November 12, 2020

Actuarial Summary Report

Oklahoma State Pension Commission

Fiscal Year ending June 30, 2020

RVK

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Executive Summary

Executive Summary

Overview

RVK reviewed the Fiscal Year 2020 actuarial reports for each underlying plan in the Oklahoma State Pension Commission. This presentation summarizes several key plan metrics from FY 2020 and trends over the previous 15 years. Metrics include funded status levels, as well as changes in assets, liabilities, and contributions relative to prior years. RVK also incorporated data collected by RVK's semi-annual Public Fund Survey to help the Commission gauge how the Plan compares to other large public pension plans throughout the country. Additional information on this survey is provided in the Appendix.

It is important to note that the information presented in this report is based on Actuarial Valuation reports for Fiscal Year 2020. The actuaries for each Plan provided all plan-specific data used in this presentation. RVK is not an actuarial firm and does not provide the actuarial services that generated the plan-specific data. This being the case, the information contained herein does not constitute a statement of actuarial opinion and may not be used in place of valuation results and recommendations provided by the plan actuary.

Funded Status Highlights

1. **Decline in Funded Status** – For the fiscal year ending June 30, 2020, The funded status of the plans declined by 5.5% based on the actuarial value of assets and 8.2% based on the market value of asset. Key drivers of the funded status decline are as follows.

   - **Liability Increase** – The decline in funded status was driven largely by an increase in plan liabilities, which rose by approximately $4 Billion over the past year.

   - **Actuarial Value of Asset Increase** – A modest increase of approximately $600 million in the actuarial value of assets partially offset the liability increase.

2. **Funded Status is Comparable to Other Large Public Plans** – Despite the decline, the combined funded status of the Oklahoma Pension Plans is roughly on par with the median funded status reported for a broad sample of large public plans. The aggregate funded status of the Oklahoma Pension Plans was 76.7% versus 77.1% for the public fund average.

3. **Teachers and Public Employees Drove the Majority of the Funded Status Decline** – The change in funded status varied by plan. The Teachers and Public Employees Plans, which constitute roughly 80% of total liabilities, drove the majority of the decline, while the smaller plans fared a bit better.

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Executive Summary (continued)

<table>
<tr><td>Contribution Highlights</td><td>

1. **Annual Contribution Increase** – Total contributions for the fiscal year were approximately $1.8 Billion, which is a 7.3% increase relative to the prior fiscal year. Contributions from employees (+34.4) and the State (+10.8%) were the primary drivers of contribution increases.

2. **Actual Contributions Continue to Exceed Required Contributions** – For the past Fiscal Year, the actual contribution exceeded the actuarially required contribution by approximately 138.5%. Since 2011, the plans have continued to contribute at a level that is higher than the actuarial requirement.

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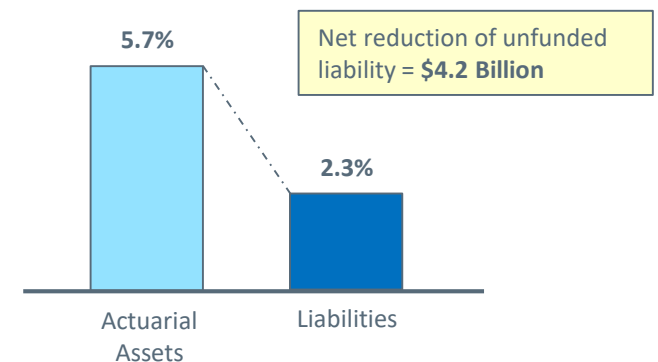## Key Metrics for Oklahoma Pension Plans

Funded Status vs. RVK Survey Median

- 77.1% — RVK Public Pension Plan Survey Median
- 76.7% — Combined Oklahoma Pension Plans
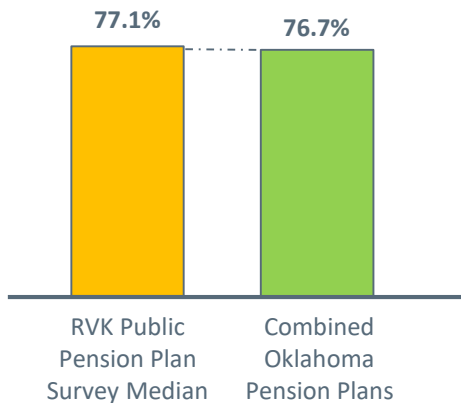
Total Contributions FY 2020 ($ Millions)

- $1,384 — Actuarially Required Contribution
- $1,835 — Combined Oklahoma Pension Plans
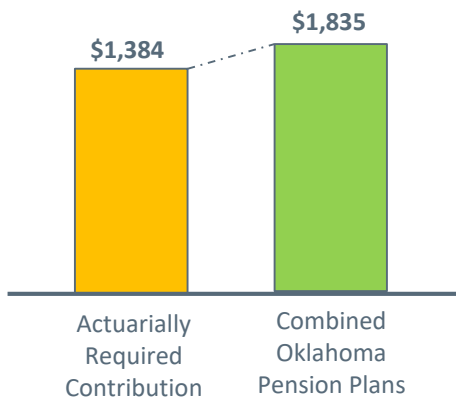
10-Year Asset vs. Liability Growth Rate (FY 2010 – 2020)

- 5.7% — Actuarial Assets
- 2.3% — Liabilities

Net reduction of unfunded liability = **$4.2 Billion**

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OKPSC Funded Status

Aggregate Funded Status (Actuarial Values)
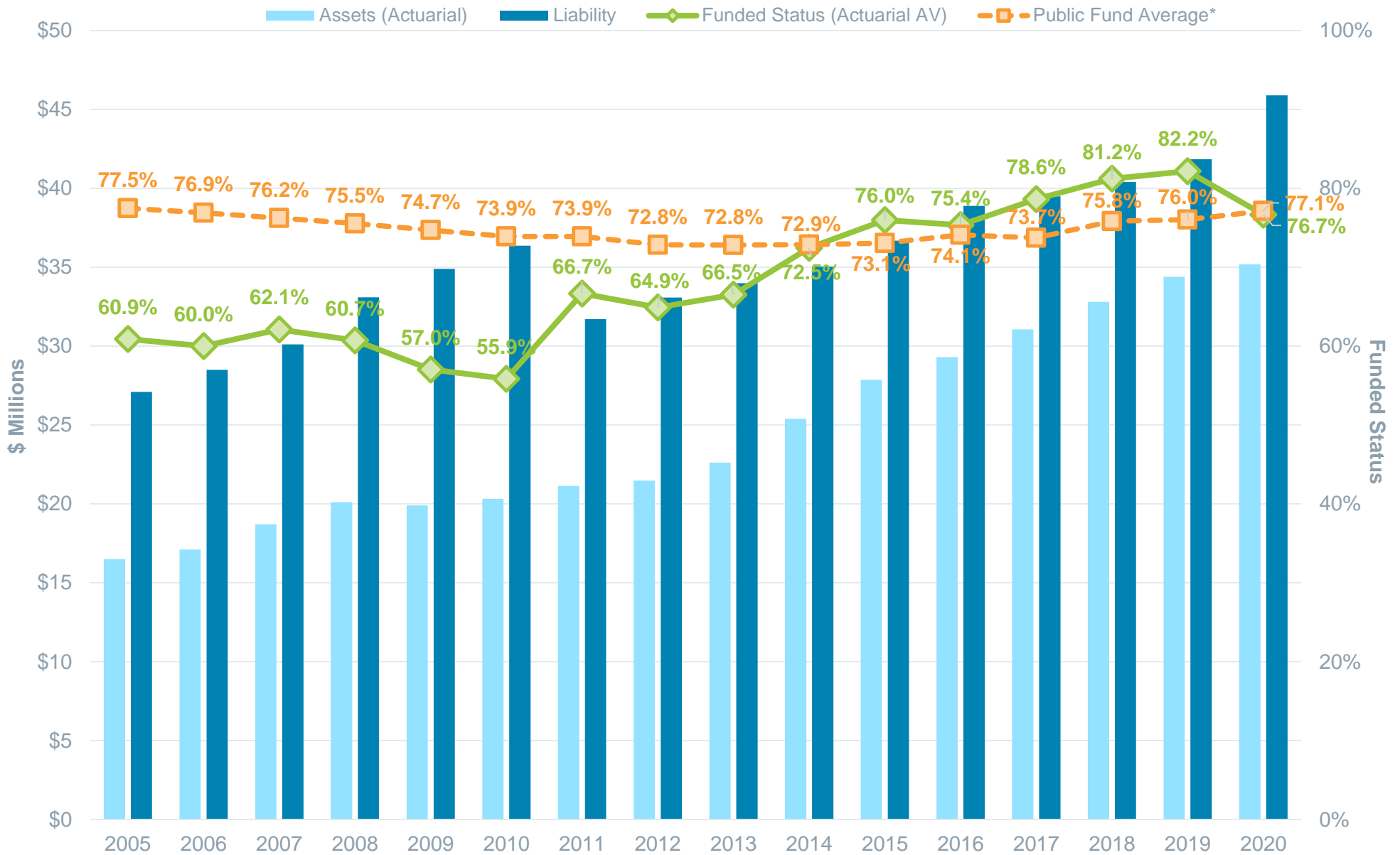
Legend: Assets (Actuarial) | Liability | Funded Status (Actuarial AV) | Public Fund Average*

