



Employees' Retirement System

Presentation to the Finance
& Personnel Committee on the
2020 Proposed Executive Budget
October 9, 2019

Budget Data

	2019 Adopted Budget	2020 Proposed Budget	Difference (amount, %)
FTEs – O&M	48.50	48.50	0.00 (0%)
FTEs - Other	0	0	0
Salaries & Wages	\$3,310,326	\$3,360,769	\$50,433 (1.5%)
Fringe Benefits	\$1,489,647	\$1,344,308	-\$145,399 (-9.8%)
Operating Expenditures	\$18,093,000	\$16,074,000	-\$2,019,000 (-11.2%)
Equipment	\$313,000	\$144,000	-\$169,000 (-54%)
Special Funds	\$0	\$0	\$0 (0%)
TOTAL	\$23,205,973	\$20,923,077	-\$2,282,896 (-9.8%)

Pension Fund Status January 1, 2019

- 81.5% on an actuarial basis
- 77.4% on a market basis
- 5.33% return on investment on actuarial value
 - Assumption was 8.00%
- **-2.91%** return on investment on market value
 - Assumption was 8.00%

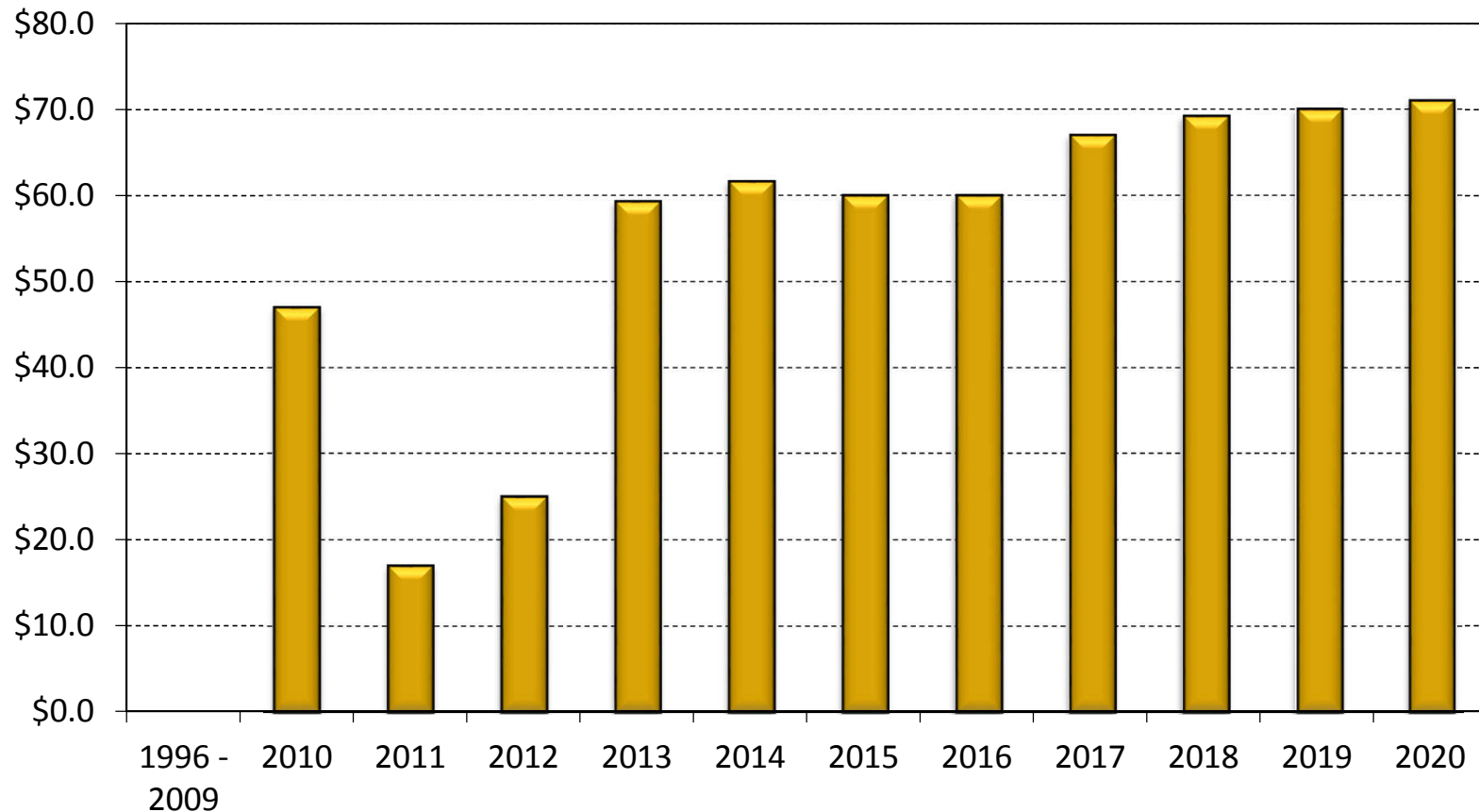
Changes to 2019 Plan Reset

- Major Changes in Pension Funding Policy & Economic and Demographic Assumptions
 - Change Actuary firm from Buck to Cavanaugh Macdonald Consulting, LLC (CMC)
 - Change in the Actuarial Assumption from prior valuation. The investment return assumption was lowered from:
 - 8.00% to 7.50% reset rate of return for 2019 and;
 - 8.25% to 7.50% rate of return for next 25 years
 - This increased the actuarial accrued liability by \$450 million and decreased the funded ratio by 6.2%

2020 Pension Contribution

- Pension reserve fund will have a balance of approximately \$30.1 million at year-end 2019
- The budget provides a payment of \$71 million for the Employer Contribution
 - *\$71 million from the tax levy*
- No member contribution paid by the employer; employees now pay their own contributions

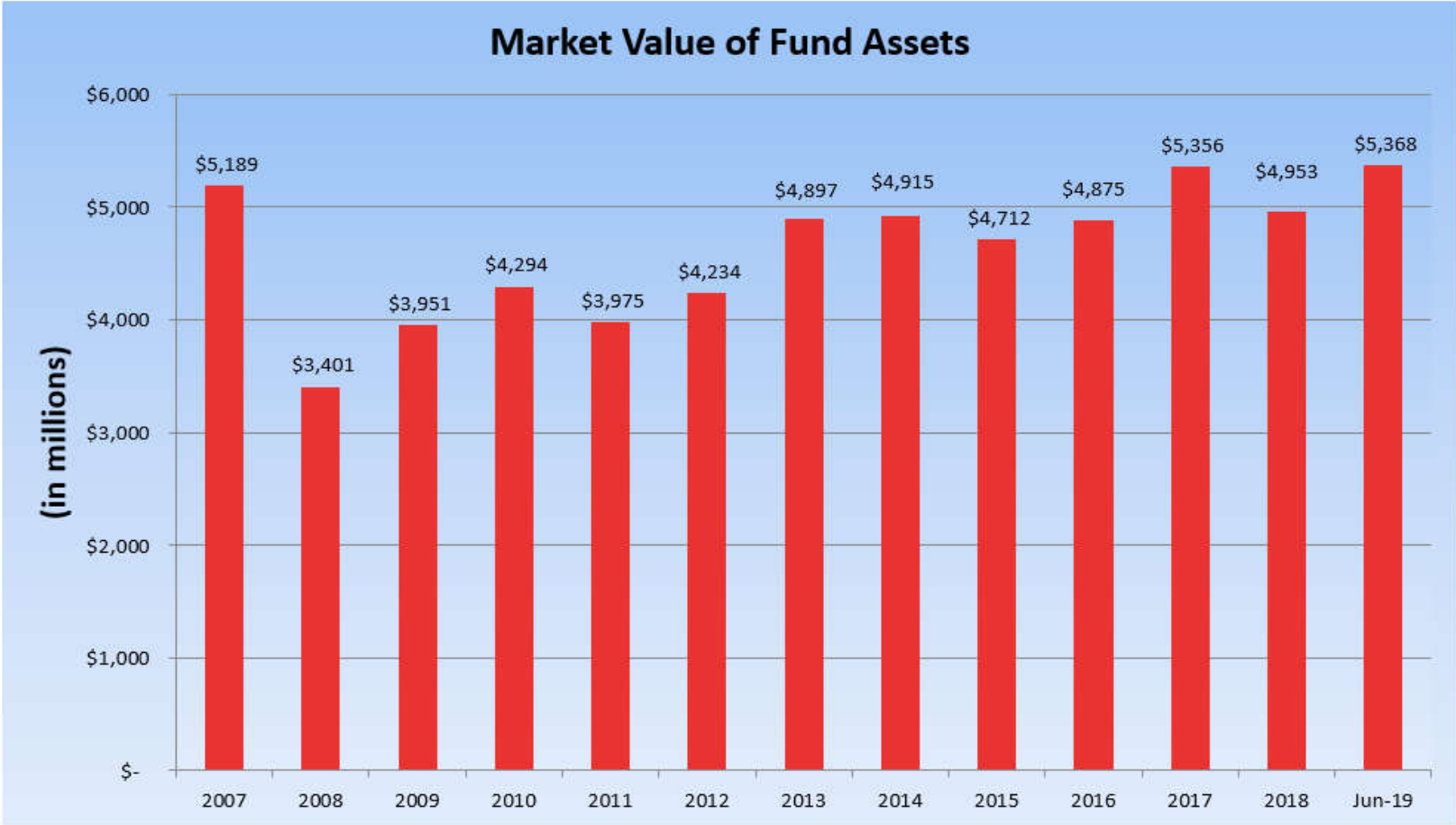
Employer Pension Contributions Trends 1996-2020 Projection



Contributions in 2011 and 2012 were made to the employer's pension reserve. 2018-2022 contributions will be based on a reset of stable contribution rates. Source: City Budget documents

Fund Value of Assets: 2007 – June 30, 2019

(Year Ended Dates Reflect 12/31 Fund Values)



