

City of Knoxville Pension System

July 1, 2011 Experience Study

presented by

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*Today's
presentation
will review
results of the
July 1, 2011
Experience
Study.*

BPS&M

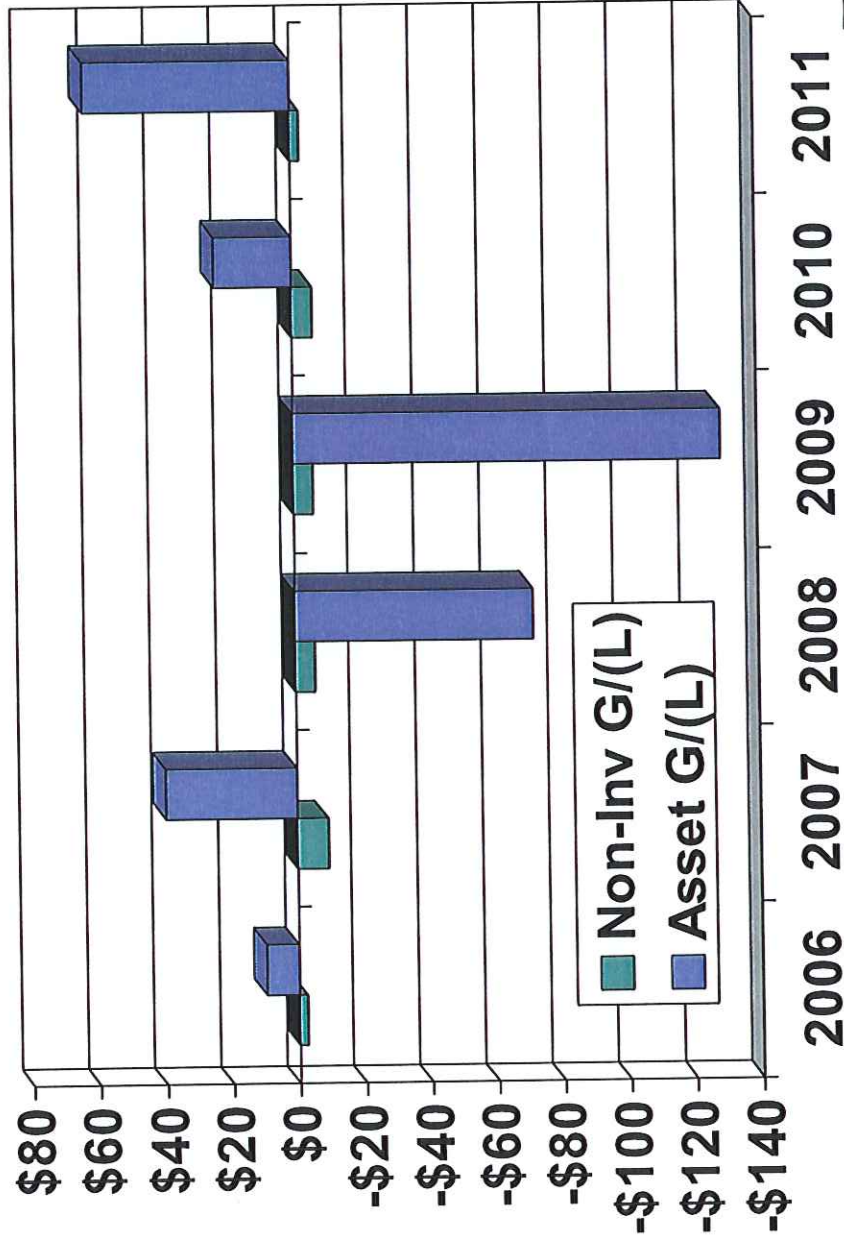
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July 1, 2011 Experience Study

- Review of assumptions (actual vs expected)
- Cost impact of recommended changes
- Impact on contributions (effective 7/1/2013)
- Contribution Projections

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Prior Gains/(Losses)



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Funding Requirement – Contribution Limit

Effective for contributions beginning July 1, 2005,
the contribution (%) increase will be limited to:

- a) 2% , or if greater,
- b) 20% of the prior year contribution (%)

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Funding Requirement – Contribution Limit

Effective for contributions beginning July 1, 2006,
the contribution (%) will be at least:
40% of the “Real Cost” of the plan

Real Cost = average value of benefits growing each year (as a % of payroll)

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Funding Requirement – Contribution Limit

Due to significant potential impact of assumption changes this year, I would recommend banding not be applied with regards to the cost impact of any assumption changes.

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7/1/2011 Experience Study

- Mortality
- Withdrawal
- Disability/ Disability Mortality
- Salary Increases
- Retirement Rates
- Transfers (G1 to G2)
- Investment Return

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Non-Investment Assumptions (\$M)

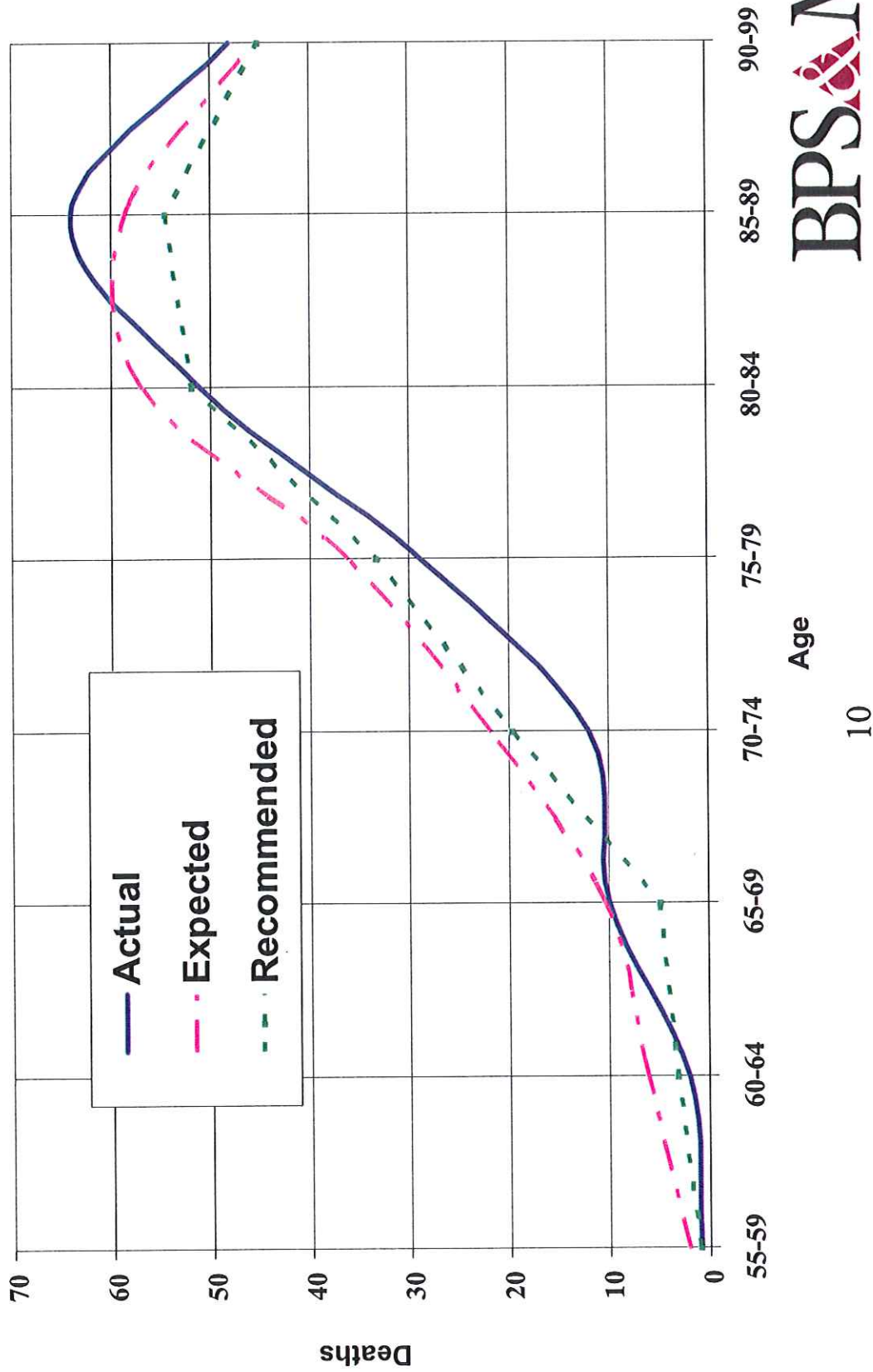
<u>2011 Non-Investment G/(L)</u>	
Retirement/Terminations	\$ (1.05)
Mortality	\$ (2.26)
New Entrants	\$ (0.61)
Other	\$ 1.04
	<u>\$ (2.88)</u>

