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Presentation of April 30, 2018 Actuarial Valuation Results

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September 19, 2018





Purposes of an Actuarial Valuation

- Measure assets and liabilities
- Determine actuarial contribution rates
- Analyze experience (actual vs. expected) during prior year
- Report on trends



April 30, 2018 Actuarial Valuations

- Snapshot measurement at valuation date
- No changes in actuarial assumptions and methods or benefit provisions
- Funded status held steady
- Unfunded Actuarial Accrued Liability increased for Police System and decreased for Civilians System



Summary of Key Valuation Results

Police	2018	2017
Unfunded Actuarial Accrued Liability (UAAL)	\$275.1M	\$265.7M
Funded Ratio (Actuarial Assets)	76%	76%
<u>Actuarial Contribution Rate:</u>		
Normal Cost Rate	25.98%	26.10%
UAAL Amortization Rate	<u>15.93%</u>	<u>15.46%</u>
Total Contribution Rate*	41.91%	41.56%
City Contribution Amount	\$30,157,170	\$29,083,743

*Employees contribute 11.55% of pay



Summary of Key Valuation Results

Civilians	2018	2017
Unfunded Actuarial Accrued Liability (UAAL)	\$32.9M	\$34.0M
Funded Ratio (Actuarial Assets)	81%	80%
Actuarial Contribution Rate:		
Normal Cost Rate	15.63%	15.78%
UAAL Amortization Rate	<u>6.52%</u>	<u>7.20%</u>
Total Contribution Rate*	22.15%	22.98%
Contribution Amount	\$4,849,708	\$4,778,854

*Employees contribute 5.0% of pay



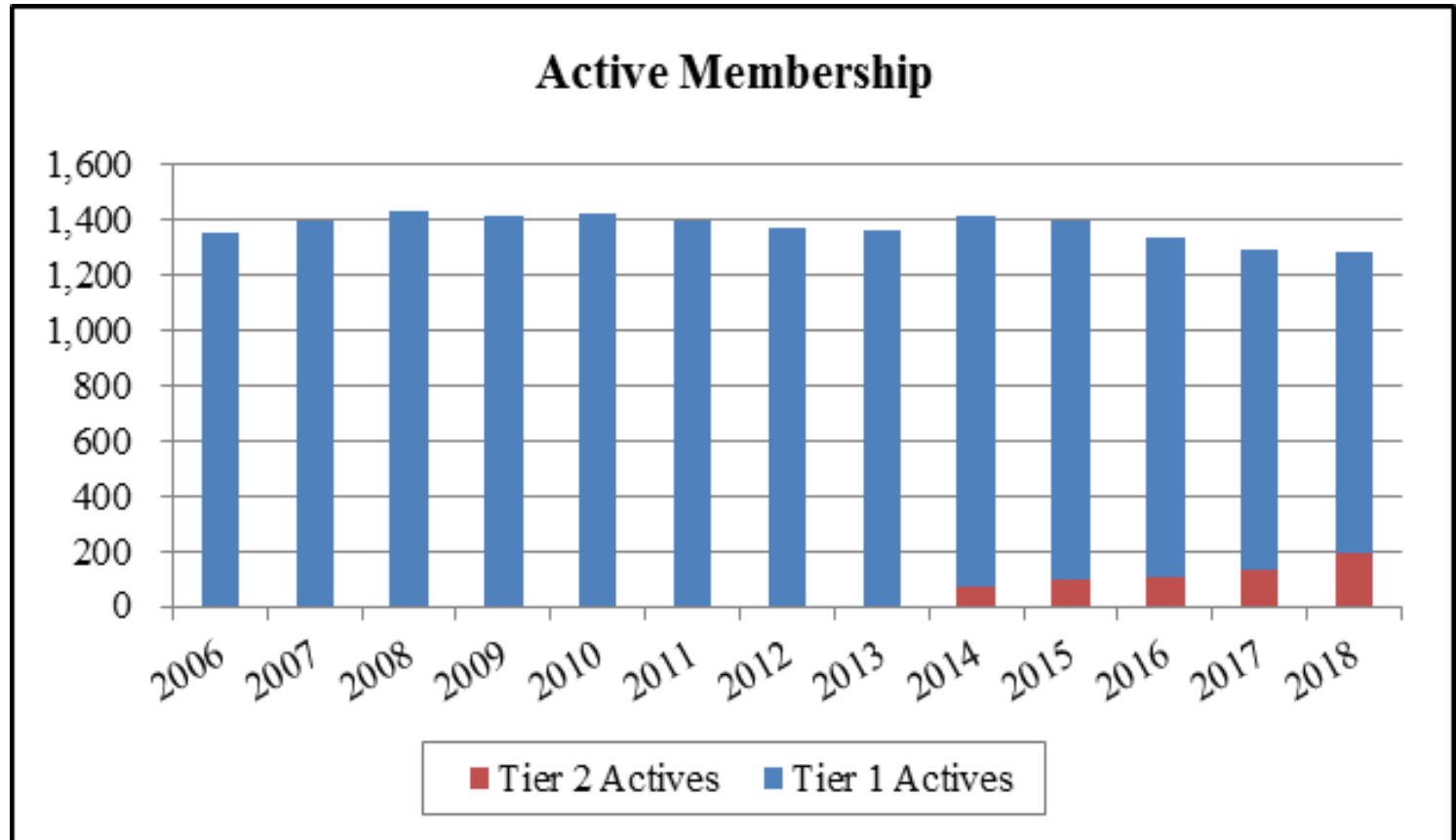
Membership Statistics

	Police	Civilians
Active Members		
• April 30, 2018	1,284	511
• April 30, 2017	1,286	492
• % Change	(0.2%)	3.9%
Payroll (\$M)		
• April 30, 2018	\$ 95.74	\$ 27.26
• April 30, 2017	\$ 93.41	\$ 25.62
• % Change	2.5%	6.4%
Retired Members		
• April 30, 2018	1,332	272
• April 30, 2017	1,308	262
• % Change	1.8%	3.8%
Average Benefit *		
• April 30, 2018	\$42,586	\$26,150
• April 30, 2017	\$41,345	\$26,076
• % Change	3.0%	0.3%

