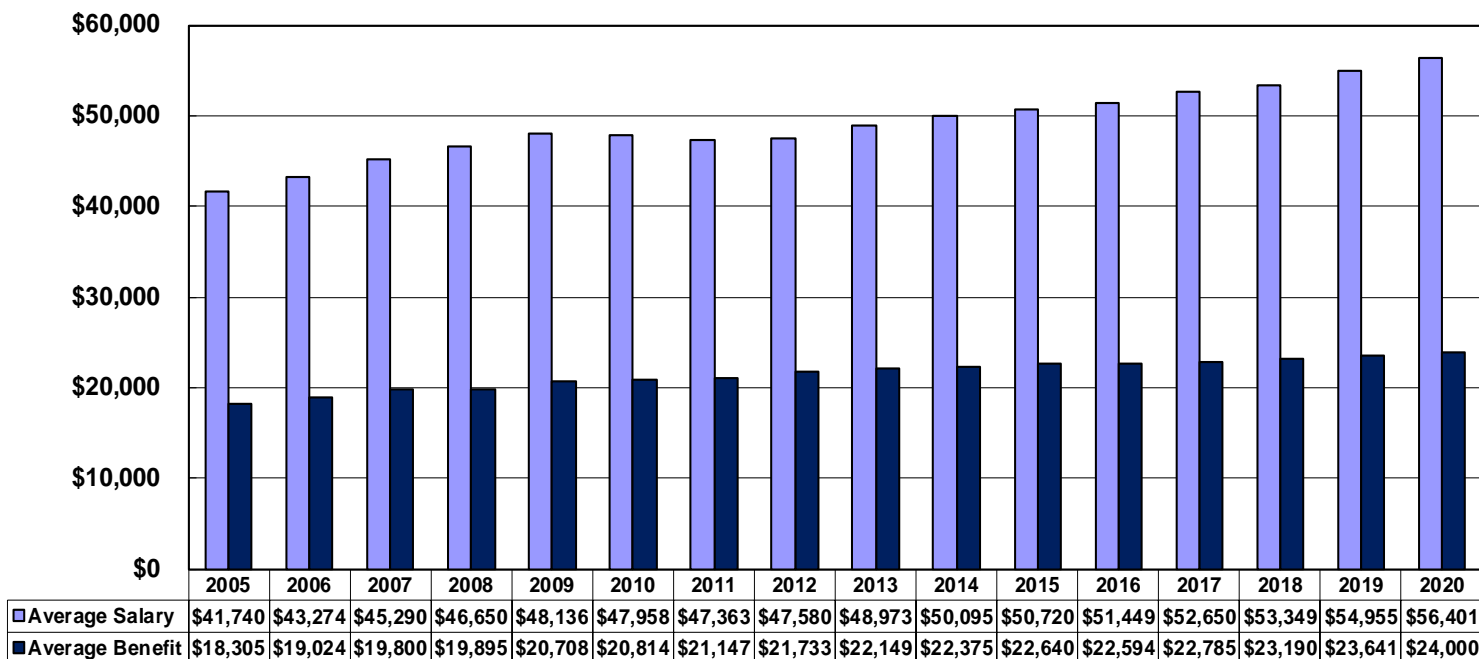
Average Benefit is average for all retirees.