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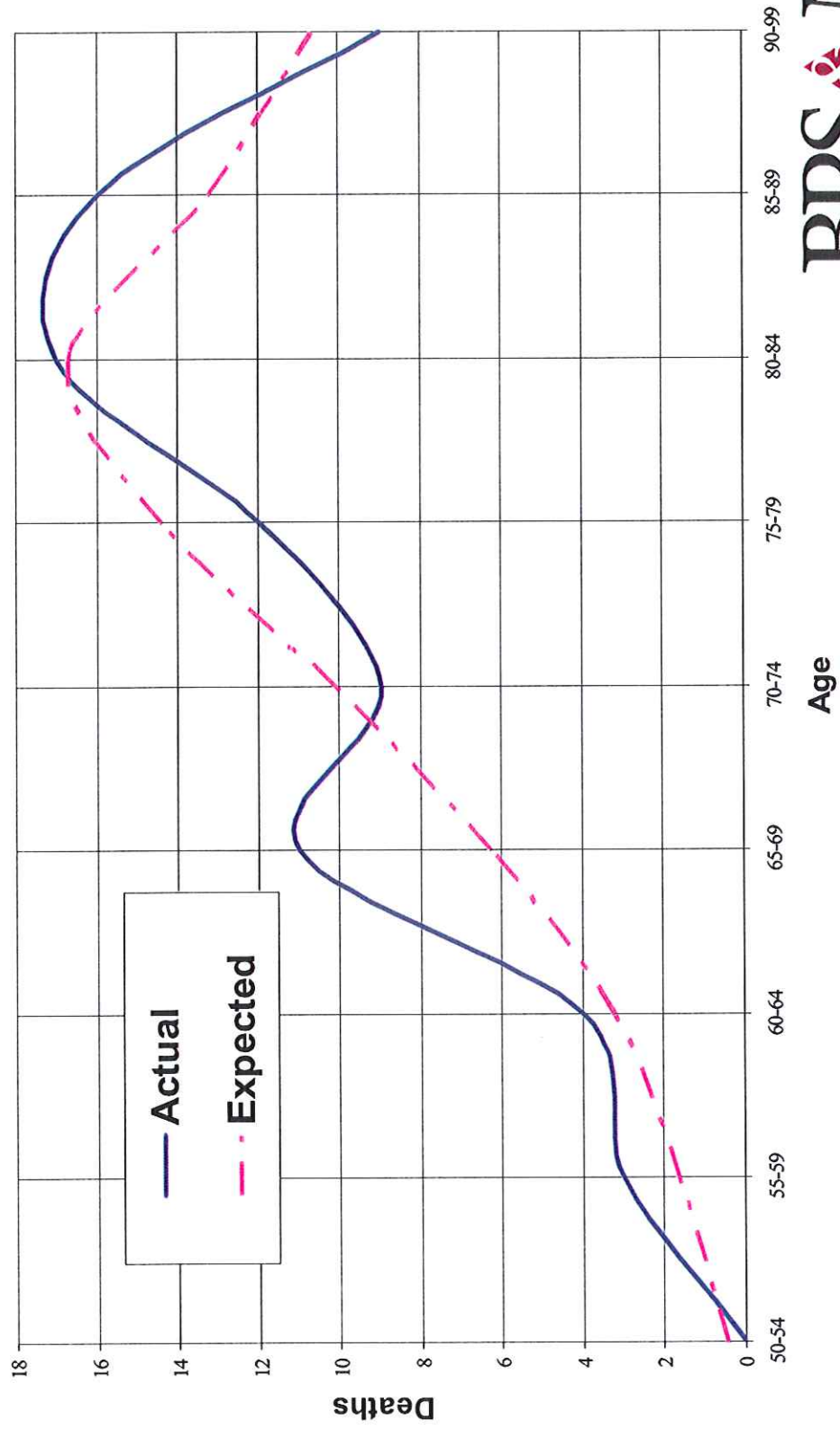
MORTALITY

