



Actuarial Summary Report

Oklahoma State Pension Commission

Fiscal Year ending June 30, 2021



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Executive Summary



Executive Summary

Overview

RVK reviewed the Fiscal Year 2021 actuarial reports for each underlying plan in the Oklahoma State Pension Commission. This presentation summarizes several key plan metrics from FY 2021, as well as historical trends over the prior 20 years. Metrics include funded status levels, as well as changes in assets, liabilities, and contributions. RVK also incorporated data obtained from Public Plans Data, which is an organization that collects data on more than 5,000 public pension plans in the United States.

The information presented in this report is based on Actuarial Valuation reports for the Fiscal Year ending on June 30, 2021. 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. Increase in Funded Status** – For the fiscal year ending June 30, 2021, The funded status of the plans increased by 4.3% based on the actuarial value of assets and 18.3% based on the market value of asset. Key drivers of funded status are as follows:
 - **Actuarial Value of Asset Increase** – An increase of approximately \$2.7 billion (~7.8%) in the actuarial value of assets was the primary driver of improved funded status of the plans.
 - **Liability Increase Offset** – A moderate increase in liabilities (approximately \$930 million, or ~2.0%) over the last year partially offset the increase in the actuarial value of assets.
- 2. Funded Status is Greater than the Public Plan Average** – After accounting for the increase in the actuarial value of assets, the combined funded status of the Oklahoma Pension Plans is roughly 9.0% higher than the average funded status reported for a broad sample of public plans. The aggregate funded status of the Oklahoma Pension Plans was 81.0% versus 72.0% for the public fund average.¹
- 3. Positive Impact of Excess Contributions** – Over the past 10 years, pension plan contributions exceeded the actuarially required contributions. This benefitted the funded status in two ways. First, the excess portion of the contribution directly reduced the unfunded liability. Second, the strong investment returns over the past 10 years compounded the impact of these excess contributions.

¹ The public fund average for 2021 is as of March 31, 2021, as June 30, 2021 data is not yet available.

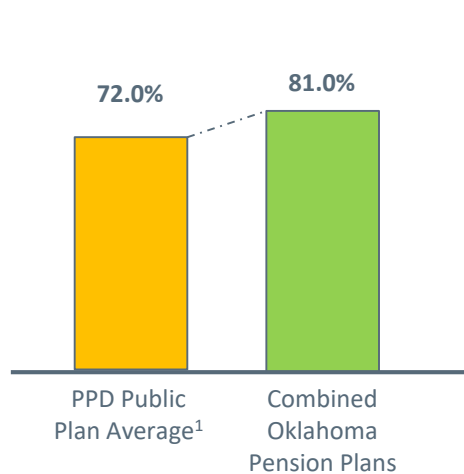
Executive Summary (continued)

Contribution Highlights

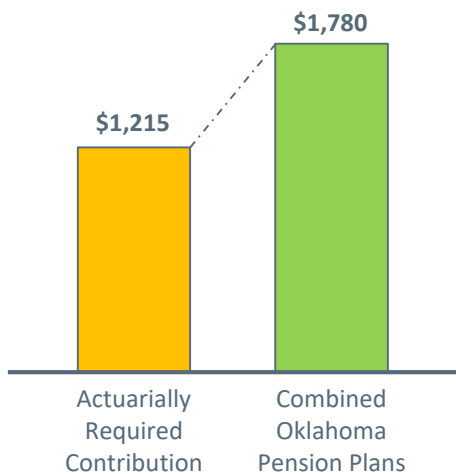
- 1. Annual Contribution Decrease** – Total contributions for the fiscal year were approximately \$1.8 Billion, which was a 3.0% decrease relative to the prior fiscal year. Contributions from employees (-\$116 M) and the State (-\$59 M) were the primary drivers of contribution decreases.
- 2. Actual Contributions Continue to Exceed Required Contributions** – For the past Fiscal Year, the actual contribution exceeded the actuarially required contribution. Since 2011, the plans have contributed at a level that is higher than the actuarial requirement due largely to a shift in the COLA policy.

Key Metrics for Oklahoma Pension Plans

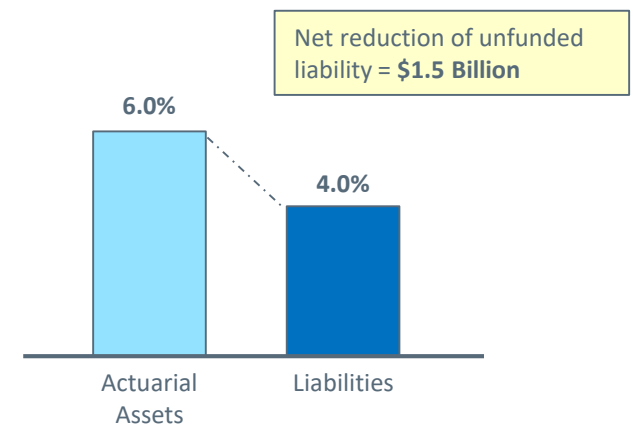
Funded Status (AV) vs. RVK Survey Median



Total Contributions FY 2021 (\$ Millions)



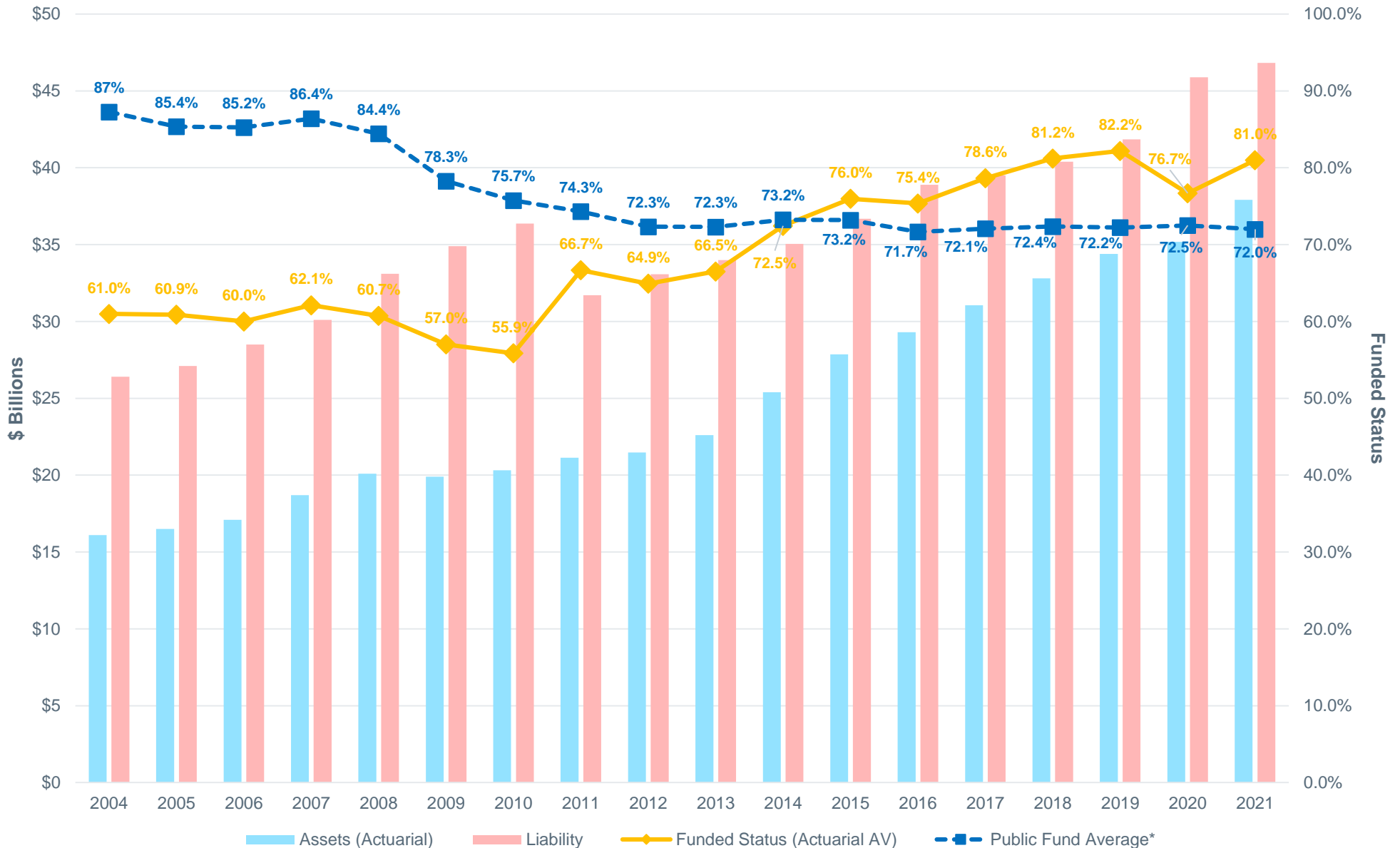
10-Year Asset vs. Liability Growth Rate (FY 2011 – 2021)