Funded Status (Actuarial AV) values by year:
- 2005: 60.9%
- 2006: 60.0%
- 2007: 62.1%
- 2008: 60.7%
- 2009: 57.0%
- 2010: 55.9%
- 2011: 66.7%
- 2012: 64.9%
- 2013: 66.5%
- 2014: 72.5%
- 2015: 76.0%
- 2016: 75.4%
- 2017: 78.6%
- 2018: 81.2%
- 2019: 82.2%
- 2020: 76.7%

Public Fund Average* values by year:
- 2005: 77.5%
- 2006: 76.9%
- 2007: 76.2%
- 2008: 75.5%
- 2009: 74.7%
- 2010: 73.9%
- 2011: 73.9%
- 2012: 72.8%
- 2013: 72.8%
- 2014: 72.9%
- 2015: 73.1%
- 2016: 74.1%
- 2017: 73.7%
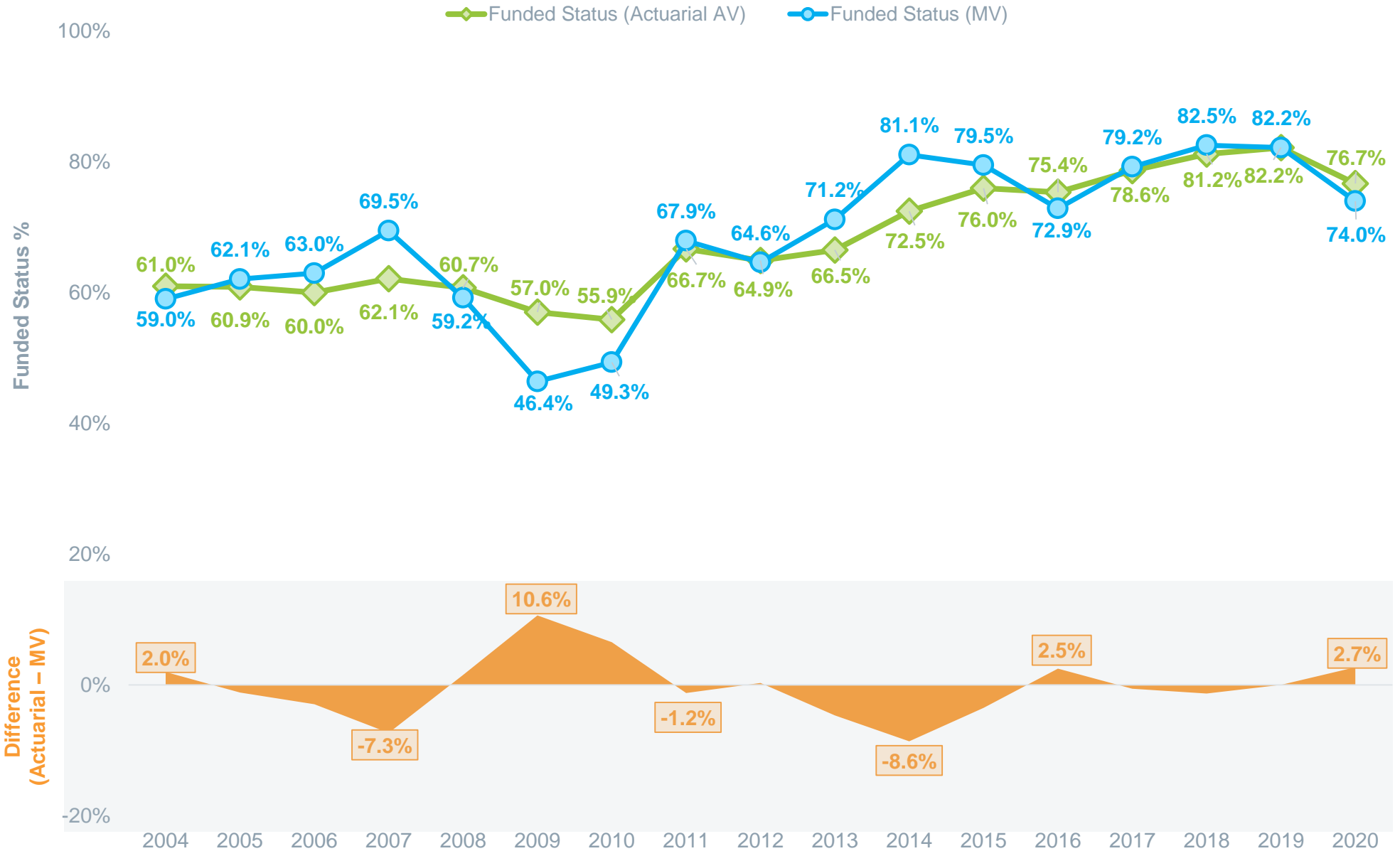- 2018: 75.8%
- 2019: 76.0%
- 2020: 77.1%

Data as of June 30, 2020.
*Represents data from RVK's Public Fund Survey. Please see the appendix for more detail.

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OKSPC Funded Status

Aggregate Funded Status (Actuarial Assets vs Market Values)
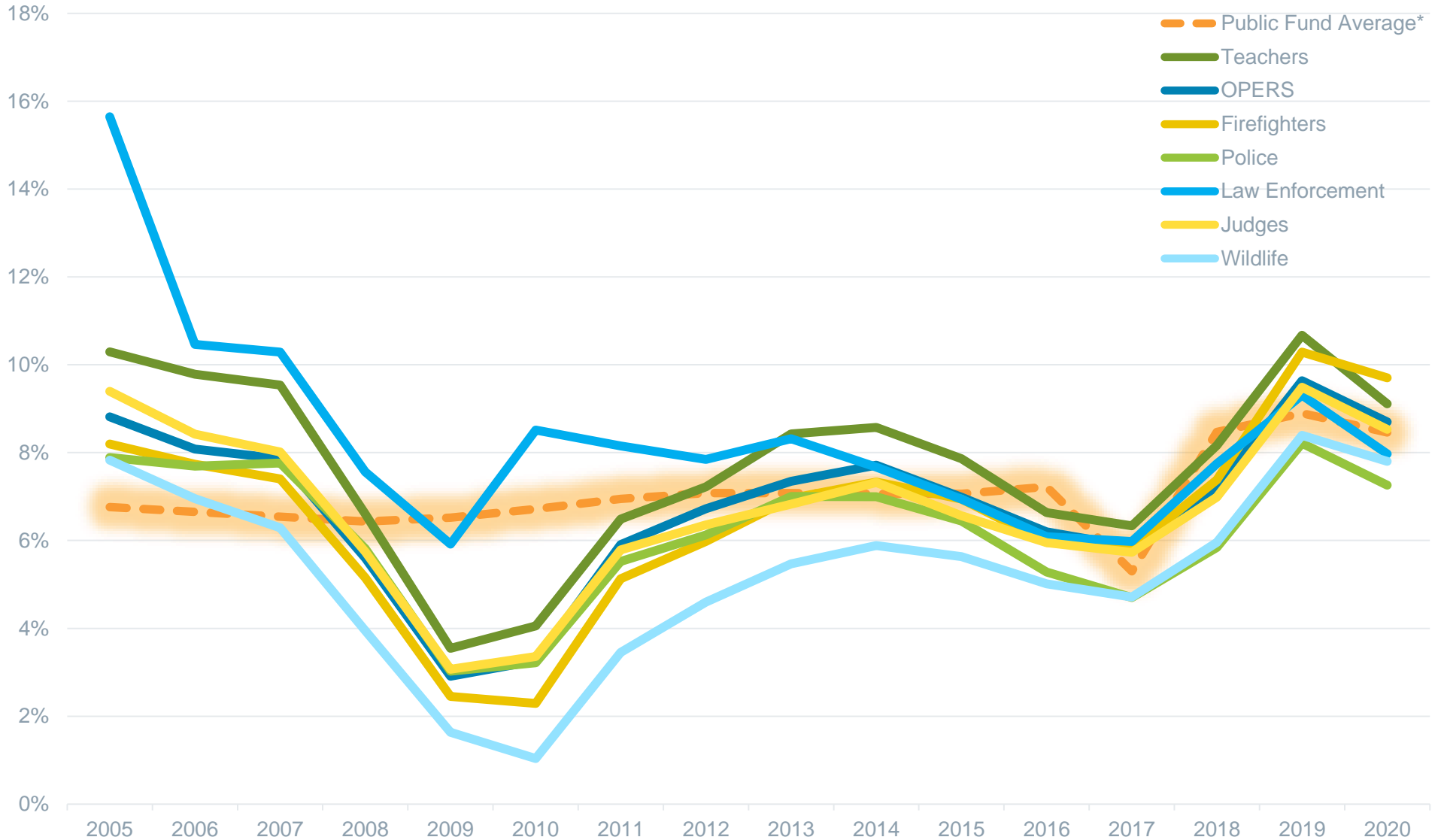