Compare actual deaths to expected deaths

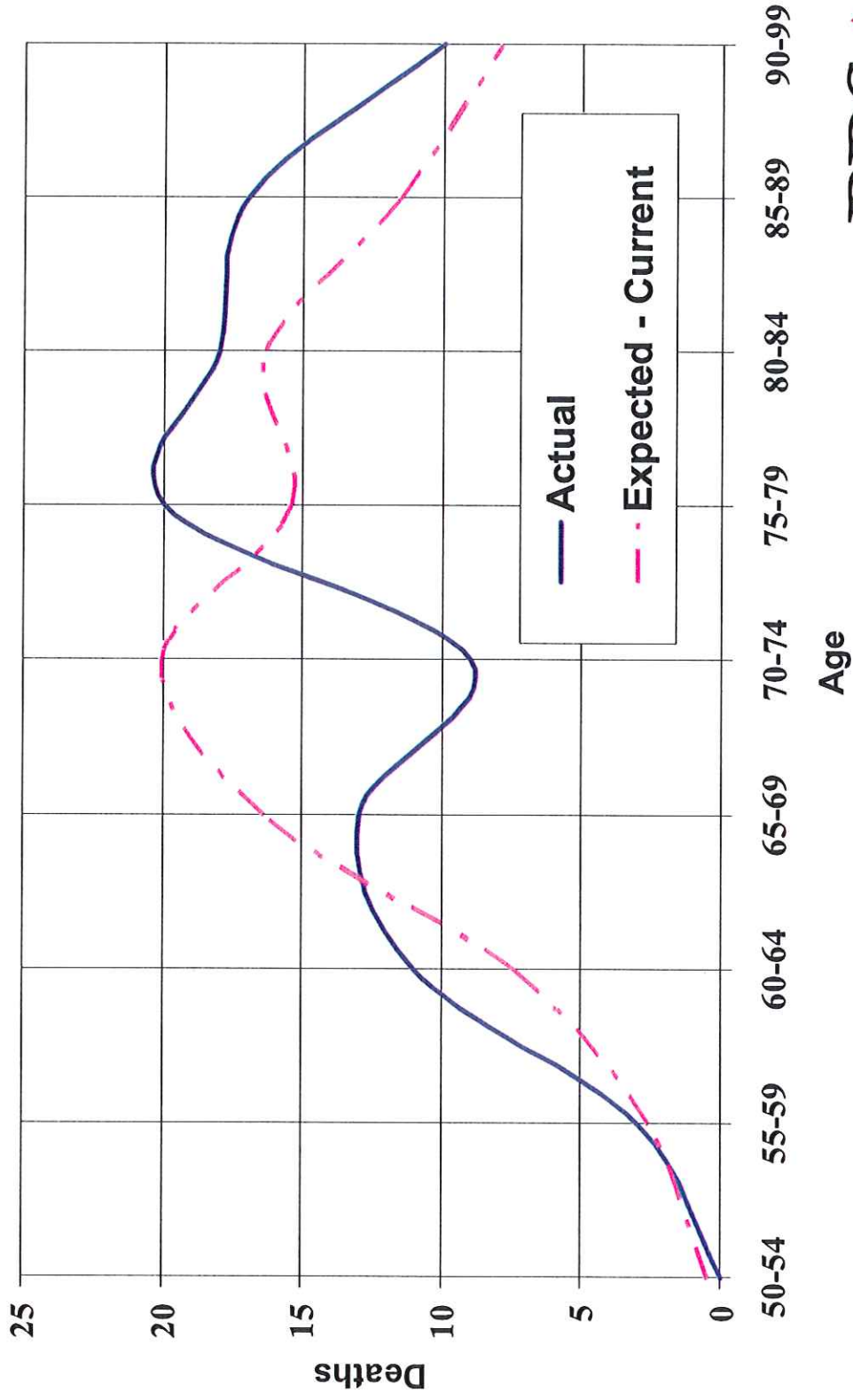
Mortality - Board of Education



Mortality - General Government



Mortality – Uniformed Bodies



Mortality – Board of Education

Impact on Liability (Millions\$)

Prior Assumptions	\$	74.3 M
Recommended Assumptions	\$	77.0 M

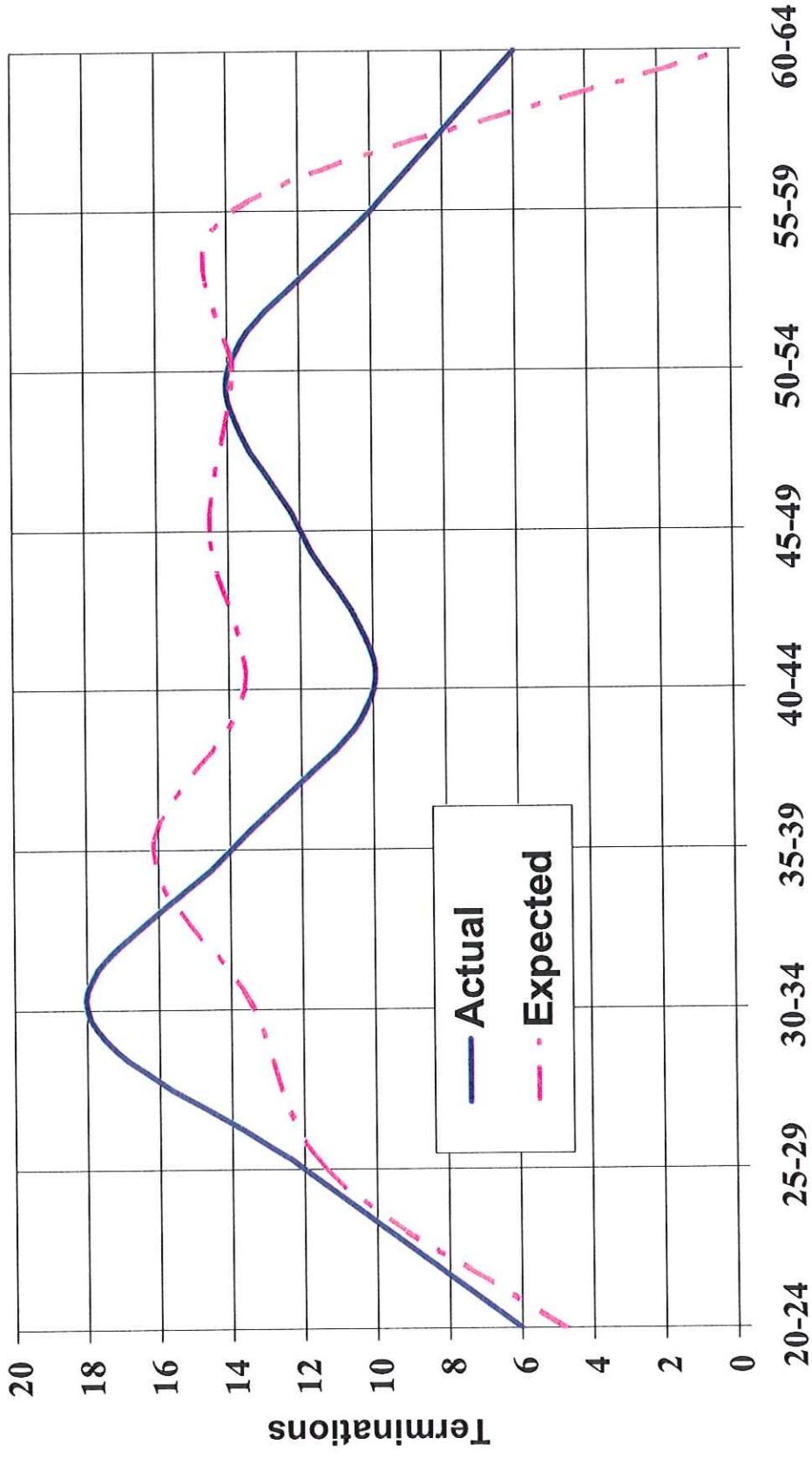
Increase	\$	2.7 M
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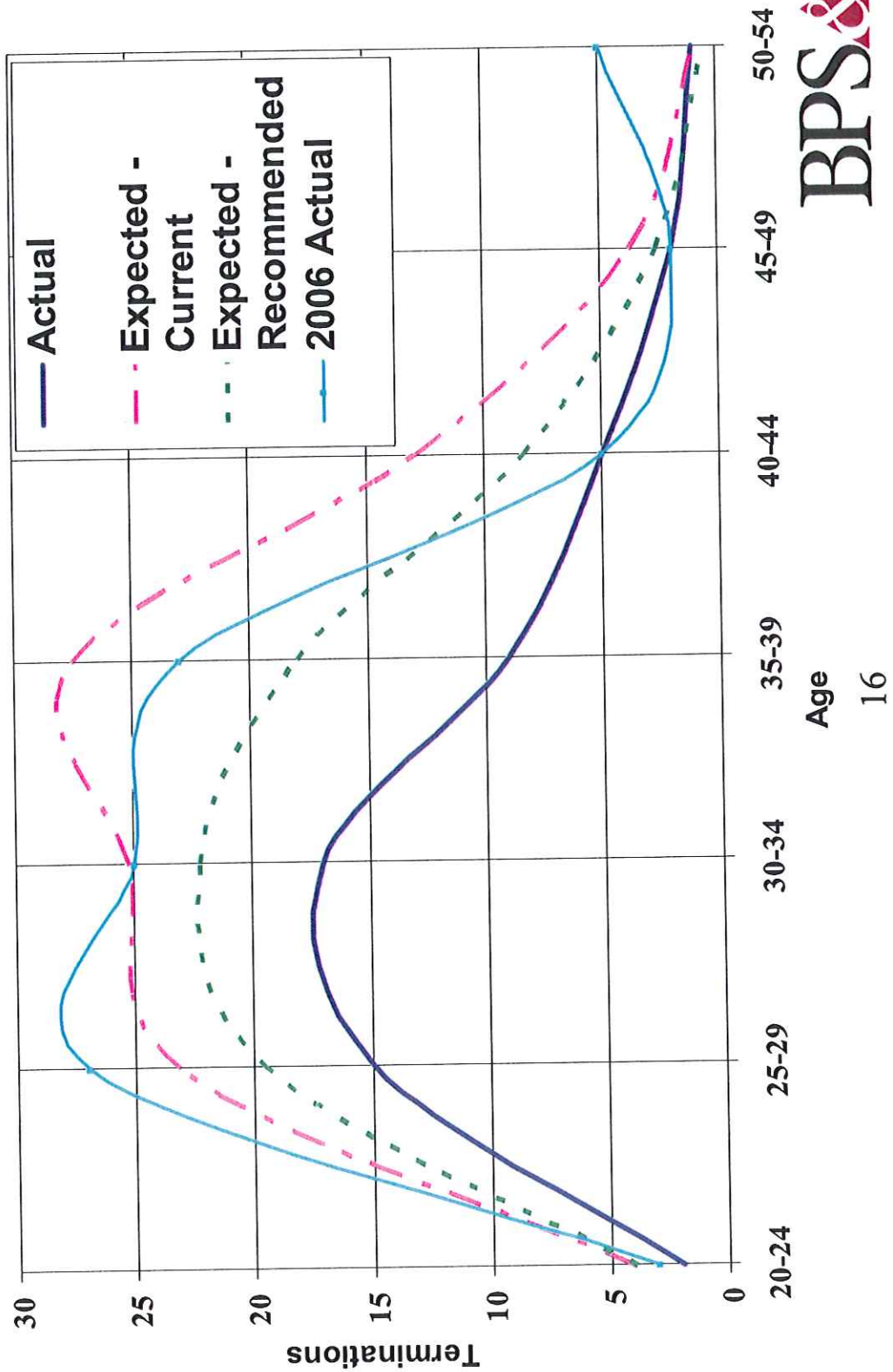
WITHDRAWALS

