



The Employees' Retirement System for the City of Norfolk

2006 Actuarial Valuation and Experience Study Results

November 20, 2006

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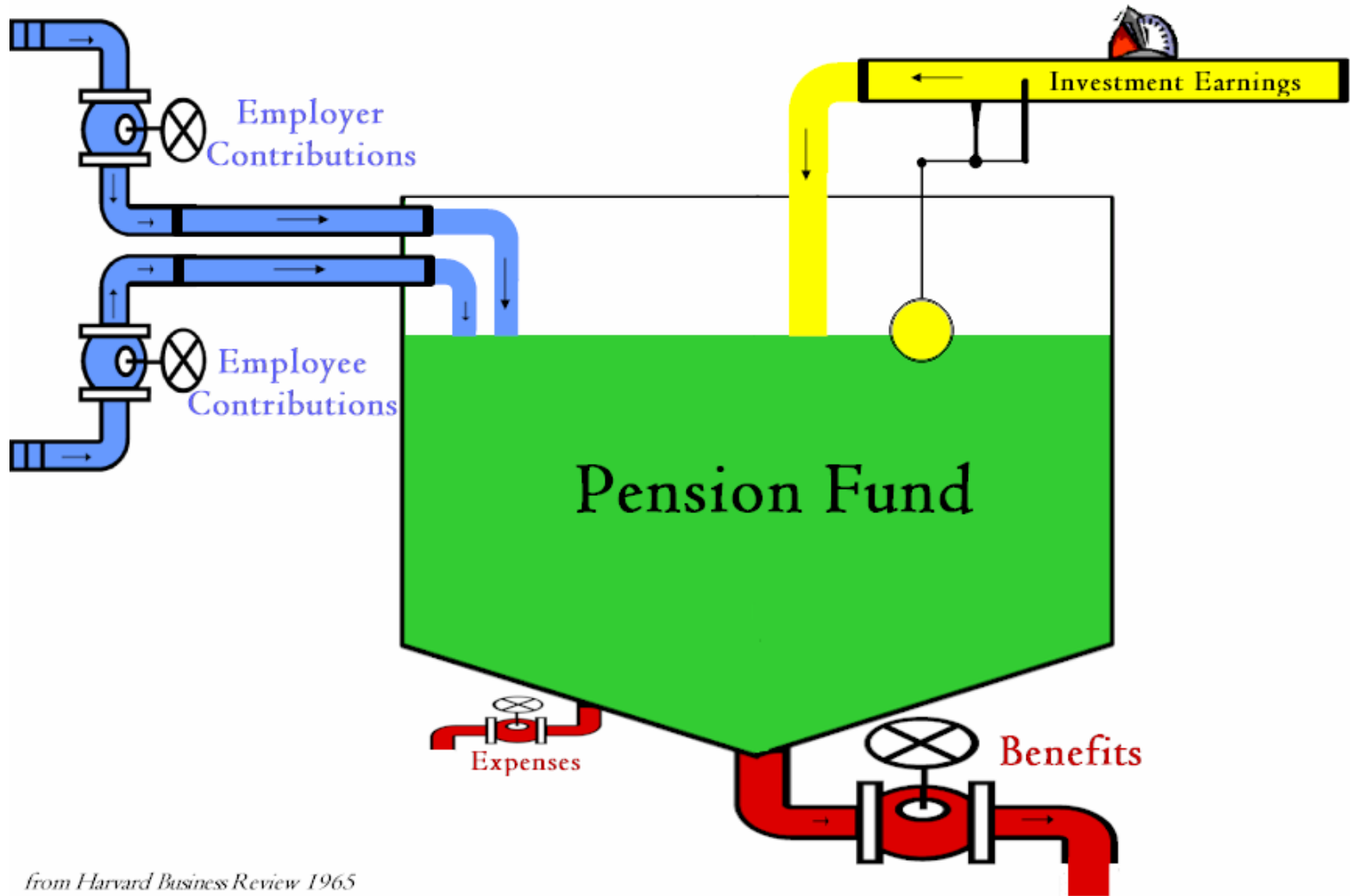




Topics for Discussion

- Historical Review
- Principal 6/30/2006 Valuation Results
- Results of Experience Study
- Forecasts