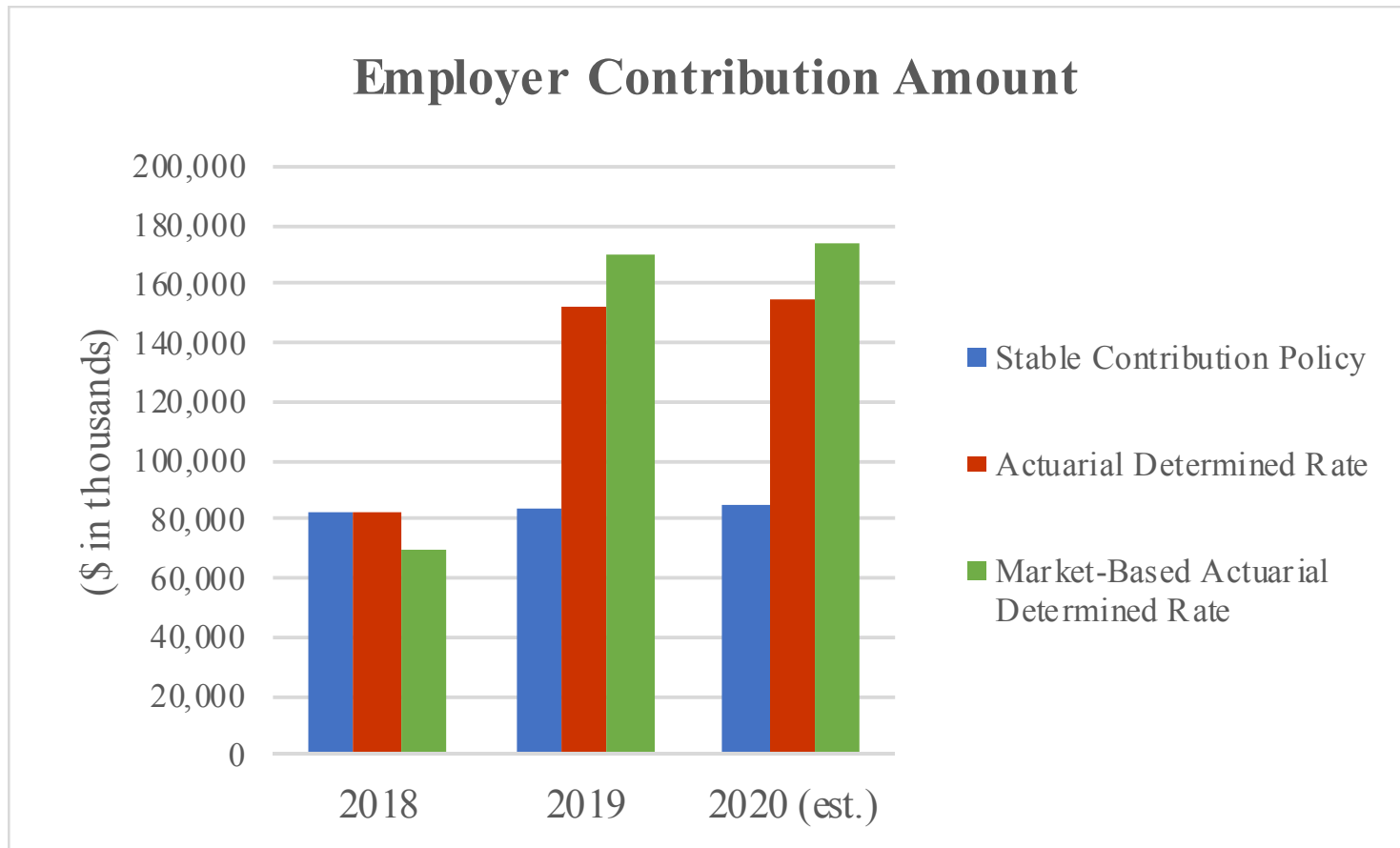
Most recent Actuarial valuation projects benefit payments to total \$4.8 billion in next 10 years.

Benefit Payments	\$3.7 billion
Expenses	\$207 million
Contributions	\$1.0 billion
Investment Gain	\$3.0 billion

11 1/2 Year Estimates (1/1/08 - 6/30/19)

Employer Contributions

(Combined Fund only as of January 1, 2019)



Given the difference between the actuarially determined contributions and the stable contribution policy contributions, it would be prudent for participating employers to start preparing now for higher contributions when the Stable Contribution Policy is reset for calendar year 2023.

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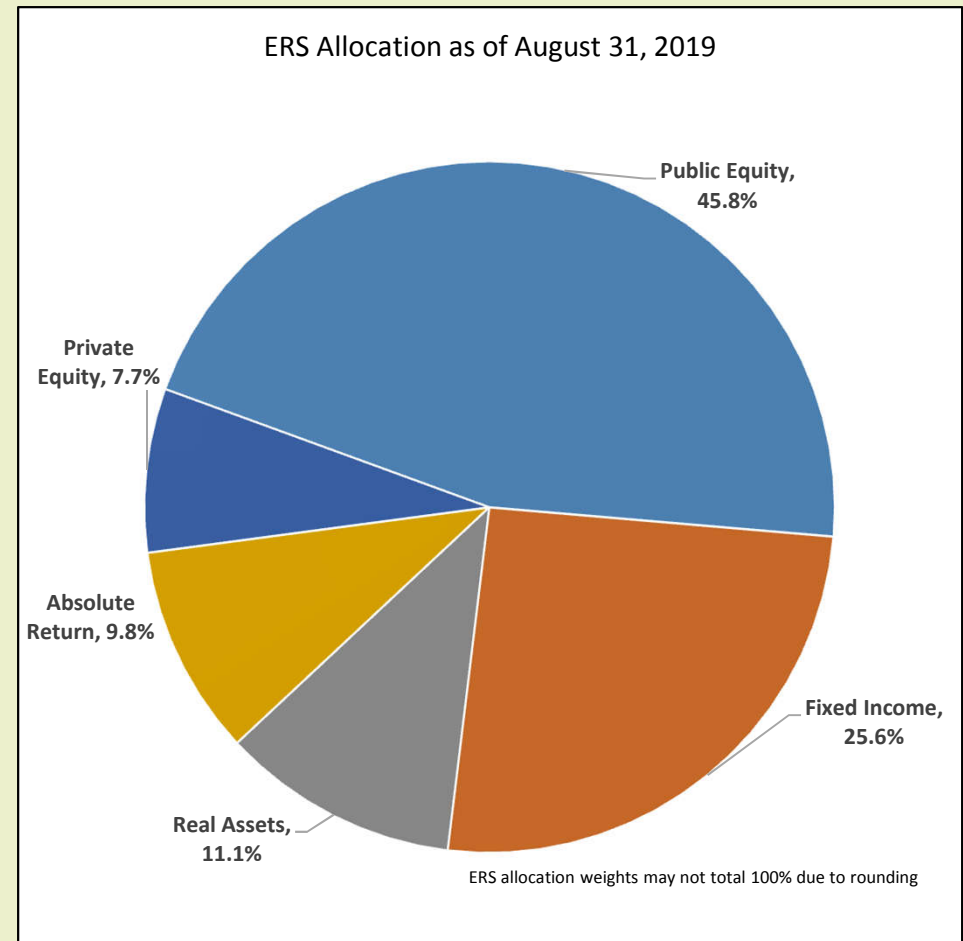


2020 Budget Presentation

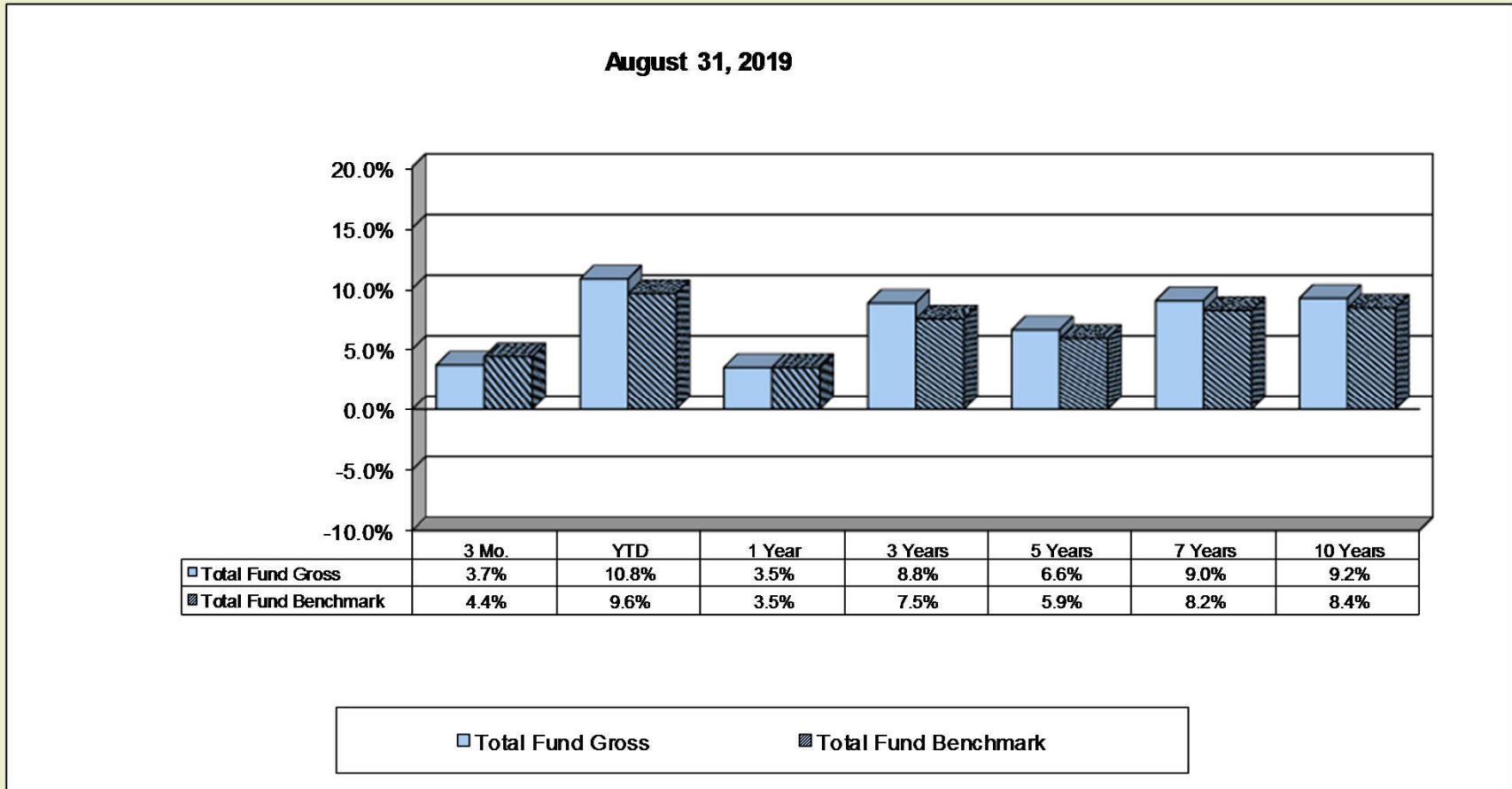
Employees' Retirement System
October 09, 2019

General Pension Statistics

- Fund Value: \$5.32 billion (Prelim. as of September 30 , 2019)
- Membership Breakdown (per 2019 valuation):
 - Actives: 10,851
 - Deferred: 4,360
 - Retirees / Beneficiaries: 13,370
- Actuarial Funded Status: 81.52% (per 2019 actuarial valuation; 77.35% based on market value)
- Total Annual Pension Payroll: \$391.6 million (est. for 2019 based on actuals through Aug. 2019)
- Total Annual Pensionable Wages: \$565.2 million (est. for 2019 based on YTD actuals through Aug.)
- Total Annual Member Contributions: \$32.3 million (est. for 2019 based on YTD actuals through Aug.)