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OKSPC Funded Status

Individual Plan Funded Status Summary

Plan	Actuarial Value of Assets ($ M)	Actuarial Accrued Liability ($ M)	Market Value of Assets ($ M)	Funded Status (per Actuarial Assets)	Funded Status (per Market Value Assets)	Change YoY (Actuarial)	Change YoY (Market)
Teachers	$17,769	$26,410	$16,930	67.3%	64.1%	-5.1%	-8.2%
OPERS	$10,212	$10,943	$10,098	93.3%	92.3%	-5.3%	-6.8%
Firefighters	$2,886	$4,103	$2,871	70.4%	70.0%	-0.4%	+0.1%
Police	$2,757	$2,736	$2,621	100.8%	95.8%	-1.7%	-4.4%
Law Enforcement	$1,088	$1,232	$1.005	88.3%	81.5%	-1.3%	-5.1%
Judges	$354	$333	$351	106.5%	105.4%	-5.4%	-7.2%
Wildlife	$119	$135	$118	88.2%	87.7%	-2.6%	-3.4%

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OKSPC Rates of Return

Individual Plan Rates of Return

10 Year Returns

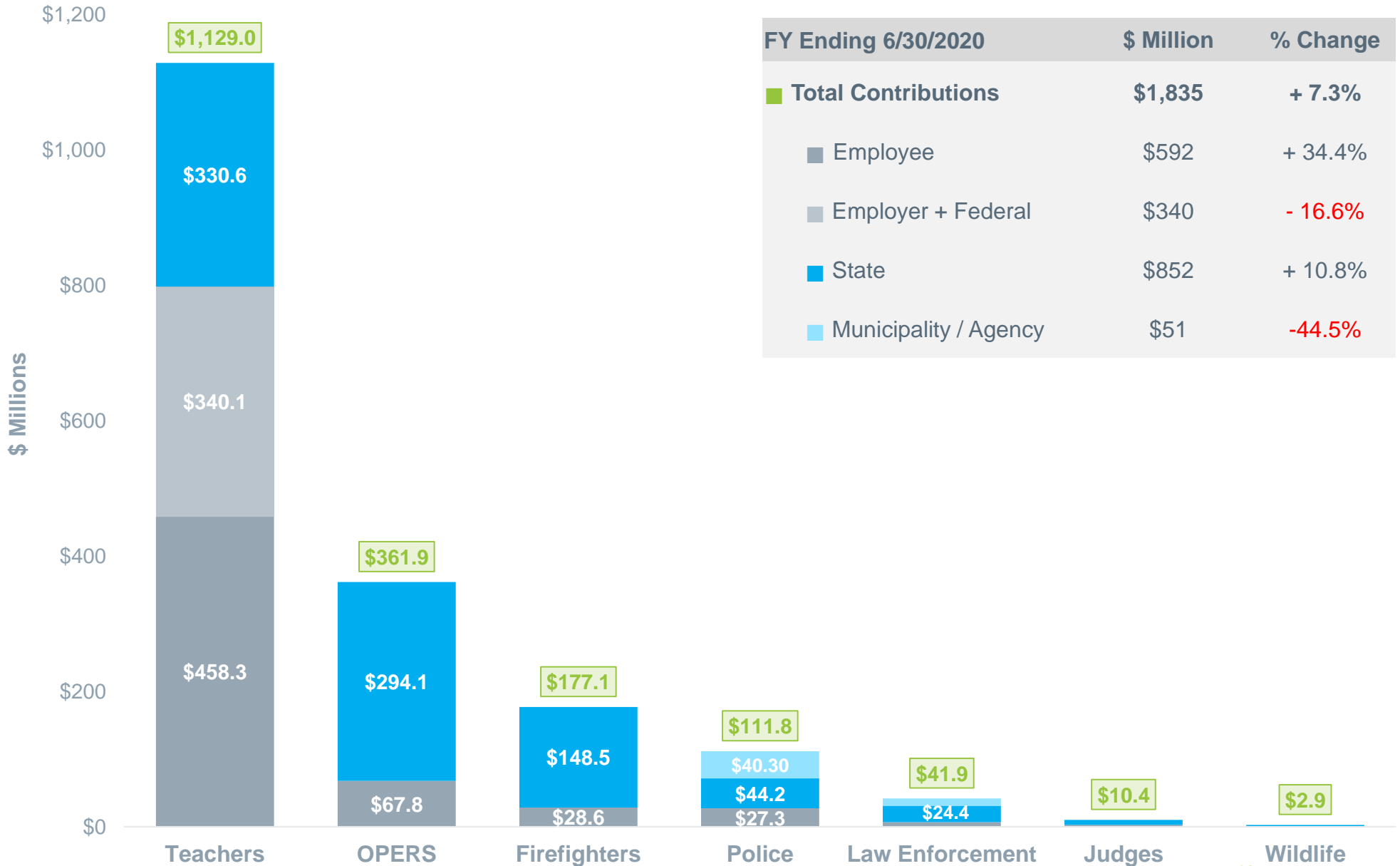Legend: Public Fund Average*, Teachers, OPERS, Firefighters, Police, Law Enforcement, Judges, Wildlife

Data as of June 30, 2020.
*Represents data from RVK's Public Fund Survey. Please see the appendix for more detail.

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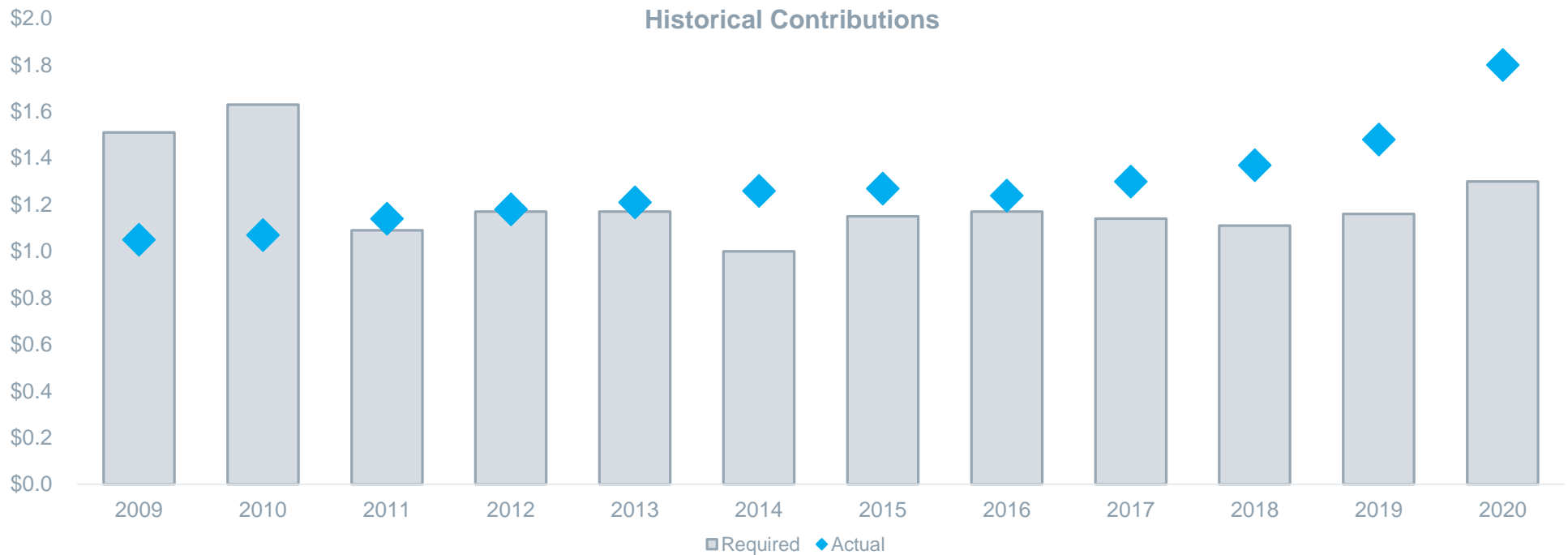# OKSPC Contributions