# Average Salary & Average Retirement Benefits



## Teachers



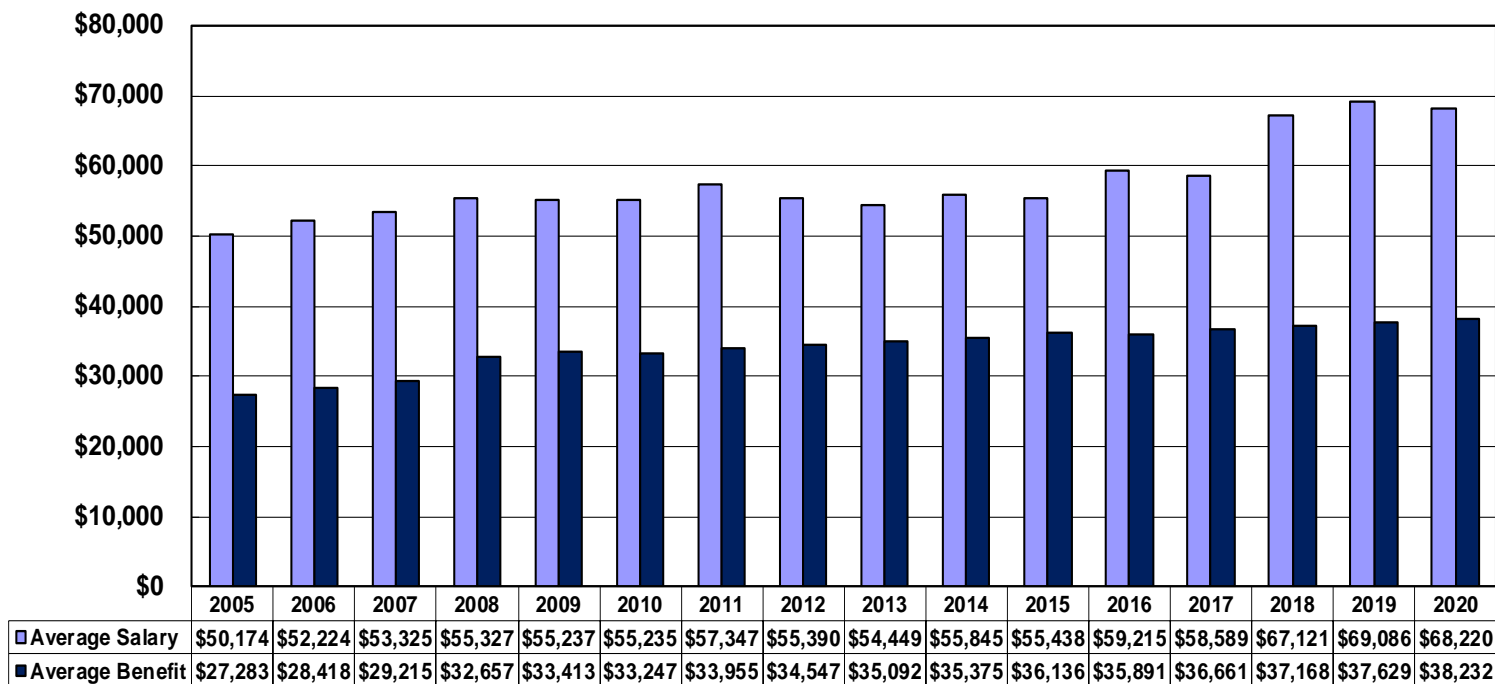
1.6% average annual increase in average salary since 2010; 2.6% increase for 2020.  
 1.4% average annual increase in average benefit since 2010; 1.5% increase for 2020.

Average Benefit is average for all retirees.

# Average Salary & Average Retirement Benefits



## State Police



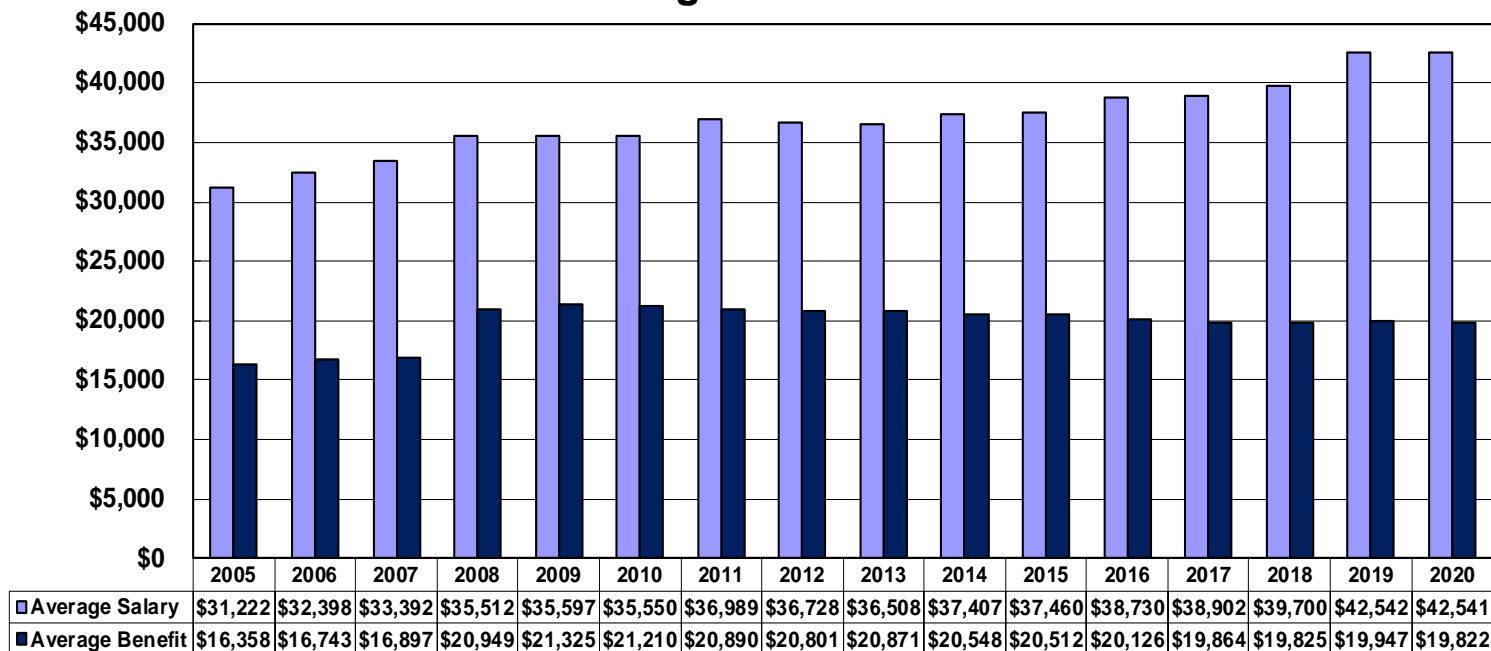
2.1% average annual increase in average salary since 2010; 1.3% decrease for 2020.  
 1.4% average annual increase in average benefit since 2010; 1.6% increase for 2020.