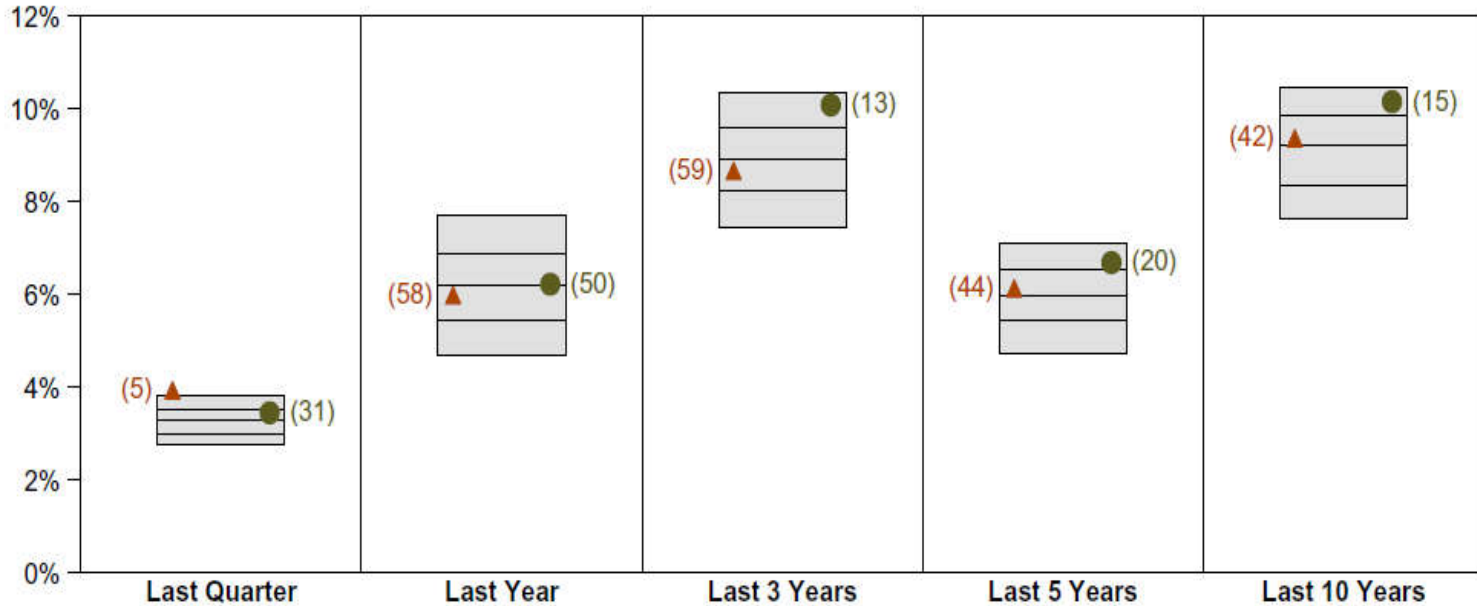


CMERS Investment Performance History Periods Ending August 31, 2019



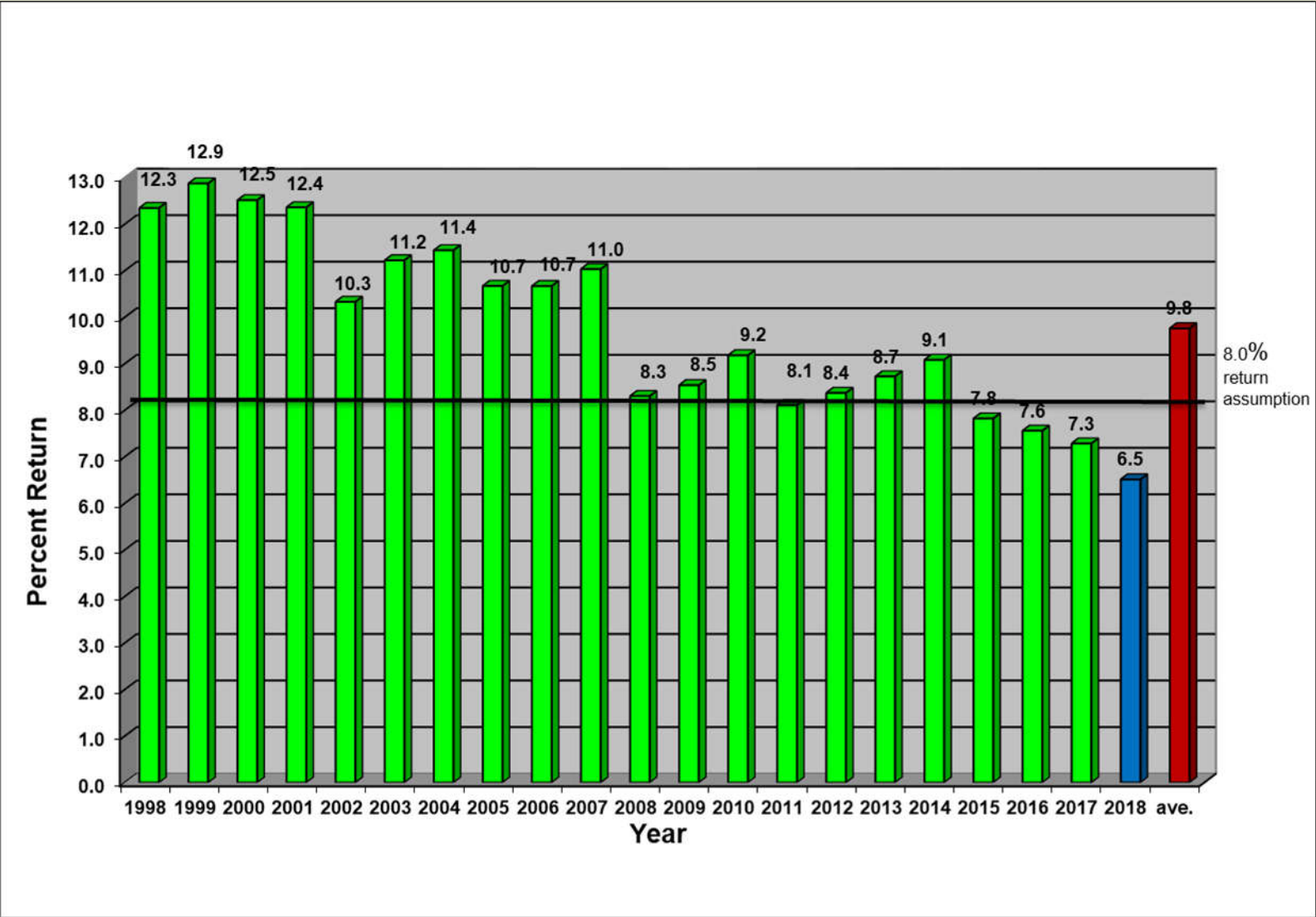
Investment Performance Compared to Public Fund Peers Periods Ending June 30, 2019

Performance vs Callan Public Fund Sponsor Database (Gross)

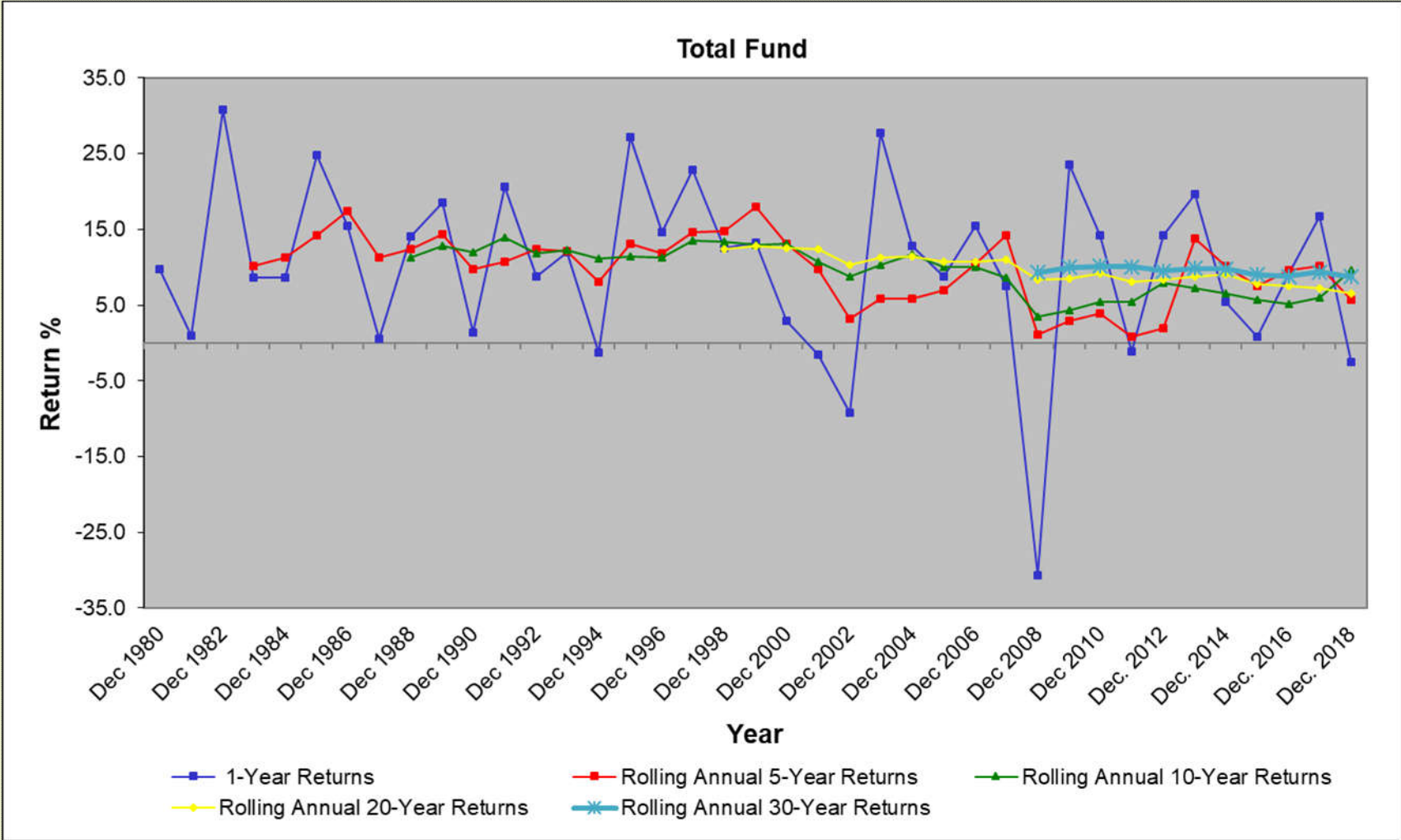


10th Percentile	3.79	7.67	10.33	7.09	10.42
25th Percentile	3.51	6.85	9.57	6.50	9.85
Median	3.27	6.19	8.91	5.96	9.20
75th Percentile	2.98	5.41	8.21	5.44	8.34
90th Percentile	2.74	4.66	7.44	4.72	7.60
Total Fund ●	3.43	6.20	10.06	6.67	10.13
Total Fund Reference Index ▲	3.92	5.97	8.64	6.12	9.35