* Excludes supplemental benefit



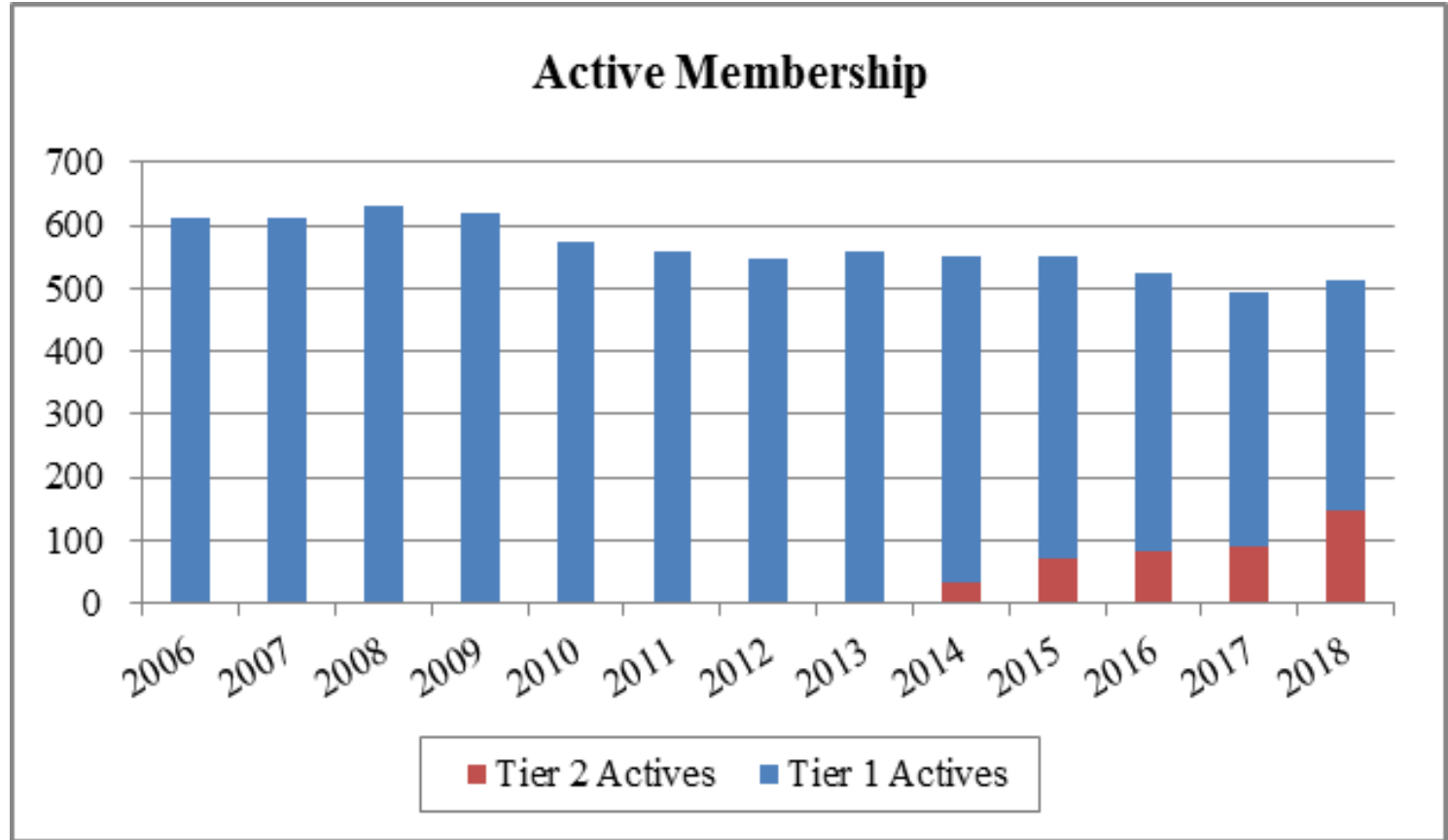
Police – Active Membership



As of April 30, 2018, there are 193 members in Tier 2 out of a total of 1,284 (about 15%).



Civilians - Active Membership



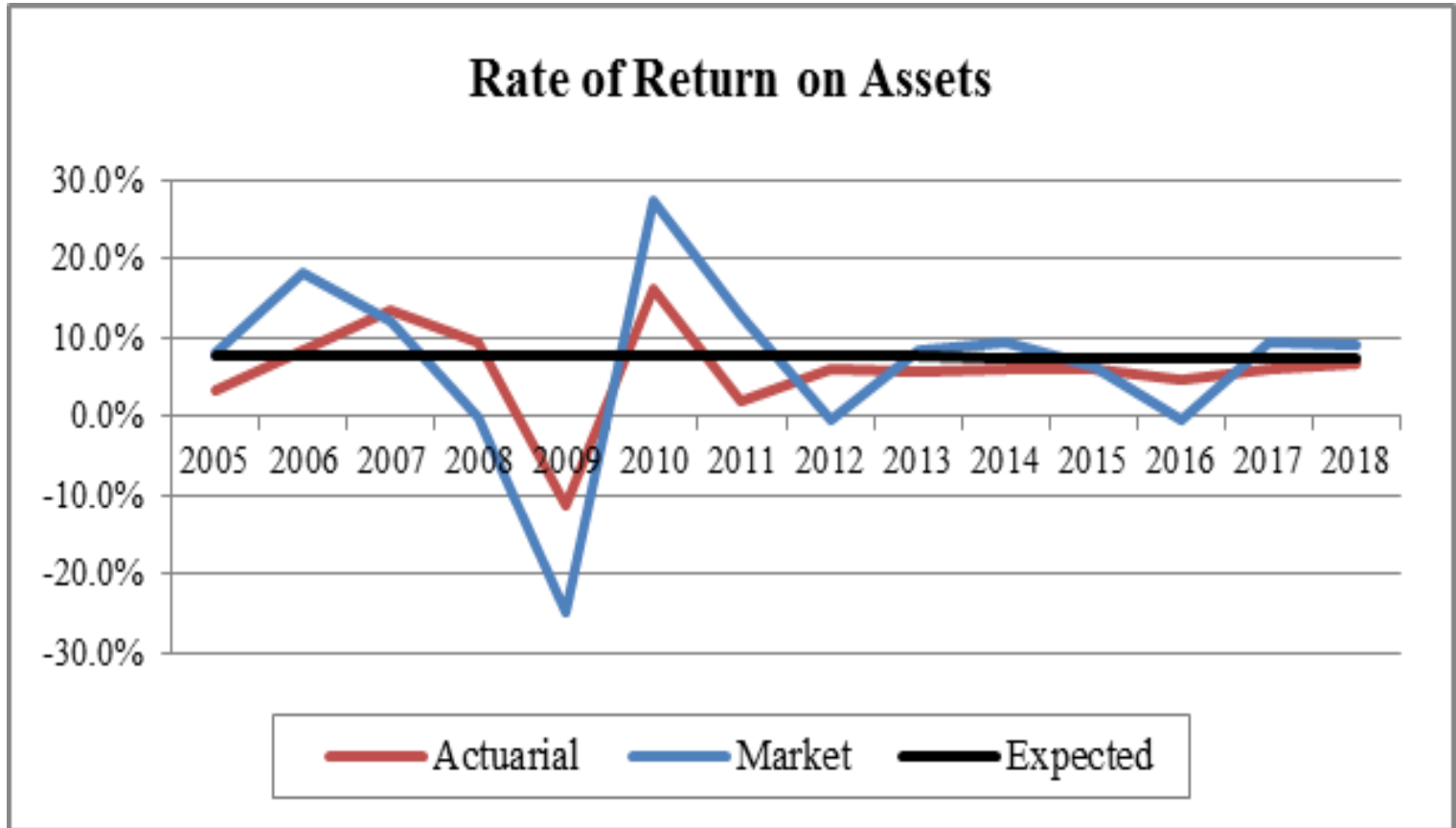
As of April 30, 2018, there are 146 members in Tier 2 out of a total of 511 (about 29%).



Actuarial Value of Assets

- Market value not used directly in valuation
- Asset valuation method is used to smooth the effect of market fluctuations
- Difference between the dollar amount of the expected and actual return on the market value of assets is spread evenly over a closed 5 year period

Historical Investment Return





Asset Values (\$M)

	Police	
	<u>Market</u>	<u>Actuarial</u>
Assets, 4/30/17	\$ 827.3	\$ 853.3
▪ Contributions	43.5	43.5
▪ Benefit Payments/Refunds	(64.7)	(64.7)
▪ Administrative Expenses	(0.7)	(0.7)
▪ Investment Income	74.1	55.3
Assets, 4/30/18	\$ 879.5	\$ 886.7
Estimated Net Return	+ 9.1%	+ 6.6%