Compare actual terminations to expected

Withdrawal - General Govt



Withdrawal - Fire/Police (Div C)



Withdrawal – Uniformed Bodies

Impact on Liability (Millions\$)

Prior Assumptions	\$	348.6 M
Recommended Assumptions	\$	349.2 M

Increase	\$	0.6 M
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DISABILITY

Compare actual disabilities to expected.

Small tweak to General Government assumptions.

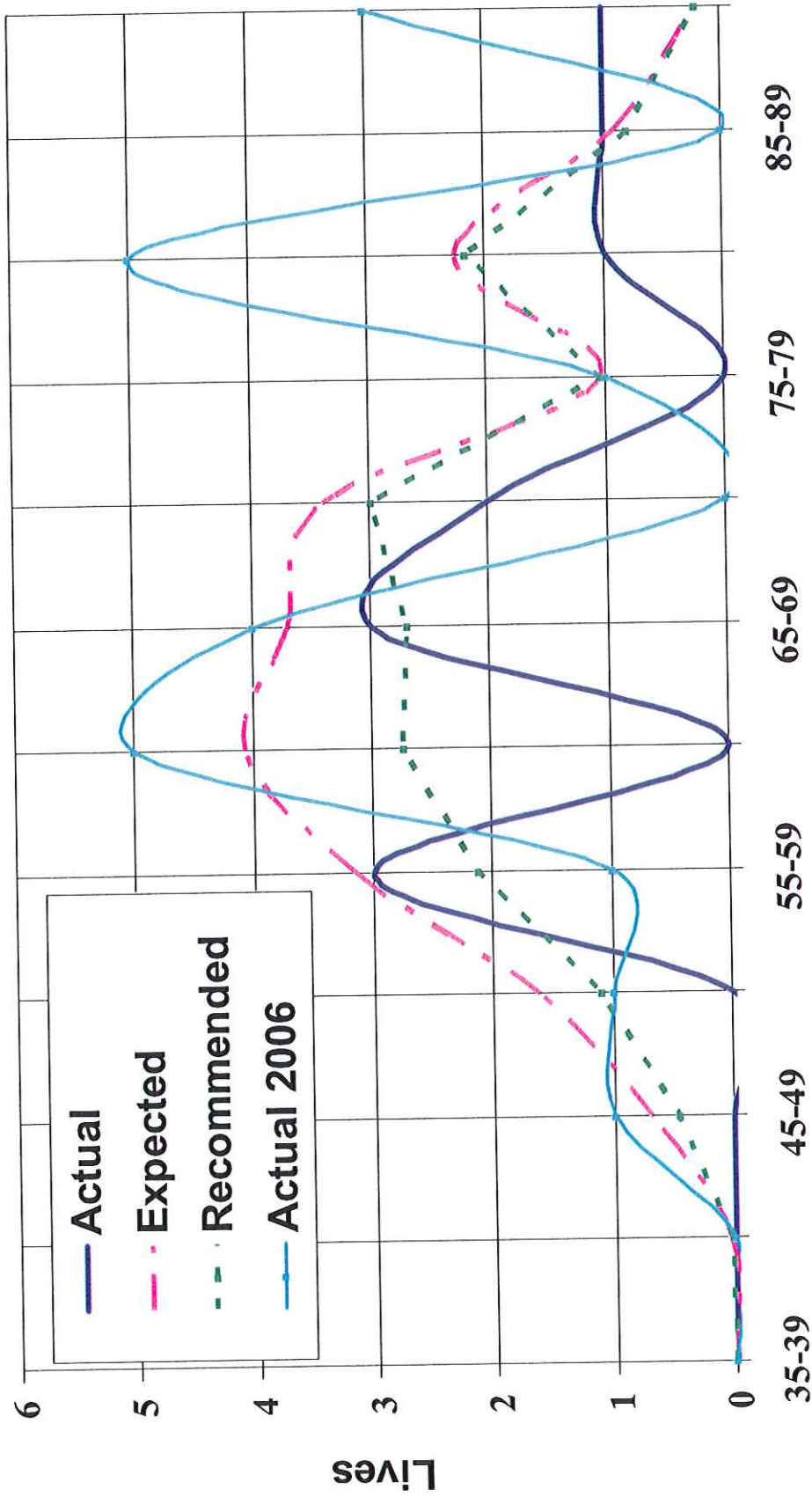
No material cost impact.