ERS 20 Year Rolling Ave. Investment Returns 1978-2018



Rolling Fund Returns 1979 - 2018



Active Management versus Passive Analysis

24-Years

1/1/95 - 12/31/18

MERS' decision to hire some active managers versus hiring only passive managers

		Time Weighted Returns			Dollar Weighted Estimates (Net of fees)		
		Annualized MERS Asset Class		Annualized Index	Value of a Dollar Invested in		Active Management Impact
MERS Asset Class	Index	Gross	Net of fees	Net of fees	MERS Asset Class	Index	\$Millions
Domestic Equity	Russell 3000	9.74%	9.48%	9.40%	\$ 8.78	\$ 8.64	\$ 119.0
International Equity*	MSCI EAFE	6.58%	6.17%	3.98%	\$ 3.87	\$ 2.42	\$ 358.8
Global Equity **	MSCI World / ACWI	7.44%	7.05%	7.22%	\$ 1.81	\$ 1.84	\$ 2.6
Fixed Income	Barclays Aggregate	6.72%	6.61%	5.43%	\$ 4.64	\$ 3.55	\$ 261.8
Estimate of Fund's benefit from its decision to hire active managers over past 24 years							\$ 742.1

Manager Fees for indices are assumed to be:

Russell 3000 Index - 2 basis points

MSCIEAFE Index - 5 basis points

MSCI World / ACWI Index - 5 basis points

Barclays Aggregate Index - 2 basis points

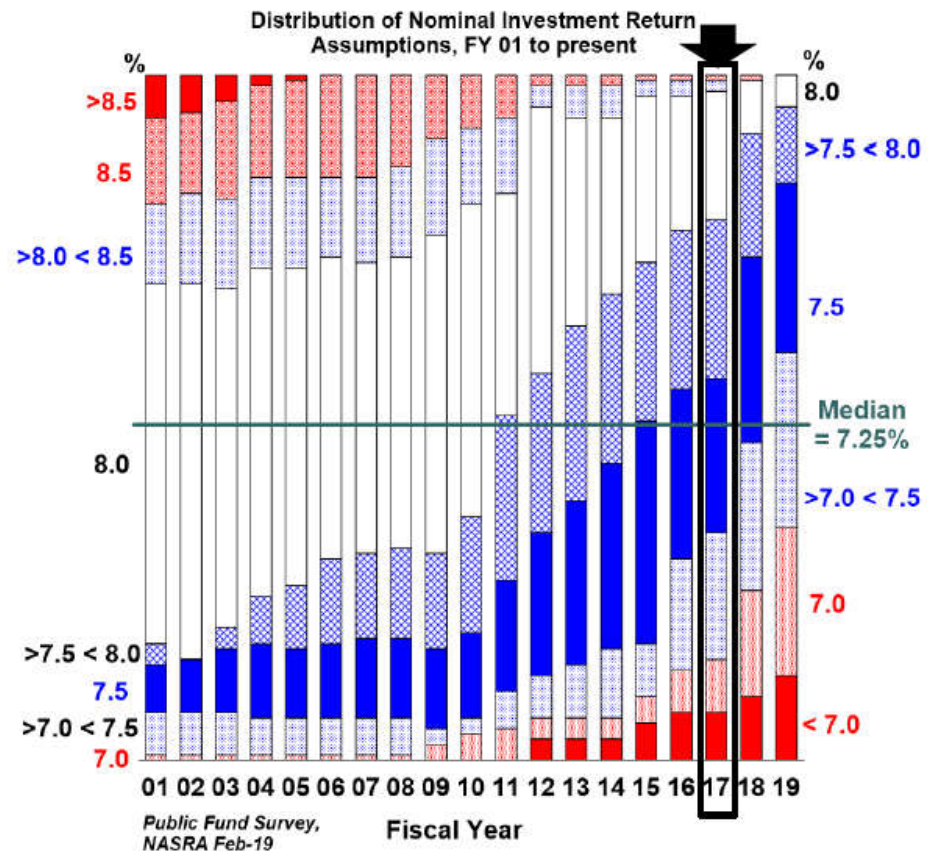
Value estimates are based on monthly ERS asset class balances.

* Inception Date for International Equity Composite is May 1, 1996

** Inception Date for Global Equity Composite is April 1, 2010

Change In Public Pension Fund Expected Return On Investment 2001-2018

Lower market expectations have resulted in a significant change to lower investment return assumptions since 2001. The shift since 2017, when CMERS last reviewed this assumption, is rather remarkable as well.



Note: Investment mixes may differ significantly between funds.

Alternative Mixes: 30-Year Return Expectations

	Current Target	Min	Max	Mix 1	Mix 2	Mix 3	Mix 4	Mix 5	Mix 6
Global Equity	55%	0%	52%	26%	33%	39%	46%	49%	52%
Private Equity	5%	0%	8%	8%	8%	8%	8%	8%	8%
Fixed Income	22%	0%	100%	41%	33%	26%	18%	14%	10%
Real Assets	10%	0%	100%	7%	8%	9%	10%	11%	12%
Absolute Return	8%	0%	18%	18%	18%	18%	18%	18%	18%
Total	100%			100%	100%	100%	100%	100%	100%
Total Equity	60%			34%	41%	47%	54%	57%	60%
10-Year Expected Return	6.4%			5.7%	5.9%	6.2%	6.4%	6.5%	6.6%
30-Year Expected Return	7.4%			6.6%	6.9%	7.1%	7.3%	7.5%	7.5%
Return Difference	1.0%			1.0%	1.0%	1.0%	1.0%	1.0%	1.0%

- Extending capital market projections out to 30 years results in a +1.0% annualized return over the 30-year forecast horizon.
- Callan believes that 10 years is an appropriate planning horizon for many strategic decisions including asset allocation
 - 10 years allows for a complete business cycle
- Shorter periods are more tactical and much longer periods (i.e. 30 years) rely on mean-reversion to elevate projections; we find that 10 years is largely appropriate
 - The focus of strategic planning should be on understanding the short term while positioning the fund for success in the long term

Funded Ratio

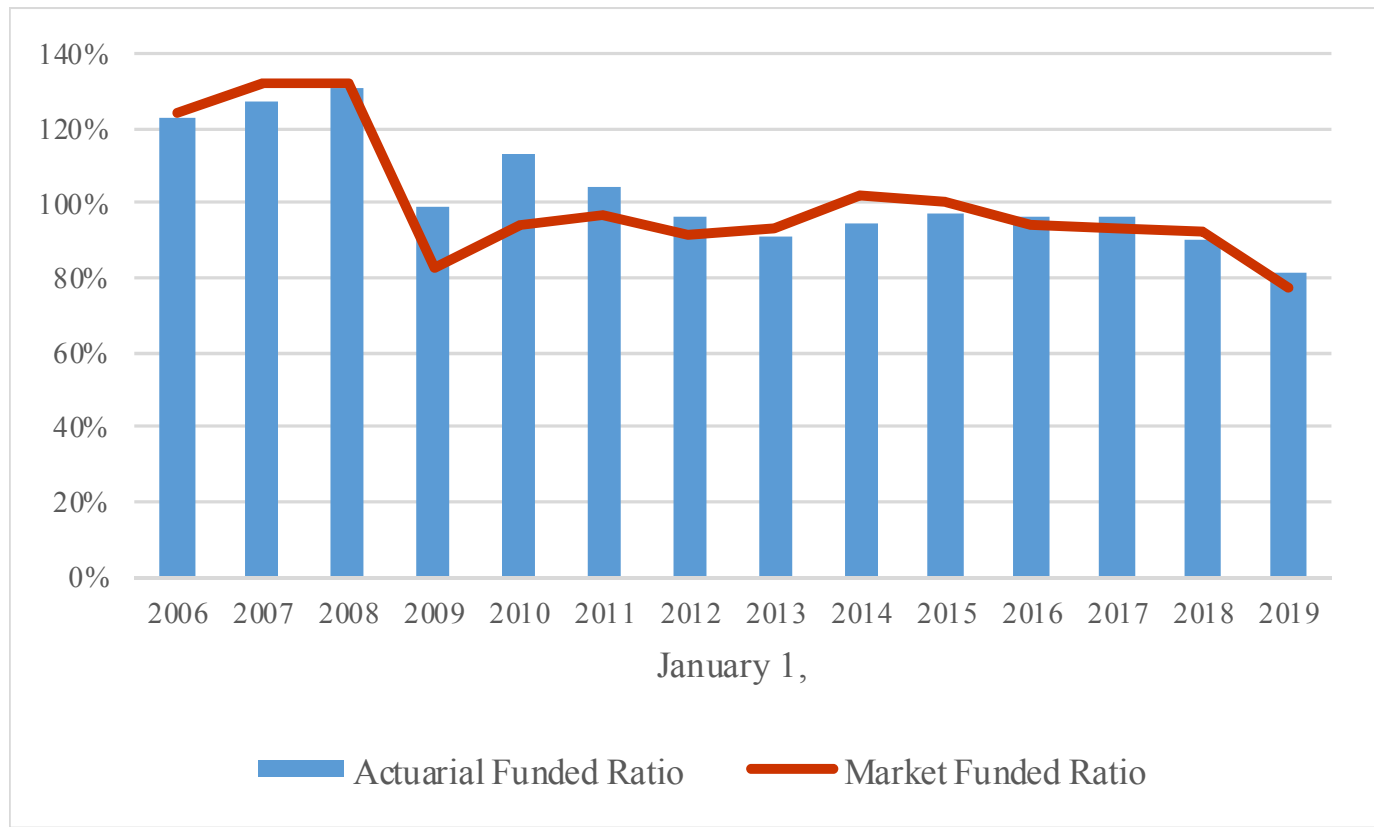
Inputs

- Membership Data
- Asset Data
- Benefit Provisions
- Assumptions
- Funding Methodology

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Results

- Actuarial Value of Assets
- Actuarial Accrued Liability
- UAAL/Funded Ratio**
- Net Actuarial Gain or Loss
- Employer Contributions
- Projections



The funded ratio in the 2019 valuation dropped significantly due to the change in the investment return assumption, along with a negative return on the market value of assets. However, historically, ERS has been a very well-funded System.