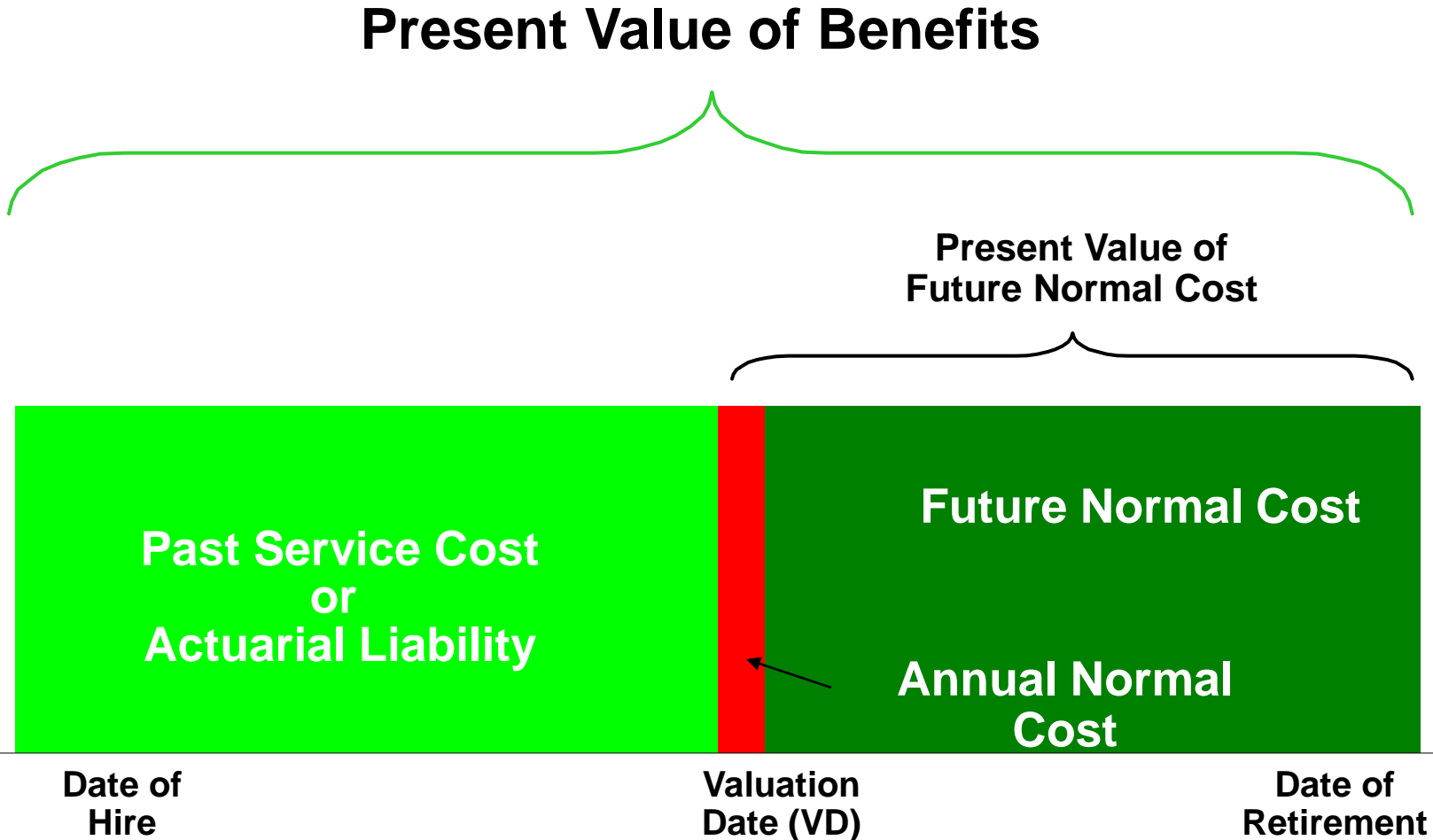
Asset Values (\$M)

	Civilians	
	<u>Market</u>	<u>Actuarial</u>
Assets, 4/30/17	\$ 132.6	\$ 137.2
▪ Contributions	6.3	6.3
▪ Benefit Payments/Refunds	(7.8)	(7.8)
▪ Administrative Expenses	(0.1)	(0.1)
▪ Investment Income	11.6	8.6
Assets, 4/30/18	\$ 142.6	\$ 144.2
Estimated Net Return	+ 9.1%	+ 6.6%



Actuarial Funding Process

Contribution as
% of Pay



Actuarial Accrued Liability – Actuarial Assets = Unfunded Actuarial Accrued Liability

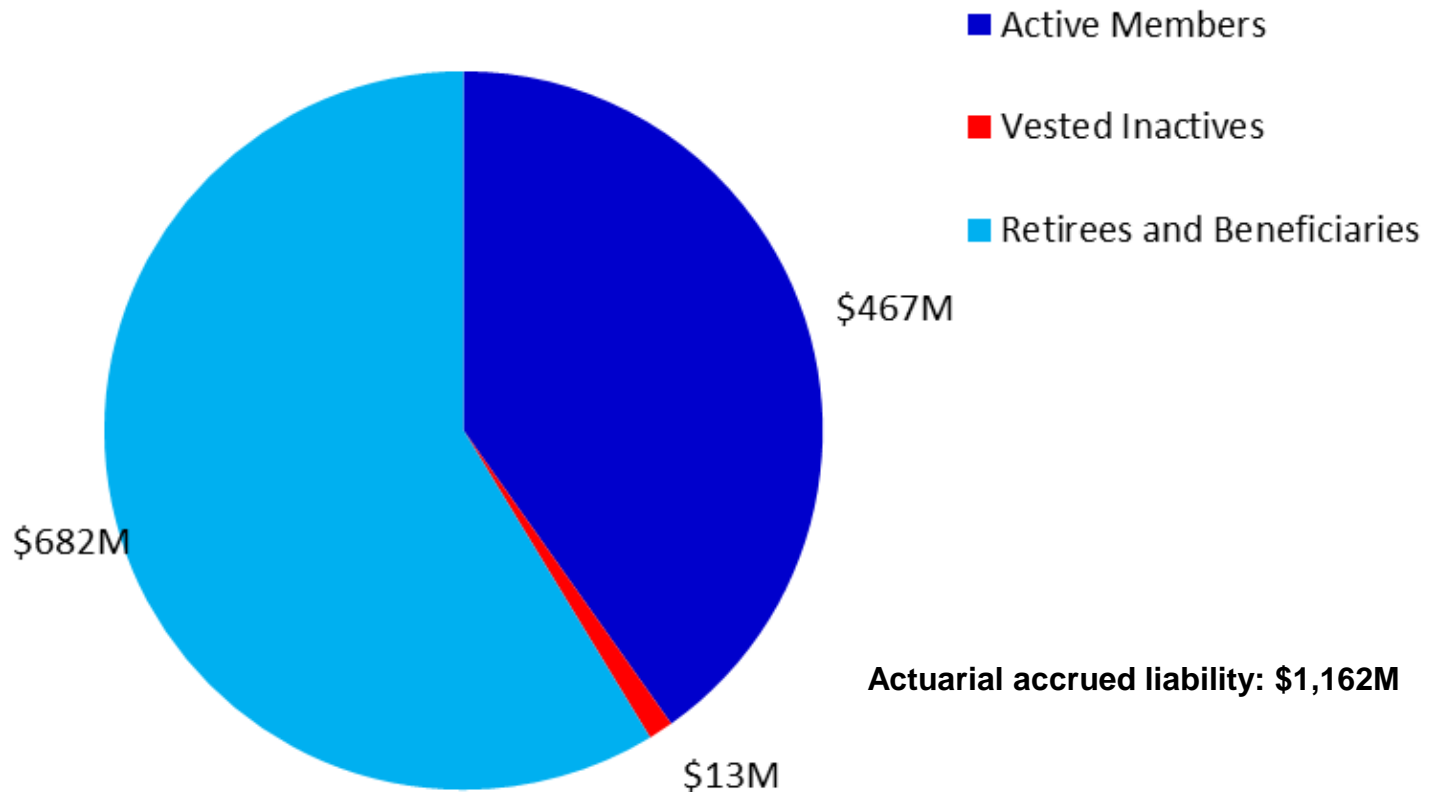
Unfunded Actuarial Accrued Liability (UAAL)



- Actuarial accrued liability less actuarial assets

- Impacted by:
 - Actual vs expected experience
 - Benefit provision changes
 - Assumption/method changes
 - Actual contributions