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DISABILITY MORTALITY

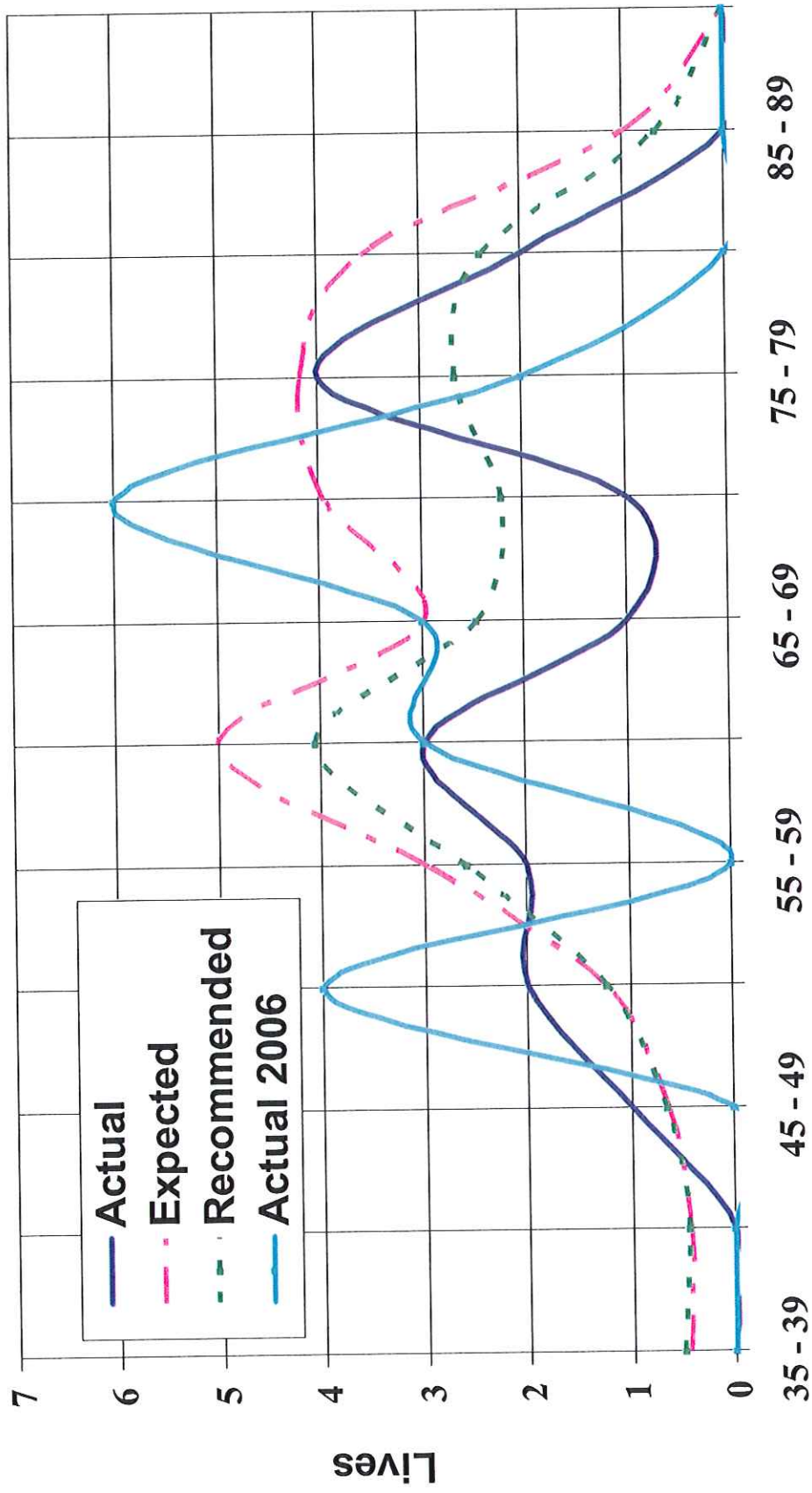
Compare actual deaths of disabled members to
expected

Disability Mortality - BDED/GG



Age

Disability Mortality - Uniformed



Age

Disability Mortality

Impact on Liability (Millions\$)

General Govt/ Board of Ed	\$	1.3 M
Fire/Police	\$	3.2 M

Increase	\$	4.5 M
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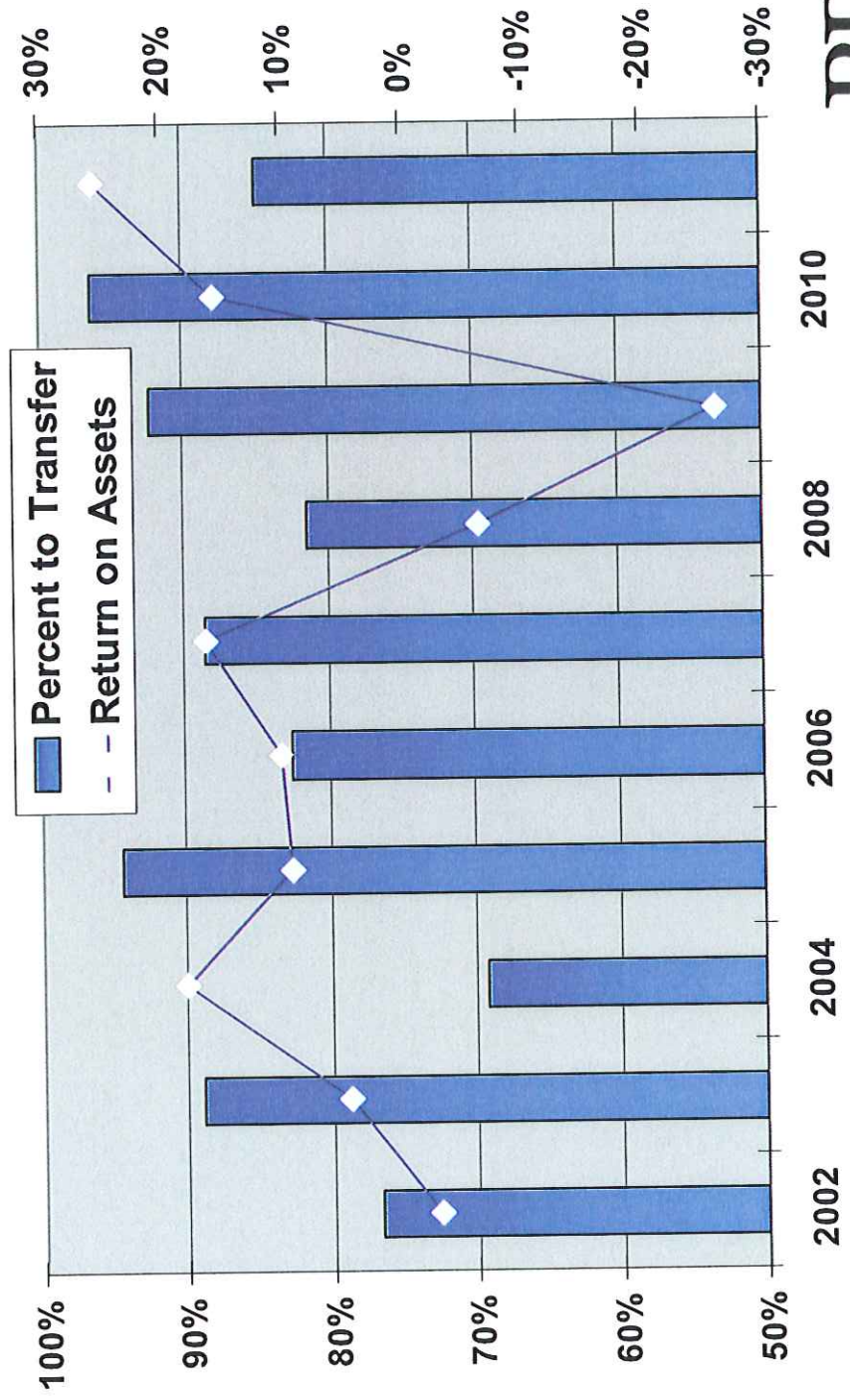
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G1 TRANSFERS TO G2