¹ The public fund average for 2021 is as of March 31, 2021, as June 30, 2021 data is not yet available.

OKPSC Funded Status

Aggregate Funded Status (Actuarial Values)

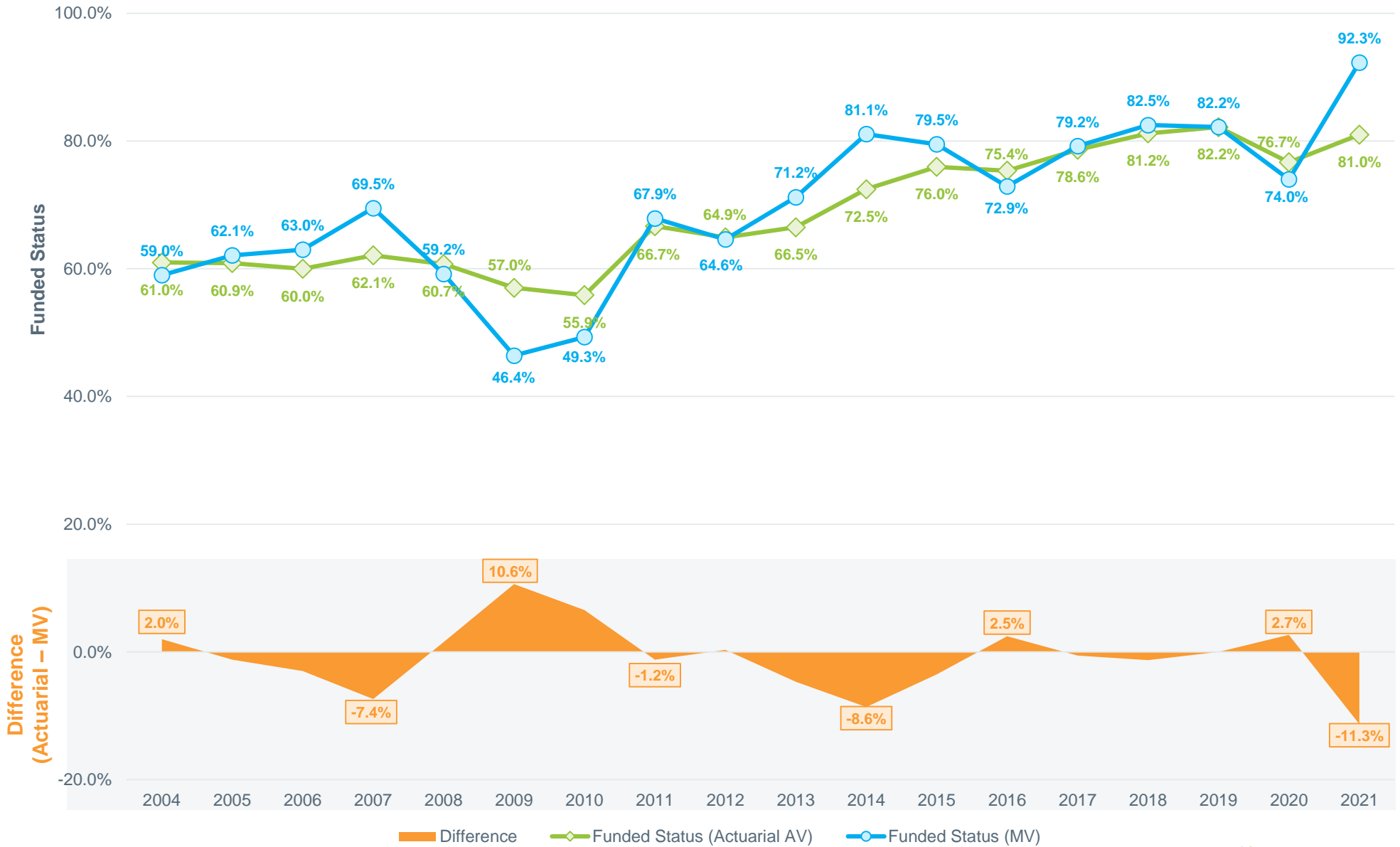


Data as of June 30, 2021.

*Source: Public Plans Data (2021). 2021 data is as of March 31, 2021, as June 30, 2021 data is currently unavailable.

OKSPC Funded Status

Aggregate Funded Status (Actuarial Assets vs Market Values)