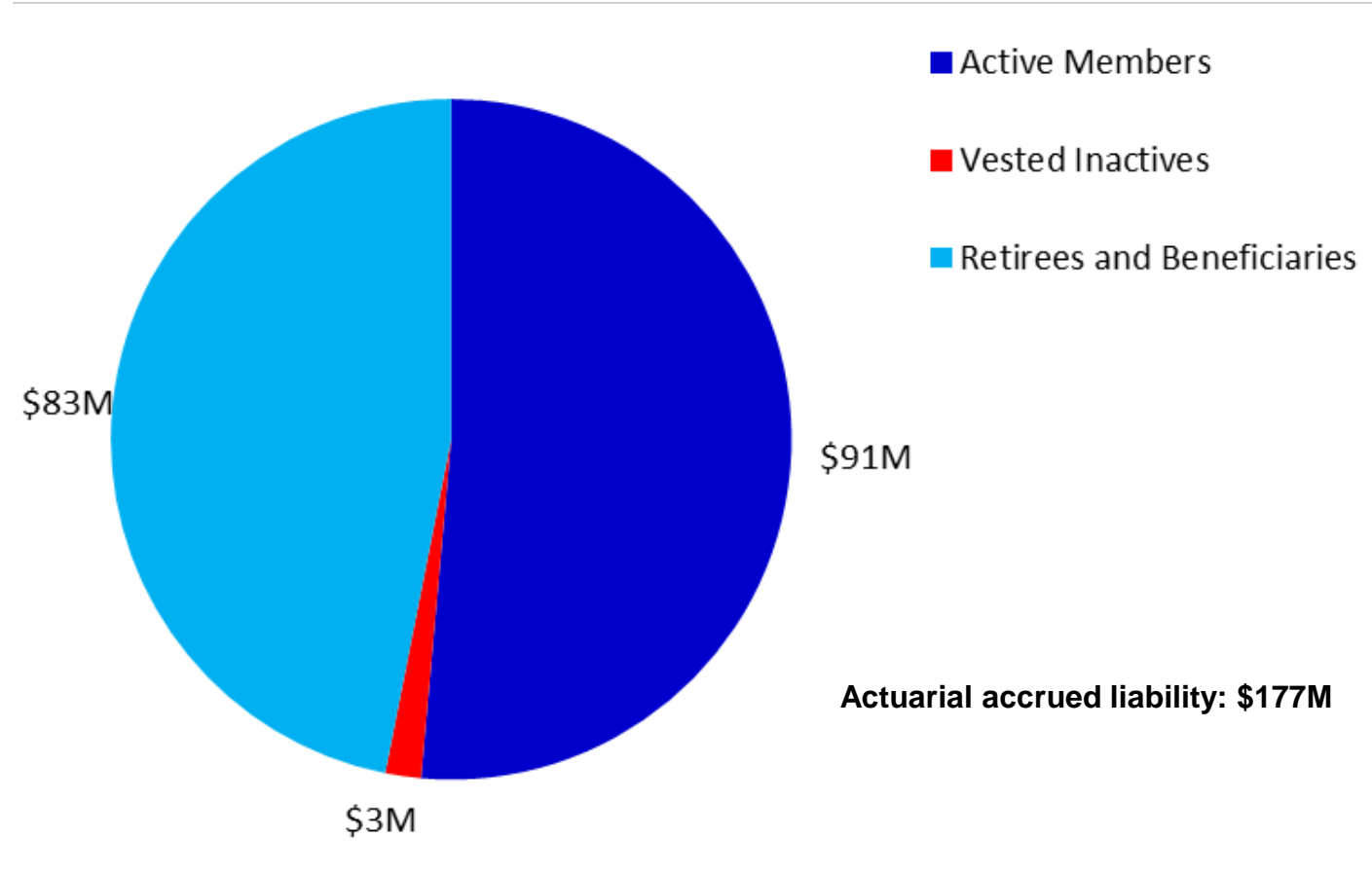
Actuarial Liability at April 30, 2018 (Police)



Note: Numbers may not add due to rounding.



Actuarial Liability at April 30, 2018 (Civilians)



Note: Numbers may not add due to rounding.

Unfunded Actuarial Accrued Liability (UAAL) at April 30, 2018



	Police	Civilians
Actuarial Accrued Liability	\$1,162M	\$ 177M
Actuarial Value of Assets	<u>887M</u>	<u>144M</u>
Unfunded Actuarial Accrued Liability*	275M	33M
Funded Ratio	76%	81%

* Numbers may not add or subtract due to rounding.



Experience (Gain)/Loss

	Police	Civilians
UAAL at 4/30/17	\$ 265.7M	\$ 34.0M
Contributions less than actuarial rate	0.0	0.0
Expected change due to amortization	5.9	0.7
Asset experience	7.8	1.6
Demographic experience	(1.3)	(2.7)
All other experience	<u>(3.0)</u>	<u>(0.7)</u>
UAAL at 4/30/18	\$ 275.1M	\$ 32.9M

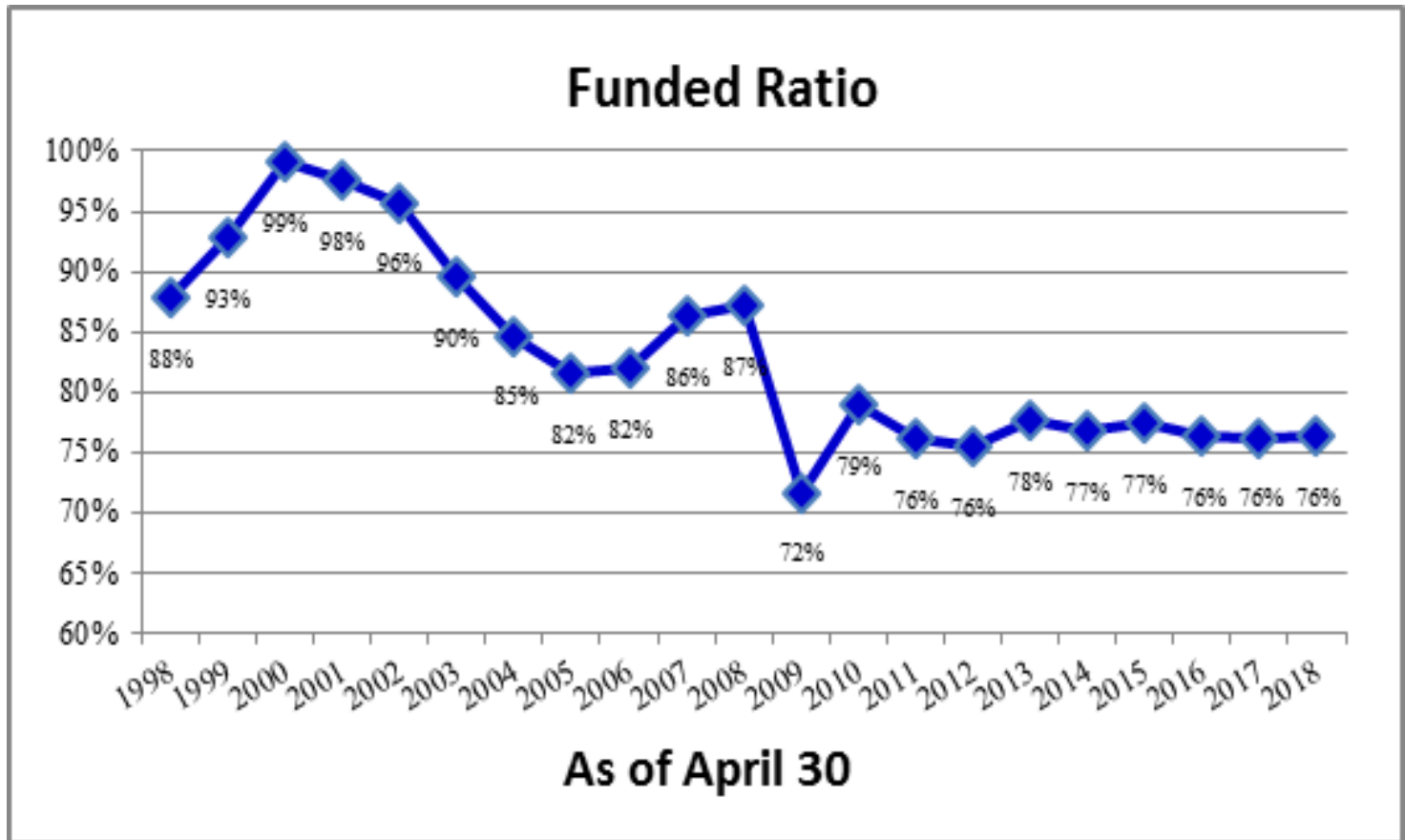


Funded Ratio

- Actuarial assets divided by actuarial accrued liability
- Often misunderstood
 - Not the percent of assets available to pay benefits already earned
 - Actuarial accrued liability includes an element of future service and salary
 - Actuarial accrued liability > value of benefits actually earned
 - One metric doesn't tell the whole story on the System's long term funding outlook