Currently assume 80% transfer to G2
Recommend revising to 90%

G1 to G2 Transfers

G1 to G2 Transfers



G1 to G2 Transfers – 90%

Impact on Liability (Millions\$)

Prior Assumption \$ 173.7 M

Recommended Assumptions \$ (173.8) M

Increase \$ 0.1 M

Summary – Board of Education

Cost of Assumption Changes

Revise Mortality	\$	2.7 M
Revise Disability Mortality	\$	0.0 M
<hr/>		
	\$	2.7 M

Summary - General Government

Cost of Assumption Changes

Revise Rates of Disability	\$	0.0 M
Revise Disability Mortality	\$	1.3 M
90% Transfer G1 to G2	\$	0.1 M

	\$	1.4 M
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Summary - Uniformed Bodies

Cost of Assumption Changes

3.2 M

Revise Disability Mortality

0.6 M

Revise Withdrawal Rates

3.8 M

Net Increase in Liability

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NON-INVESTMENT RETURN 2011 Study

Liability Impact (\$M)

	Board of Ed	Gen Govt	Fire/Police	Total
Old	74.3	172.4	345.4	592.1
New	77.0	173.8	349.2	600.0
Change	2.7	1.4	3.8	7.9

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NON-INVESTMENT RETURN 2011 Study

Contribution Impact (\$M)

	Board of Ed	Gen Govt	Fire/Police	Total
Old	1.0	4.3	7.8	13.1
New	1.3	4.5	8.5	14.3
Change	0.3	0.2	0.7	1.2

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INVESTMENT RETURN

Use a building block approach to determine expected future returns.

Real Returns + Inflation - Expenses

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INVESTMENT RETURN

Employer Contribution =

Benefit Payments

- Employee Contributions
- Investment return

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INVESTMENT RETURN

Has there been a fundamental change in the markets?

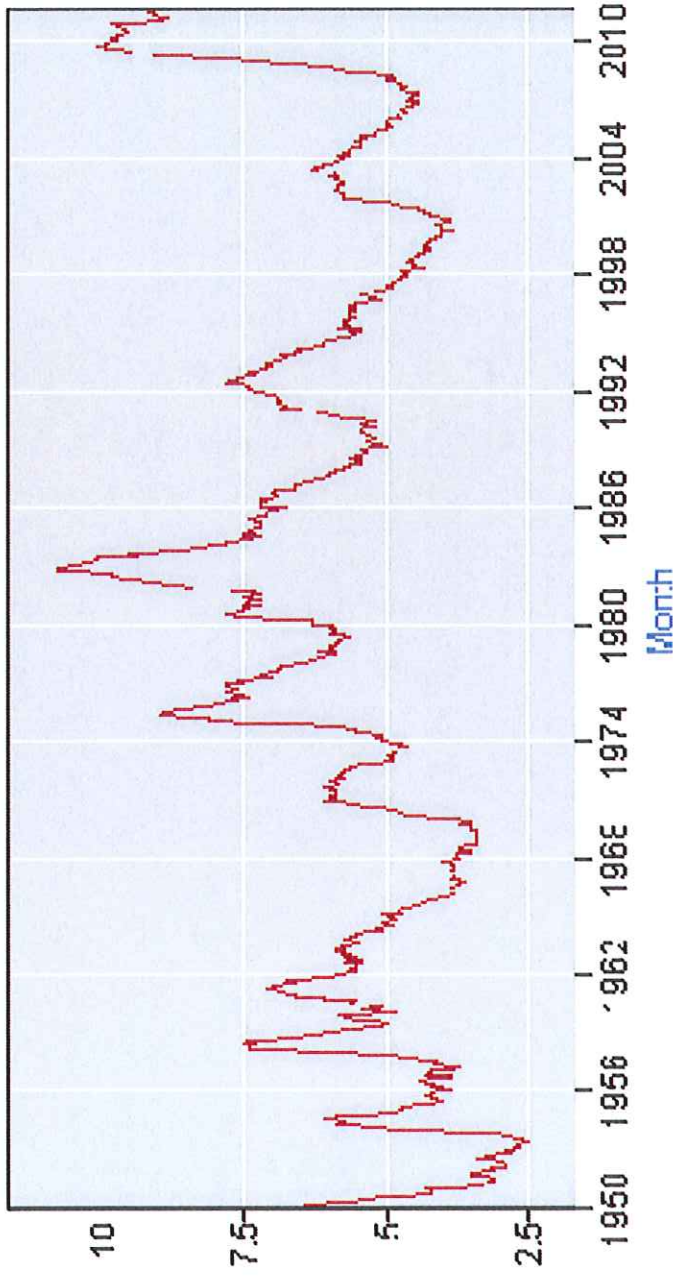
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Health of US Economy

	2002	2011
US Credit Card Debt	\$200B	\$800B
US National Debt	\$6T	\$15T
Unemployment	6%	9%

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Unemployment Rates*



*Bureau of Labor Statistics

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“Given the anemic state of the economy, the overhanging debt, weak consumer demand and the danger of a double-dip recession, there is no plausible way to safely attain such high numbers [8% or higher returns].”