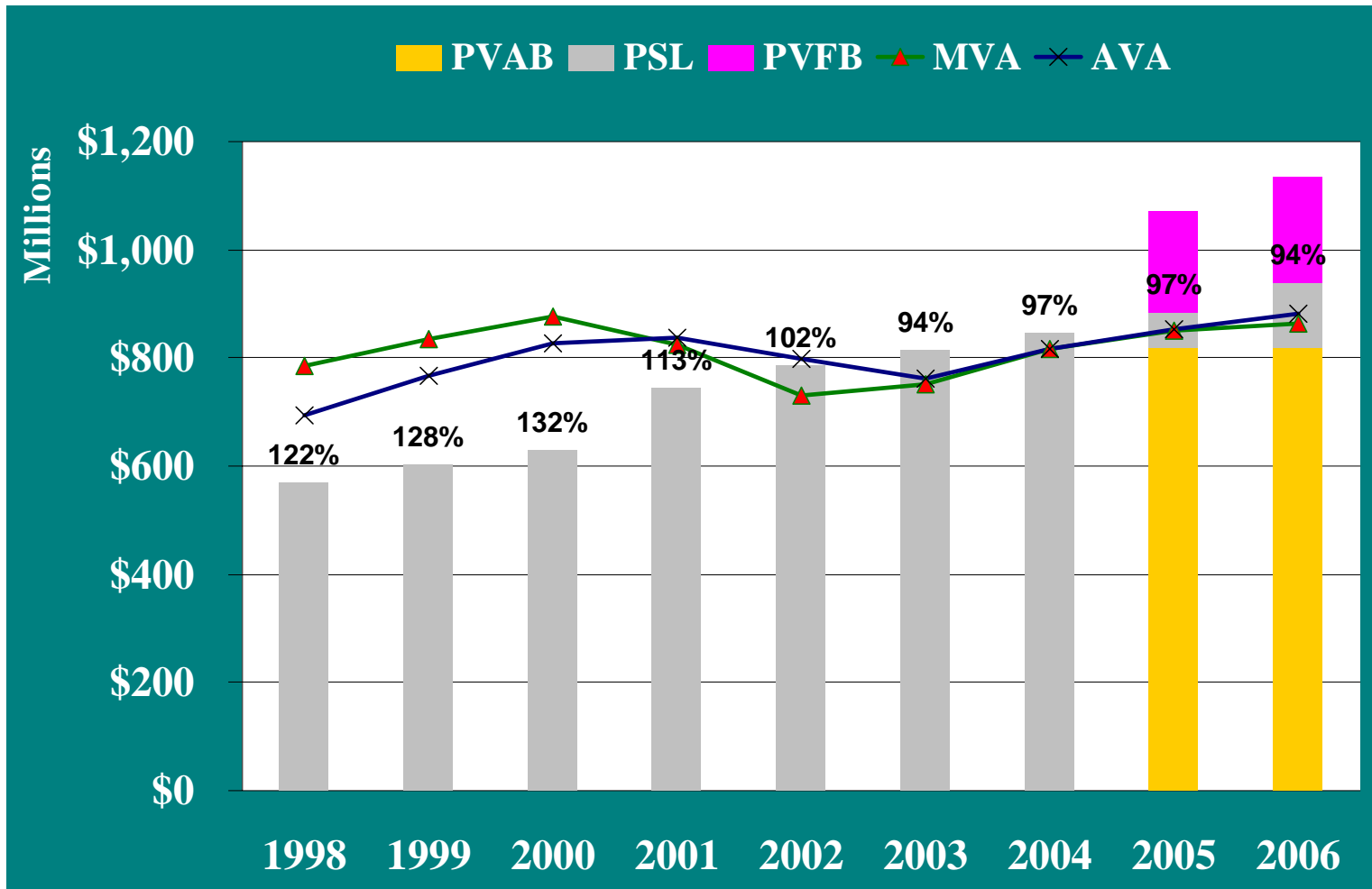


from Harvard Business Review 1965



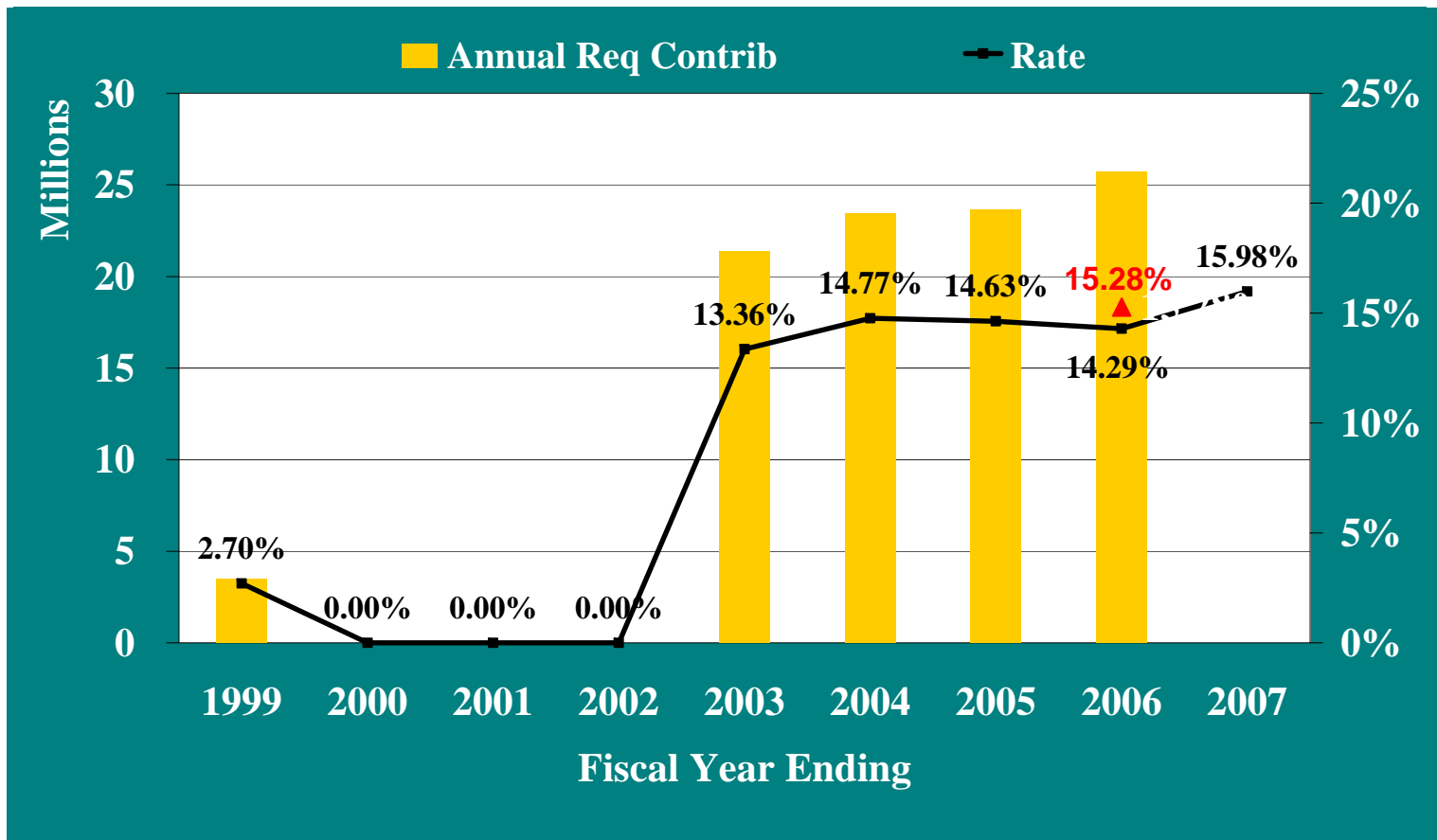
Historical Review

Key Actuarial Indicators: Assets & Liabilities



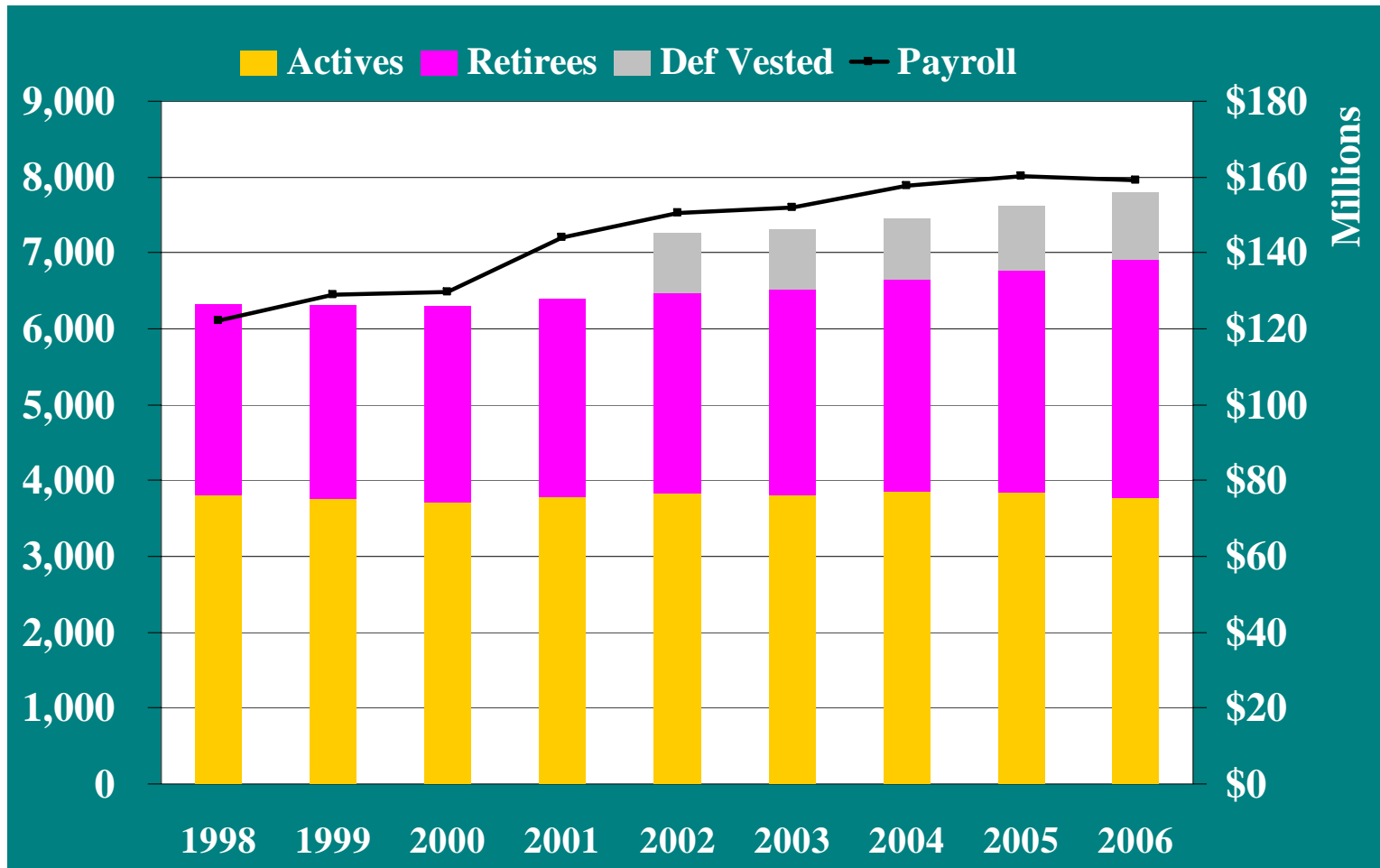
Historical Review

Key Actuarial Indicators: Contributions



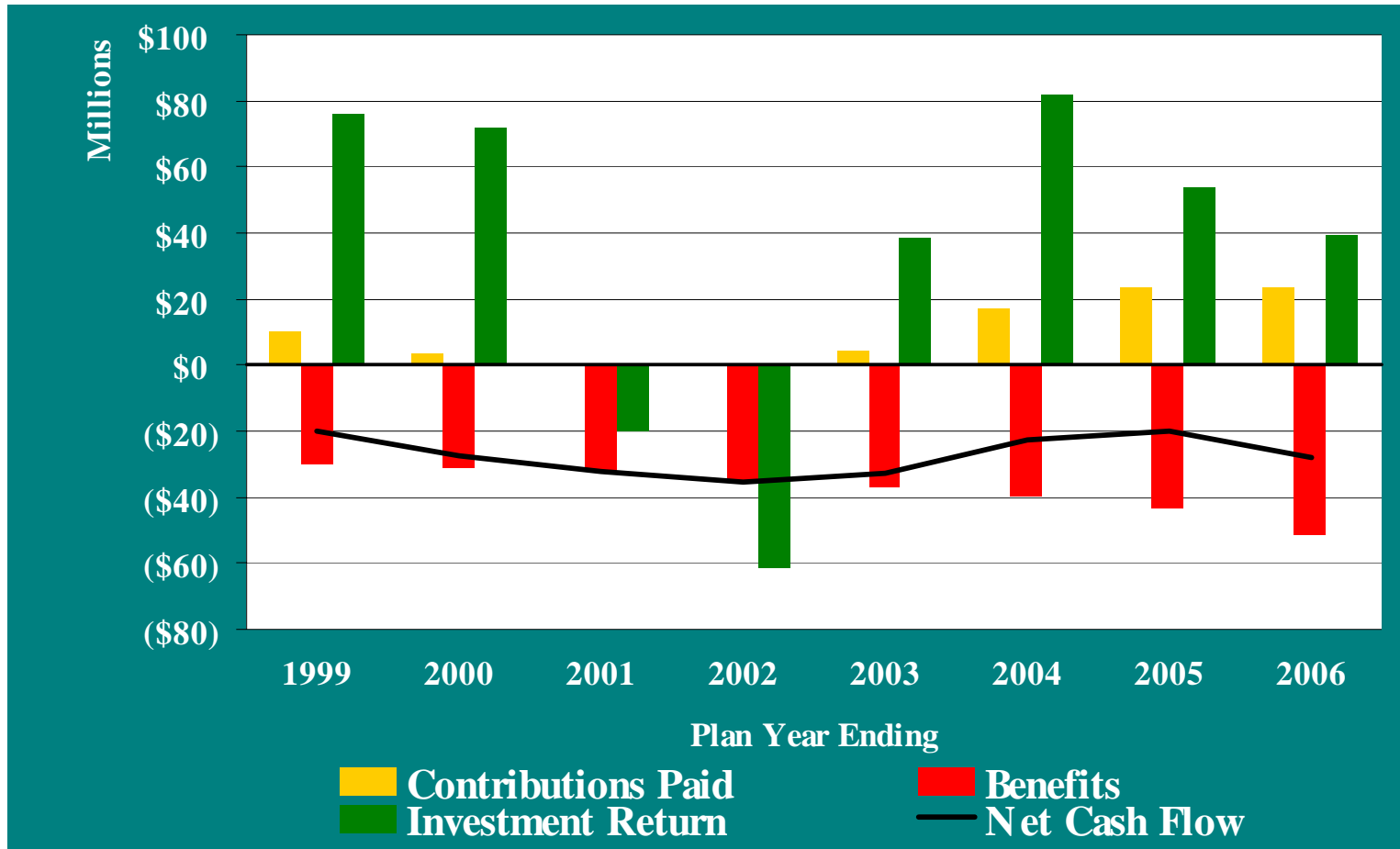
Historical Review

Plan Maturity Indicators: Participation



Historical Review

Plan Maturity Indicators: Annual Cash Flows



Principal 2006 Valuation Results

Key Statistics

	2005	2006	% Change
Number of Actives¹			
General	2,607	2,581	(1.0)%
Firefighters & Police	<u>1,231</u>	<u>1,186</u>	<u>(3.7)%</u>
Total	3,838	3,767	(1.8)%
Total Salary (in millions)			
General	\$ 101.7	\$ 103.7	1.9%
Firefighters & Police	<u>58.5</u>	<u>55.6</u>	<u>(4.9)%</u>
Total	\$ 160.2	\$ 159.3	(0.6)%
Number Retired			
General	2,061	2,134	3.5%
Firefighters & Police	<u>868</u>	<u>1,017</u>	<u>17.2%</u>
Total	2,929	3,151	7.6%
Total Benefits (in millions)			
General	\$ 26.4	\$ 28.8	9.1%
Firefighters & Police	<u>18.7</u>	<u>25.5</u>	<u>36.5%</u>
Total	\$ 45.1	\$ 54.3	20.4%

¹ Excludes participants on leave of absence.