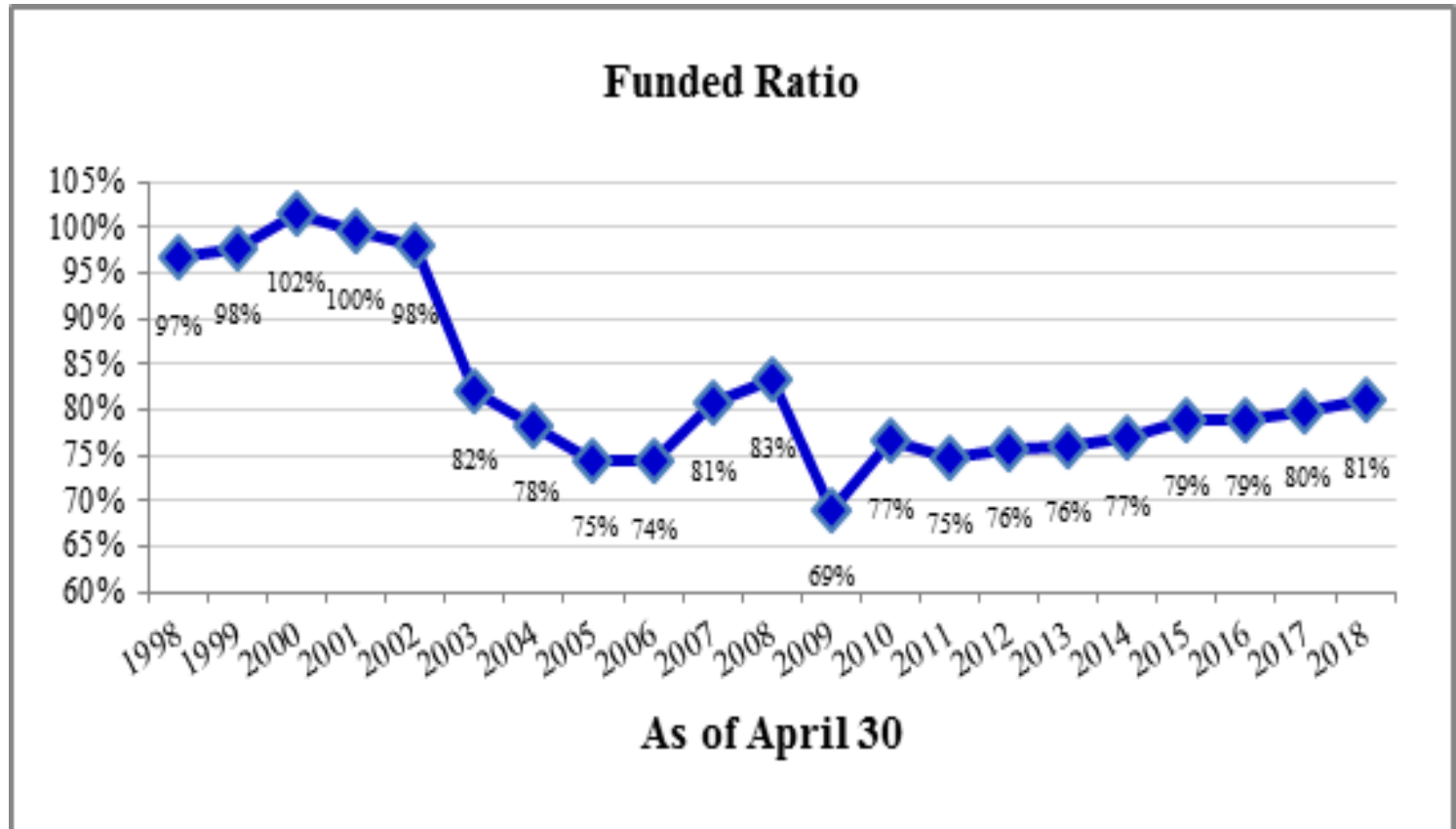


Historical Police Funded Ratio





Historical Civilians Funded Ratio





Actuarial Contribution Rates

- Components of Contribution Rate:
 - Normal Cost
 - Amortization of UAAL

- Funding policy finances the 4/30/17 UAAL over a 30-year closed period. New layers each year (starting in 2018) are amortized over closed 20 year periods.

- 4/30/2018 valuation sets the FY 2020 contribution amount (May 1, 2019 to April 30, 2020)



Actuarial Contribution Rate - Police

	2018	2017
Normal Cost	25.98%	26.10%
UAAL Payment	<u>15.93%</u>	<u>15.46%</u>
Total Actuarial Rate	41.91%	41.56%
Less Member Rate	<u>(11.55)%</u>	<u>(11.55)%</u>
Employer Actuarial Rate	30.36%	30.01%
City Contribution Amount	\$30,157,170	\$29,083,743



Actuarial Contribution Rate - Civilians

	2018	2017
Normal Cost	15.63%	15.78%
UAAL Payment	<u>6.52%</u>	<u>7.20%</u>
Total Actuarial Rate	22.15%	22.98%
Less Member Rate	<u>(5.00)%</u>	<u>(5.00)%</u>
Employer Actuarial Rate	17.15%	17.98%
City Contribution Amount	\$4,849,708	\$4,778,854



Ad Hoc COLA

- Board has a formal policy to determine if COLA is granted. Must satisfy one of the following:
 - ✓ Funded ratio at least 75%
 - ✓ Contributions for last 3 years at least 90% of total actuarial rate
 - ✓ Employer contributions equal to Actuarial Required Contribution in at least three of last five years
- Both systems meet the funded ratio test
- Considerations
 - ✓ Higher contributions from the City are not guaranteed
 - ✓ Investment outlook in short-term somewhat pessimistic
 - ✓ Ad hoc COLA creates additional liability. The amount is dependent on the actual returns in future years.



Projections

- Actuarial valuation is a snapshot measurement at a single point in time

- Provides important information, but no insight into how future valuation results might look
 - How does Funding Policy impact funded status over time

 - When a new tier of benefits applies to new hires, a projection is needed to evaluate future funding requirements