OKSPC Funded Status

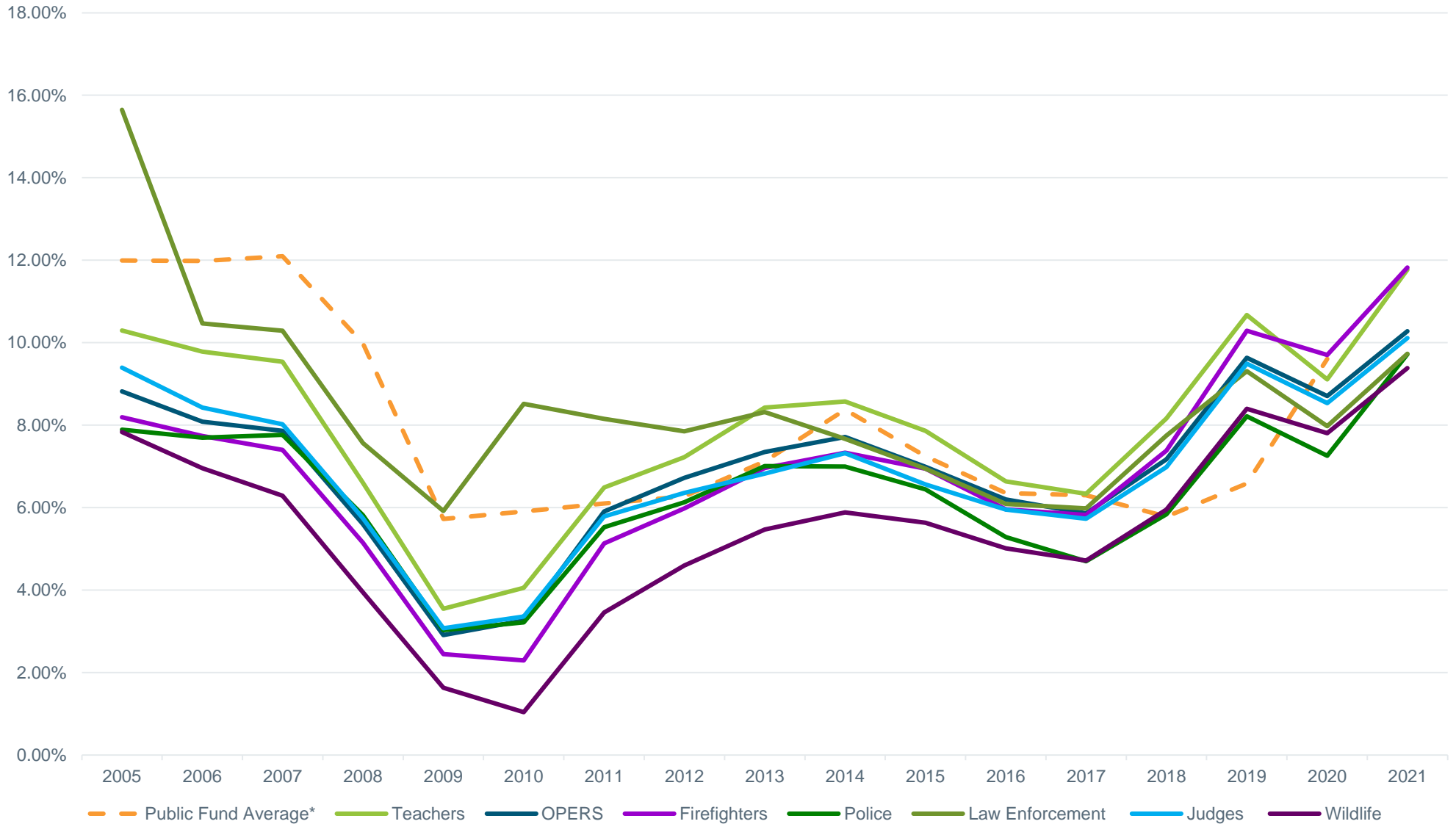
Individual Plan Funded Status Summary

Plan	Actuarial Value of Assets (\$M)	Actuarial Accrued Liability (\$M)	Market Value of Assets (\$M)	Funded Status (per Actuarial Assets)	Funded Status (per MV Assets)	Change YoY (Actuarial)	Change YoY (MV)
Teachers	\$19,330	\$27,034	\$22,052	71.50%	81.57%	4.20%	17.47%
OPERS	\$10,991	\$11,046	\$12,526	99.50%	113.40%	6.20%	21.10%
Firefighters	\$2,997	\$4,179	\$3,521	71.70%	84.24%	1.30%	14.24%
Police	\$2,940	\$2,810	\$3,290	104.62%	117.07%	3.82%	21.27%
Law Enforcement	\$1,152	\$1,272	\$1,247	90.56%	98.08%	2.26%	16.58%
Judges	\$380	\$342	\$434	111.26%	126.79%	4.76%	21.39%
Wildlife	\$128	\$138	\$142	92.89%	102.83%	4.69%	15.13%

OKSPC Rates of Return

Individual Plan Rates of Return

Rolling 10-Year Return

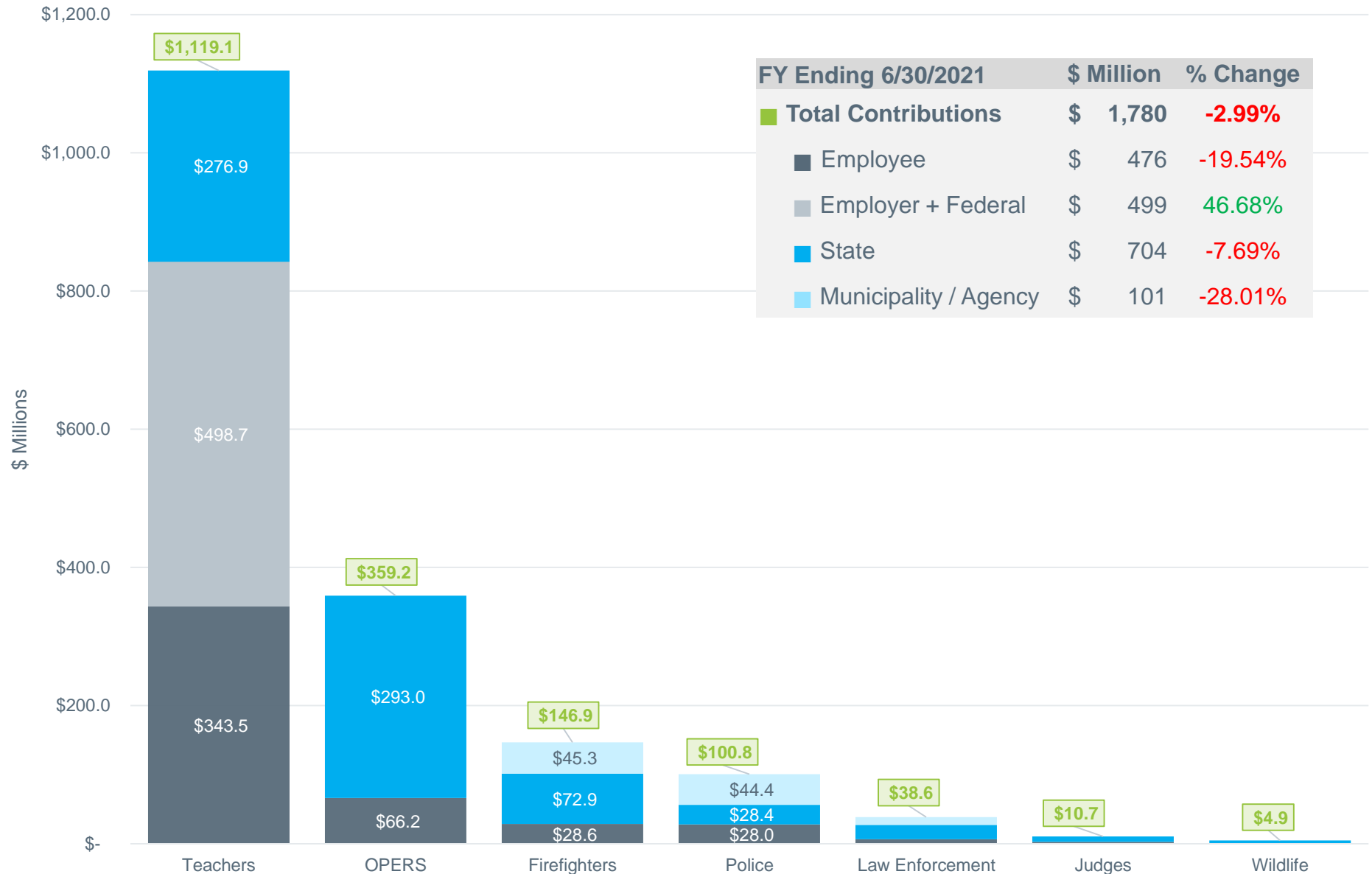


Data as of June 30, 2021.

*Source: Public Plans Data (2021). 2021 data is currently unavailable.

OKSPC Contributions

Individual Plan 2021 Contributions



FY Ending 6/30/2021	\$ Million	% Change
Total Contributions	\$ 1,780	-2.99%
Employee	\$ 476	-19.54%
Employer + Federal	\$ 499	46.68%
State	\$ 704	-7.69%
Municipality / Agency	\$ 101	-28.01%