Principal 2006 Valuation Results

Key Results – General

Valuation Date June 30, 2005 June 30, 2006
(\$ in millions)

Actuarial Accrued Liability	\$ 489.3	\$ 511.3
Actuarial Value of Assets	\$ 484.5	\$ 496.0
Unfunded Actuarial Liability	\$ 4.8	\$ 15.3
Funded Ratio	99.02%	97.01%

City Contribution Rate

Normal Cost Rate	11.48%	10.91%
UAL Amortization Rate	0.45%	1.40%
Total Contribution Rate	11.93%	12.31%



Principal 2006 Valuation Results

Key Results – Firefighters and Police

Valuation Date June 30, 2005 June 30, 2006
 (\$ in millions)

Actuarial Accrued Liability	\$ 394.6	\$ 427.8
Actuarial Value of Assets	\$ 369.6	\$ 385.0
Unfunded Actuarial Liability	\$ 25.0	\$ 42.8
Funded Ratio	93.66%	90.00%

City Contribution Rate

Normal Cost Rate	14.35%	15.48%
UAL Amortization Rate	4.06%	7.36%
Total Contribution Rate	18.41%*	22.84%

* 21.12% including PSREP



Principal 2006 Valuation Results

Key Results – Combined

Valuation Date June 30, 2005 June 30, 2006
 (\$ in millions)

Actuarial Accrued Liability	\$ 883.9	\$ 939.1
Actuarial Value of Assets	\$ 854.1	\$ 881.0
Unfunded Actuarial Liability	\$ 29.8	\$ 58.1
Funded Ratio	96.63%	93.82%

City Contribution Rate

Normal Cost Rate	12.53%	12.50%
UAL Amortization Rate	1.76%	3.48%
Total Contribution Rate	14.29%*	15.98%

* 15.28% including PSREP



Principal 2006 Valuation Results

Changes in Liability/Assets

(\$ in millions)

	Liability	Assets	UAL	% Funded
6/30/2005	\$ 883.9	\$ 854.1	\$ 29.8	96.6%
Expected Change*	34.7	36.5	(1.8)	
PSREP	16.7	0.0	16.7	
Ad hoc COLA	11.0	0.0	11.0	
Expected at 6/30/2006	\$ 946.3	\$ 890.6	\$ 55.7	94.1%
Actual at 6/30/2006	\$ 939.1	\$ 881.0	\$ 58.1	93.8%
(Gain) / Loss	\$ (7.2)	\$ 9.6	\$ 2.4	

* Normal Cost, Contributions, Benefits, & Interest



Principal 2006 Valuation Results

Calculated Contribution Rate

	6/30/2005	6/30/2006
Normal Cost	12.53%	12.50%
UAL	1.76%	3.48%
Calculated Rate	14.29%	15.98%

Sources of Change

System Amendment (2.5% COLA)	0.66%
PSREP	0.99%
Investment Returns less than assumed	0.57%
Other Losses (Gains)	(0.53)%
Total	1.69%





Experience Study

An experience study is a detailed review of the key assumptions, usually performed every 5 years, to ensure the plan is being valued appropriately.

○ Economic

- Inflation
- Investment Return
- General Salary Increases

○ Demographic

- Retirement
- Withdrawal
- Disability
- Mortality
- Merit/Seniority Salary Increases
- Sick Leave






Economic Assumptions Factors to Consider

- Past experience of the Plan
- Historical Data in General
- What Other Funds are Doing





Economic Assumptions Experience of Plan

	Current Assumption	Four Year Experience	Six Year Experience
Inflation	3.50%	3.18%	2.84%
Investment Return*	7.50%	6.92%	2.78%
General Wage Inflation**	3.50%	1.77%	3.27%
COLA	0.00%	1.50%	1.83%

* Net of both investment and administrative expenses.

** Based on increase in average pay.



Economic Assumptions

Historical Data In General

- 60% Equity /40% Bonds produces

	<u>through 1995</u>	<u>through 2005</u>
-since 1926:	9.06%	9.00%
-since 1946:	9.68%	9.49%
-since 1966:	9.95%	9.59%
-since 1986:	13.71%	11.10%

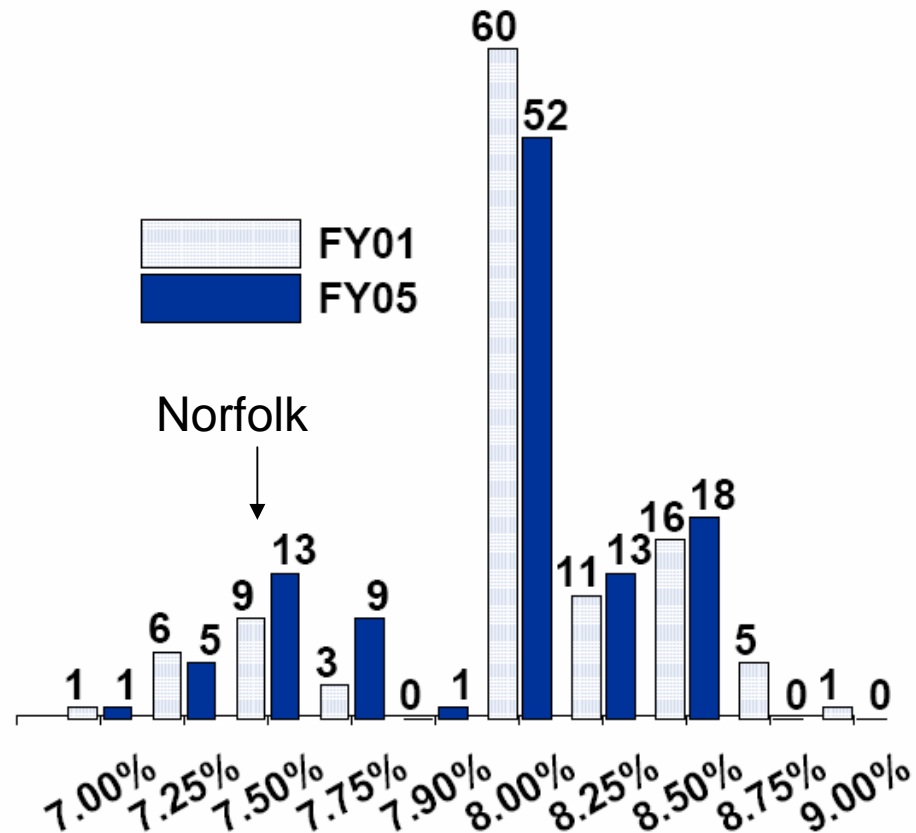
- Historical Inflation

-since 1926:	3.12%	3.06%
-since 1946:	4.36%	4.07%
-since 1966:	5.38%	4.69%
-since 1986:	3.05%	3.05%



Investment Return: Comparison to Other Systems

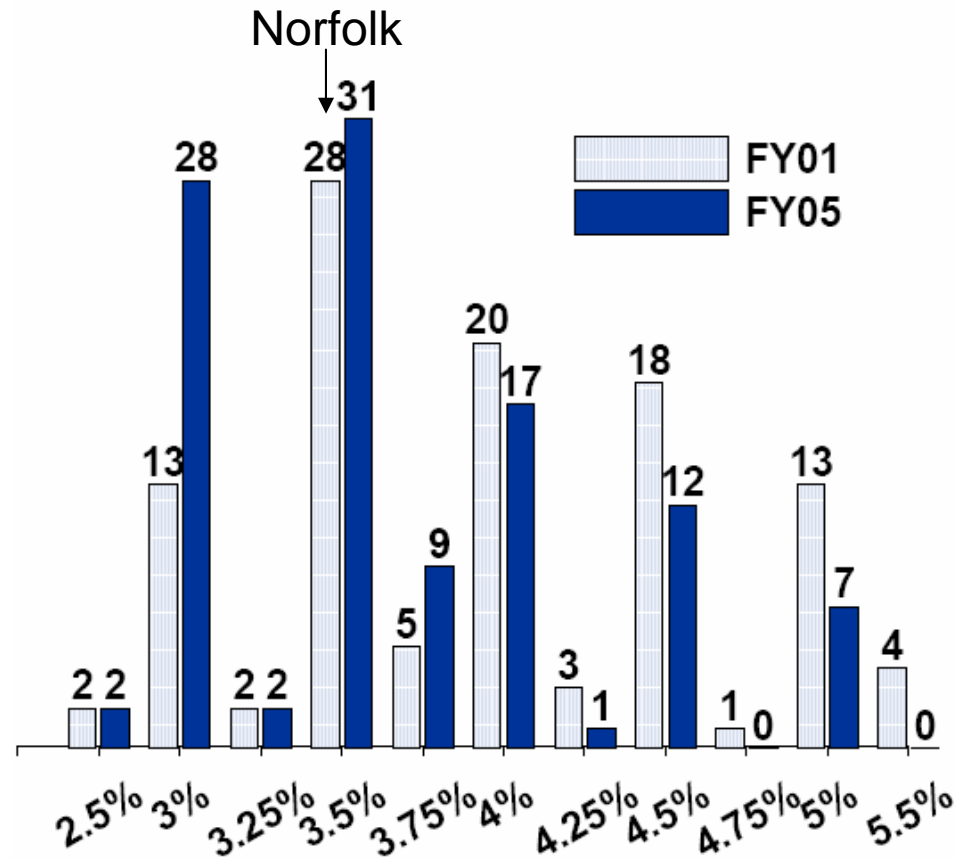
Figure Q: Distribution of Investment Return Assumptions, FY 01 and FY 05