- Adopted by the Common Council on April 30, 2013. Contribution rate set for each group: Policemen, Firemen, and General Employees of the Combined Fund, and is applicable for the subsequent five-year period following the Experience Study performed by the actuary.
- The current actuarial contribution rates under the Stable Employer Contribution Policy in effect for calendar years 2018 through 2022 are:
 - General Employees: 7.48%
 - Policemen: 25.22%
 - Firemen: 26.83%.
- January 1, 2019 results are used to monitor the impact of the Stable Employer Contribution Policy on the System's funding and anticipate possible adjustments when the rate is reset for calendar years 2023 through 2027.



Employer Contributions

(Combined Fund only as of January 1, 2019)



- Inputs
- Membership Data
- Asset Data
- Benefit Provisions
- Assumptions
- Funding Methodology
- ↓
- Results
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Group	Employer Rate Based On:		
	Stable Contribution Policy	Actuarial Determined Rate	Market-Based Actuarial Determined Rate
General	7.48%	15.57%	17.70%
Policemen	25.22%	41.31%	46.08%
Firemen	26.83%	48.71%	54.25%

As a result of the events mentioned earlier, there is a significant difference between the actuarially determined contribution rate and the stable contribution policy rate as shown above.

2019 COM Employer Contribution

TABLE 18

Allocation of 2019 Contribution to Agencies for Combined Fund

Group	Active Members	Covered Compensation	Employer Rate**	Dollar Amount Payable***									
				Jan 1, 2019	June 1, 2019	July 1, 2019	Aug 1, 2019	Sept 1, 2019	Oct 1, 2019	Nov 1, 2019	Dec 1, 2019	Jan 31, 2020	
General City*	3,303	\$179,514,533	7.48%	\$13,427,687	\$13,858,470	\$13,922,122	\$14,006,280	\$14,090,947	\$14,176,126	\$14,261,820	\$14,348,032	\$14,522,022	
Water Department	333	18,379,775	7.48%	1,374,807	1,416,865	1,425,430	1,434,047	1,442,716	1,451,437	1,460,211	1,469,038	1,486,852	
School Board****	4,054	125,365,372	7.48%	9,377,330	9,664,203	9,722,622	9,781,394	9,840,522	9,900,007	9,959,852	10,020,058	10,141,565	
Milwaukee Technical College	0	0	7.48%	0	0	0	0	0	0	0	0	0	
Sewerage Commission	225	19,343,005	7.48%	1,446,857	1,491,120	1,500,134	1,509,202	1,518,325	1,527,503	1,536,737	1,546,020	1,564,774	
Veolia	24	1,925,764	7.48%	144,047	148,454	149,351	150,254	151,162	152,070	152,995	153,920	155,786	
Wisconsin Center District	81	4,775,345	7.48%	357,196	368,123	370,348	372,587	374,839	377,105	379,385	381,678	386,306	
Housing Authority	147	8,996,069	7.48%	672,906	693,492	704,084	701,901	706,144	710,413	714,707	719,027	727,746	
Policemen	1,915	159,862,101	25.22%	40,317,222	41,550,615	41,801,785	42,054,473	42,308,689	42,564,442	42,821,741	43,080,595	43,602,007	
Firemen	707	60,941,958	26.83%	16,350,727	16,850,022	16,822,122	17,022,215	17,158,371	17,262,092	17,366,440	17,471,419	17,683,284	
Total	10,789	\$579,103,922		\$83,468,779	\$86,022,274	\$86,542,271	\$87,065,411	\$87,591,715	\$88,121,201	\$88,653,888	\$89,189,793	\$90,271,342	

General City- \$13.4 Million

Police- \$40.3 Million

Fire- \$16.5 million

Total-\$70.2 Million

* Includes Elected Officials and Redevelopment Authority
 ** Rates apply to Covered Compensation as of the beginning of the year, then credited with interest to payable date.
 *** Actual contribution requirement will be adjusted for the actual payment date of the contribution.
 **** Breakdown of contributions for MPS by normal cost and past service portion as follow:

Payable at:	Jan 1, 2019	June 1, 2019	July 1, 2019	Aug 1, 2019	Sept 1, 2019	Oct 1, 2019	Nov 1, 2019	Dec 1, 2019	Jan 31, 2020
Normal Cost	6,233,636	6,424,337	6,463,172	6,502,241	6,541,547	6,581,090	6,620,872	6,660,895	6,741,668
Past Service Portion	3,143,694	3,239,866	3,259,450	3,279,153	3,298,975	3,318,917	3,338,980	3,359,163	3,399,897
Total	9,377,330	9,664,203	9,722,622	9,781,394	9,840,522	9,900,007	9,959,852	10,020,058	10,141,565



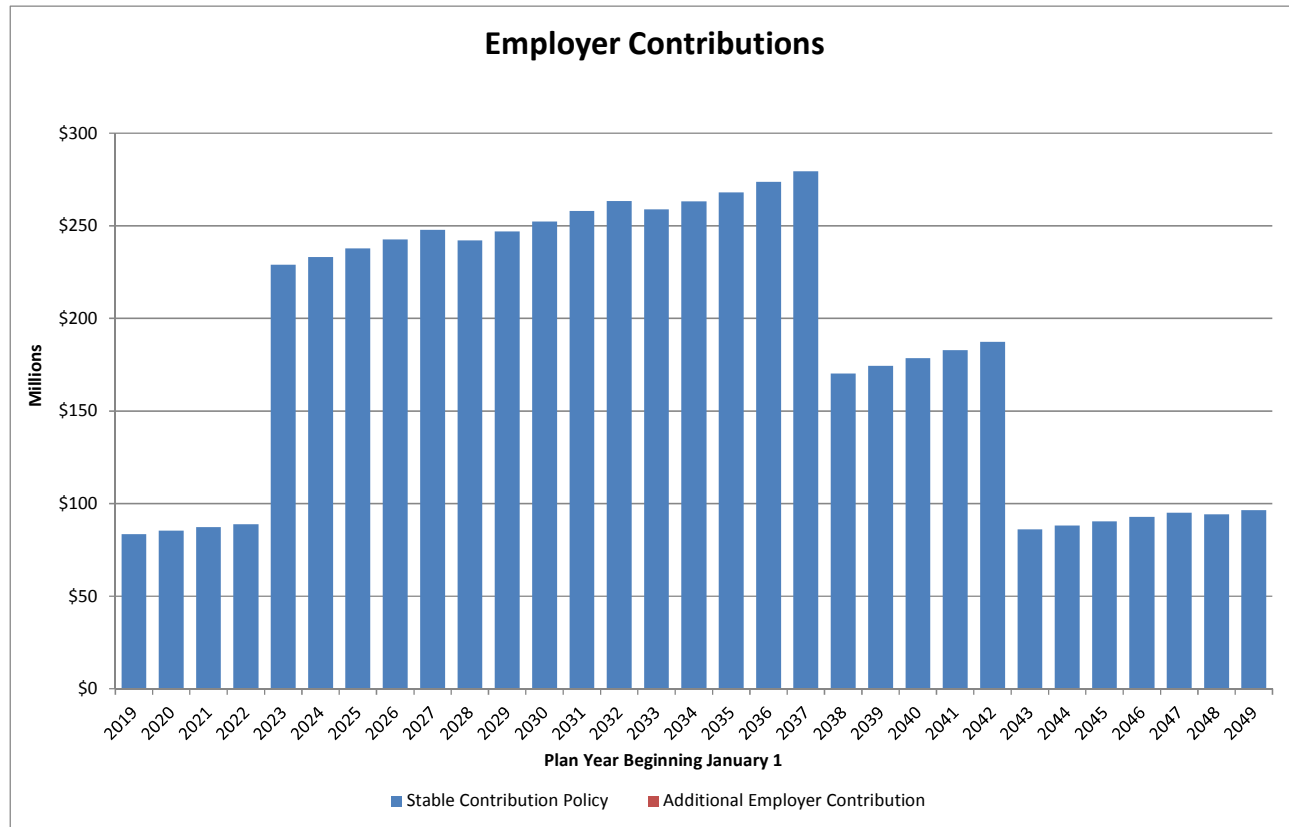
Inputs

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- Asset Data
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Results

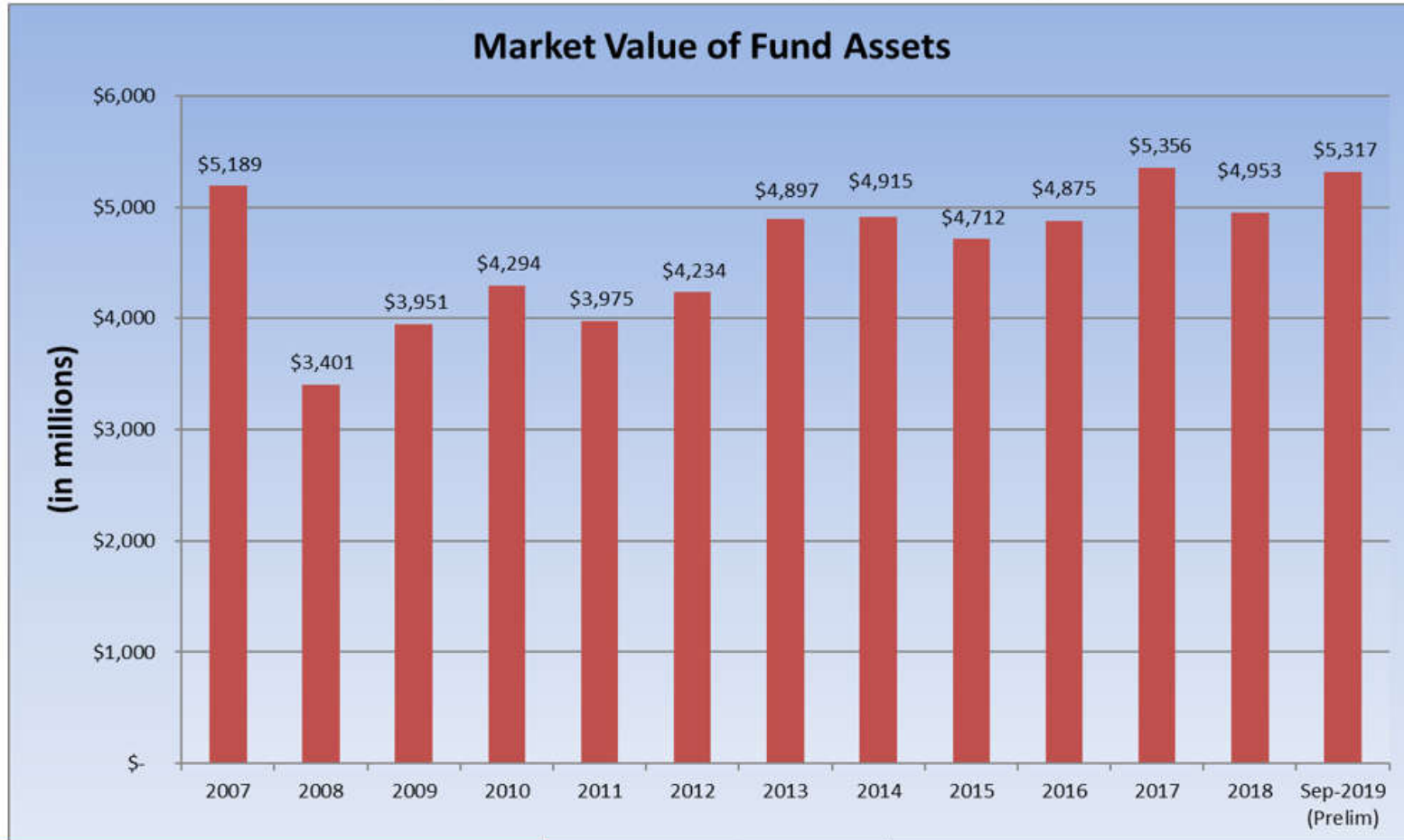
- Actuarial Value of Assets
- Actuarial Accrued Liability
- UAAL/Funded Ratio
- Net Actuarial Gain or Loss
- Employer Contributions
- Projections**