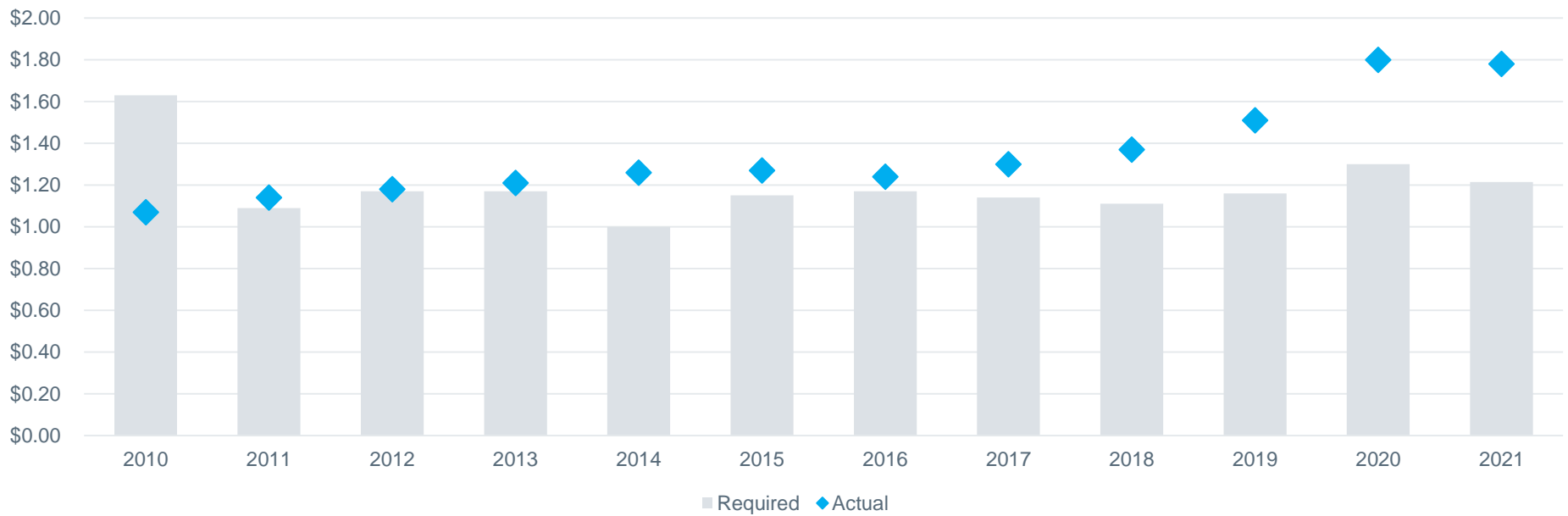
Teachers "Employer + Federal" contribution includes grant matching funds.

OKSPC Historical Contributions

Historical Contributions

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Required	\$1.63	\$1.09	\$1.17	\$1.17	\$1.00	\$1.15	\$1.17	\$1.14	\$1.11	\$1.16	\$1.30	\$1.21
Actual	\$1.07	\$1.14	\$1.18	\$1.21	\$1.26	\$1.27	\$1.24	\$1.30	\$1.37	\$1.51	\$1.80	\$1.78
% Actual vs Required	65.6%	104.6%	100.9%	103.4%	126.0%	110.4%	106.0%	114.0%	123.4%	130.2%	138.5%	146.54%

Historical Contributions



OKSPC Actuarially Determined Contribution Rates

	Teachers	OPERS	Firefighters	Police	Law Enforcement	Judges	Wildlife
Total Normal Cost	10.44%	10.83%	22.04%	20.50%	25.29%	25.85%	12.30%
Expenses	0.10%	0.48%	1.20%	0.70%	1.73%	0.66%	0.00%
Amortization of UAAL	13.66%	0.52%	33.69%	-3.00%	23.26%	-19.67%	11.70%
Total ADC	24.20%	11.83%	56.93%	18.20%	50.28%	6.84%	24.00%
Employee Contribution	7.00%	4.25%	9.00%	8.00%	8.00%	8.00%	5.00%
Total Employer ADC	17.20%	7.58%	47.93%	10.20%	42.28%	-1.16%	19.00%
Employer Contribution	9.30%	16.50%	13.00%	13.00%	11.33%	22.00%	19.00%
Total State ADC	7.90%	16.50%	34.93%	0.00%	30.95%	22.00%	19.00%

GASB 67 : Funding Position and Contributions

Funding Position:

	Net Position (\$M)	Total Pension Liability (\$M)	Unfunded Accrued Liability (\$M)	Net Position as % of Total Pension Liability	Discount Rate
Teachers	\$21,499	\$26,608	\$5,109	80.80%	7.00%
OPERS	\$12,068	\$10,726	(\$1,342)	112.51%	6.50%
Firefighters	\$3,521	\$4,179	\$659	84.24%	7.50%
Police	\$3,290	\$2,810	(\$480)	117.07%	7.50%
Law Enforcement	\$1,245	\$1,259	\$13	98.93%	7.50%
Judges	\$429	\$339	(\$90)	126.58%	6.50%
Wildlife	\$142	\$138	(\$4)	102.85%	7.00%
Total	\$42,193	\$46,058	\$3,865	91.61%	

Contributions:

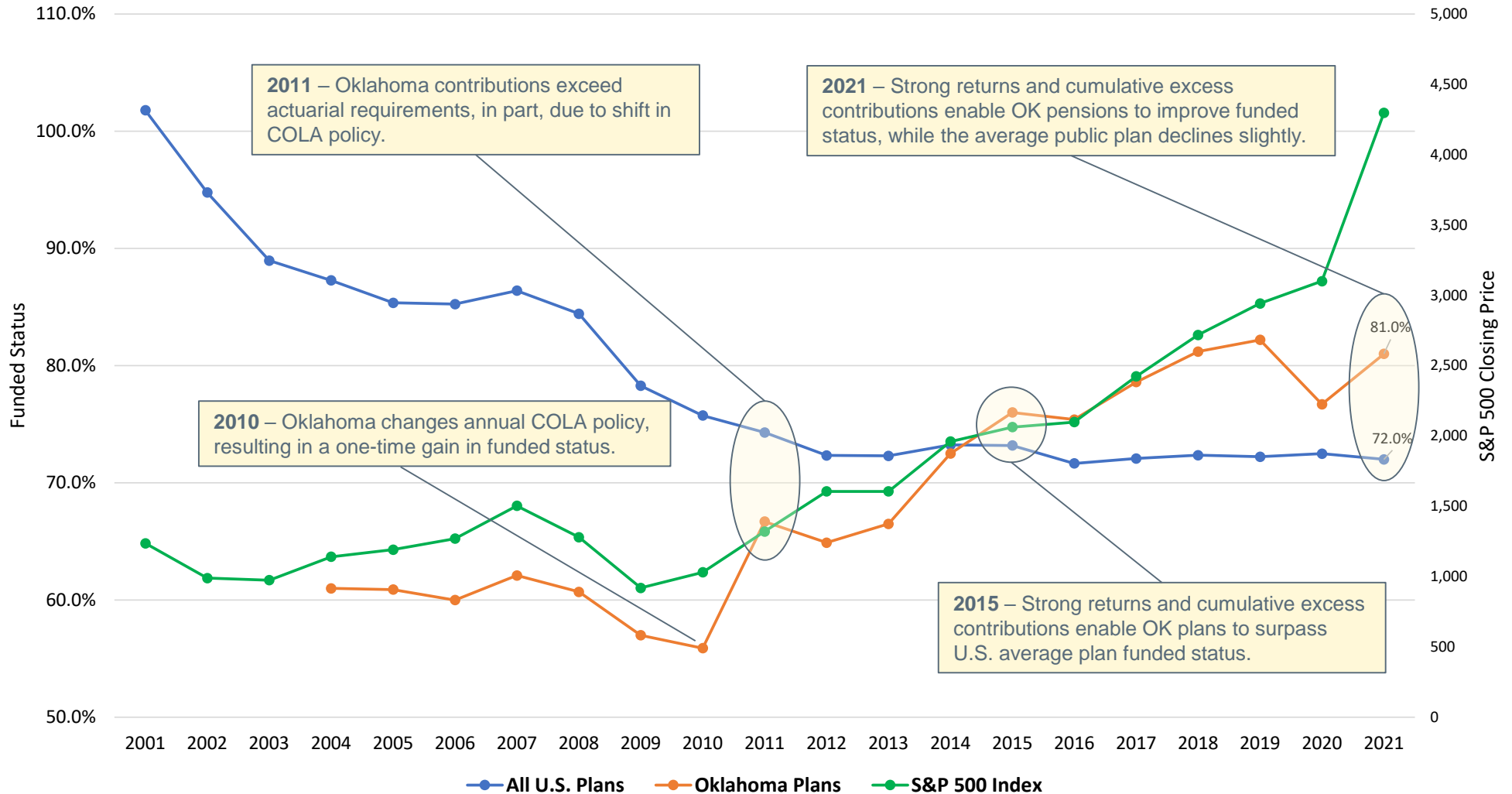
	ADEC	Actual Contributions	Contribution Deficiency/Excess	Covered Payroll	ADEC % Payroll	Actual % Payroll
Teachers	\$830	\$770	(\$60)	\$4,823	17.20%	15.96%
OPERS	\$225	\$275	\$51	\$1,572	14.30%	17.52%
Firefighters	\$152	\$110	(\$41)	\$313	48.36%	35.15%
Police	\$45	\$73	\$28	\$342	13.08%	21.31%
Law Enforcement	\$37	\$31	(\$7)	\$85	43.87%	36.05%
Judges	\$3	\$8	\$4	\$35	9.20%	21.53%
Wildlife	\$3	\$4	\$2	\$11	24.05%	38.26%