Source: Public Fund Survey Summary of Findings for FY2005, NASRA

Inflation Assumption: Comparison to Other Systems

Figure P: Distribution of Inflation Assumptions,
FY 01 and FY 05



Source: Public Fund Survey Summary of Findings for FY2005, NASRA



Economic Assumptions-Summary

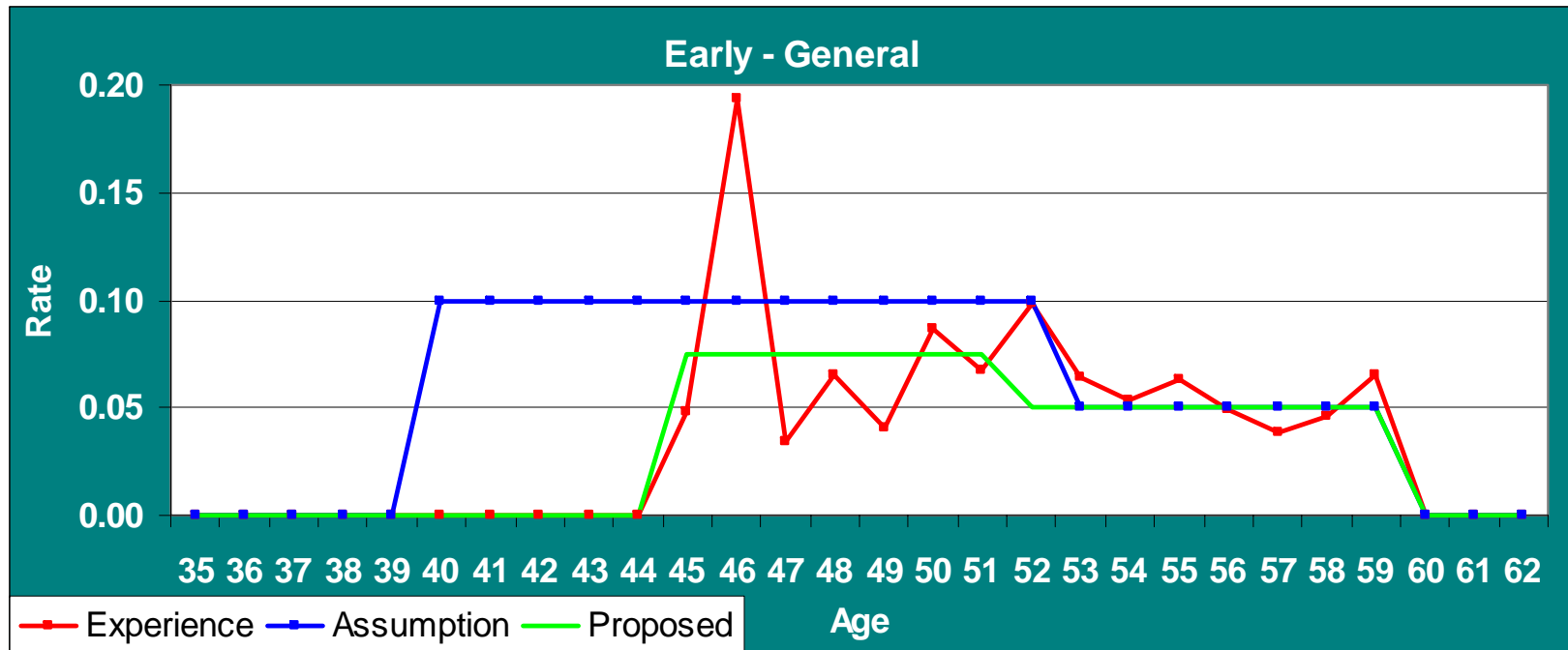
○ Changes Recommended

- Investment Return: Keep at 7.5%
- General Wage Inflation: Maintain 3.5% assumption
- COLA: Consider impact of ad-hocs



Demographic Assumptions

Retirement Assumption (General)

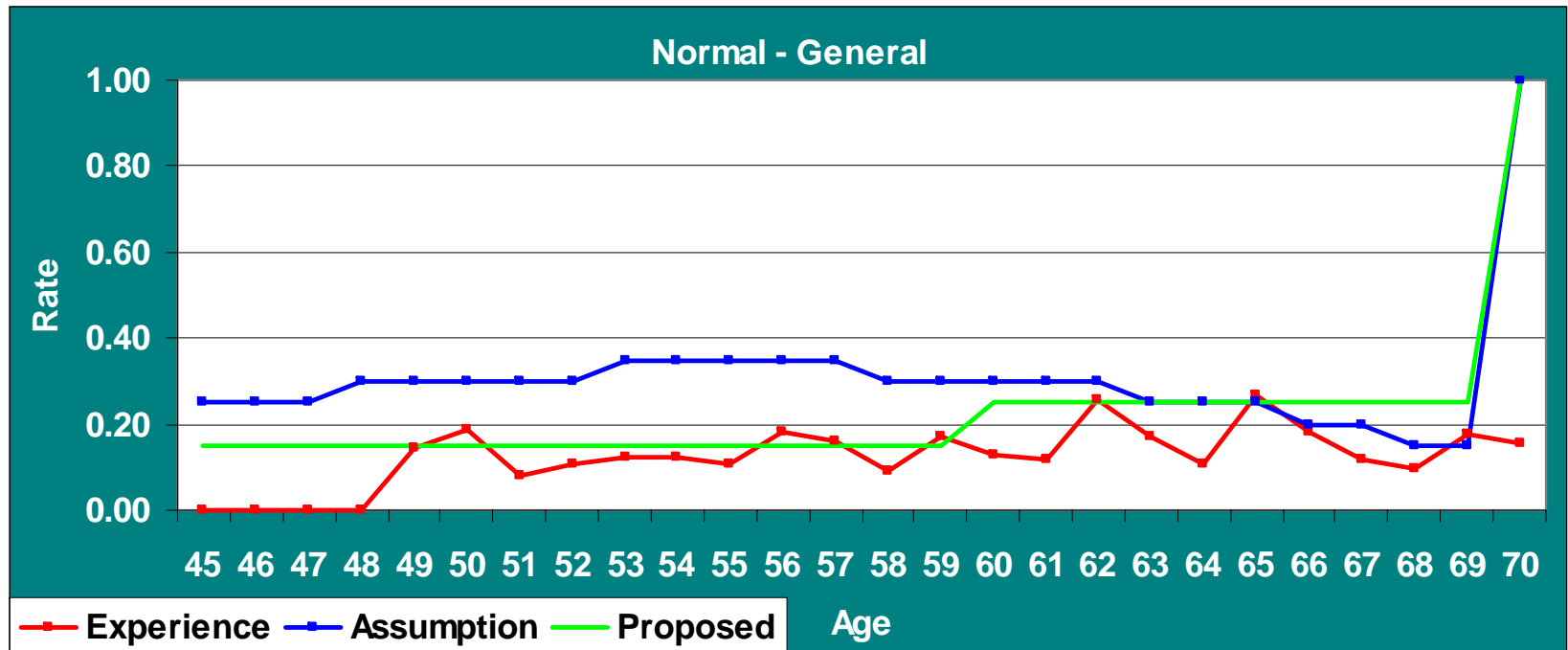


Actual early retirement experience for General participants has been less than anticipated by the decrements.



Demographic Assumptions

Retirement Assumption (General)

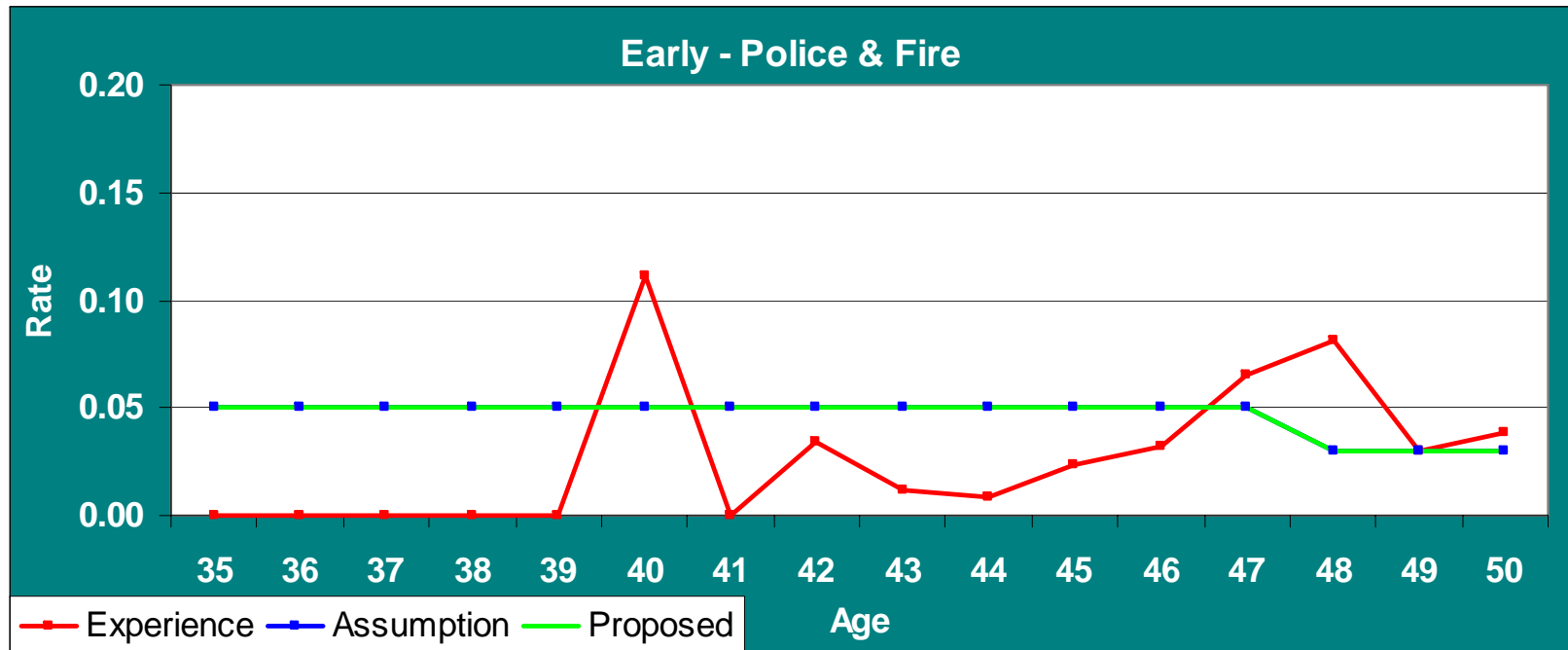


Actual normal retirement experience for General participants has been less than anticipated by the decrements.