 - Also provides ability to perform some basic sensitivity analysis

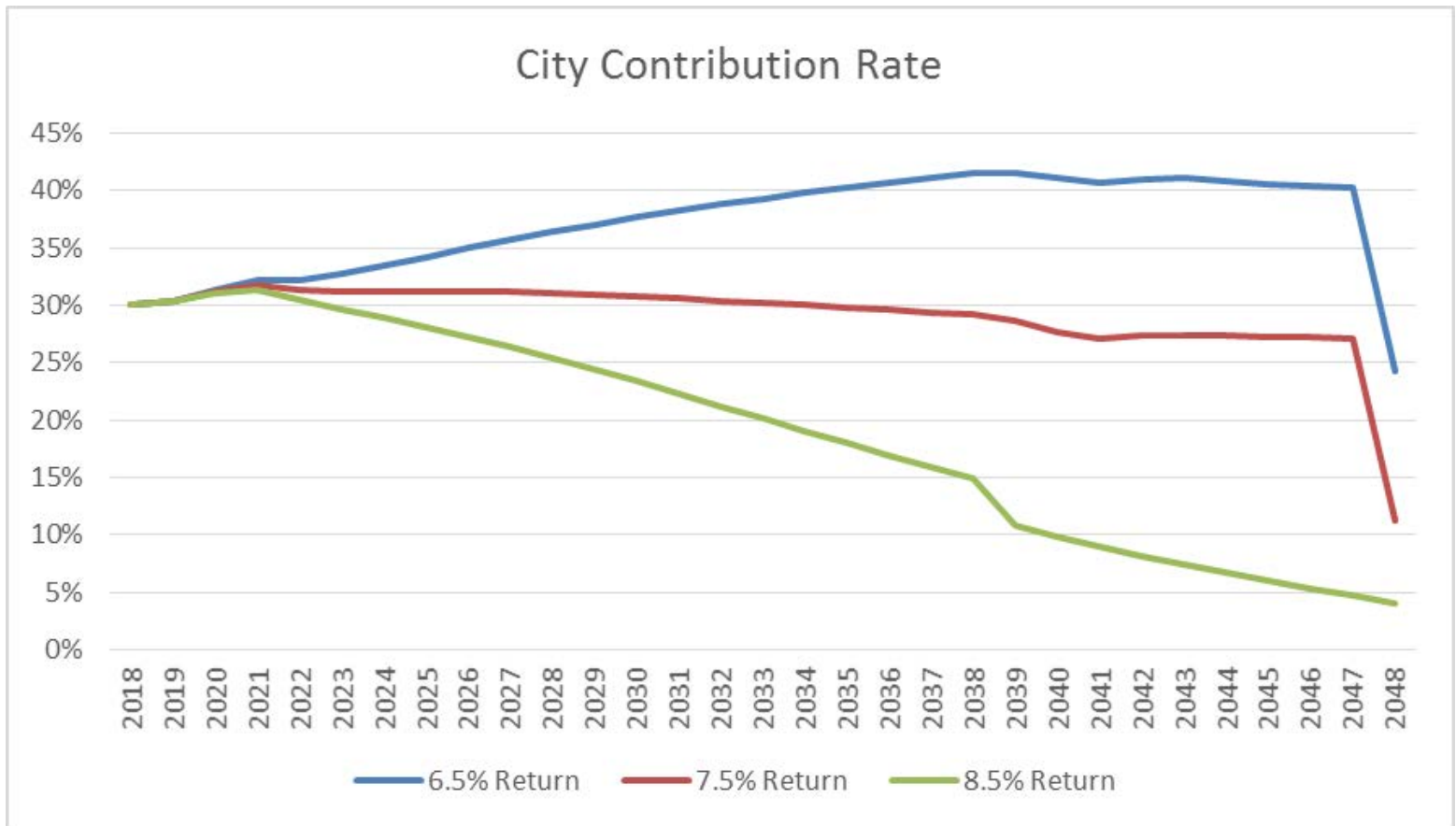


Projections

- Not precise predictions but general trends

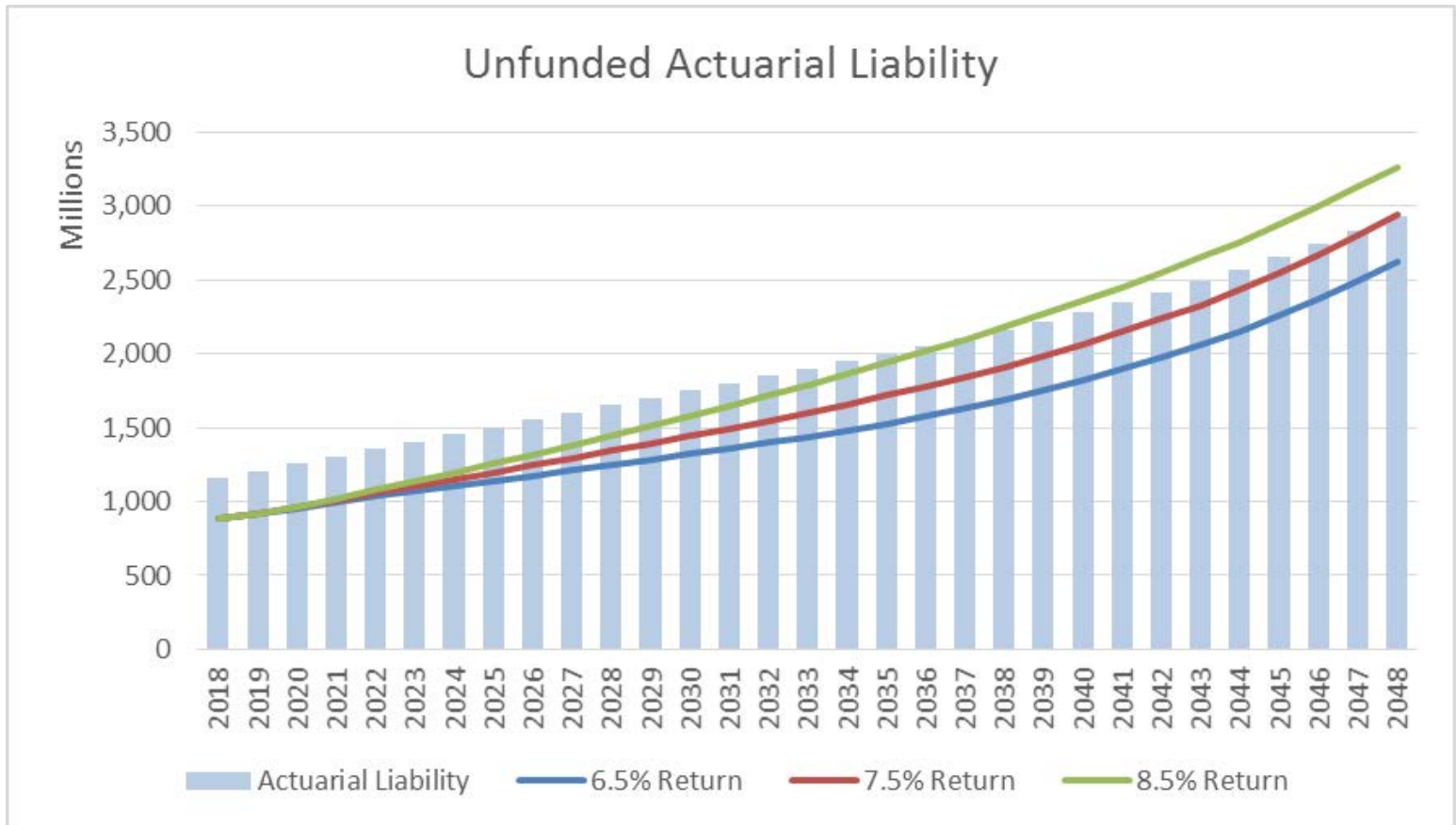
- Projections based on many assumptions
 - 7.5% return on market value in all future years
 - All other actuarial assumptions met in the future
 - Constant number of active members
 - No change in current plan provisions
 - Contributions are paid timely per Board's Funding Policy, including closed amortization periods
 - New entrants in future years are similar to recent history