Average Benefit is average for all retirees.

# Average Salary & Average Retirement Benefits



## Virginia Law Officers



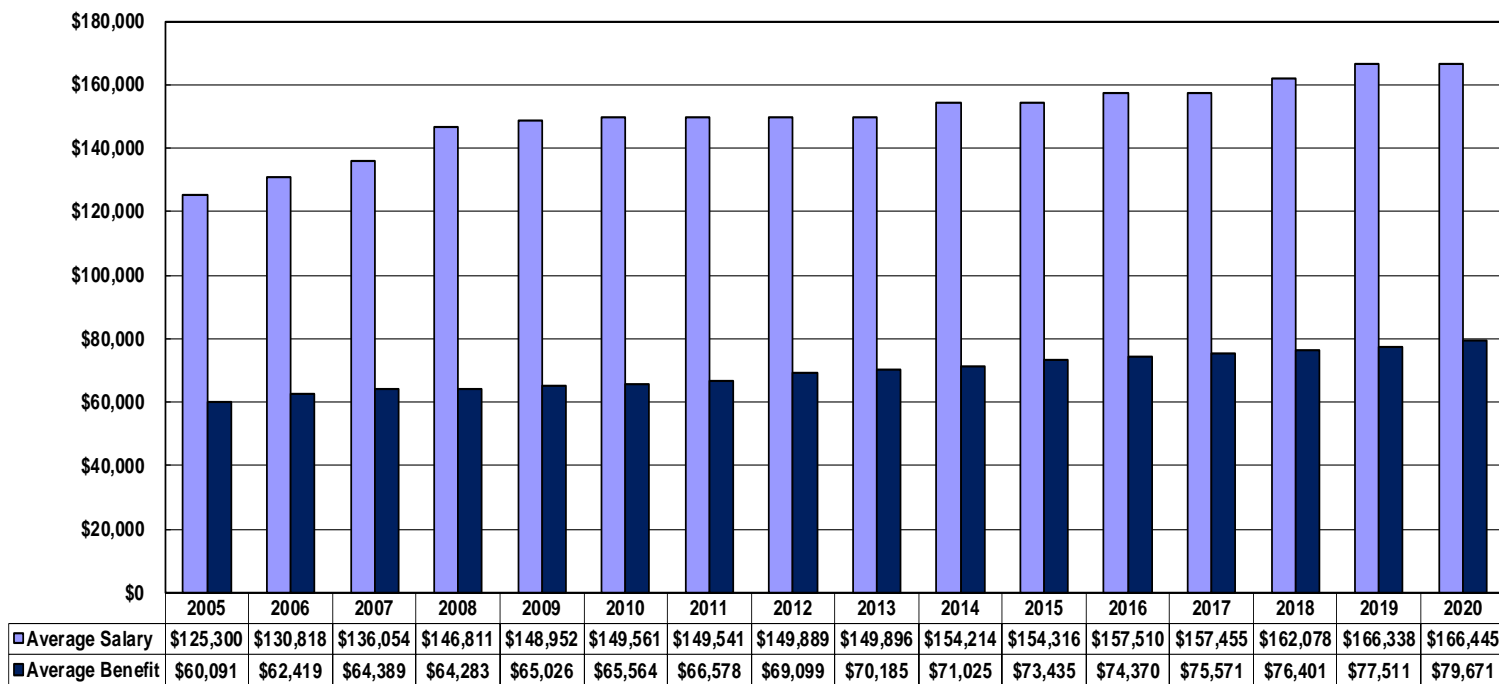
1.8% average annual increase in average salary since 2010; 0.0% increase for 2020.  
 0.7% average annual decrease in average benefit since 2010; 0.6% decrease for 2020.