Here we show the projected dollar amount of employer contributions across all employers.

Fund Value of Assets: 2007 – September 30, 2019 (Preliminary)

(Year Ended Dates Reflect 12/31 Fund Values)



Most recent Actuarial valuation projects benefit payments to total \$4.8 billion in next 10 years.

Benefit Payments	\$3.8 billion
Expenses	\$211 million
Contributions	\$1.0 billion
Investment Gain	\$3.0 billion

11 3/4 Year Estimates (1/1/08 - Prelim 9/30/19)

APPENDIX

CMERS Participant Headcount (Active, Deferred and Retired) as of August 31, 2019

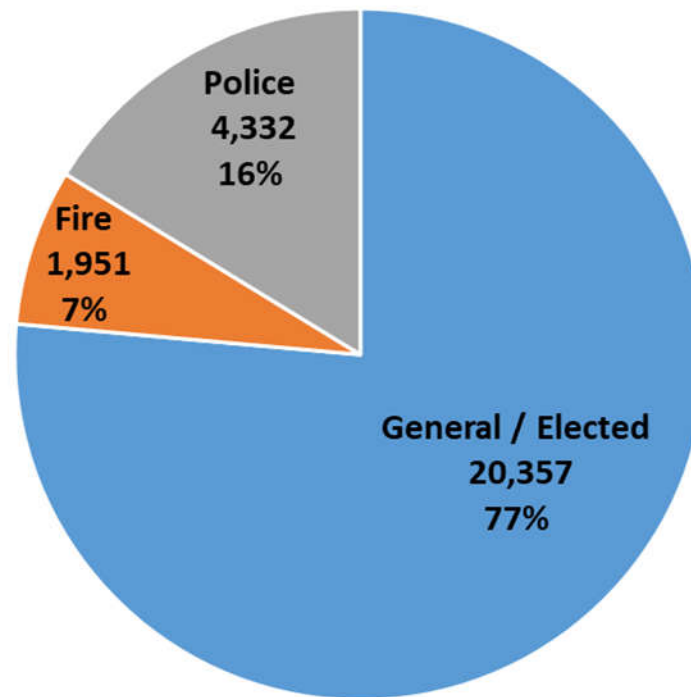
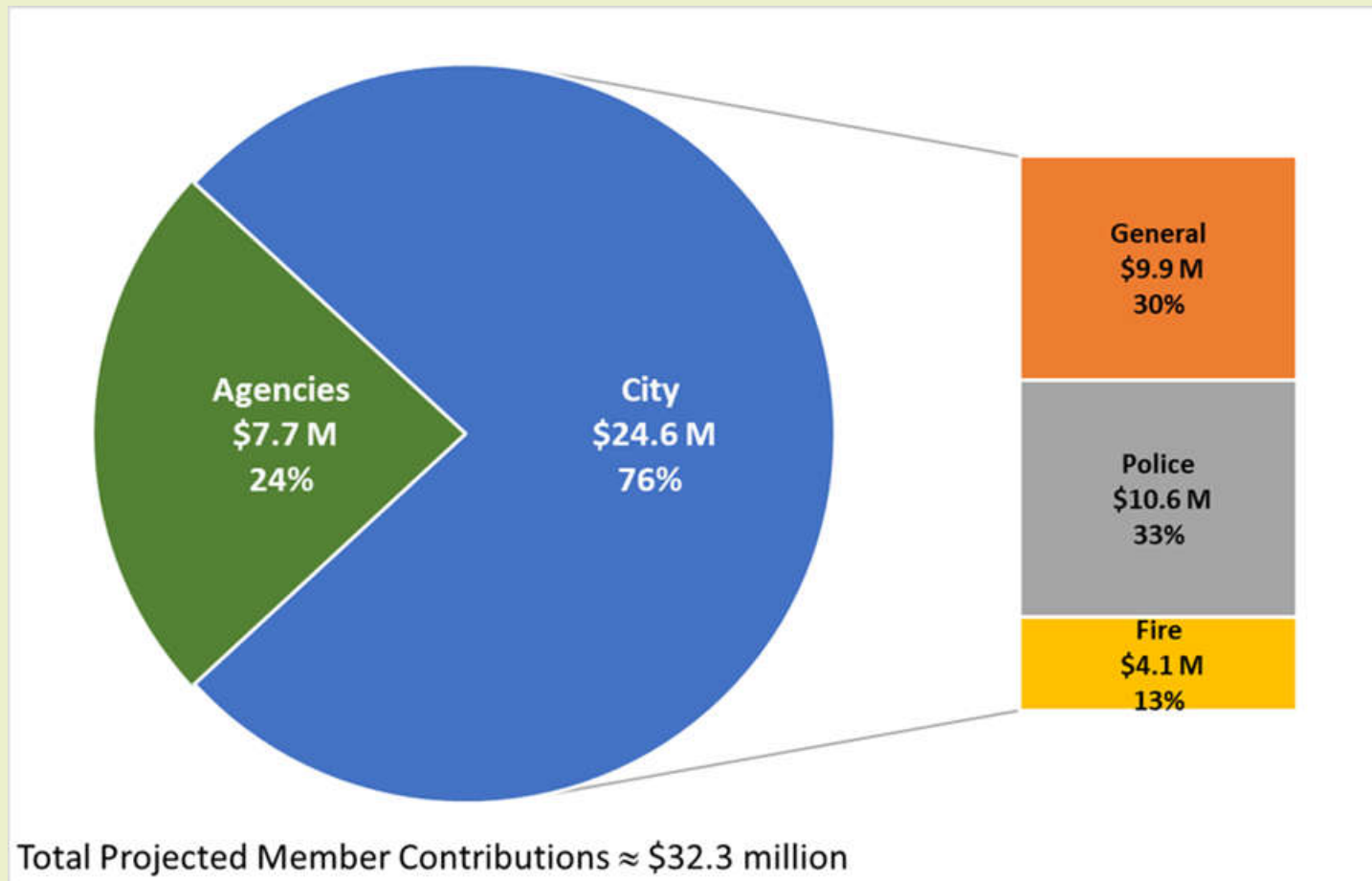


Chart does not include survivors/beneficiaries in payment

Total Annual Member Contributions

(in millions)
(projected for 2019)



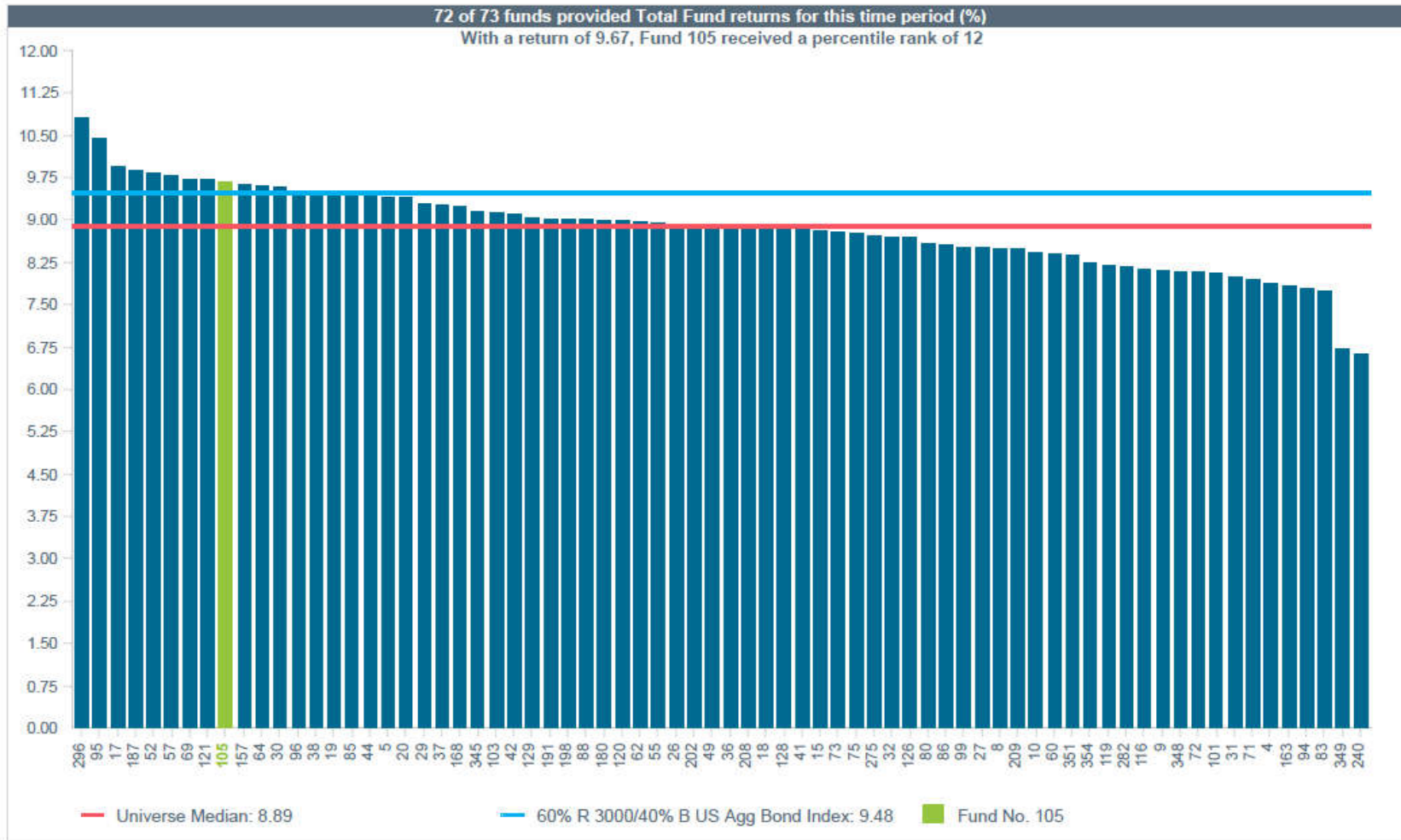
Annual Member Contributions (projected for 2019)