Police Retirement System City Contribution Rate



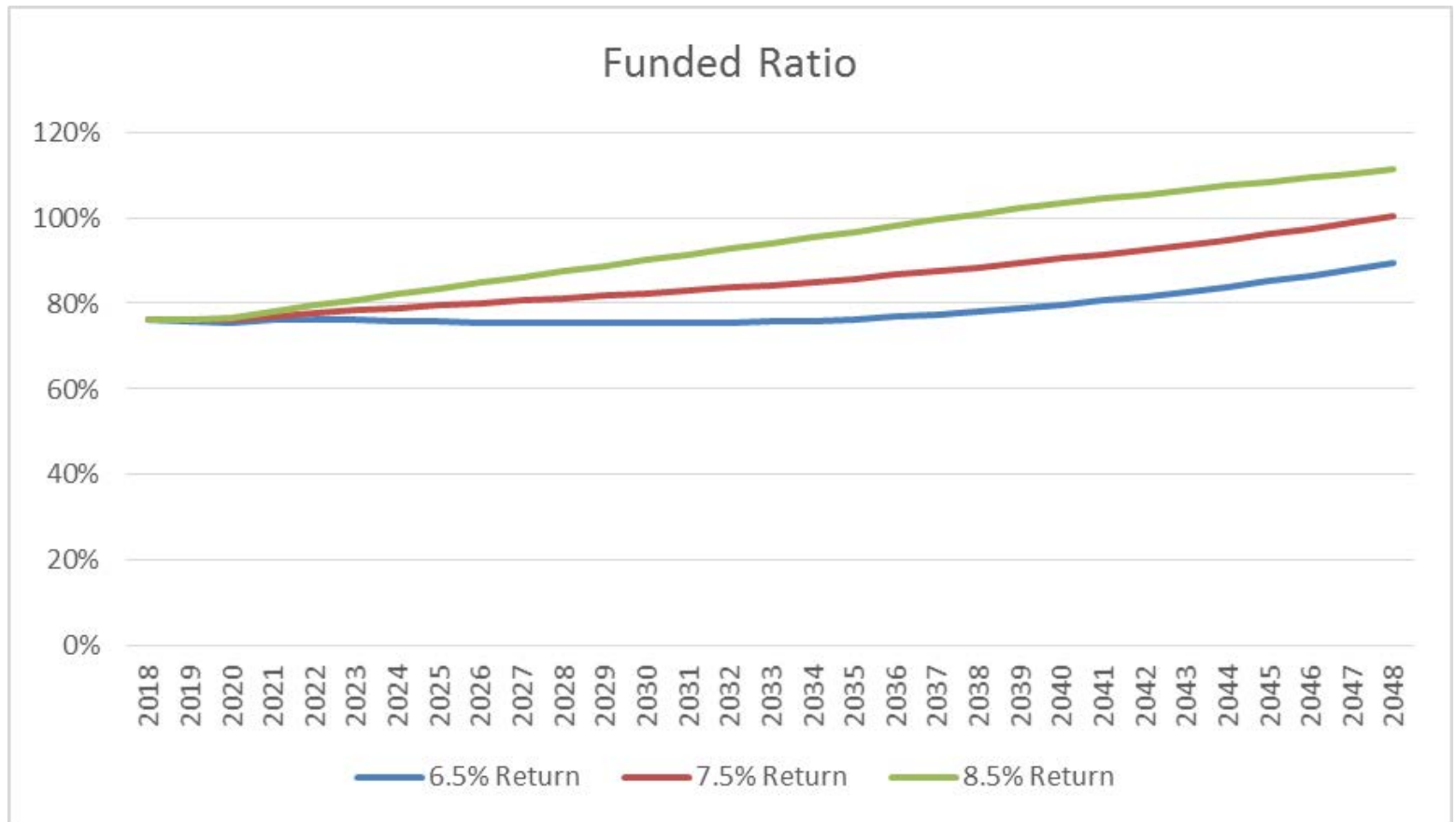


Police Retirement System Unfunded Actuarial Accrued Liability

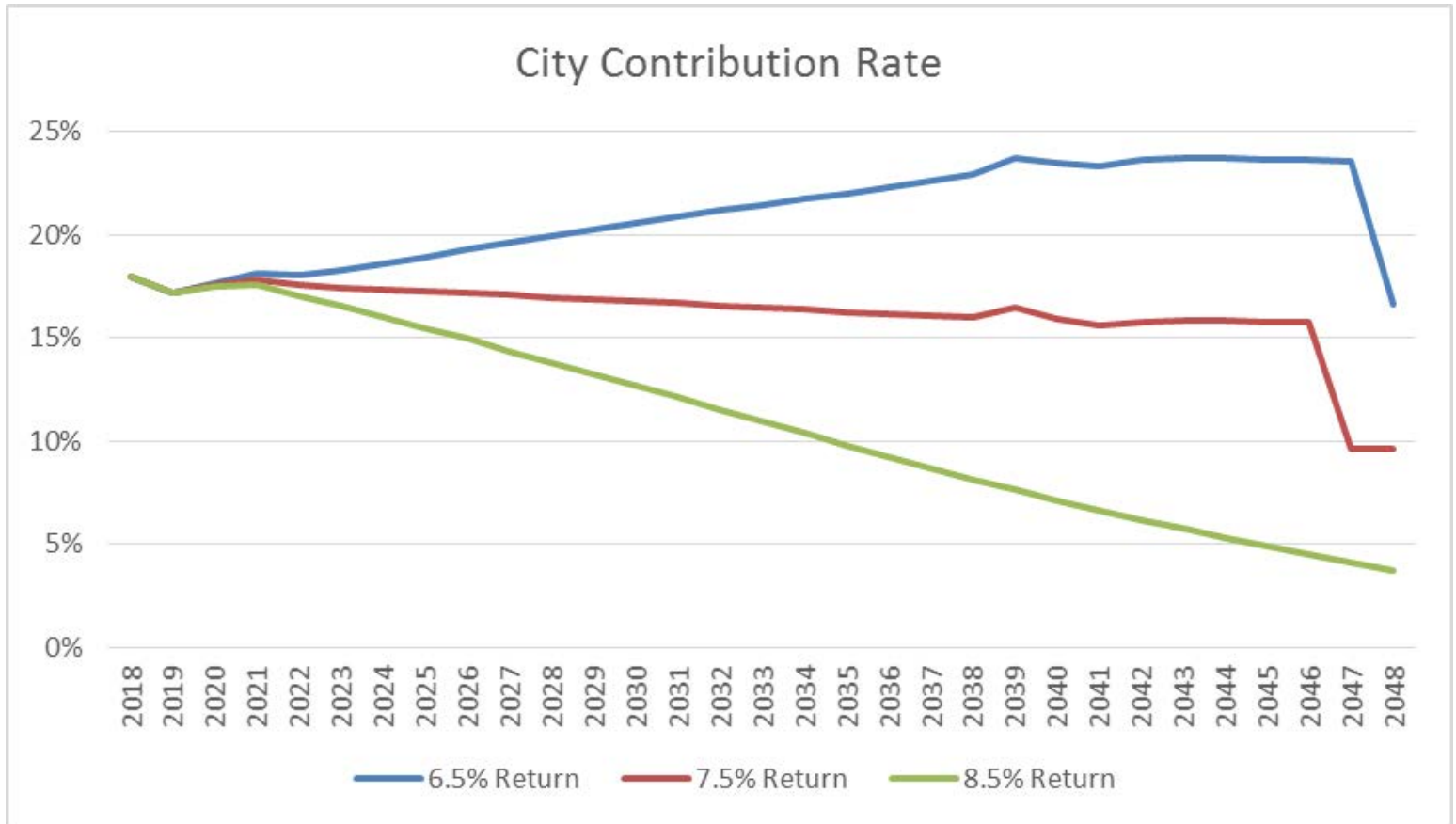


Asset values are shown by colored lines, illustrating different return scenarios.