Individual Plan 2020 Contributions

FY Ending 6/30/2020	$ Million	% Change
■ **Total Contributions**	**$1,835**	**+ 7.3%**
■ Employee	$592	+ 34.4%
■ Employer + Federal	$340	- 16.6%
■ State	$852	+ 10.8%
■ Municipality / Agency	$51	-44.5%

$ Millions

Teachers: $1,129.0
- $330.6
- $340.1
- $458.3

OPERS: $361.9
- $294.1
- $67.8

Firefighters: $177.1
- $148.5
- $28.6

Police: $111.8
- $40.30
- $44.2
- $27.3

Law Enforcement: $41.9
- $24.4

Judges: $10.4

Wildlife: $2.9

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OKSPC Historical Contributions

Historical Contributions

	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Required	$1.51	$1.63	$1.09	$1.17	$1.17	$1.00	$1.15	$1.17	$1.14	$1.11	$1.16	$1.3
Actual	$1.05	$1.07	$1.14	$1.18	$1.21	$1.26	$1.27	$1.24	$1.30	$1.37	$1.51	$1.8
% Actual vs Required	69.6%	65.5%	104.3%	101.1%	103.3%	126.7%	110.3%	105.5%	114.7%	126.8%	130.3%	138.5%

Historical Contributions

Required ◆ Actual

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OKSPC State Contributions

	2020			
	Contribution as % of Pay		**$ Contributions**	
	Actuarial	**Actual**	**Actuarial**	**Actual**
Teachers	7.0%	6.9%	$336	$331
OPERS	13.4%	18.7%	$130	$294
Firefighters	33.7%	35.4%	$107	$112
Police	0.0%	11.9%	$0	$40
Law Enforcement	43.2%	52.0%	$35	$42
Judges	1.8%	21.4%	$1	$8
Wildlife	21.2%	19.5%	$2	$2

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OKSPC Actuarially Determined Contribution Rates

	Teachers	OPERS	Firefighters	Police	Law Enforcement	Judges	Wildlife
Total Normal Cost	10.5%	10.9%	21.8%	20.5%	25.7%	26.4%	12.5%
Expenses	0.1%	0.7%	1.3%	0.7%	1.7%	0.7%	0.0%
Amortization of UAAL	14.9%	-0.5%	30.8%	-0.5%	24.9%	-9.8%	12.8%
Total ADC	**25.5%**	**11.1%**	**53.9%**	**20.7%**	**52.3%**	**17.3%**	**25.3%**
Employee Contribution	7.0%	4.2%	9.0%	8.0%	8.0%	8.0%	-
Total Employer ADC	**18.5%**	**6.9%**	**44.9%**	**12.7%**	**44.3%**	**9.3%**	**25.3%**
Employer Contribution	9.3%	-	13.0%	13.0%	11.3%	-	-
Total State ADC	**9.2%**	**6.9%**	**31.9%**	**0.0%**	**33.1%**	**22.0%**	**25.3%**

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GASB 67 : Funding Position and Contributions

Funding Position:

	Net Position	Total Pension Liability ($M)	Unfunded Accrued Liability ($M)	Funded Status	Discount Rate
Teachers	$16,489	$25,979	$9,490	63.5%	7.0%
OPERS	$9,722	$10,615	$892	91.6%	6.5%
Firefighters	$2,871	$4,103	$1,232	70.0%	7.5%
Police	$2,757	$2,736	-$21	100.8%	7.5%
Law Enforcement	$1,004	$1,220	$216	88.3%	7.5%
Judges	$348	$330	-$17	105.3%	6.5%
Wildlife	$118	$135	$17	87.8%	7.0%
Total	**$33,309**	**$45,118**	**$11,809**	**73.8%**	

Contributions:

	ADEC	Actual Contributions	Contribution Deficiency/Excess	Covered Payroll	ADEC % Payroll	Actual % Payroll
Teachers	$810	$817	$6	$4,740	17.1%	17.23
OPERS	$118	$275	$157	$1,585	7.5%	17.3%
Firefighters	$142	$140	-$2	$318	44.6%	44.0%
Police	$39	$85	$45	$340	11.6%	24.8%
Law Enforcement	$35	$34	-$1	$88	39.4%	38.6%
Judges	$1	$7	$7	$35	2.2%	21.0%
Wildlife	$2	$2	$0	$12	21.4%	19.7%

ADEC stands for Actuarially Determined Employer Contribution.

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Plan Highlights

Teachers

	2020	2019	*Change*
Assets (AV)	$17,769 M	$17,150 M	*+ $619 M*
Liability	$26,410 m	$23,580 M	*+ $2,830 M*
Funded Status	67.3%	72.4%	*- 5.1%*
Assets (MV)	$16,930 M	$17,124 M	*- $194M*
Funded Status	64.1%	72.3%	*- 8.2%*

Historical Funded Status

Rate of Return (Annual)

Historical Contributions

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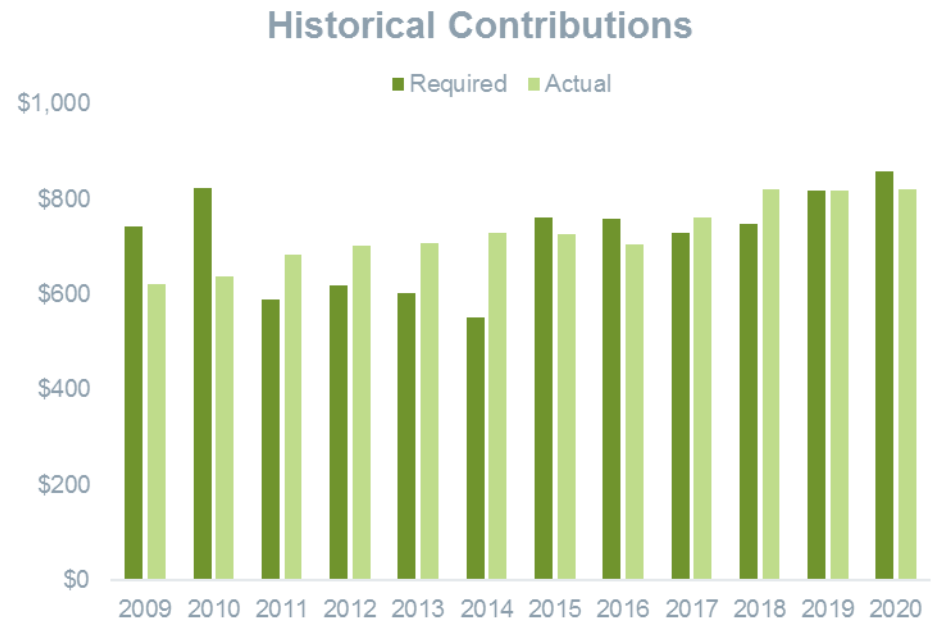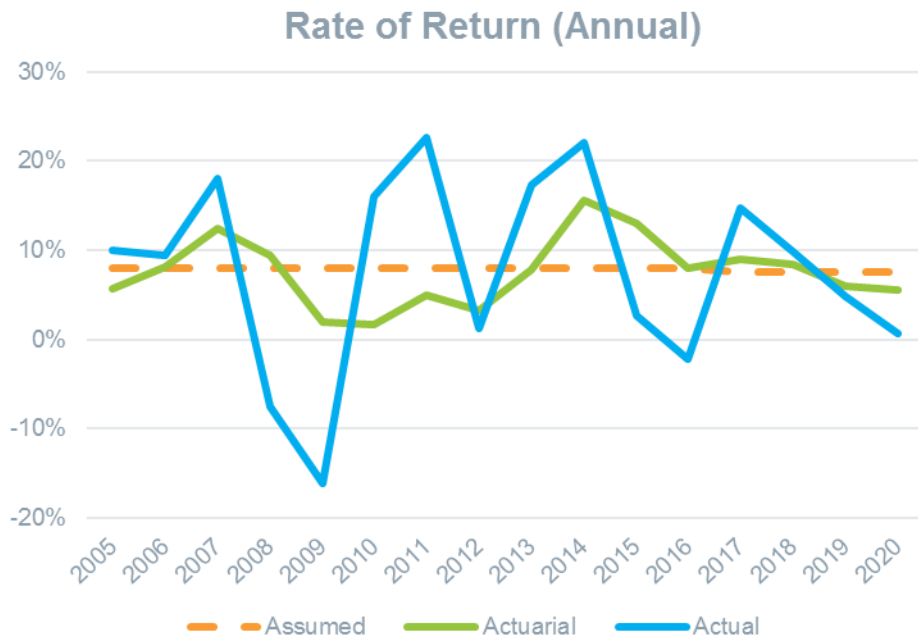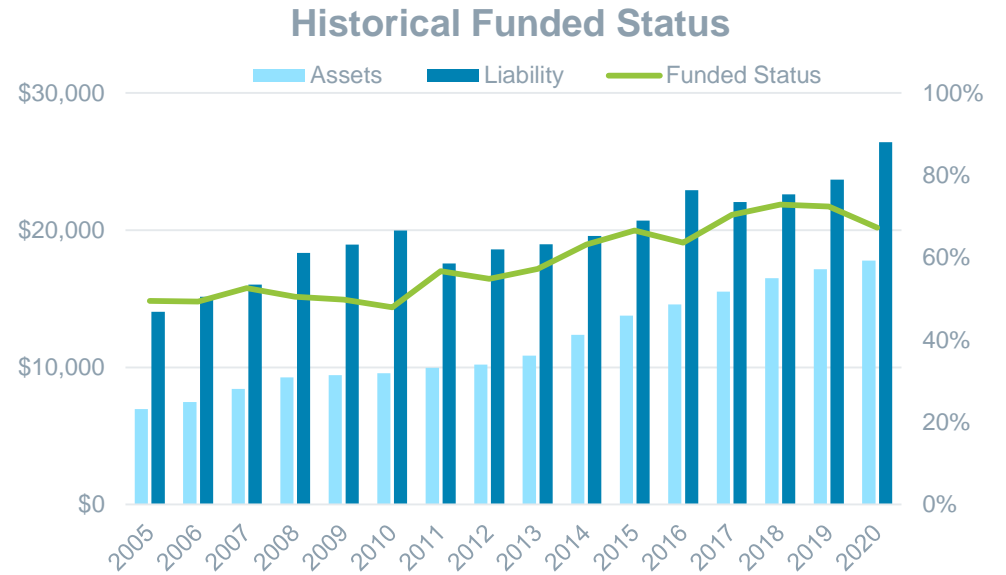
OPERS