Employer / Group	Collected Through PP-18-2019*				Straightline Projection Through EOY 2019			
	Pension Wages	Employee Paid Member Contributions	Employer Paid Member Contributions	Total Member Contributions	Pension Wages	Employee Paid Member Contributions	Employer Paid Member Contributions	Total Member Contributions
City - General	137,308,783	6,867,842	-	6,867,842	198,468,439	9,916,363	-	9,916,363
City - Police	106,513,574	7,455,580	-	7,455,580	150,982,704	10,568,734	-	10,568,734
City - Fire	40,654,024	2,844,362	-	2,844,362	59,065,396	4,132,302	-	4,132,302
City - Total	284,476,381	17,167,784	-	17,167,784	408,516,539	24,617,399	-	24,617,399
Agencies	91,422,497	4,414,234	52,012	4,466,246	156,676,415	7,573,399	84,925	7,658,324
Total	\$ 375,898,877	\$ 21,582,017	\$ 52,012	\$ 21,634,029	\$ 565,192,955	\$ 32,190,798	\$ 84,925	\$ 32,275,723

*For some agencies, postings have been received through PP-17

10 Year Annualized Total Fund Returns

As of December 31, 2018

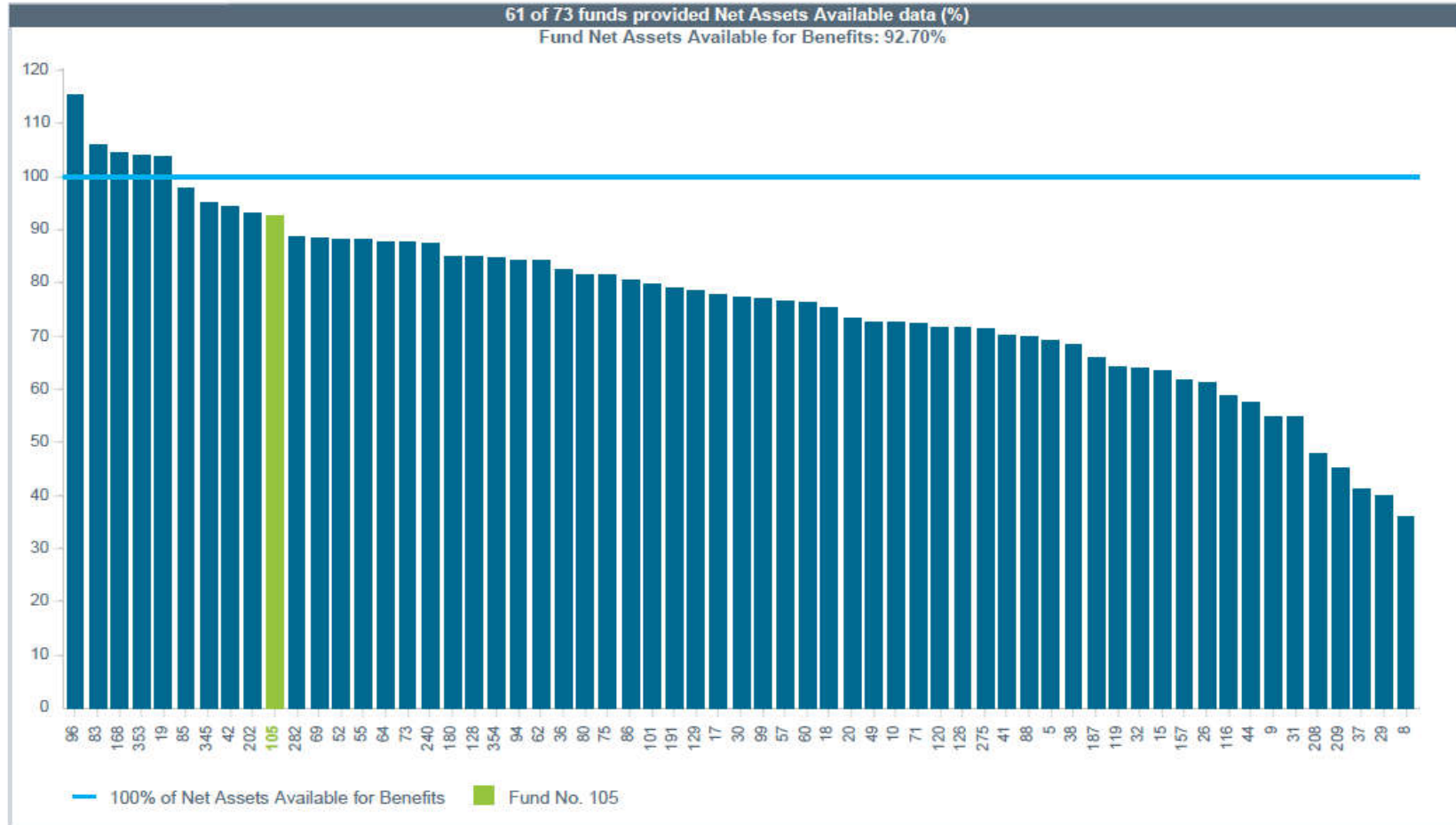


Funds with less history than the specified time period will not appear in the chart.



Net Assets Available For Benefits
Expressed as a Percentage of the Pension Benefit Obligation

As of December 31, 2018

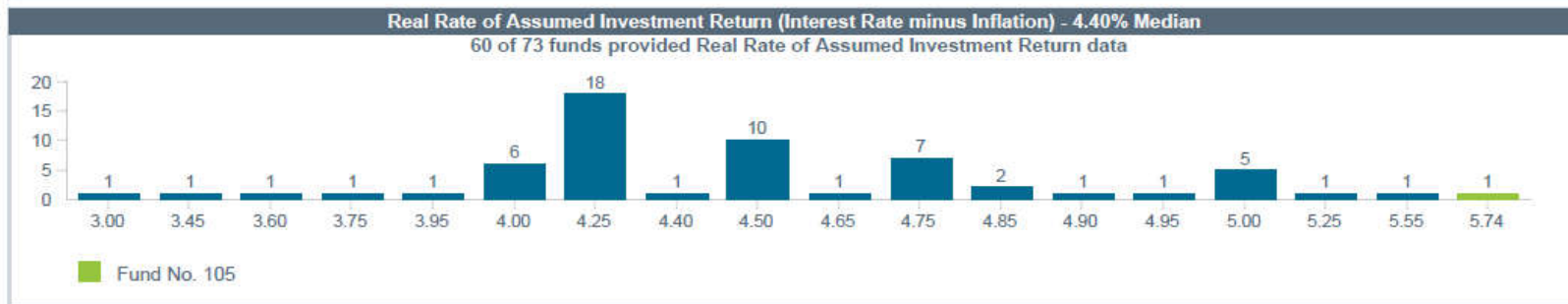
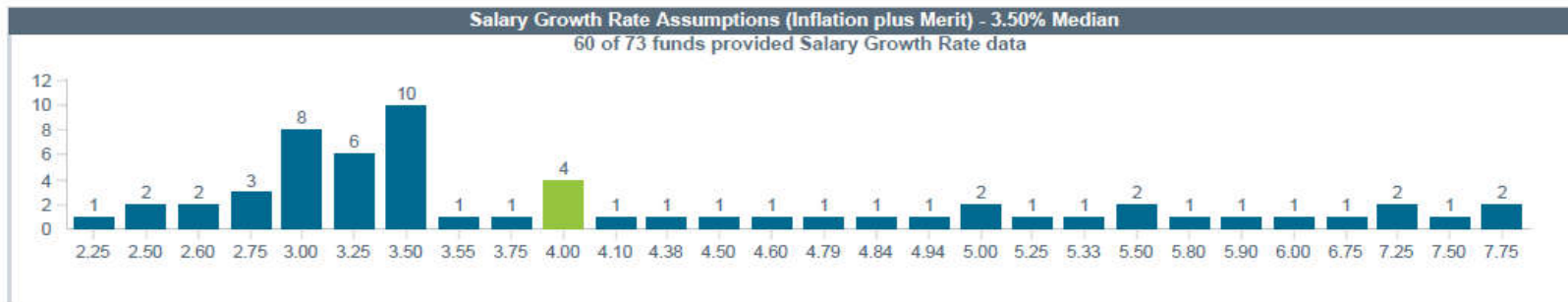
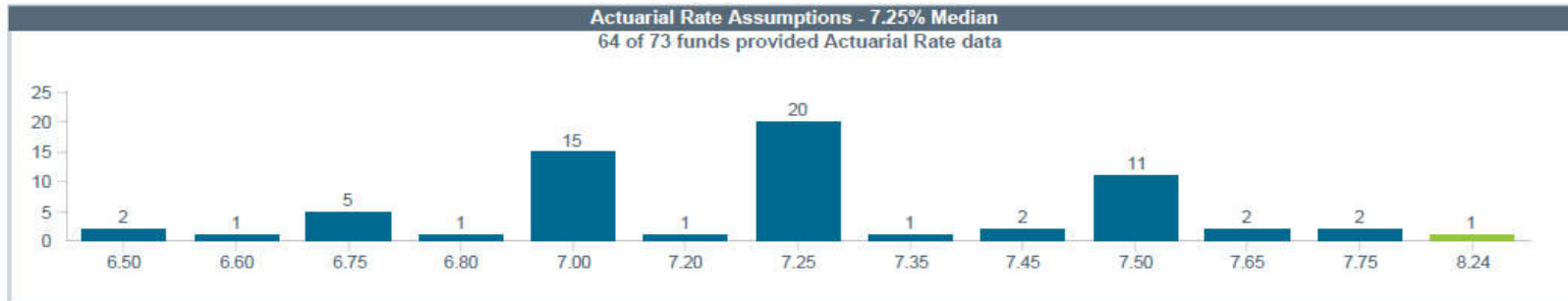


Funds that did not provide data will not appear in the chart.