Average Benefit is average for all retirees.

# Average Salary & Average Retirement Benefits



## JRS



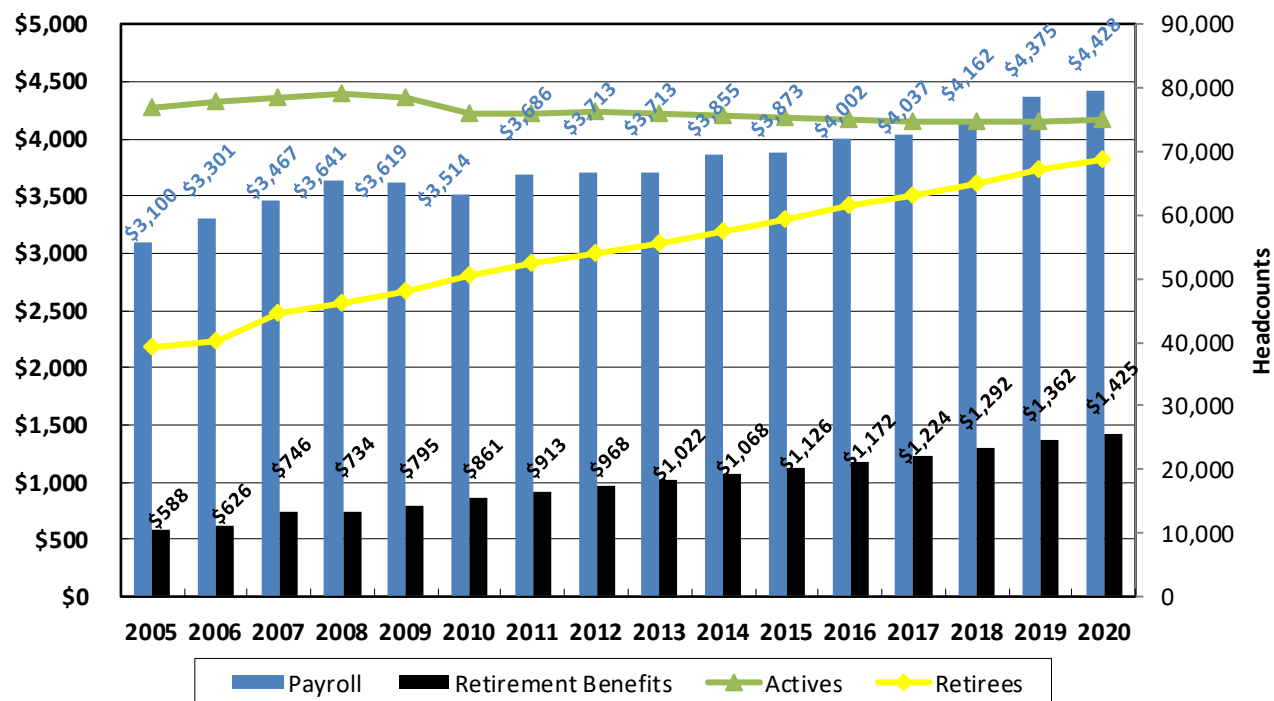
1.1% average annual increase in average salary since 2010; 0.1% increase for 2020.  
 2.0% average annual increase in average benefit since 2010; 2.8% increase for 2020.

Average Benefit is average for all retirees.