- Chicago Tribune October 17, 2011

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INVESTMENT RETURN 2006 Study

Real Returns

Summit Expectations	5.60%
Market Returns 80 Years	6.51%
Average Real Return	6.06%

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INVESTMENT RETURN 2006 Study

Expected Real Return	6.06%
Plus Inflation	3.00%
Minus Expenses	(0.50%)
Net Expected Return	8.56%

Recommended Return 8.00%



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INVESTMENT RETURN 2011 Study

Real Return Expectations

Wells Fargo	4.77%
JP Morgan	4.40%
Summit Strategies	4.86%
Average Real Return	4.67%

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INVESTMENT RETURN 2011 Study

Historical Real Returns

Knoxville 20 Years	5.60%
Market Returns 80 Years	6.23%
Average Real Return	5.91%

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INVESTMENT RETURN 2011 Study

Real Returns

Historical Returns	5.91%
Market Expectations	4.67%
Average Real Return	5.29%

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INVESTMENT RETURN 2011 Study

Net Return Expectation

Expected Real Return	5.29%
Plus Inflation	2.75%
Minus Expected Expenses	(0.50%)
Net Expected Return	7.54%

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INVESTMENT RETURN 2011 Study

Net Return Expectation

	2006	2011
Expected Real Return	6.06%	5.29%
Plus Inflation	3.00%	2.75%
Minus Expenses	(0.50%)	(0.50%)
Net Expected Return	8.56%	7.54%

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INVESTMENT RETURN 2011 Study

Liability Impact of 7.5% Assumption (\$M)

	Board of Ed	Gen Govt	Fire/Police	Total
8.00%	77.0	173.8	349.2	600.0
7.50%	79.7	183.6	368.9	632.2
Change	2.7	9.8	19.7	32.2

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INVESTMENT RETURN 2011 Study

Contribution Impact of 7.5% Assumption (\$M)

	Board of Ed	Gen Govt	Fire/Police	Total
8.00%	1.3	4.5	8.5	14.3
7.50%	1.5	5.9	10.4	17.8
Change	0.2	1.4	1.9	3.5

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2011 Experience Study

Liability Impact of Experience Study Changes (\$M)

	Board of Ed	Gen Govt	Fire/Police	Total
Non-Investment	2.7	1.4	3.8	7.9
Investment	2.7	9.8	19.7	32.2
Total	5.4	11.2	23.5	40.1

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2011 Experience Study

Contribution Impact of Experience Study Changes (\$M)

	Board of Ed	Gen Govt	Fire/Police	Total
Original	1.0	4.3	7.8	13.1
Non-Investment	0.3	0.2	0.7	1.2
Investment	0.2	1.4	1.9	3.5
Revised *	1.5	5.9	10.4	17.8

* Revised total contribution for 2012 estimated to be \$19.50 M.

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2011 Experience Study

Normal Cost Impact of Experience Study Changes (%)

	Gen Govt	Fire/Police
Original	5.7%	13.0%
Non-Investment	0.2%	1.4%
Investment	1.1%	2.5%
Revised *	7.0%	16.9%

Summary - Timing

New assumptions will apply for 7/1/2012 valuation.

Funding requirement for 7/1/2012 valuation will be effective 7/1/2013.

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PROJECTED FUTURE CONTRIBUTIONS

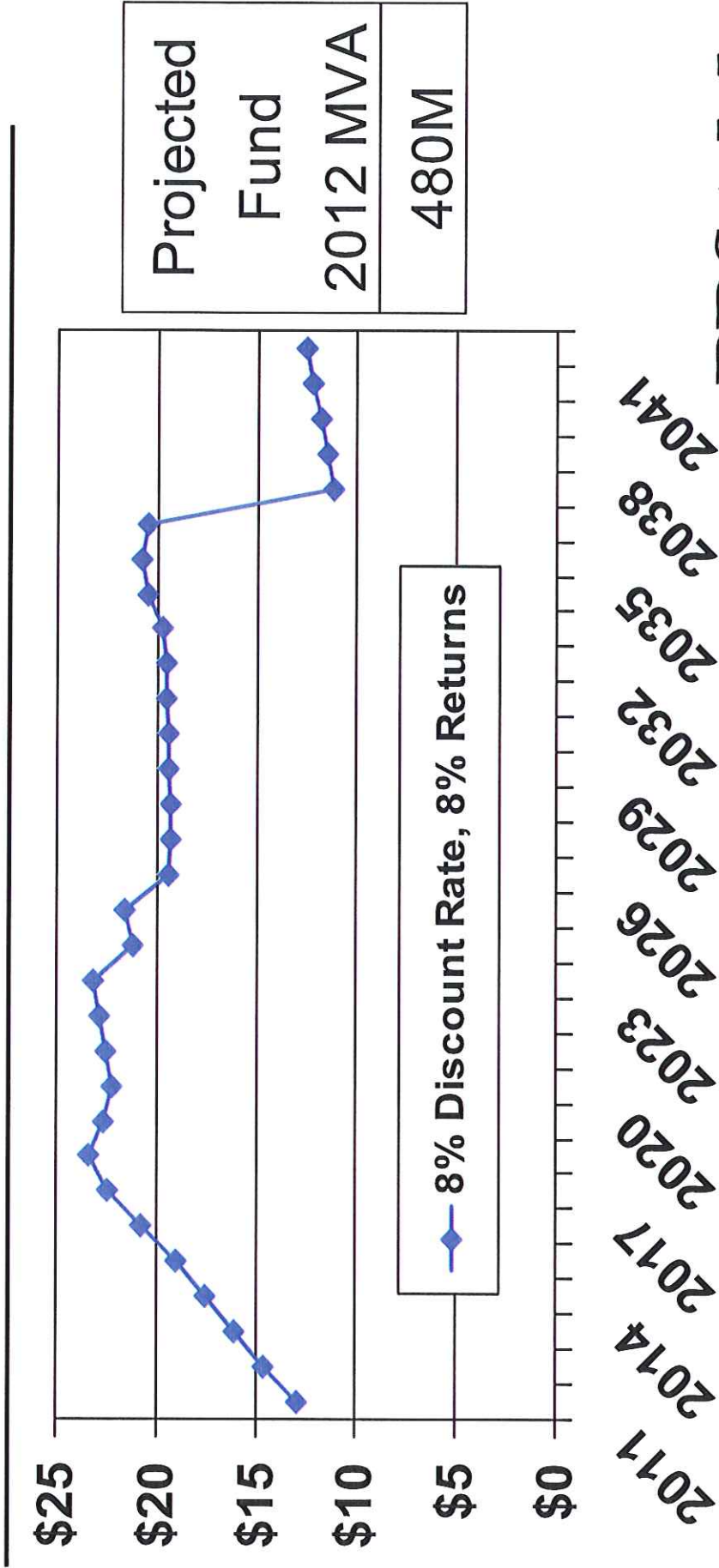
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Projected Contributions (\$ millions)

Year	Expected Contribution (current assumptions)	Expected Contribution (revised assumptions)
2011	13.02	13.02
2012	14.62	19.50
2013	16.09	21.08
2014	17.61	22.71
2015	19.07	24.30