Public Pension Plan Challenges



A Twenty-Year History of U.S. Pension Funding

Comparative Funded Status and S&P 500 Index Level (June 30, 2001 – June 30, 2021)

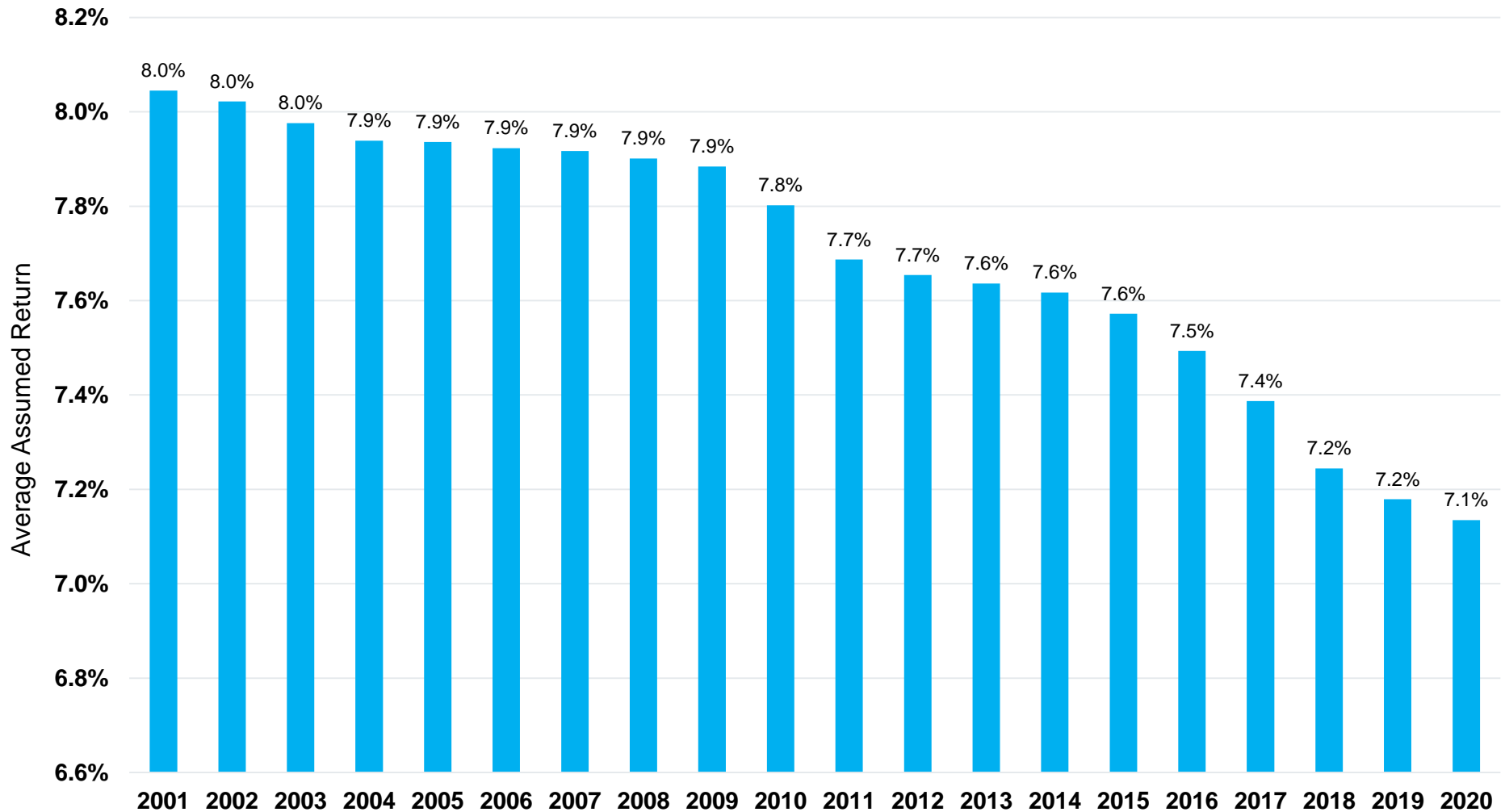


¹ The public fund average for 2021 is as of March 31, 2021, as June 30, 2021 data is not yet available.

Source: Public Plans Data (2021).

Future Return Expectations Have Declined

Average Public Pension Plan Expected Return by Fiscal Year
(June 30, 2001 – June 30, 2020)



Current Challenges for Oklahoma Pension Plans

Market Reflexivity

Securities markets are reflexive, meaning that, all else being equal, periods of exceptional returns tend to dampen future returns (and vice versa). The Oklahoma Pension Plans acknowledge this tendency by reducing the actuarial return assumption.

Short vs. Long Term Valuation

Market reflexivity can have a material impact on intermediate term returns, but as the time horizon extends the impact of reflexivity declines.

Liability Management

A common error of defined benefit plan sponsors is to assume that the recent past will continue indefinitely. The most common example of is when plan sponsors assume exceptional past returns will continue indefinitely, which may lead to changes to benefits and/or contributions that are more costly than presumed.