	2020	2019	Change
Assets (AV)	$10,212 M	$9,910 M	+ $302
Liability	$10,943 M	$10,047 M	+ $896
Funded Status	93.3%	98.6%	- 5.3%
Assets (MV)	$10,098 M	$9,958 M	+ $140
Funded Status	92.3%	99.1%	- 6.8%

Historical Funded Status

Assets | Liabilities | Funded Status

Rate of Return

Assumed | Actuarial | Actual

Historical Contributions

Required | Actual

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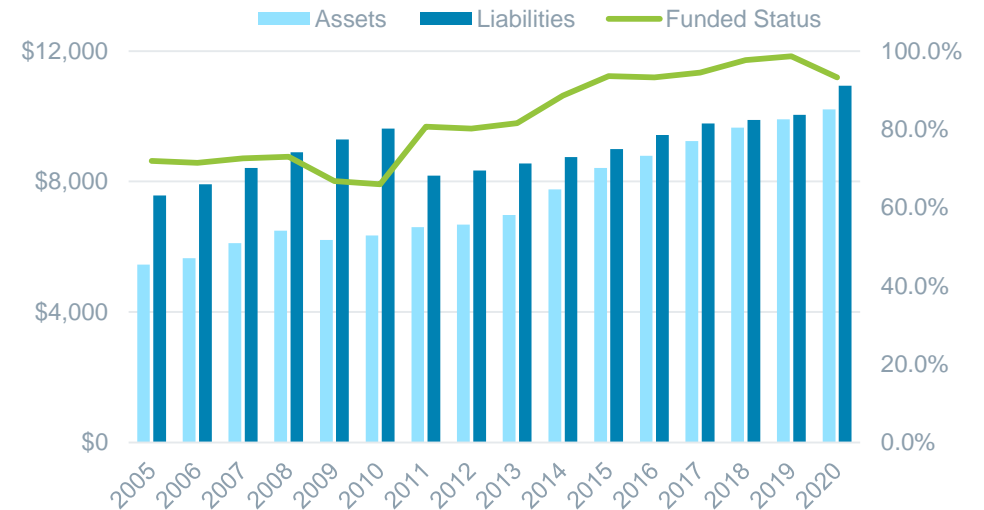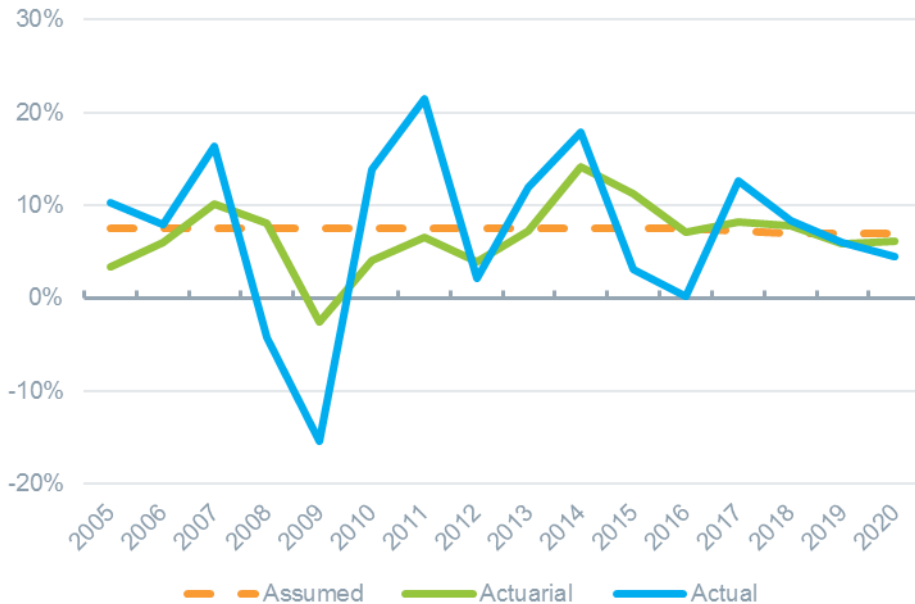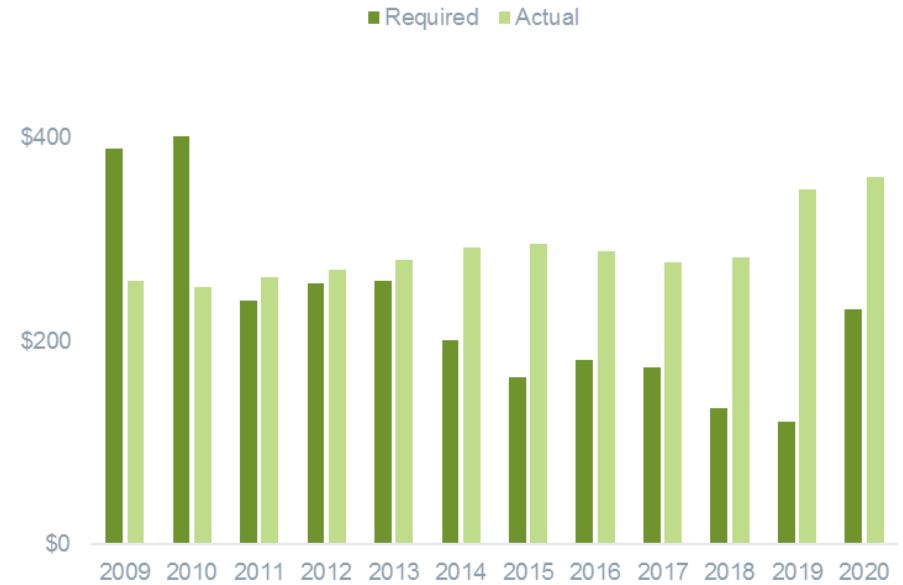
Firefighters

	2020	2019	*Change*
Assets (AV)	$2,888	$2,756 M	+ *$132 M*
Liability	$4,103	$3,892 M	+ *$211 M*
Funded Status	70.4%	70.8%	*- 0.4%*
Assets (MV)	$2,871 M	$2,719 M	+ *$152 M*
Funded Status	70.0%	69.9%	*+ 0.1%*