Demographic Assumptions

Retirement Assumption (P & F)

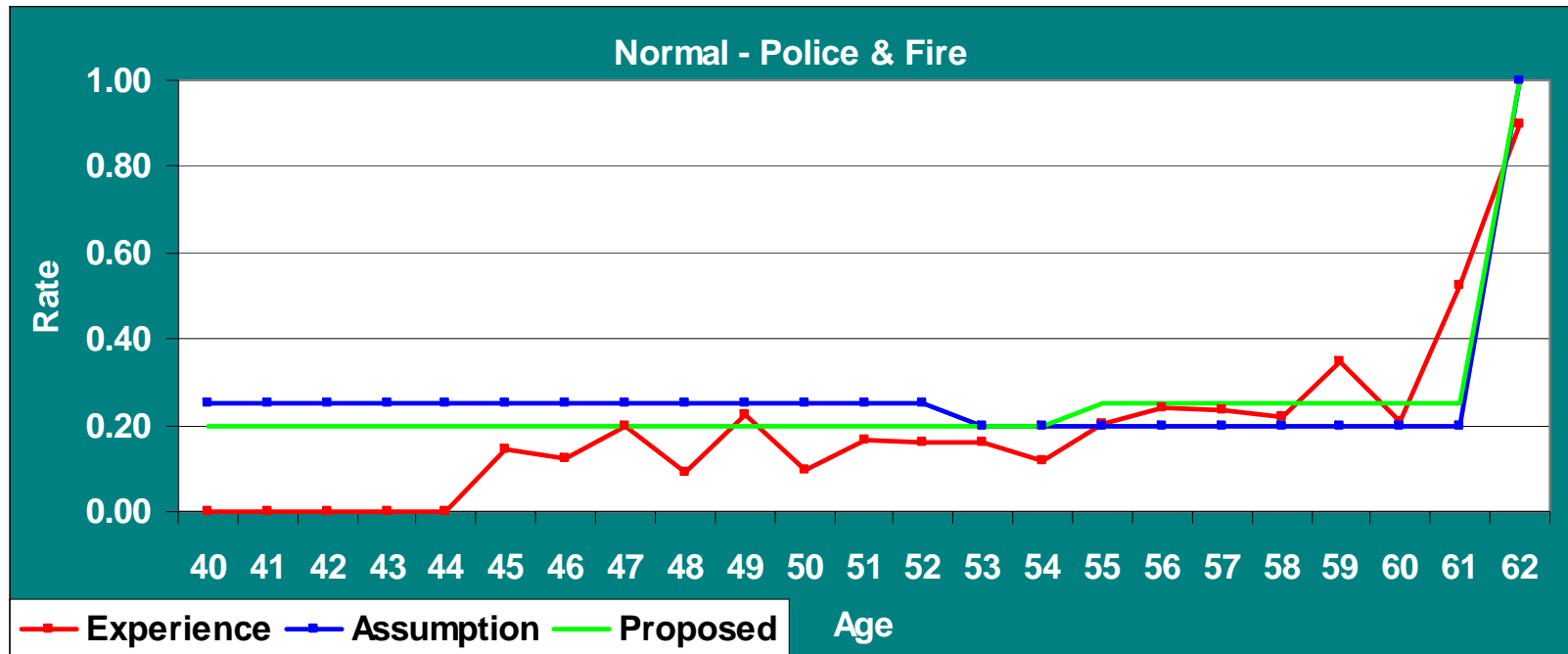


Actual early retirement experience for Police & Fire participants has been less than anticipated by the decrements.



Demographic Assumptions

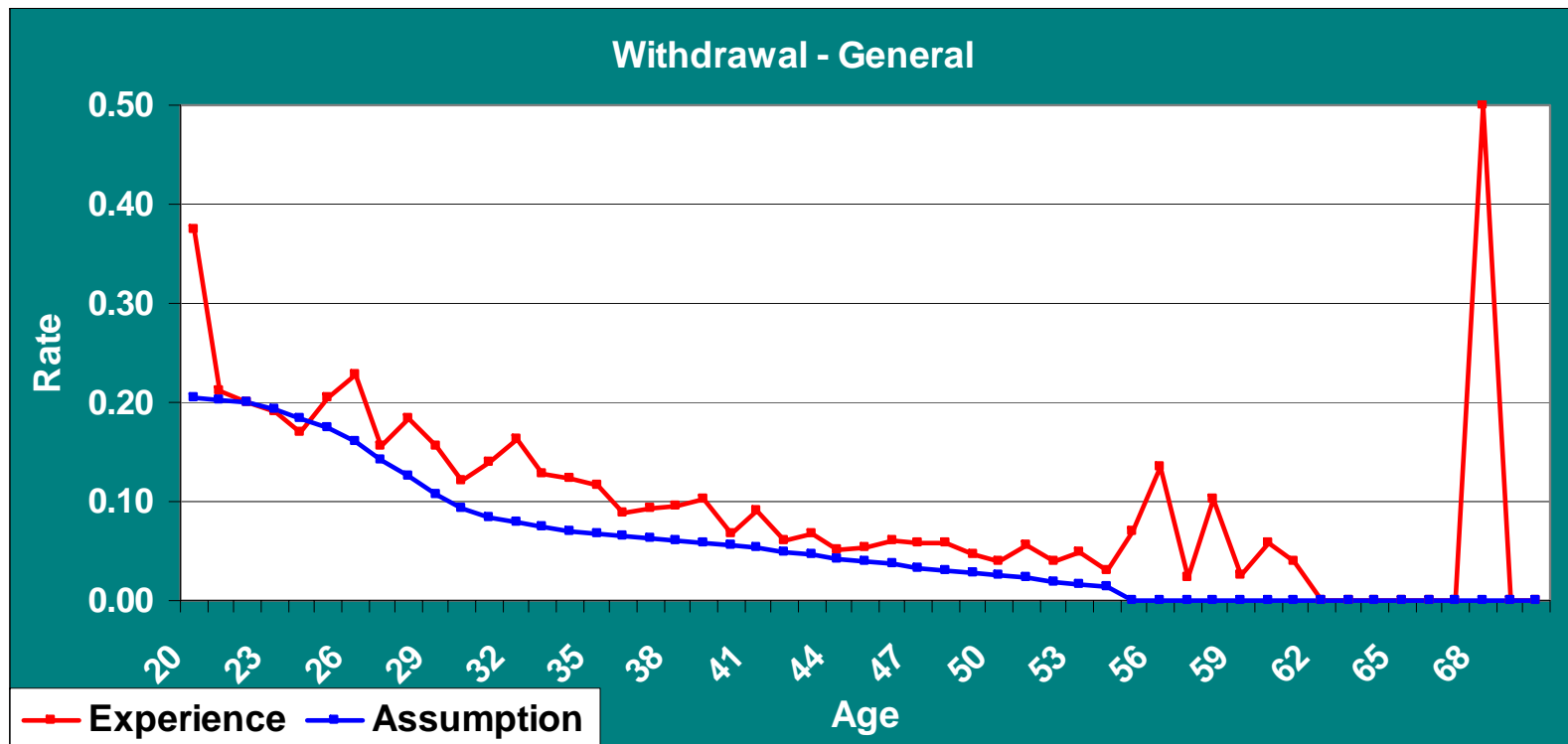
Retirement Assumption (P & F)



Actual normal retirement experience for Police & Fire participants has been less than anticipated by the decrements at the younger ages.



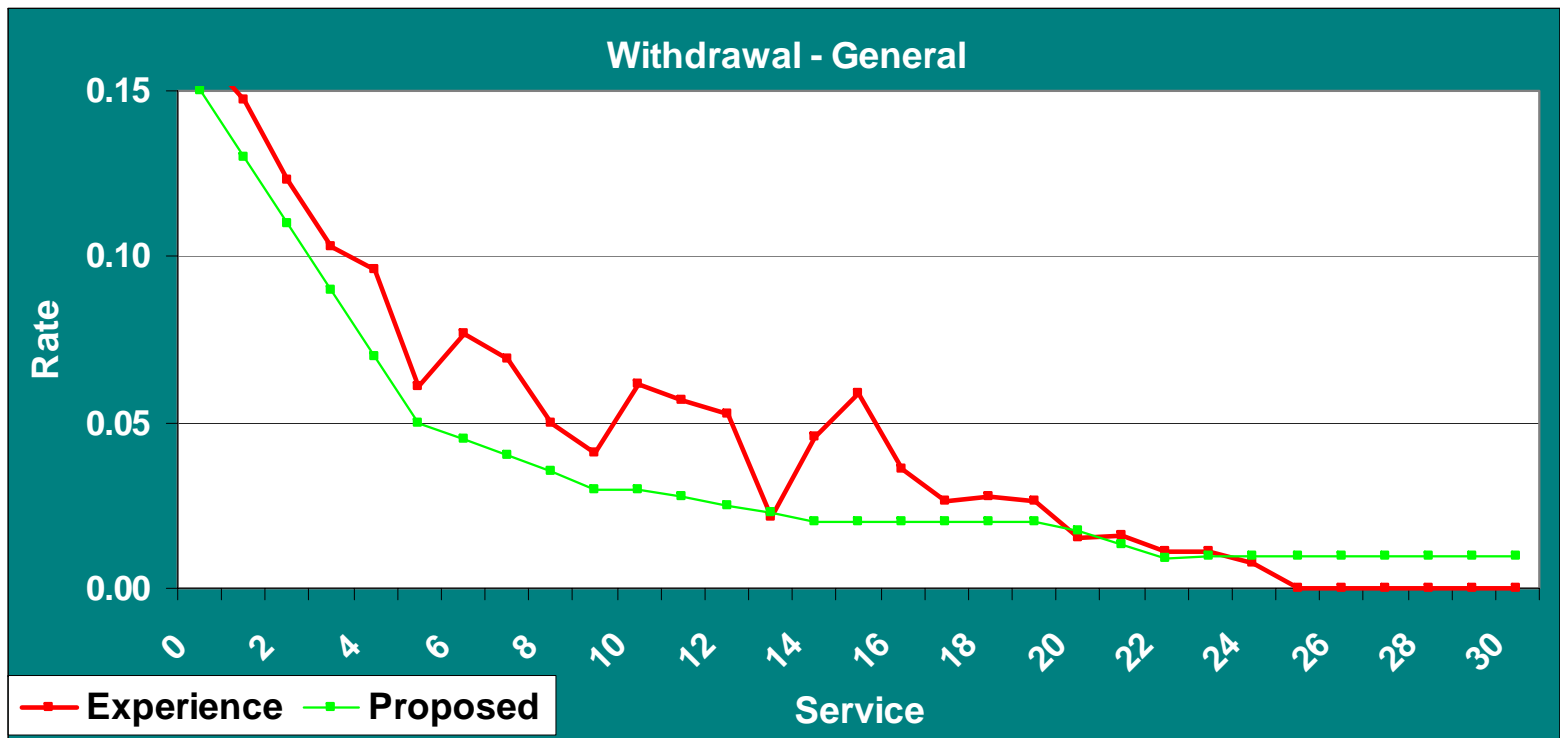
Demographic Assumptions Withdrawal (General)