# Annual Payroll & Retirement Benefits (\$ Millions)



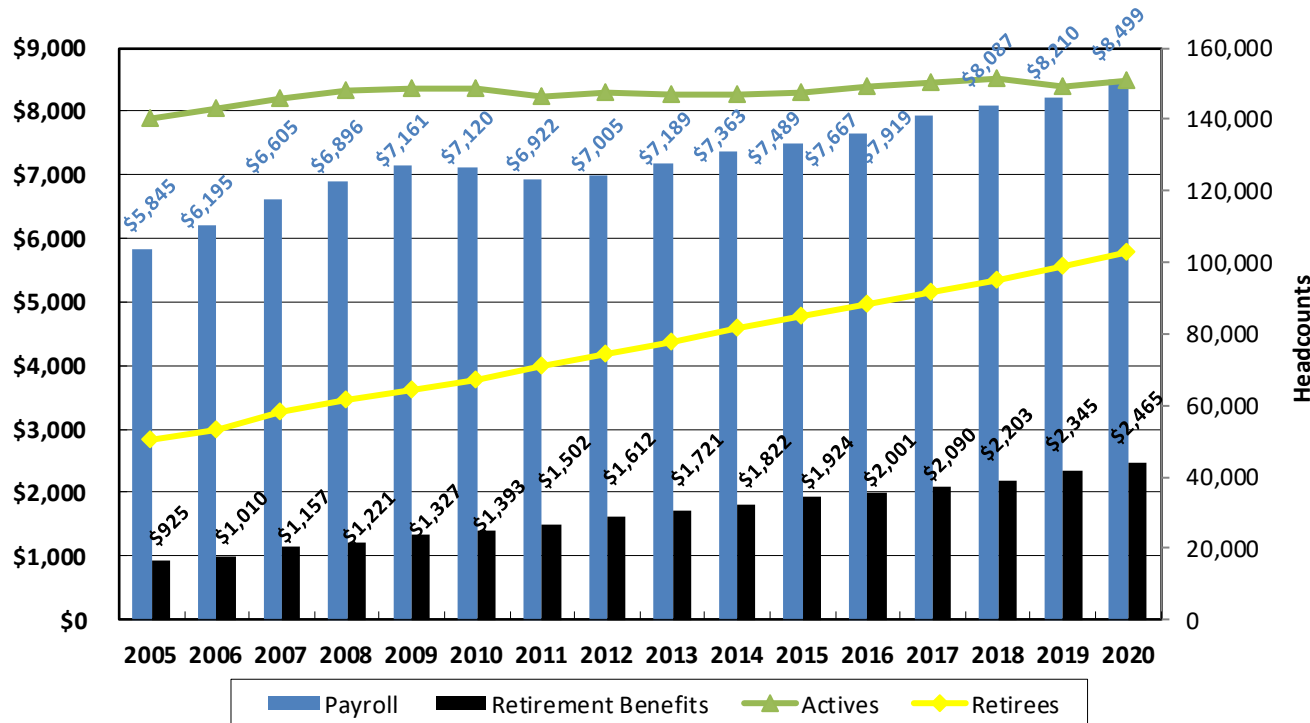
## State Employees



# Annual Payroll & Retirement Benefits (\$ Millions)



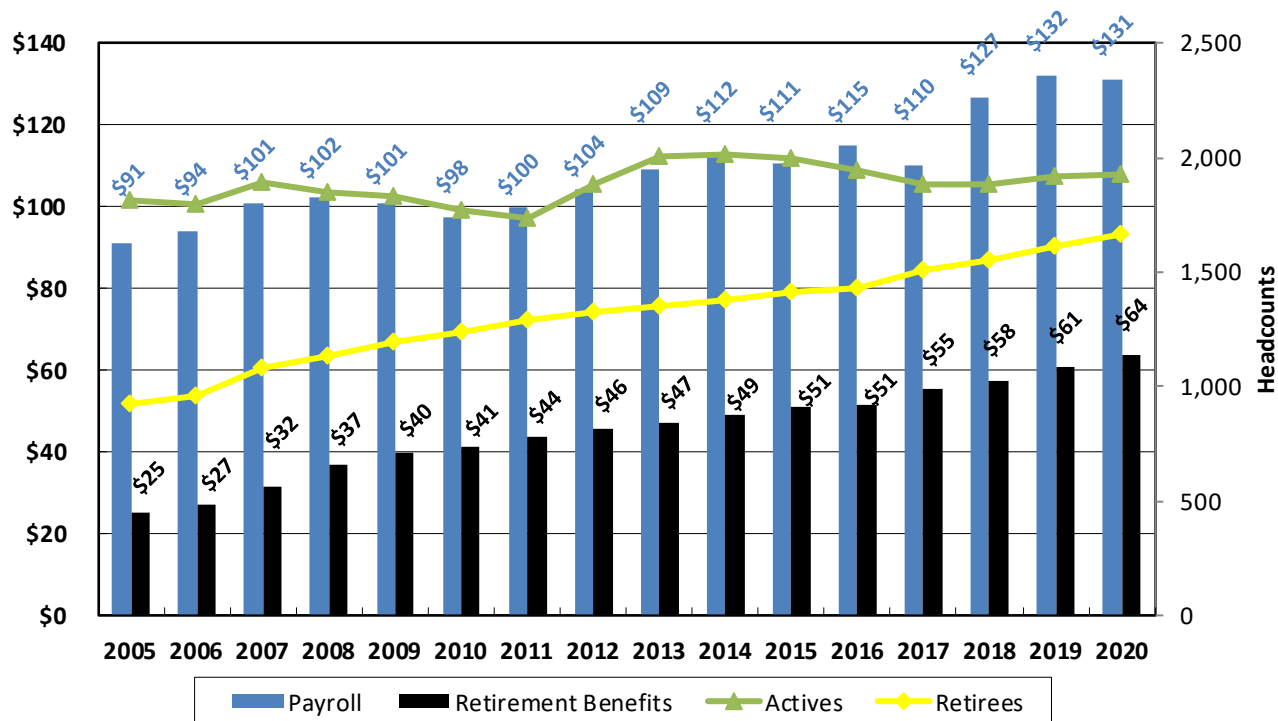