Historical Funded Status

Rate of Return

Historical Contributions

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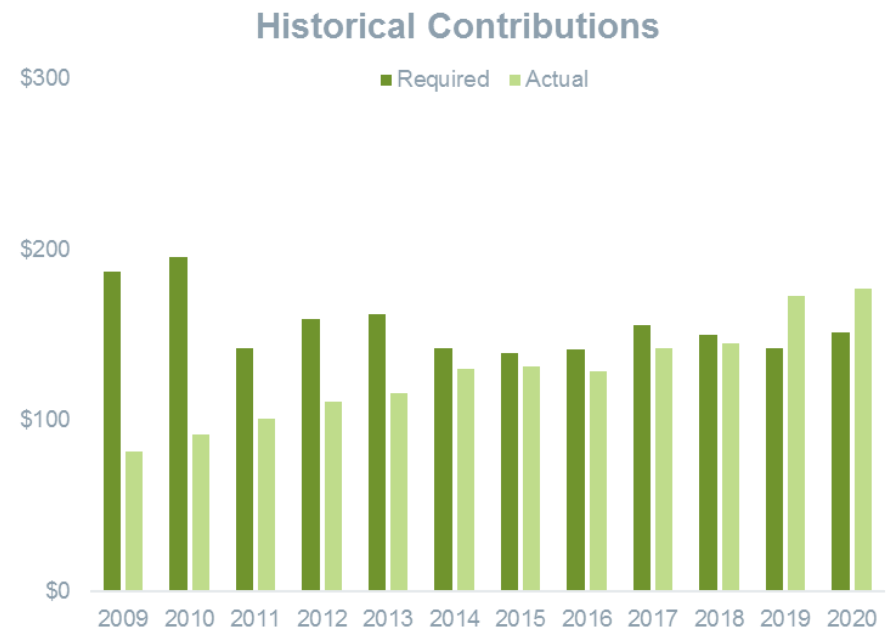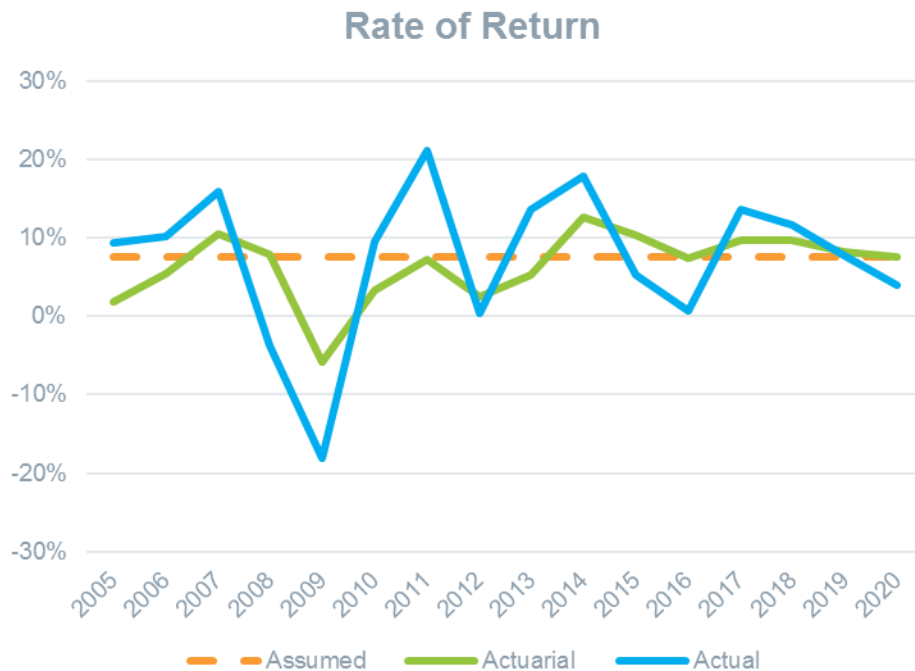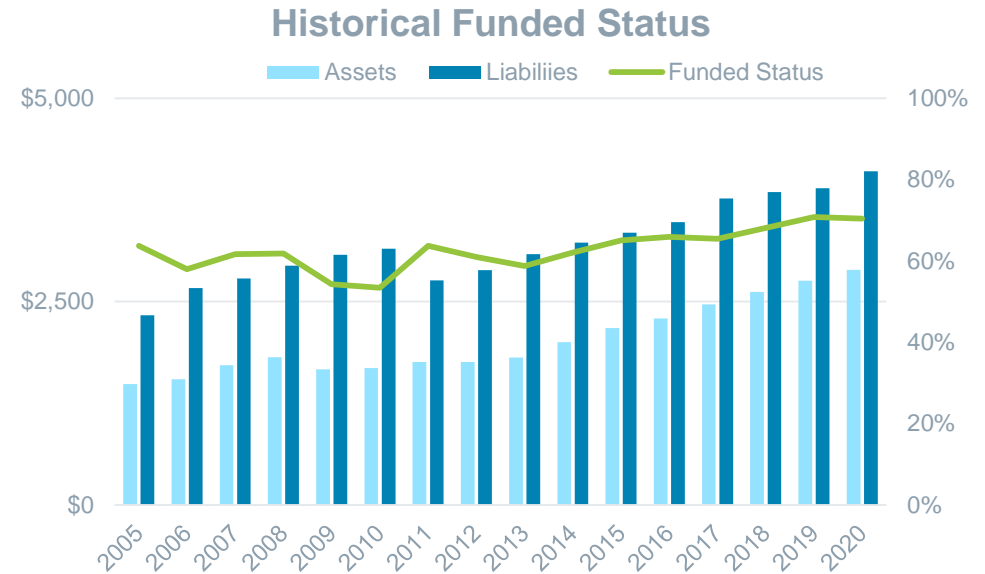
Police

	2020	2019	Change
Assets (AV)	$2,757 M	$2,677 M	+ 80 M
Liability	$2,736 M	$2,612 M	+ $124
Funded Status	100.8%	102.5%	- 1.7%
Assets (MV)	$2,621 M	$2,619	+ 2 M
Funded Status	95.8%	100.2%	- 4.4%

Historical Funded Status

Rate of Return (Annual)

Historical Contributions

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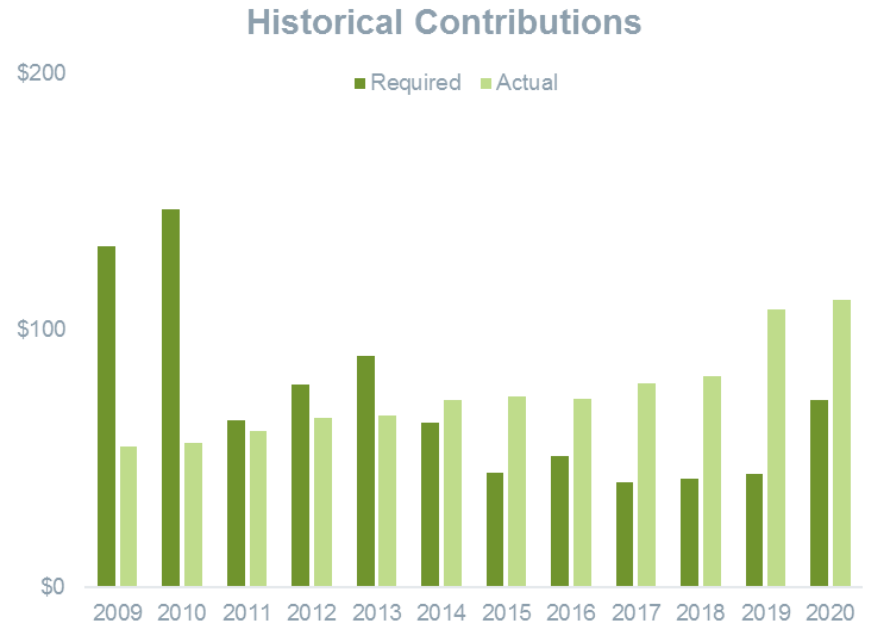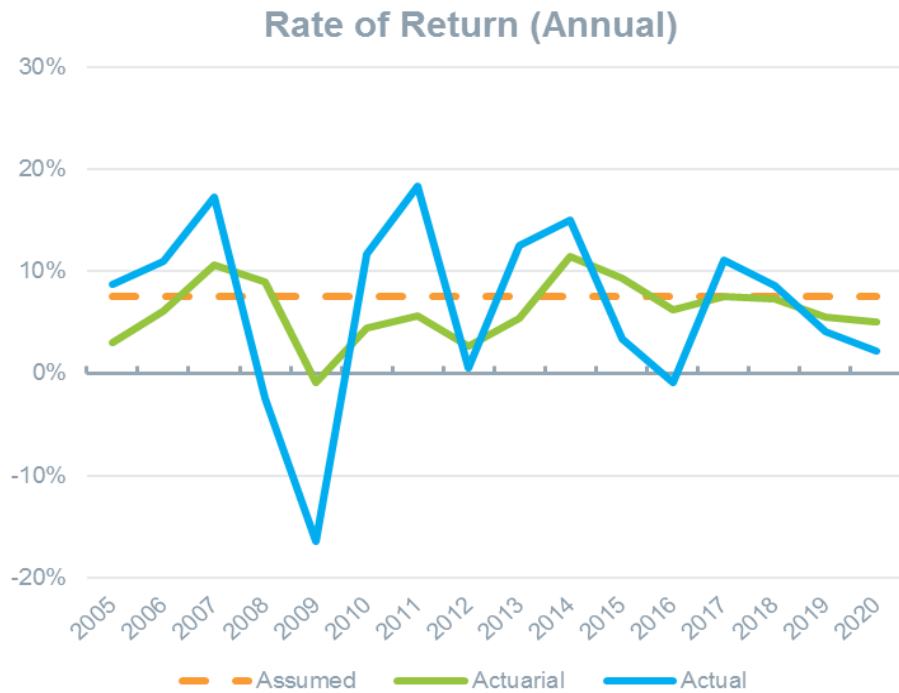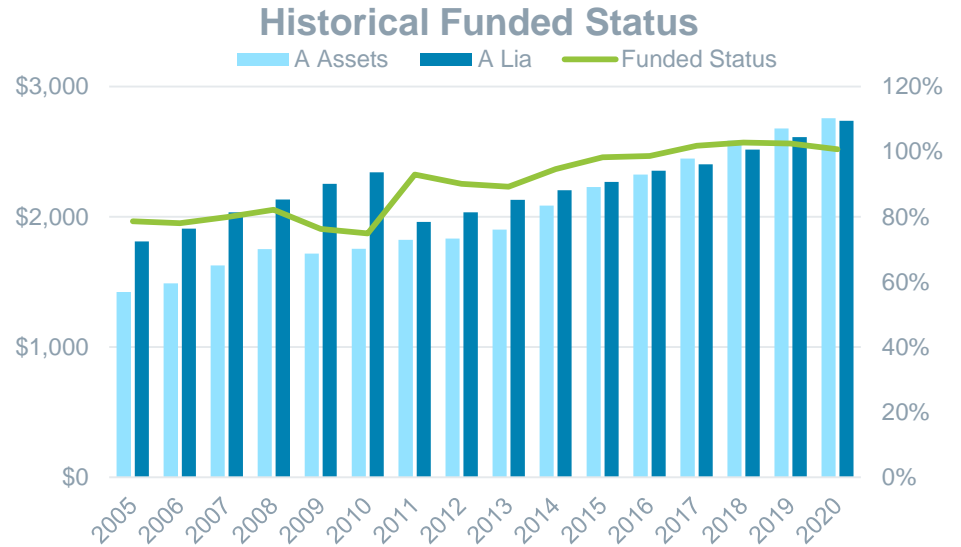
Law Enforcement