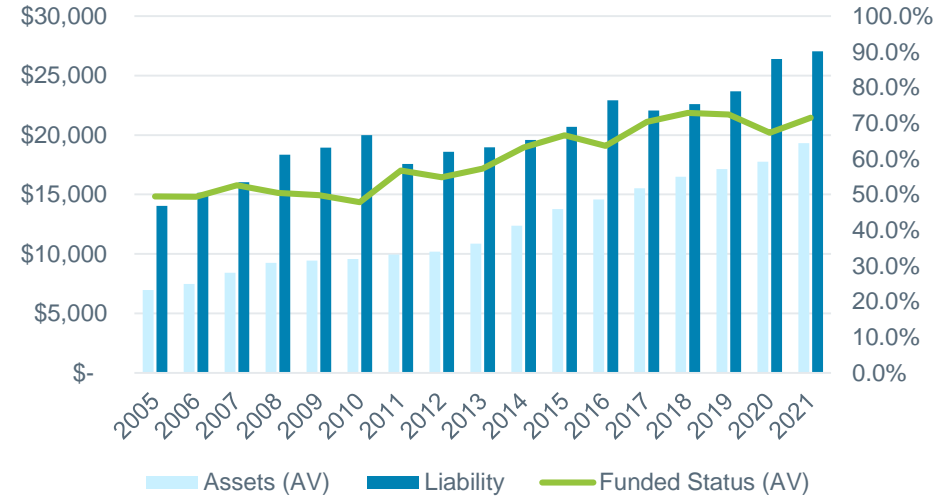
Individual Plan Highlights



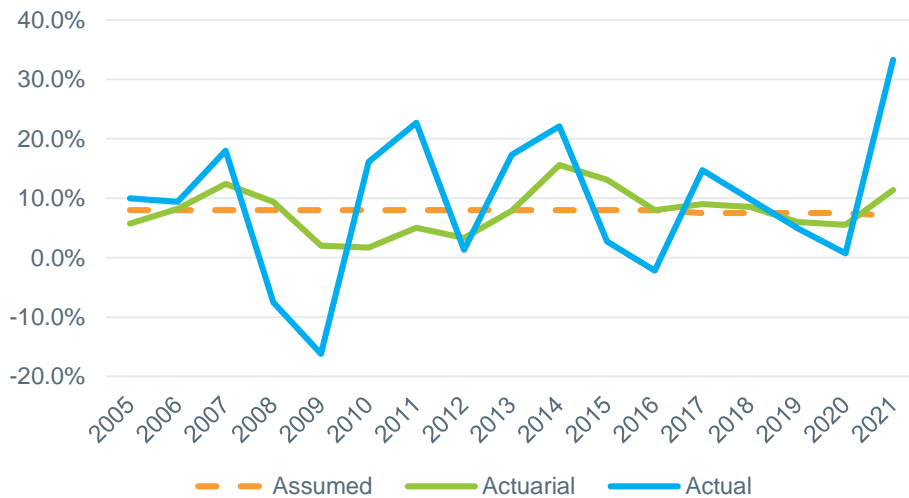
Teachers

	2021	2020	Change
Assets (AV)	\$19,330 M	\$17,769 M	+ \$1,561 M
Liability	\$27,034 M	\$26,410 M	+ \$624 M
Funded Status (AV)	71.5%	67.3%	+ 4.2%
Assets (MV)	\$22,052 M	\$16,930 M	+ \$5,122 M
Funded Status (MV)	81.6%	64.1%	+ 17.5%

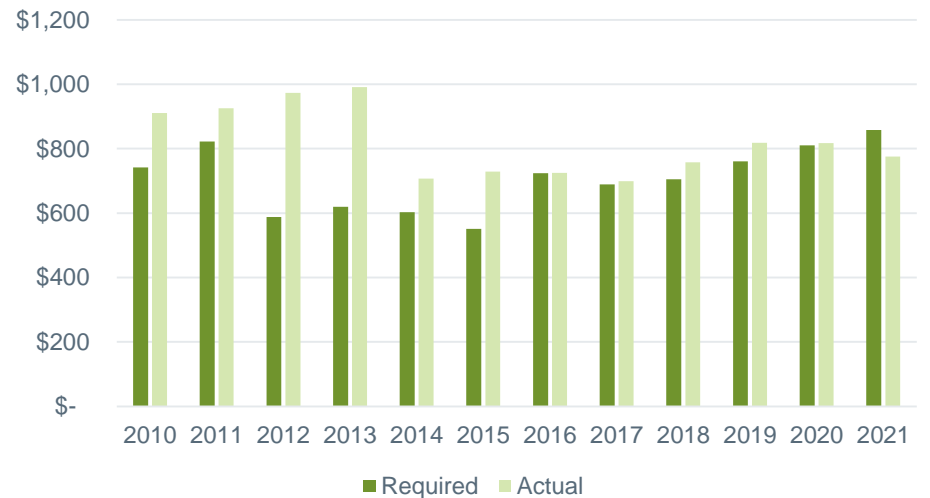
Historical Funded Status



Rate of Return (Annual)



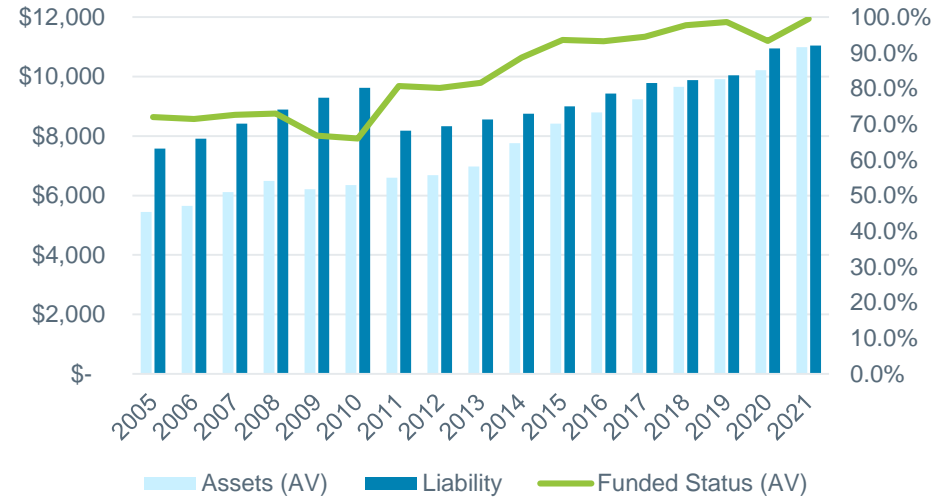
Historical Contributions



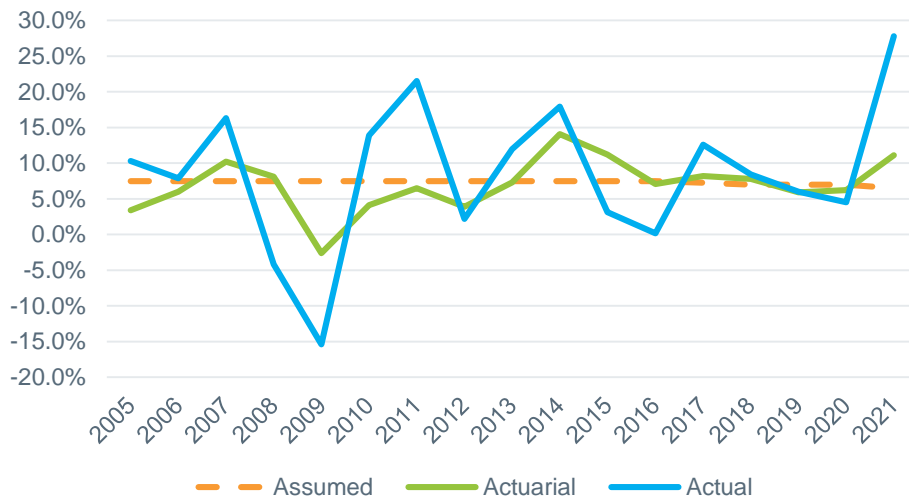
OPERS

	2021	2020	Change
Assets (AV)	\$10,991 M	\$10,212 M	+ \$779 M
Liability	\$11,046 M	\$10,943 M	+ \$103 M
Funded Status (AV)	99.5%	93.3%	+ 6.2%
Assets (MV)	\$12,526 M	\$10,098 M	+ \$2,428 M
Funded Status (MV)	113.4%	92.3%	+ 21.1%

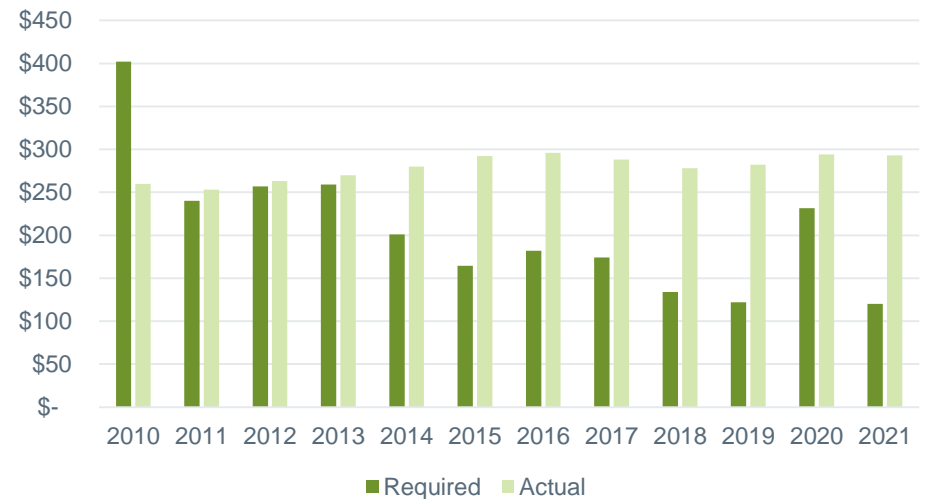
Historical Funded Status



Rate of Return (Annual)