## Teachers



# Annual Payroll & Retirement Benefits (\$ Millions)



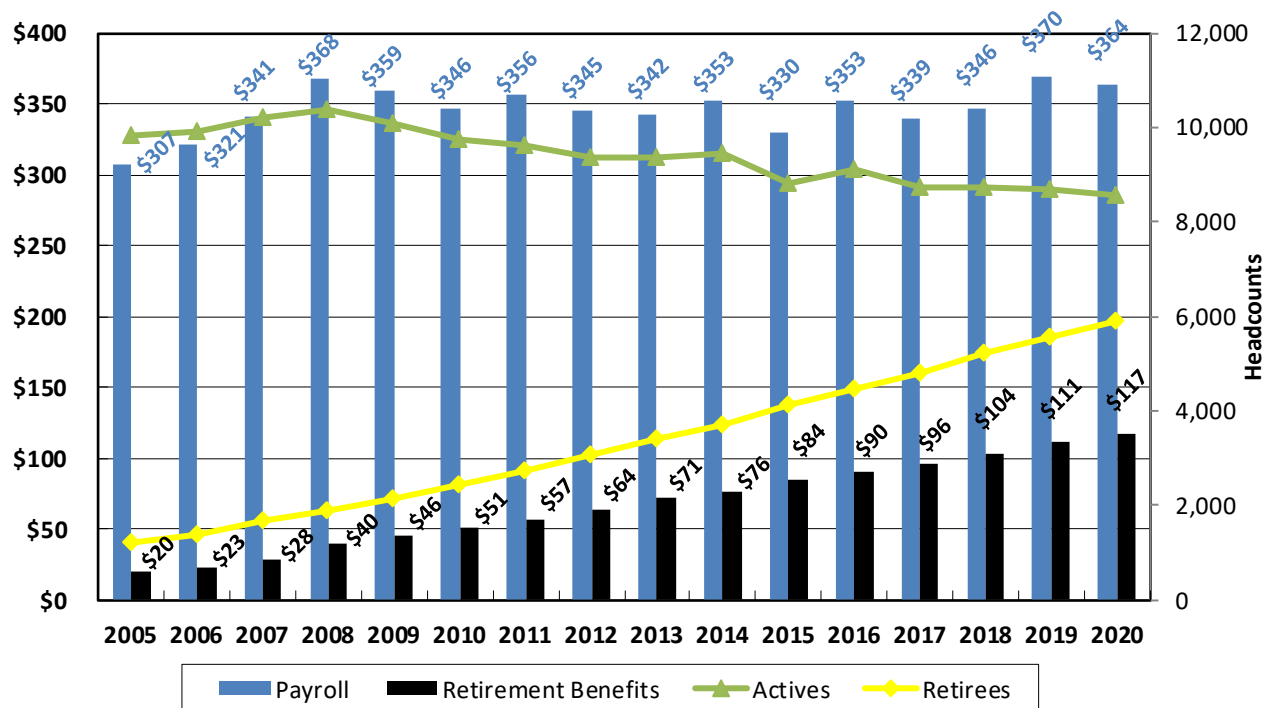
## State Police



# Annual Payroll & Retirement Benefits (\$ Millions)



## Virginia Law Officers





# Annual Payroll & Retirement Benefits (\$ Millions)