	2020	2019	*Change*
Assets (AV)	$1,088 M	$1,052 M	*+ $36 M*
Liability	$1,232 M	$1,174 M	*+ $58 M*
Funded Status	88.3%	89.6%	*- 1.3%*
Assets (MV)	$1,005 M	$1,017 M	*- $12 M*
Funded Status	81.5%	86.6%	*- 5.1%*

Historical Funded Status

Rate of Return

Historical Contributions

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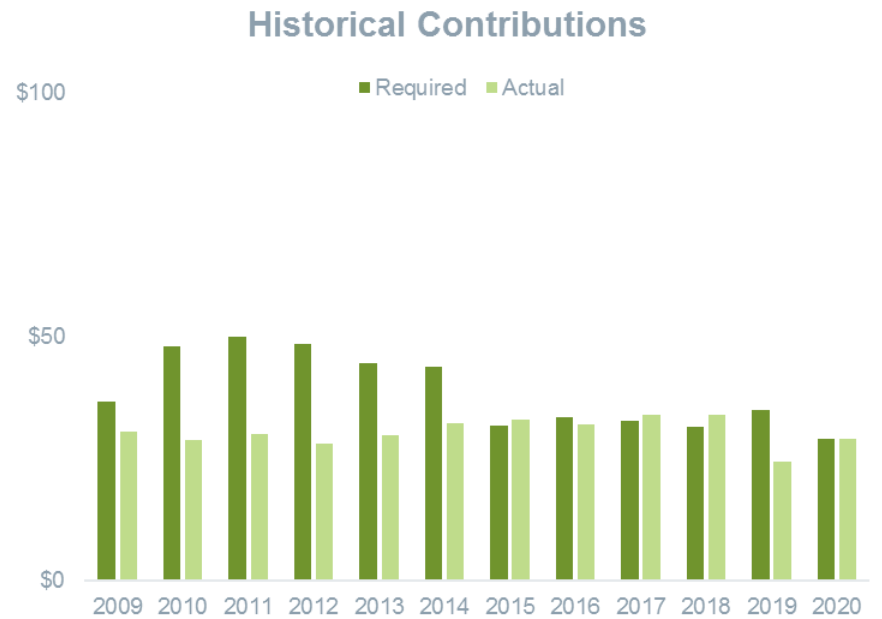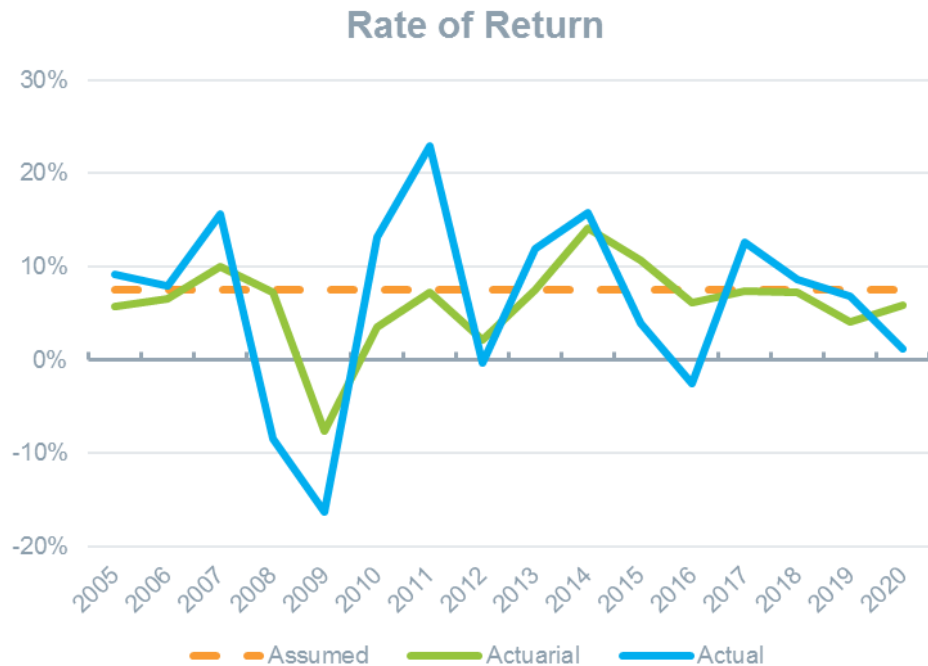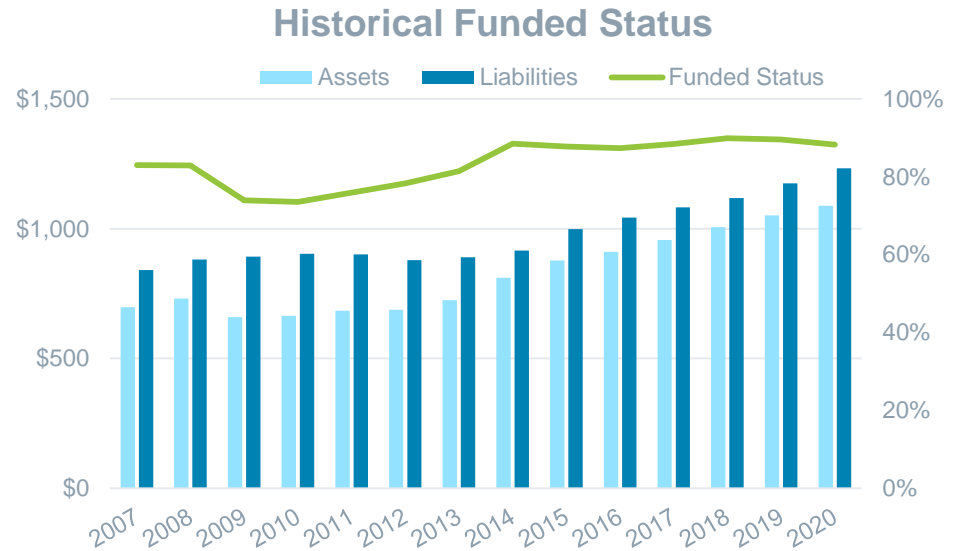
Judges