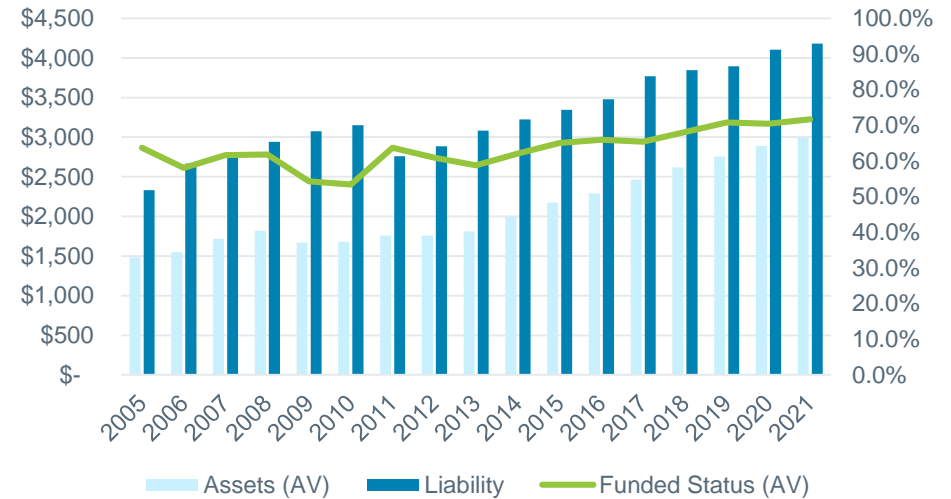
Historical Contributions



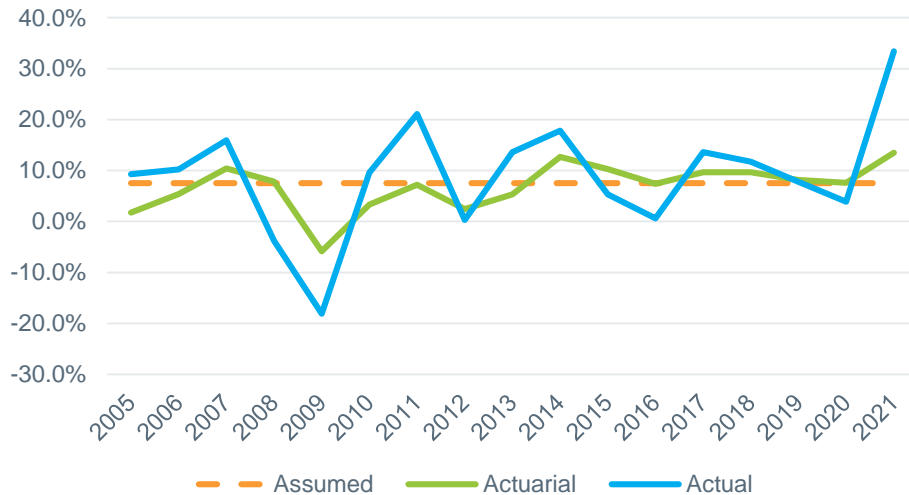
Firefighters

	2021	2020	Change
Assets (AV)	\$2,997 M	\$2,888 M	+ \$108 M
Liability	\$4,179 M	\$4,103 M	+ \$76 M
Funded Status (AV)	71.7%	70.4%	+ 1.3%
Assets (MV)	\$3,521 M	\$2,871 M	+ \$650 M
Funded Status (MV)	84.2%	70.0%	+ 14.3%

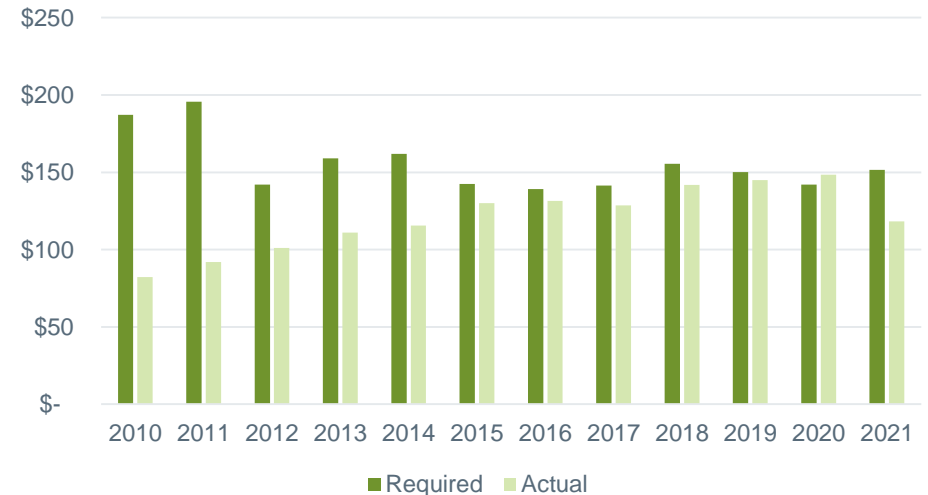
Historical Funded Status



Rate of Return (Annual)



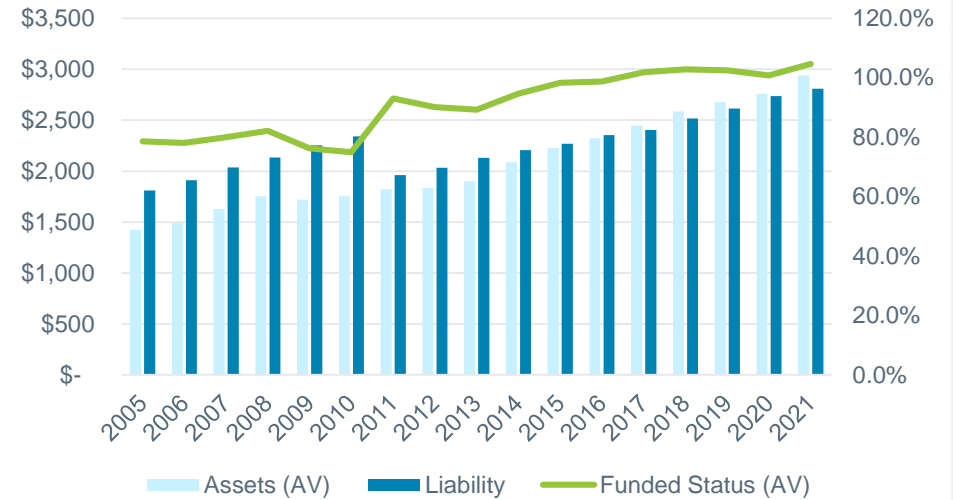
Historical Contributions



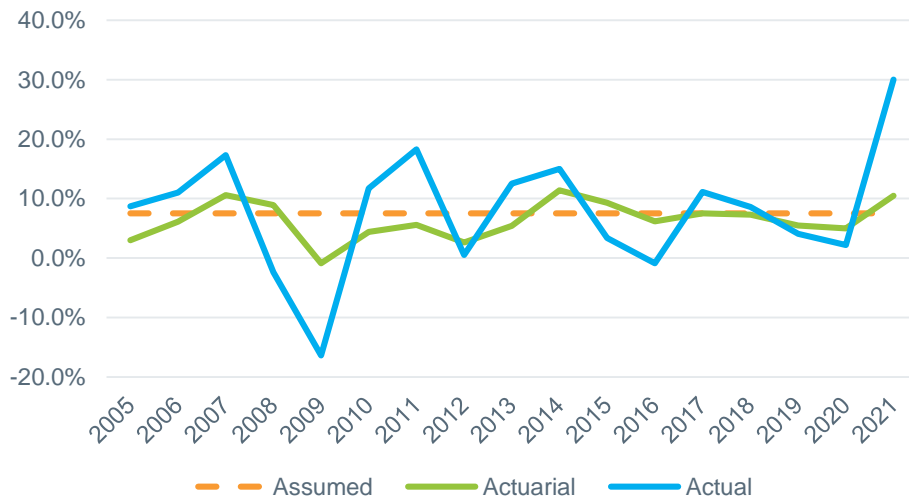
Police

	2021	2020	Change
Assets (AV)	\$2,940 M	\$2,757 M	+ \$183 M
Liability	\$2,810 M	\$2,736 M	+ \$74 M
Funded Status (AV)	104.6%	100.8%	+ 3.9%
Assets (MV)	\$3,290 M	\$2,621 M	+ \$669 M
Funded Status (MV)	117.1%	95.8%	+ 21.3%