Actuarial Assumption Rates

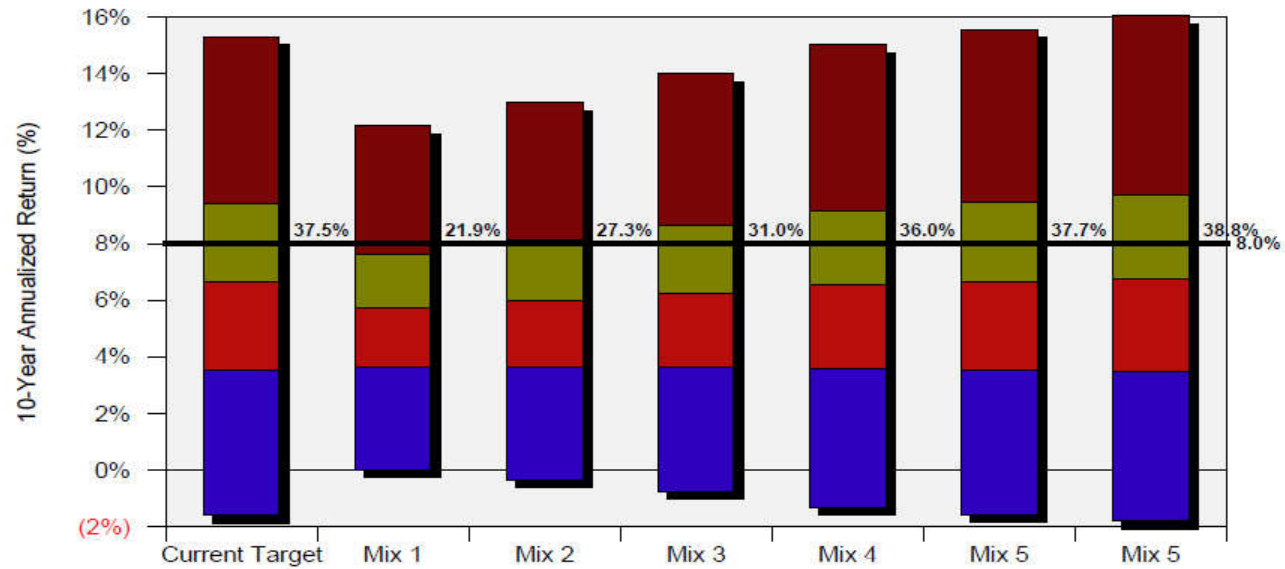
As of December 31, 2018



Funds that did not provide data will not appear in the chart.



Probability of Achieving An 8.0% Return



2nd Percentile	15.3%	12.2%	13.0%	14.0%	15.0%	15.6%	16.0%
25th Percentile	9.4%	7.6%	8.1%	8.7%	9.2%	9.5%	9.7%
Median	6.6%	5.7%	6.0%	6.2%	6.5%	6.7%	6.8%
75th Percentile	3.6%	3.6%	3.6%	3.6%	3.6%	3.6%	3.5%
97th Percentile	(1.6%)	0.0%	(0.3%)	(0.7%)	(1.3%)	(1.6%)	(1.8%)
Prob > 8.0%	37.5%	21.9%	27.3%	31.0%	36.0%	37.7%	38.8%

- The above chart illustrates the probability of achieving an 8.0% over the next 10 years in anticipation of lowering the assumed investment return in the Fall, 2017.

Employer Contributions

(Combined Fund only as of January 1, 2019)

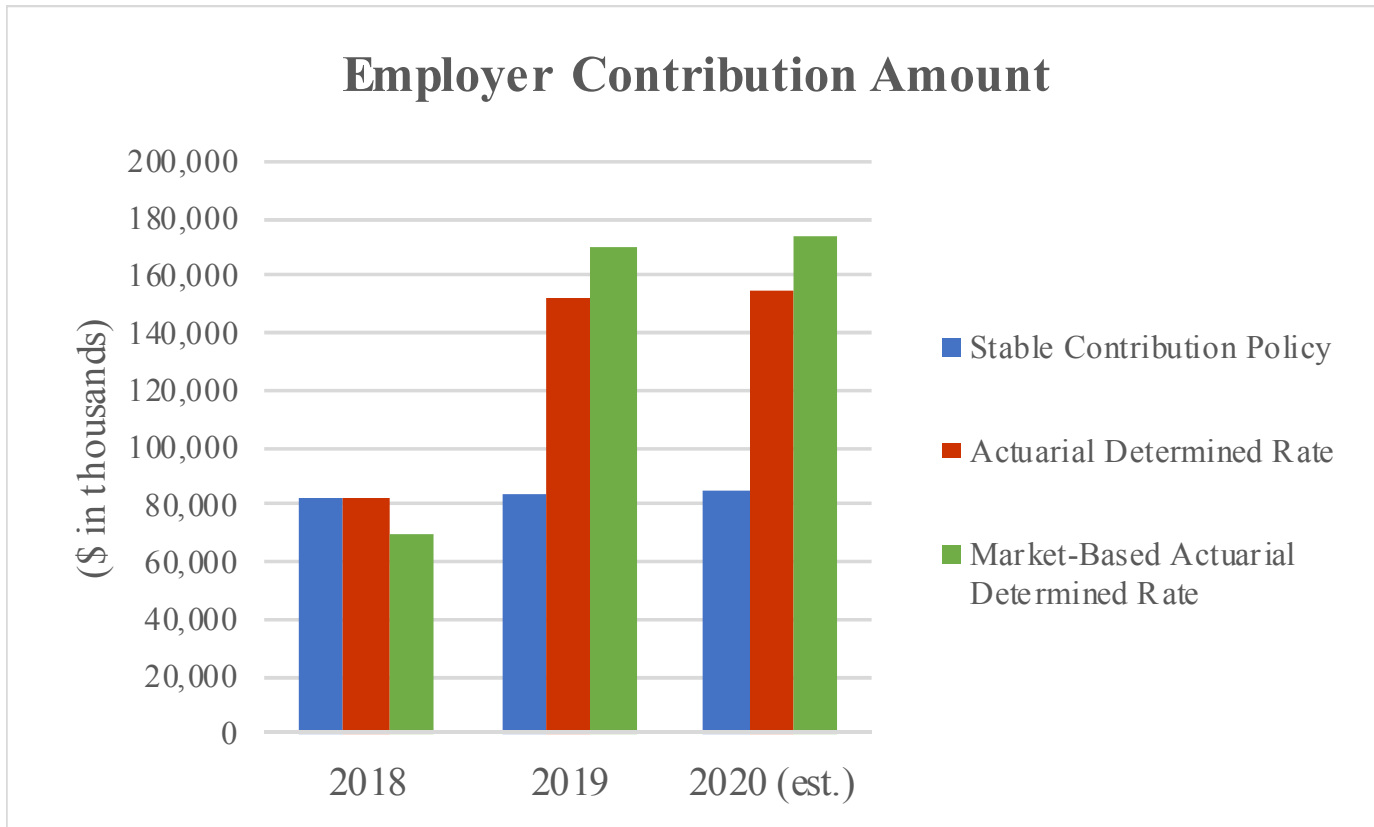
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Given the difference between the actuarially determined contributions and the stable contribution policy contributions it would be prudent for participating employers to start preparing now for higher contributions when the Stable Contribution Policy is reset for calendar year 2023.

Inputs

Membership Data
Asset Data
Benefit Provisions

Assumptions

Funding Methodology



Results

Actuarial Value of Assets
Actuarial Accrued Liability
UAAL/Funded Ratio
Net Actuarial Gain or Loss
Employer Contributions
Projections

- Demographic (future events that relate to people)
 - Retirement
 - Termination
 - Disability
 - Death
 - Note that new public sector mortality tables are available as of this valuation
 - We plan on implementing with the next experience review but they could be adopted sooner
- Economic (future events that relate to money)
 - Interest rate - 7.50% per year
 - Inflation - 2.50%
 - UAAL Payment Increase - 2.00%
 - Salary rate (net of inflation) vary with age

Other than the 7.50% investment return assumption, the latest assumptions were adopted for use with the January 1, 2018 actuarial valuation based upon recommendations by the previous actuary. The 7.50% assumption was recommended by CMC and adopted by the Board at its April, 2019 meeting.

The next experience review will be completed in time for implementation with the January 1, 2023 actuarial valuation.

Comparison of Plan Provisions Between the Employees' Retirement System of the City of Milwaukee (ERS) and Wisconsin Retirement System (WRS)

	General Employees (hired after 1/1/14)		Public Safety (w/o Social Security) (hired after 12/21/15 for Police and hired after 7/31/16 for Fire)	
	ERS	WRS	ERS	WRS
Multiplier	1.6%	1.6%	2.5%	2.5%
COLA	2% after the 5th anniversary of retirement, every year after	Annuity adjustments are based on investment performance and other factors	Minimum of 2%, maximum of 3%, based upon CPI-U for the calendar year preceding the increase	Annuity adjustments are based on investment performance and other factors
Employee Contribution	4%	6.75% ¹	7.00%	6.75%
Employer Contribution	7.48%	6.75%	Fire - 26.83% Police - 25.22%	16.25%
Vesting	4 years or age 65	5 year of service	4 years or Age 57	5 year of service
Money purchase benefit	No	Yes, with 100% employer match	No	Yes, with 100% employer match
Normal retirement	Age 65 or Age 60 with 30 years of service	Age 65 or age 57 with 30 years of service	Fire - Age 57 or Age 52 with 25 years of service Police - Age 57 or Age 50 with 25 years of service	Age 54 or age 53 with 25 years of service
Final Average Salary (FAS)	Three years of highest earnings	Three years of highest earnings	One year of highest earnings	Three years of highest earnings
Social Security?	Yes	Yes	No	No
Risk-sharing	No	Employees contribute 50% of the total contribution rate. The Annuity adjustment is based primarily on the investment returns of the fund. Actuarial factors, such as mortality rates, also affect annuity adjustments.	No	Employees contribute 50% of the total contribution rate. The Annuity adjustment is based primarily on the investment returns of the fund. Actuarial factors, such as mortality rates, also affect annuity adjustments.

¹ based upon 2020 rates calculated in 2018, WRS contribution rates reset every year based upon the actuarial analysis