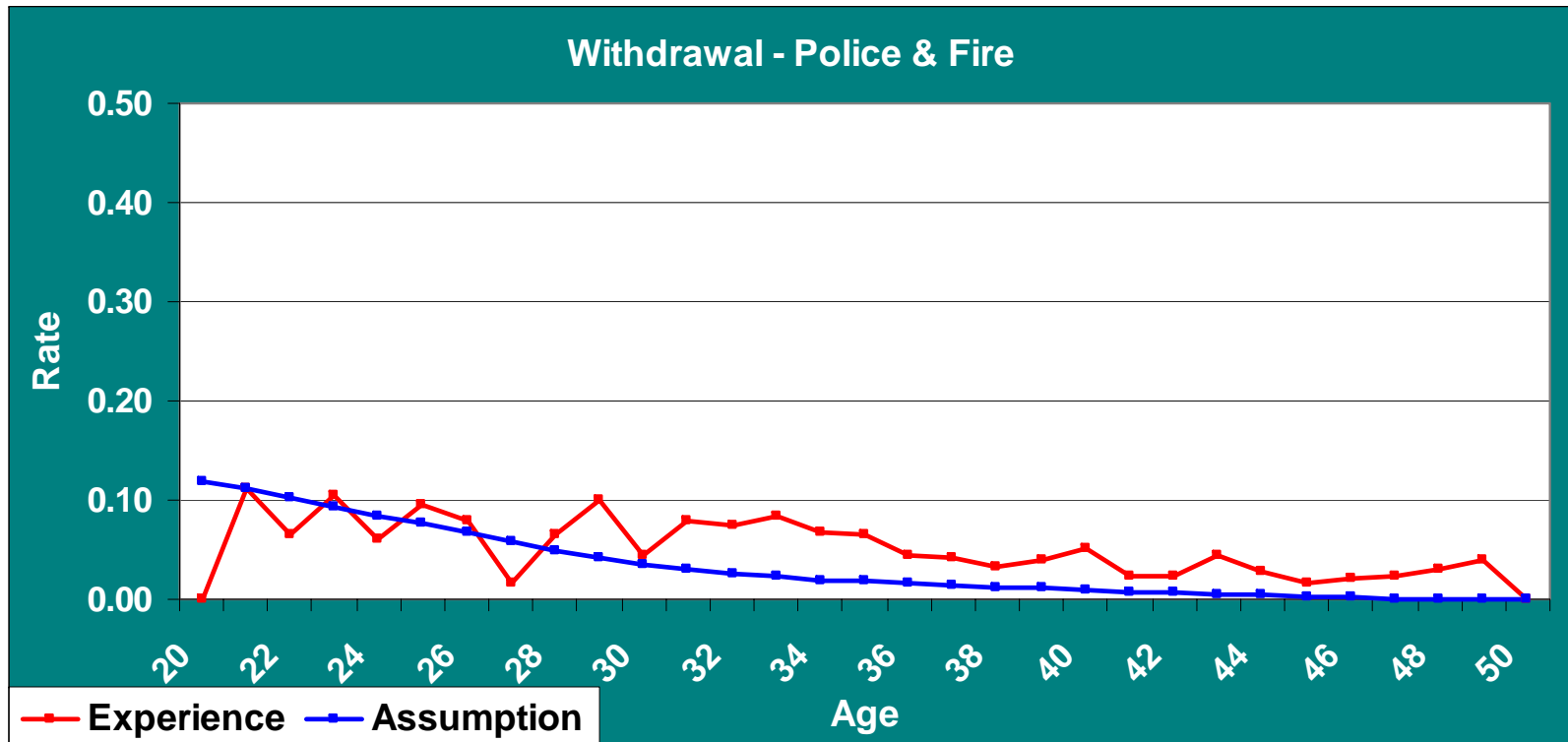
Actual turnover for General participants has been more than expected based on the current age-based decrements. However, turnover is better correlated with service.



Demographic Assumptions Withdrawal (General)



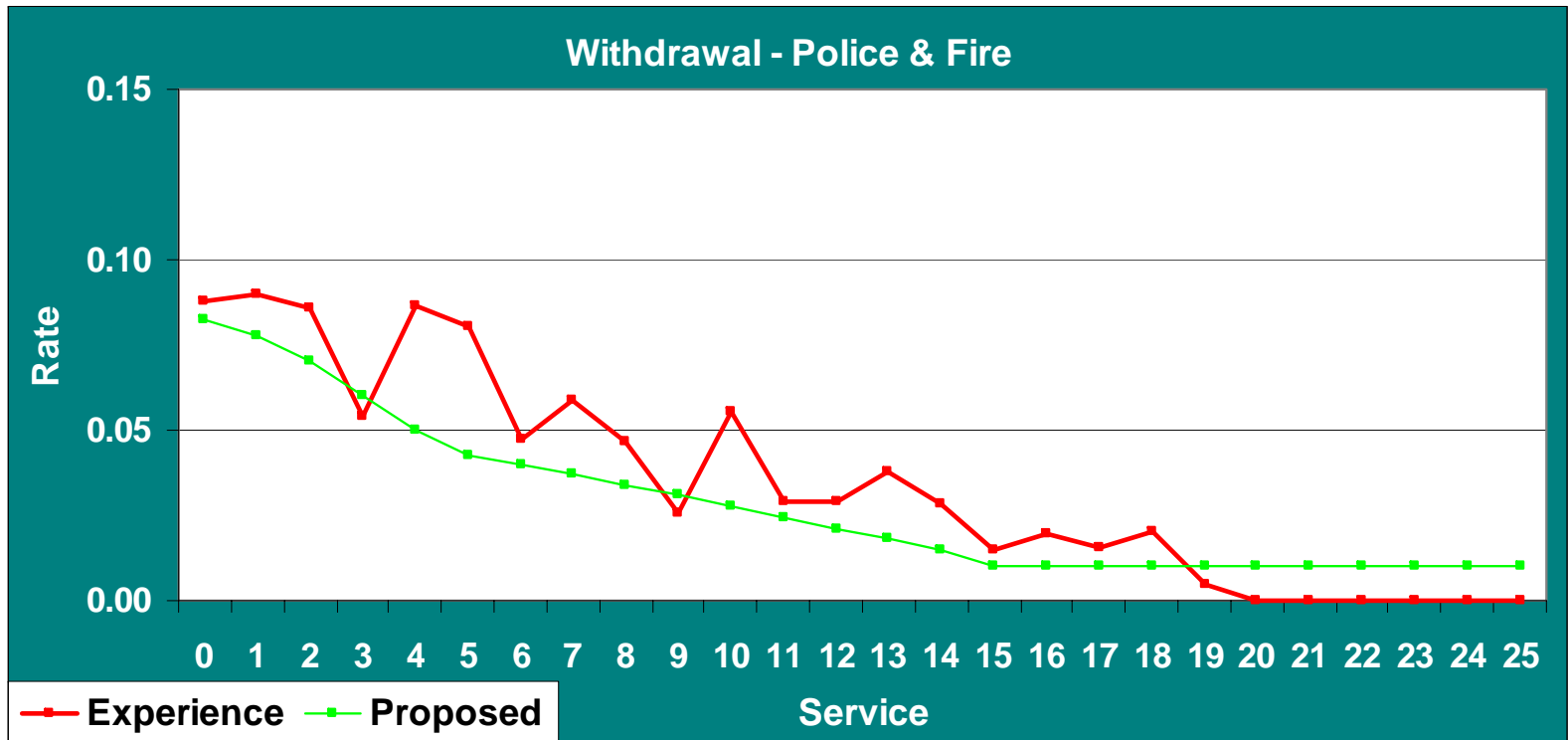
Demographic Assumptions Withdrawal (P & F)



Actual turnover for Police & Fire participants has been more than expected based on the current age-based decrements. However, turnover is better correlated with service.



Demographic Assumptions Withdrawal (P & F)



Demographic Assumptions Disability

2006 Experience Study

Group	(a) Actual Disableds	(b) Expected Disableds	(c) Ratio (a) / (b)
General			
Males	45	62	72.9%
Females	23	38	60.2%
Total	68	100	68.0%
Fire & Police			
Males	16	46	34.5%
Females	5	4	133.2%
Total	21	50	41.9%

Too small of a group for meaningful analysis.

No change recommended at this time.