Police Retirement System Funded Ratio

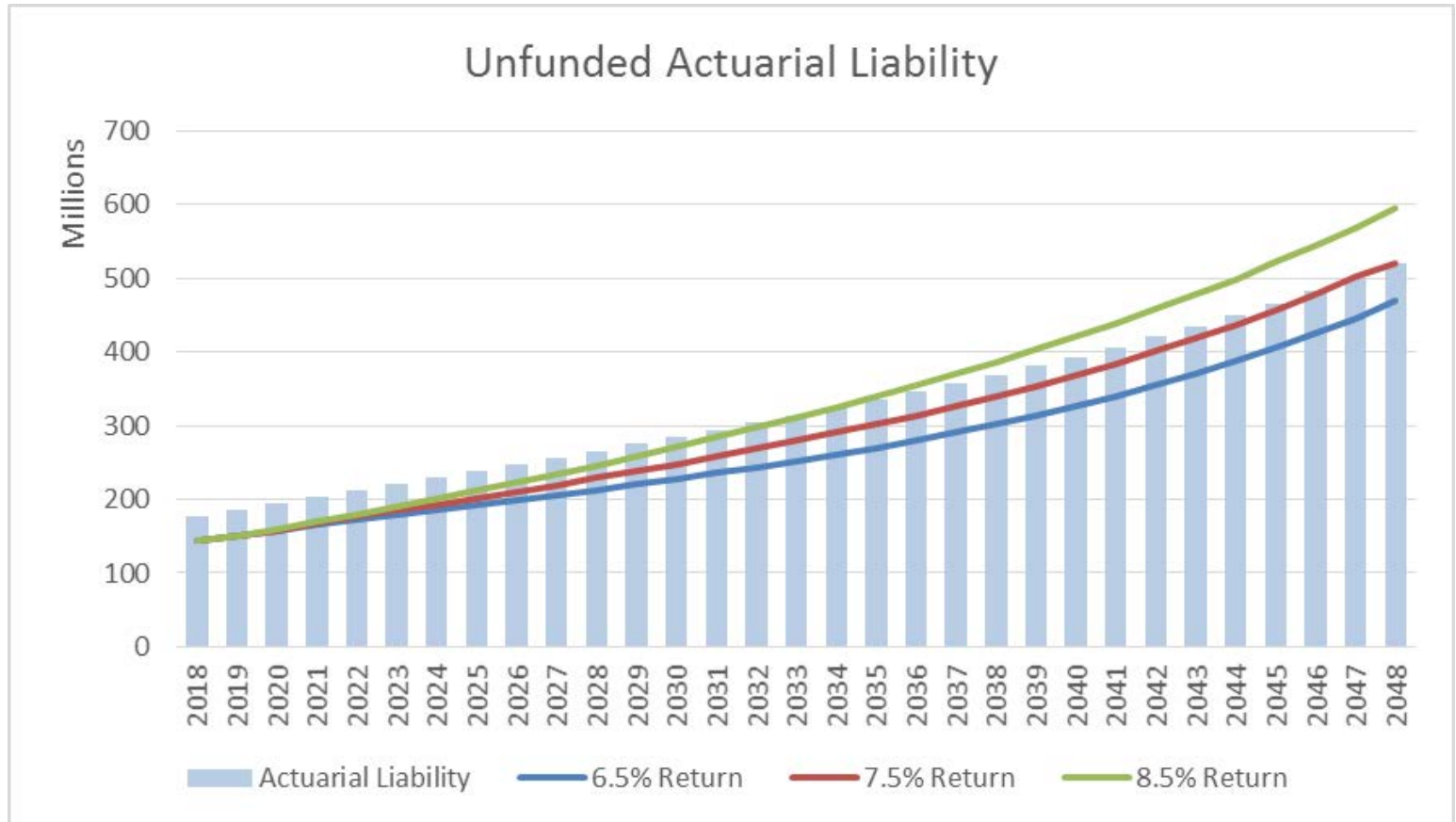


Civilians Retirement System City Contribution Rate



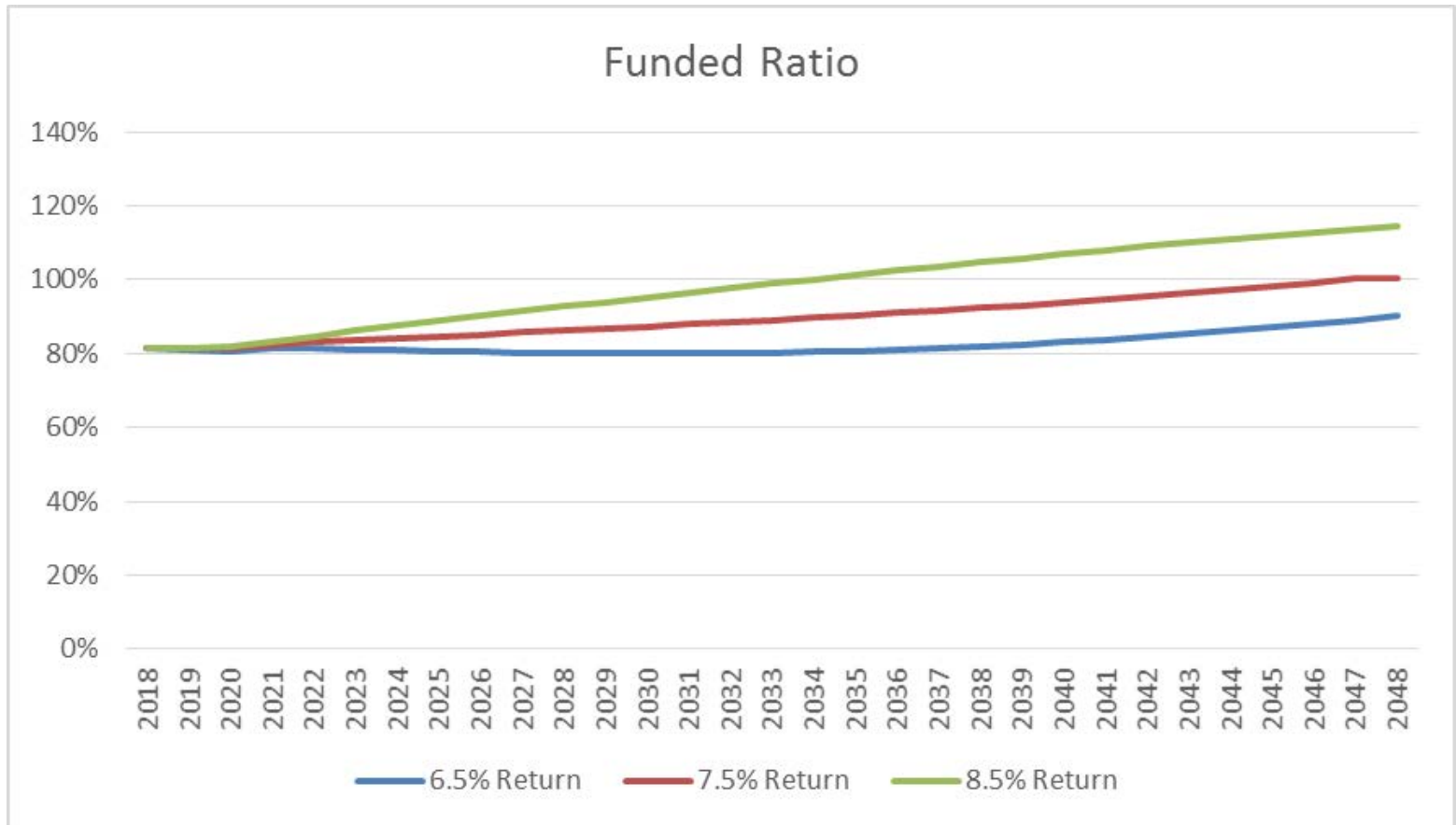


Civilians Retirement System Unfunded Actuarial Accrued Liability



Asset values are shown by colored lines, illustrating different return scenarios.

Civilians Retirement System Funded Ratio





Comments on Funding Report

- It will take another 10-15 years before the impact of the plan changes (benefits and contributions) really has an impact on valuation results, and longer if there are fewer new hires in future years
- The Board's recently adopted Funding Policy will increase the funded ratios over time, ultimately leading to the Systems being fully funded at the end of the amortization periods
- Funding remains vulnerable to adverse market experience in the short-term due to current funded ratios



Review of April 30, 2018 GASB 67 Report



GASB 67 Reporting

- Measurement date: April 30, 2018
 - Liabilities projected forward from April 30, 2017 using standard formulae (so they don't match the 2018 valuation results)
 - Actual market value of assets (Fiduciary Net Position or FNP) at April 30, 2018 was used

- Only for Systems' financial reporting, i.e., Comprehensive Annual Financial Report

- No impact on funding the Plan!

GASB 67 Reporting

(Year ending April 30, 2018)



	Police	Civilians
Measurement Date (MD)	April 30, 2018	April 30, 2018
Prior Measurement Date	April 30, 2017	April 30, 2017
Valuation Date	April 30, 2017	April 30, 2017
Long-term expected return	7.50%	7.50%
Municipal bond rate at Prior MD	3.78%	3.78%
Municipal bond rate at MD	3.90%	3.90%
Depletion date of FNP	None	None
Single Equivalent Interest Rate (SEIR) at Prior MD	7.50%	7.50%
SEIR at Measurement Date	7.50%	7.50%

TPL is projected forward from the valuation date to the Measurement Date using standard actuarial formulae.

GASB 67 Reporting

(as of April 30, 2018)



	Police	Civilians
Total Pension Liability (TPL)*	\$1,204,038,915	\$179,393,466
Fiduciary Net Position (FNP)	<u>879,496,868</u>	<u>142,605,109</u>
Net Pension Liability (NPL)	\$324,542,047	\$36,788,357
Funded Ratio (FNP/TPL)	73.1%	79.5%
UAAL per 2018 Valuation	\$275,112,127	\$32,910,023

* The TPL reflects projected liabilities based on the 2017 valuations, but includes the full Supplemental Benefit for Police members rather than just the portion funded in the retirement system.

Note: For both Systems, the UAAL is calculated using the actuarial value of assets and actual liabilities on 4/30/18 based on the membership on that date.



GASB 67 Reporting

- GASB 67 report is produced every year
 - Liabilities will be projected forward from prior valuation
 - Actual market value of assets is used
 - As a result, numbers will NOT match the funding report

- Only for System's financial reporting, i.e., Comprehensive Annual Financial Report

- No impact on funding the Plan!