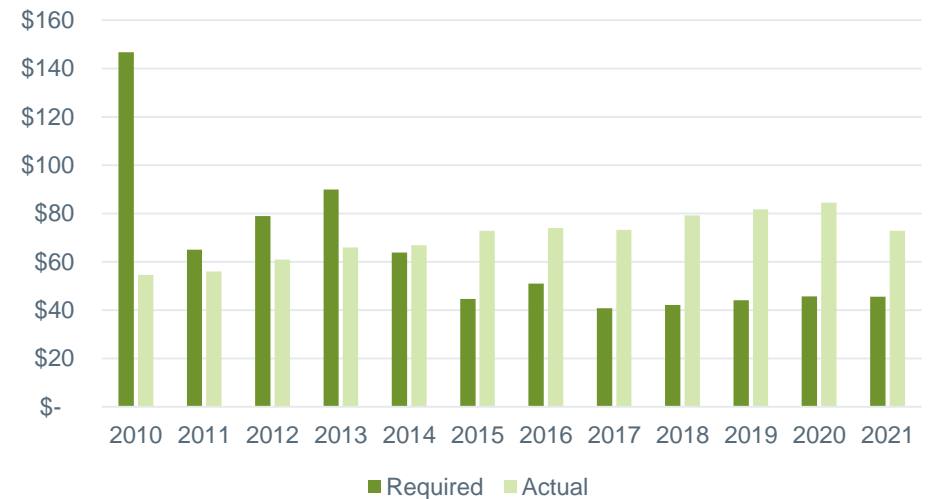
Historical Funded Status



Rate of Return (Annual)



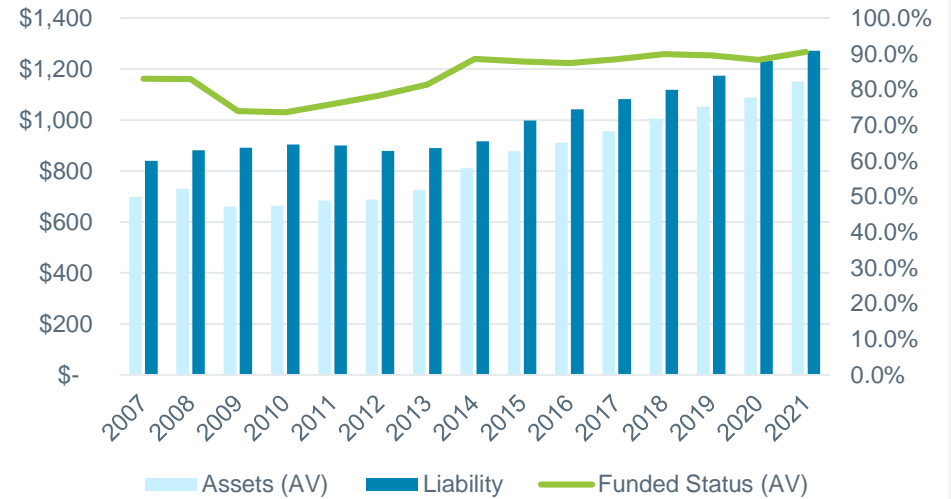
Historical Contributions



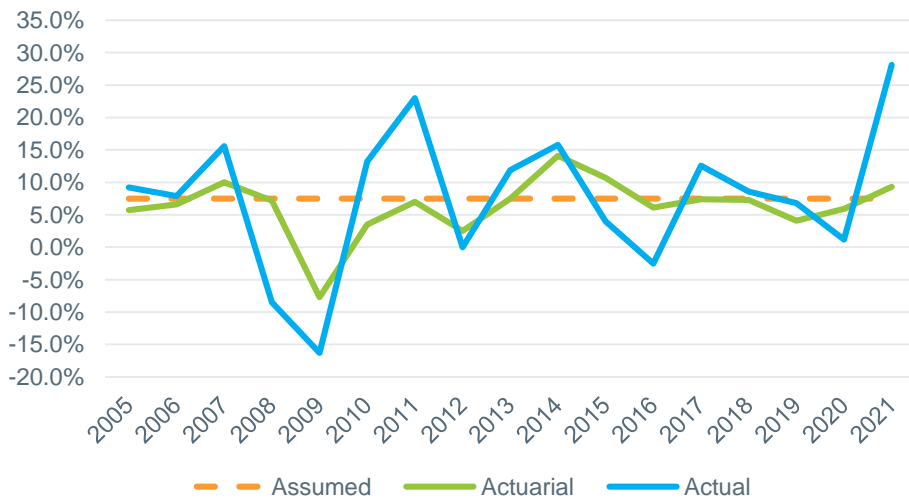
Law Enforcement

	2021	2020	Change
Assets (AV)	\$1,152 M	\$1,088 M	+ \$64 M
Liability	\$1,272 M	\$1,232 M	+ \$39 M
Funded Status (AV)	90.6%	88.3%	+ 2.3%
Assets (MV)	\$1,247 M	\$1,005 M	+ \$242 M
Funded Status (MV)	98.1%	81.5%	+ 16.5%

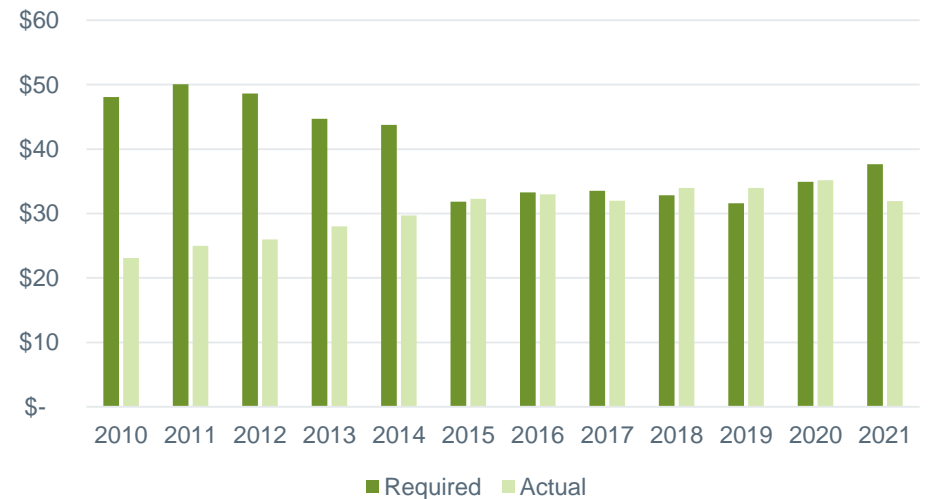
Historical Funded Status



Rate of Return (Annual)



Historical Contributions



Judges

	2021	2020	Change
Assets (AV)	\$380 M	\$355 M	+ \$26 M
Liability	\$342 M	\$333 M	+ \$9 M
Funded Status (AV)	111.3%	106.4%	+ 4.8%
Assets (MV)	\$434 M	\$351 M	+ \$83 M
Funded Status (MV)	126.8%	105.4%	+ 21.4%