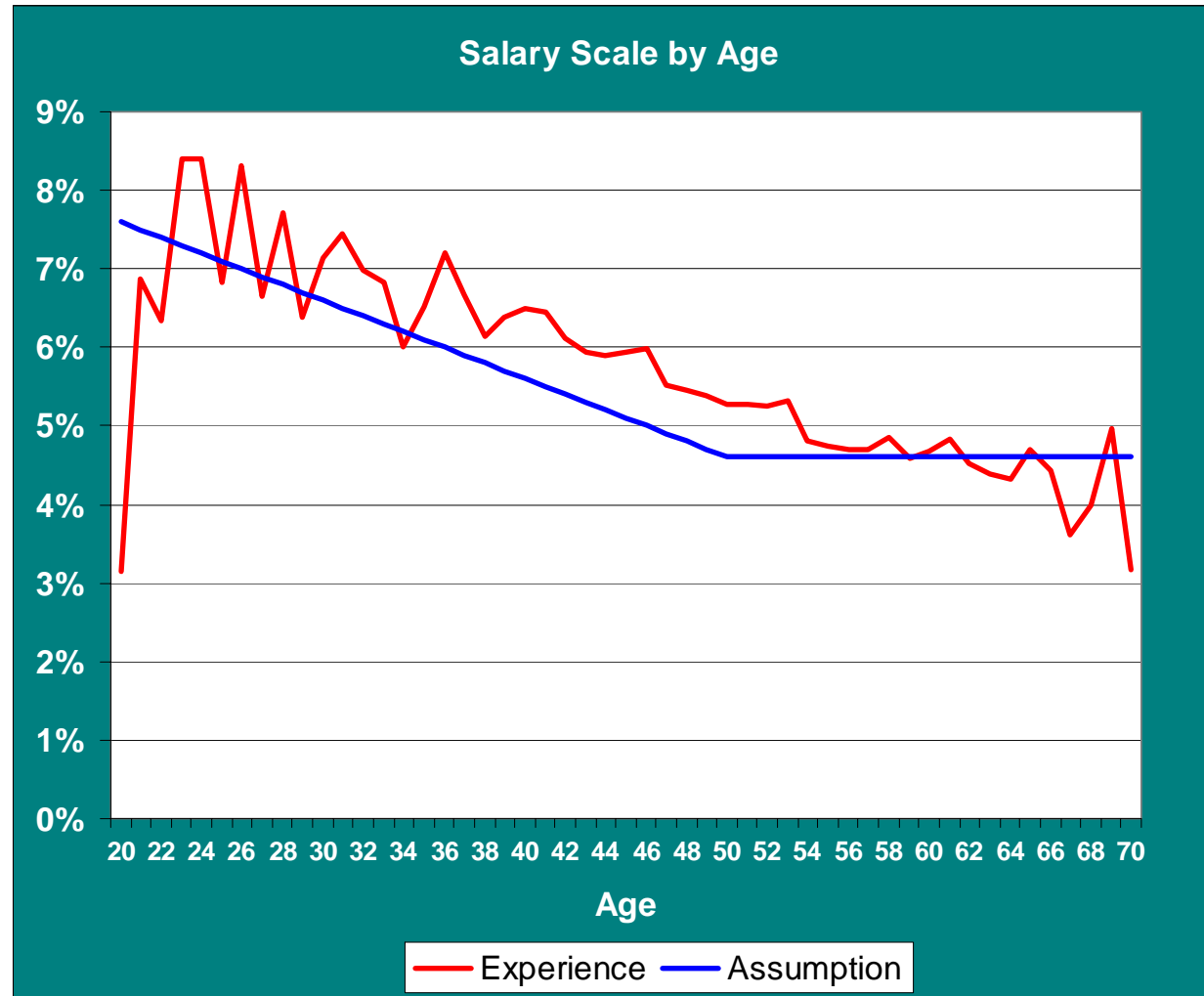
Demographic Assumptions

Mortality

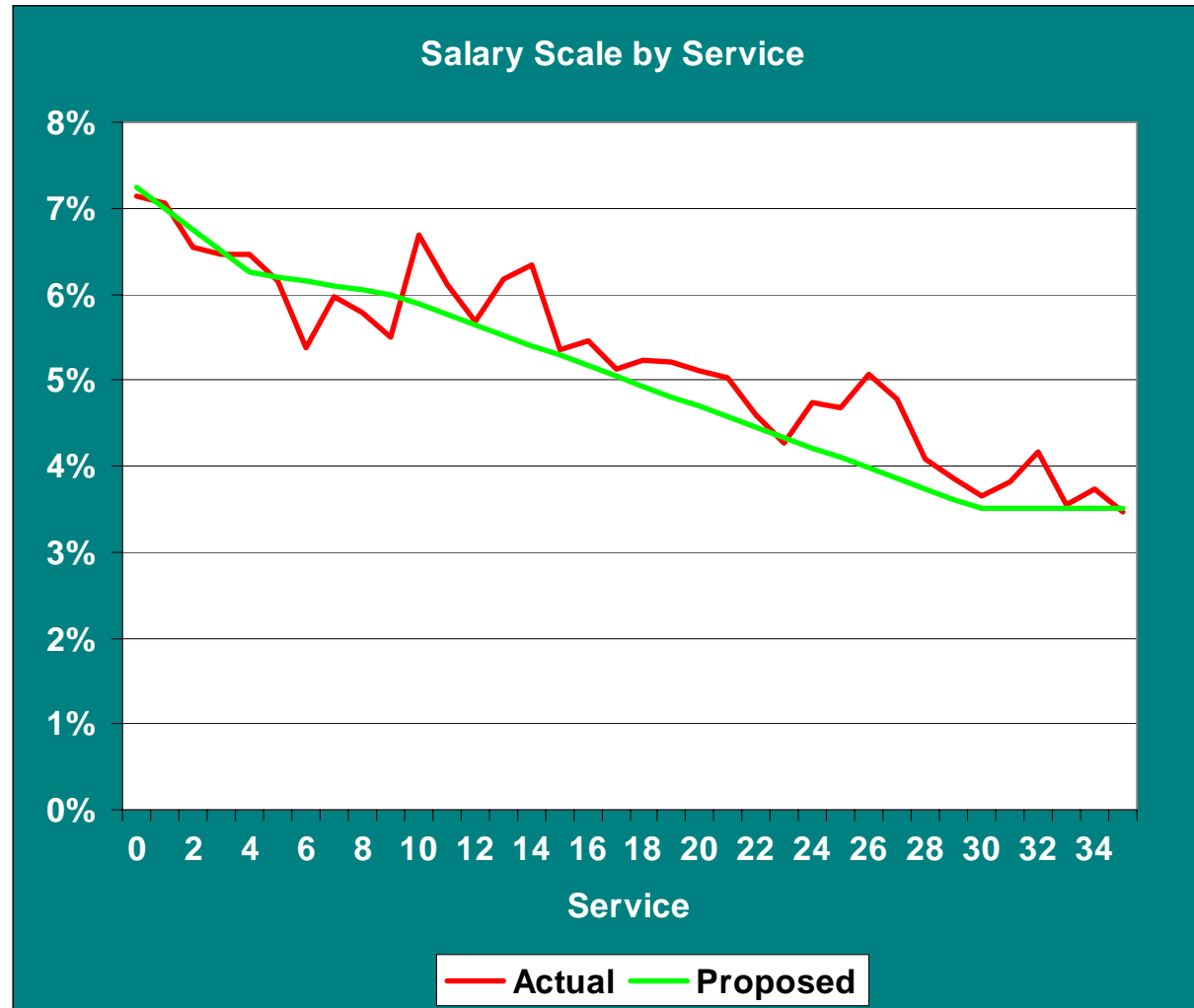
- Mortality
 - Non-disabled mortality was lower than expected
 - Anticipated deaths 541
 - Actual deaths 473
 - Disabled mortality was also lower than expected
 - Anticipated deaths 91
 - Actual deaths 61
 - Recommend using more up-to-date tables
 - Pre-Retirement: RP-2000 Employee Mortality
 - Healthy Annuitant: RP-2000 Healthy Annuitant Mortality
 - Disableds: RP-2000 Disabled Mortality