	2020	2019	Change
Assets (AV)	$354 M	$345 M	+ $9 M
Liability	$333 M	$309 M	+ $24 M
Funded Status	106.5%	111.9%	- 5.4%
Assets (MV)	$351 M	$347 M	+ $4 M
Funded Status	105.4%	112.6%	- 7.2%

Historical Funded Status

Rate of Return

Historical Contributions

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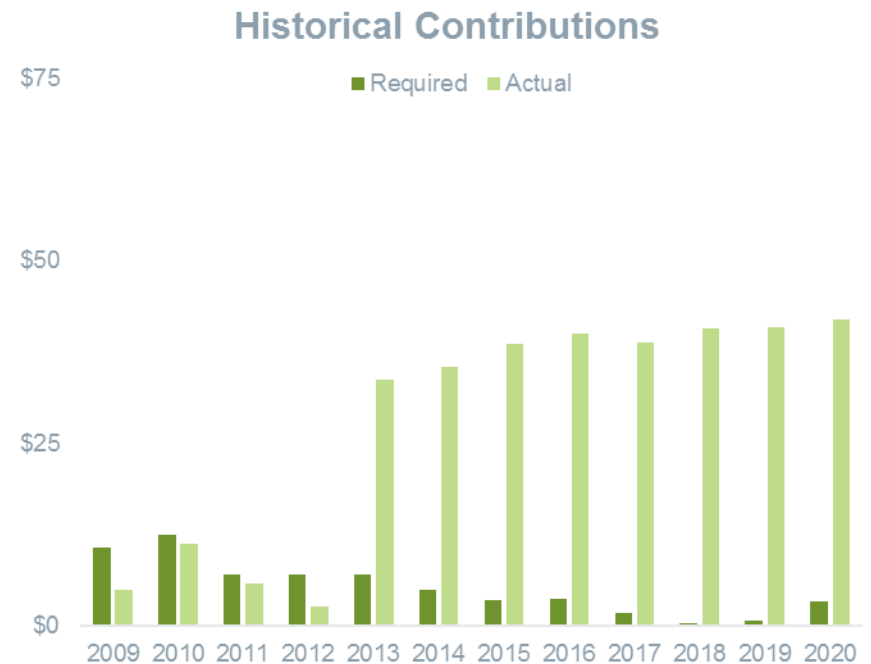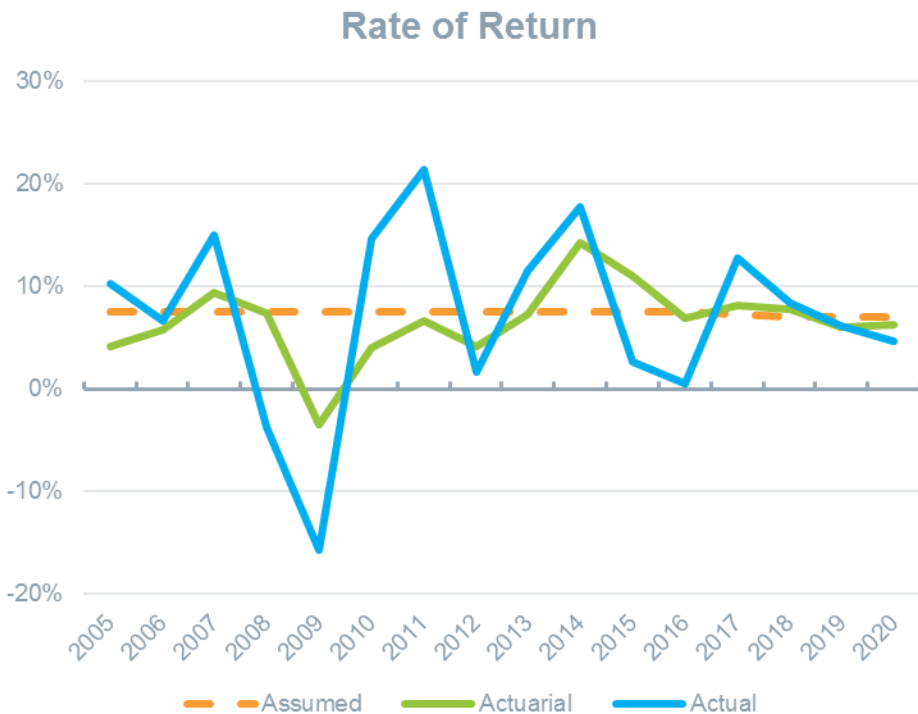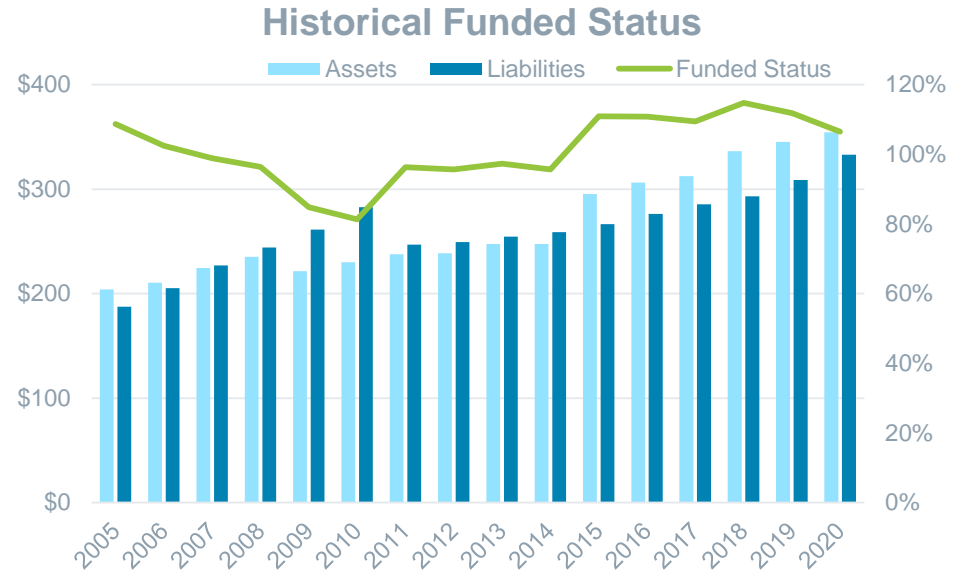
Appendix

Public Funds Survey Disclaimer

RVK produces a complimentary report on a semi-annual basis that aggregates various portfolio and actuarial factors among public pension plans. The most recent universe is listed below.

Alameda County Employees' Retirement Association	Anchorage Police & Fire Retirement System
Arlington County Employees' Retirement System	Baltimore City Employees' Retirement Systems
California State Teachers' Retirement System	City of Austin Employees' Retirement System
City of Fresno Employees Retirement Systems	City of Fresno Fire & Police Retirement System
City of Jacksonville Police and Fire Retirement Fund	City of Jacksonville Retirement System
City of Milwaukee Employes' Retirement System	City of Plano Other Post-Employment Benefits Trust
City of Plano Retirement Security Plan	Civilian Employees' Retirement System of the Police Department of Kansas City, Missouri
Colorado Public Employees' Retirement Association	Employees Retirement System of Texas
Fire and Police Pension Association of Colorado	Fort Worth Employees' Retirement Fund
Fresno County Employees' Retirement Association	Gila River Indian Community Retirement Plan
Imperial County Employees' Retirement System	Iowa Public Employees' Retirement System
Kansas City, Missouri Employees' Retirement System	Kansas Public Employees' Retirement System
Kern County Employees' Retirement Association	Los Angeles County Employees Retirement Association
Los Angeles Fire and Police Pension System	Los Angeles Water & Power Employees Retirement Plan
Marin County Employees' Retirement Association	Maryland State Retirement and Pension System
Mendocino County Employees' Retirement Association	Merced County Employees' Retirement Association
Montana Public Employees' Retirement System	Montana Teachers' Retirement System
Municipality of Anchorage Pre-Funding Program	Nevada Public Employees' Retirement System
New York State Common Retirement Fund	North Carolina Retirement System
Ohio Public Employees' Retirement System	Oklahoma Firefighters Pension and Retirement System
Oklahoma Law Enforcement Retirement System	Oklahoma Police Pension and Retirement System
Oklahoma Public Employees Retirement System	**Oklahoma Teachers' Retirement System (Fund No. 386)**
Oklahoma Uniform Retirement System for Justices and Judges	Orange County Employees' Retirement System
Police Retirement System of Kansas City, Missouri	Public Employees Retirement Association of New Mexico
Public School and Education ERS of Missouri	Sacramento County Employees' Retirement System
San Diego City Employees' Retirement System	San Diego County Employees Retirement Association
San Diego Transit Corporation Employees Retirement	San Mateo County Employees' Retirement Association
Santa Barbara County Employees' Retirement System	Sonoma County Employees' Retirement Association
South Dakota Retirement System	

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