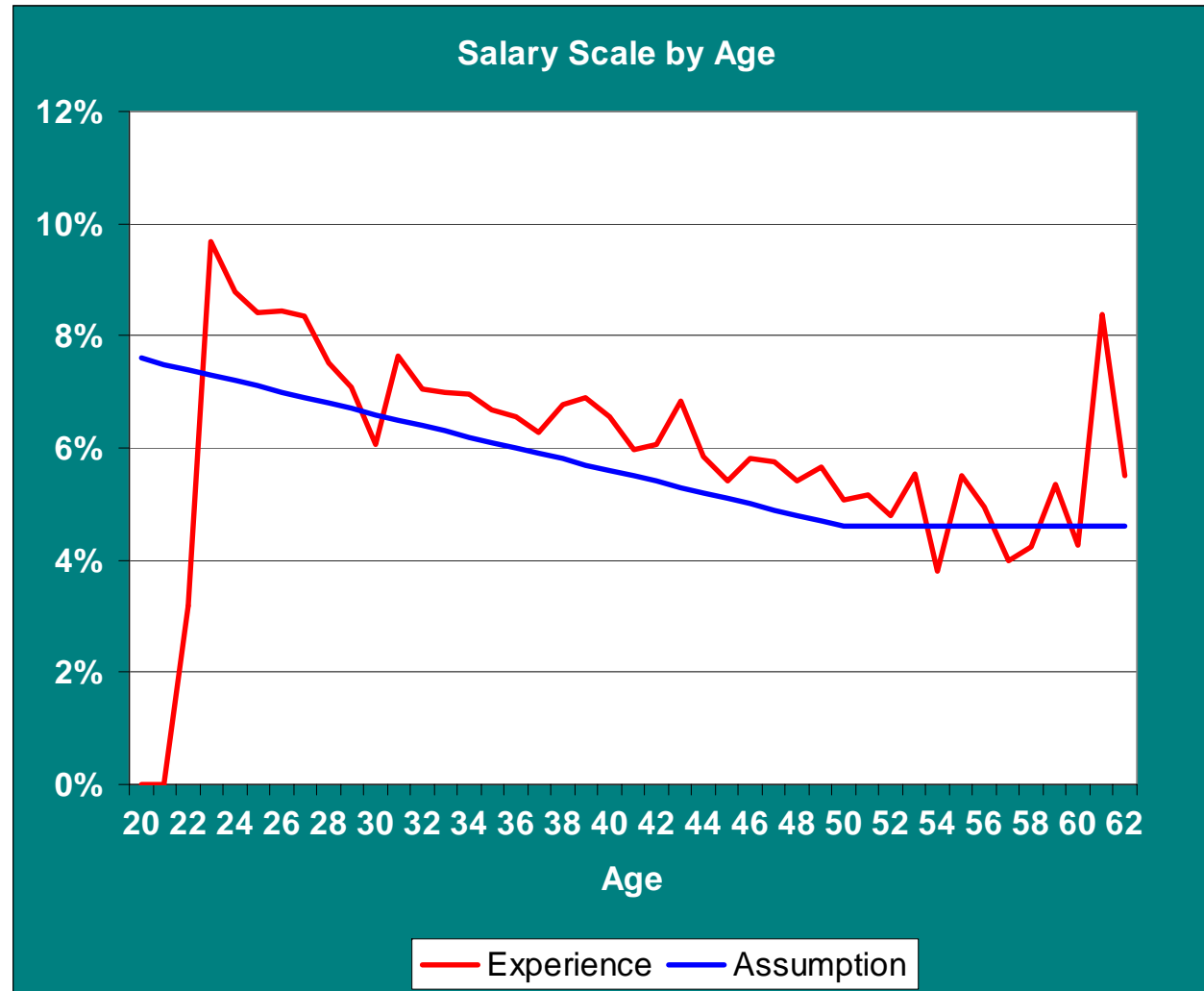
Merit/Seniority Salary Increase General



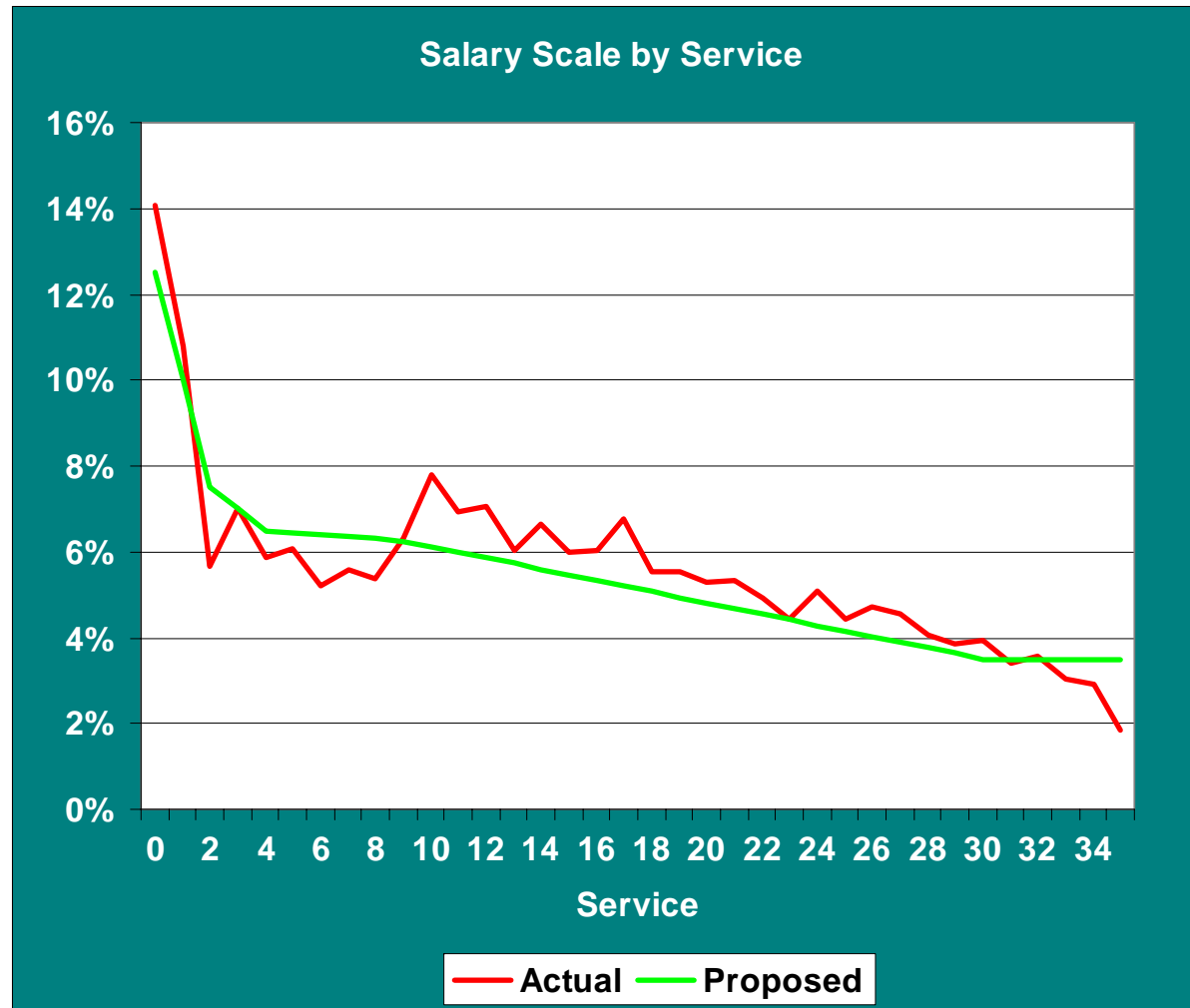
Merit/Seniority Salary Increase General



Merit/Seniority Salary Increase Police & Fire



Merit/Seniority Salary Increase Police & Fire





Sick Leave Assumption

- Additional service credit from people converting unused sick leave at retirement
- Currently, assume no future increase in amount of unused sick leave

Unused Sick (as a % of Total Svc) For Retirees ONLY

<u>System</u>	<u>2004</u>	<u>2005</u>	<u>2006</u>
General	0.83%	0.87%	0.91%
Police & Fire	1.08%	1.08%	1.17%

- Recommend adding a load of 0.90% for General and 1.10% for Police & Fire to retirement benefit to account for this





Funding Method

- City currently uses Projected Unit Credit (PUC)

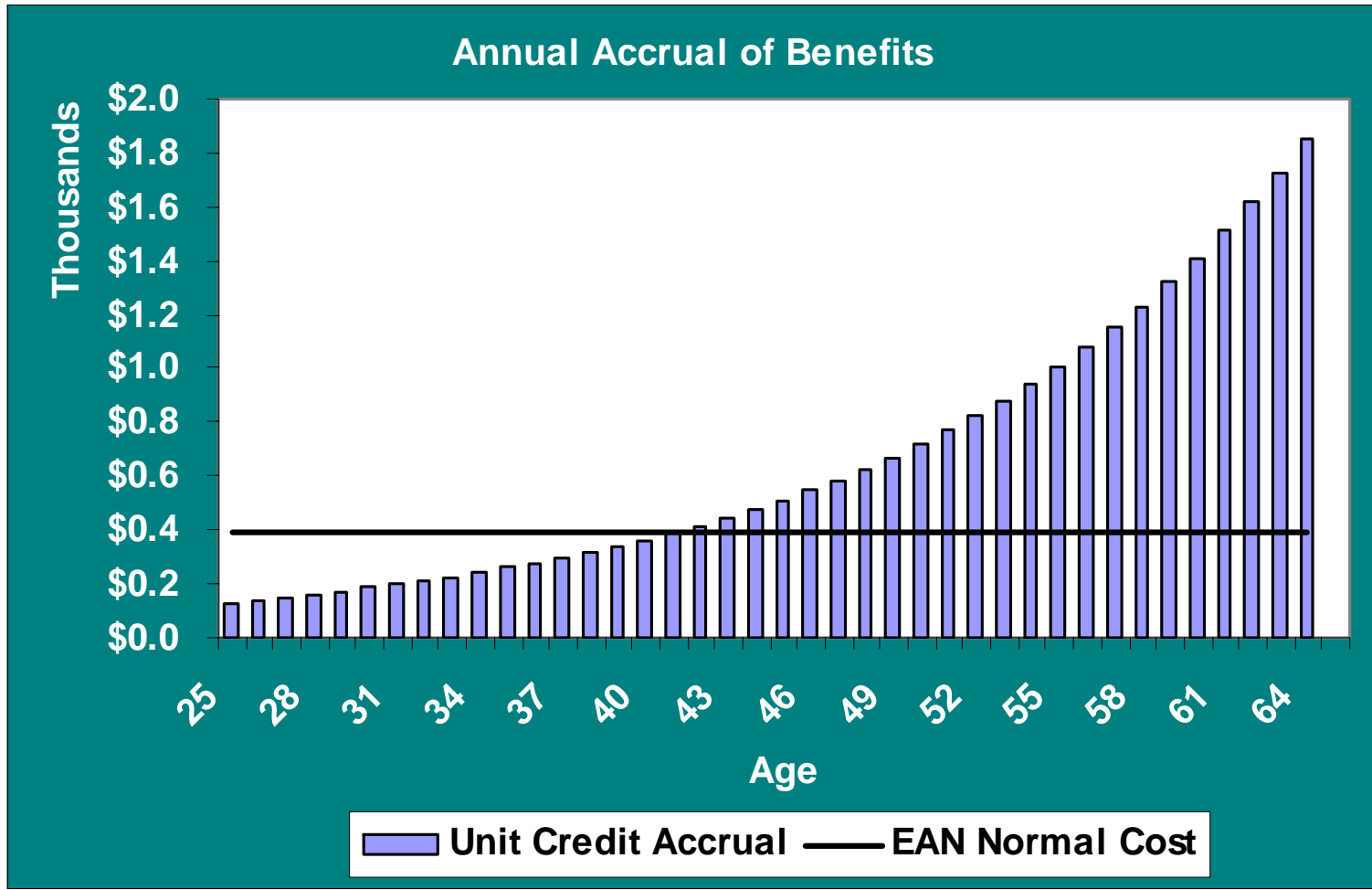
<u>Funding Method</u>	<u>% of Plans</u>
Entry Age	59%
Frozen Entry Age	6%
Projected Unit Credit	11%
Aggregate	11%
Other	5%
Not Applicable	7%

Source: GFOA 2001 Survey



Funding Method

PUC versus Entry Age Normal





Demographic Assumptions-Summary

○ Changes Recommended

- Retirement: Minor changes
- Withdrawal: Move to service-based table
- Disability: No change
- Mortality: Improve tables
- Merit/Seniority Salary: Service based table
- Sick Leave: Use load at retirement instead of current balance
- COLA: May want to consider
- Funding Method: Entry Age Normal

○ Impact Of Recommended Changes



Revised 7/1/2006 Valuation Results

	Old Assumptions	Proposed Assumptions	Proposed Assumptions With 1% COLA
Normal Cost	12.50%	12.25%	13.09%
Amortization	<u>3.48%</u>	<u>3.12%</u>	<u>8.03%</u>
Total City Rate	15.98%	15.37%	21.12%
AAL	\$ 939.1	\$ 933.0	\$1,015.4
AVA	<u>\$ 881.0</u>	<u>\$ 881.0</u>	<u>\$ 881.0</u>
UAL	\$ 58.1	\$ 52.0	\$ 134.4
Funded Ratio	93.82%	94.43%	86.76%



P-scan Forecasting