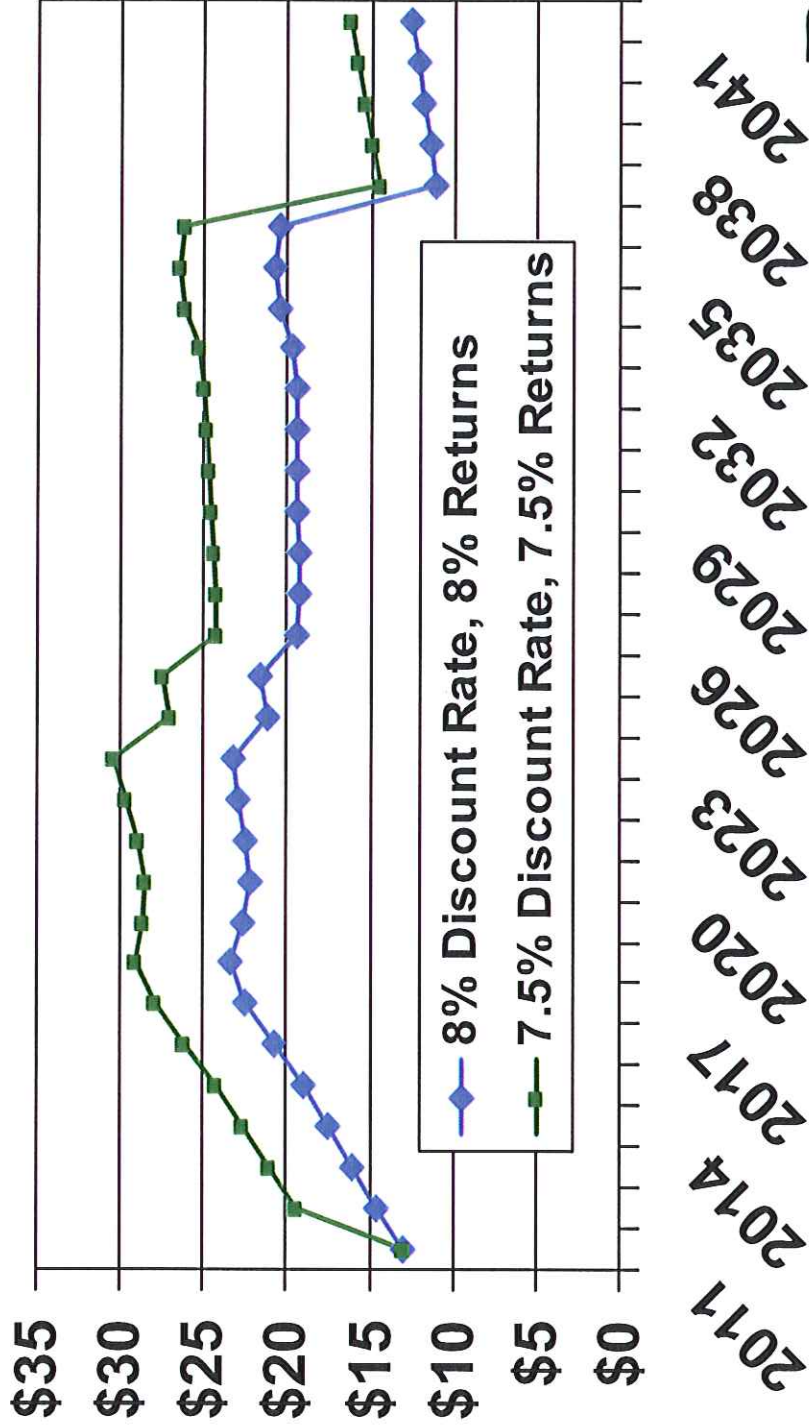
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Projected Contributions (\$millions)



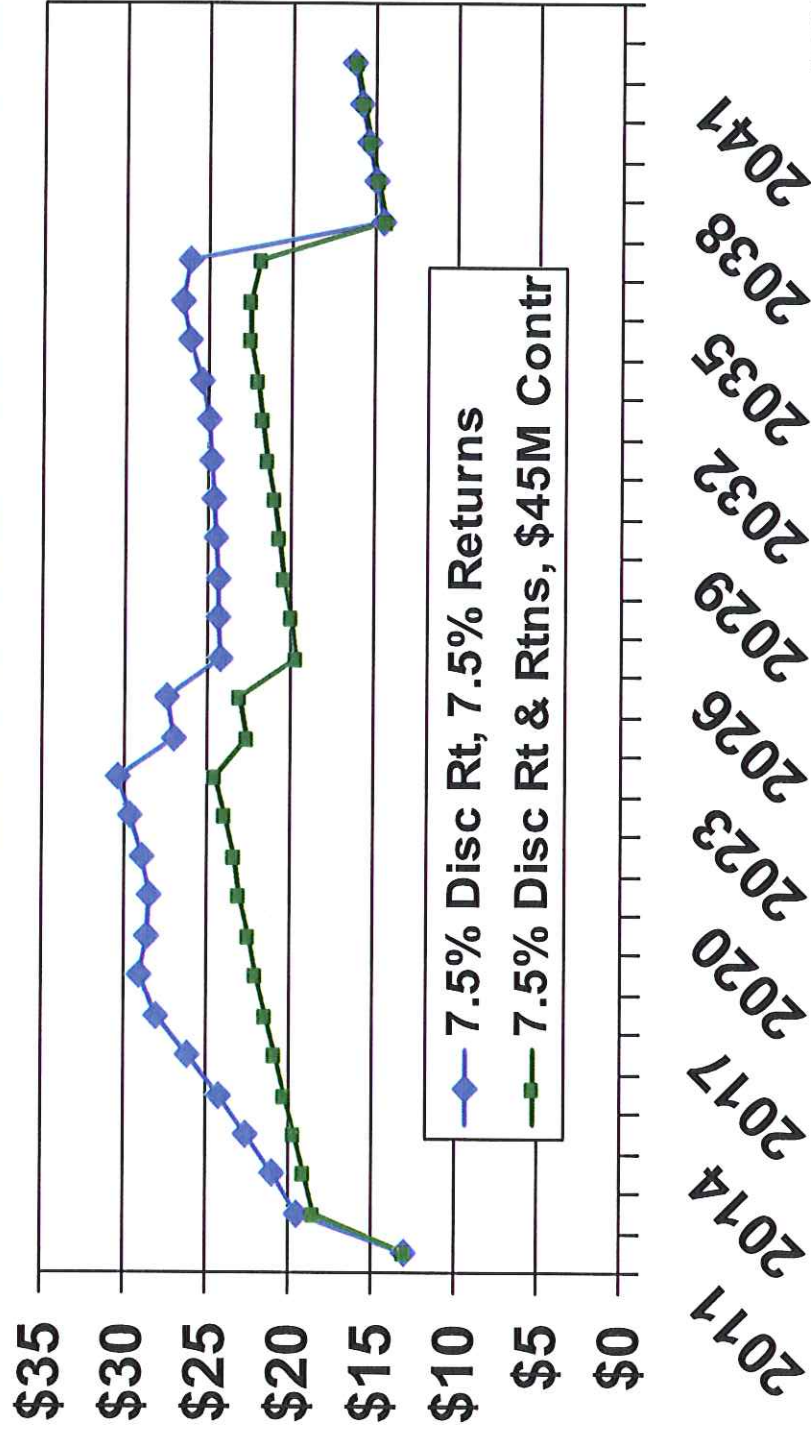
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Projected Contributions (\$millions)



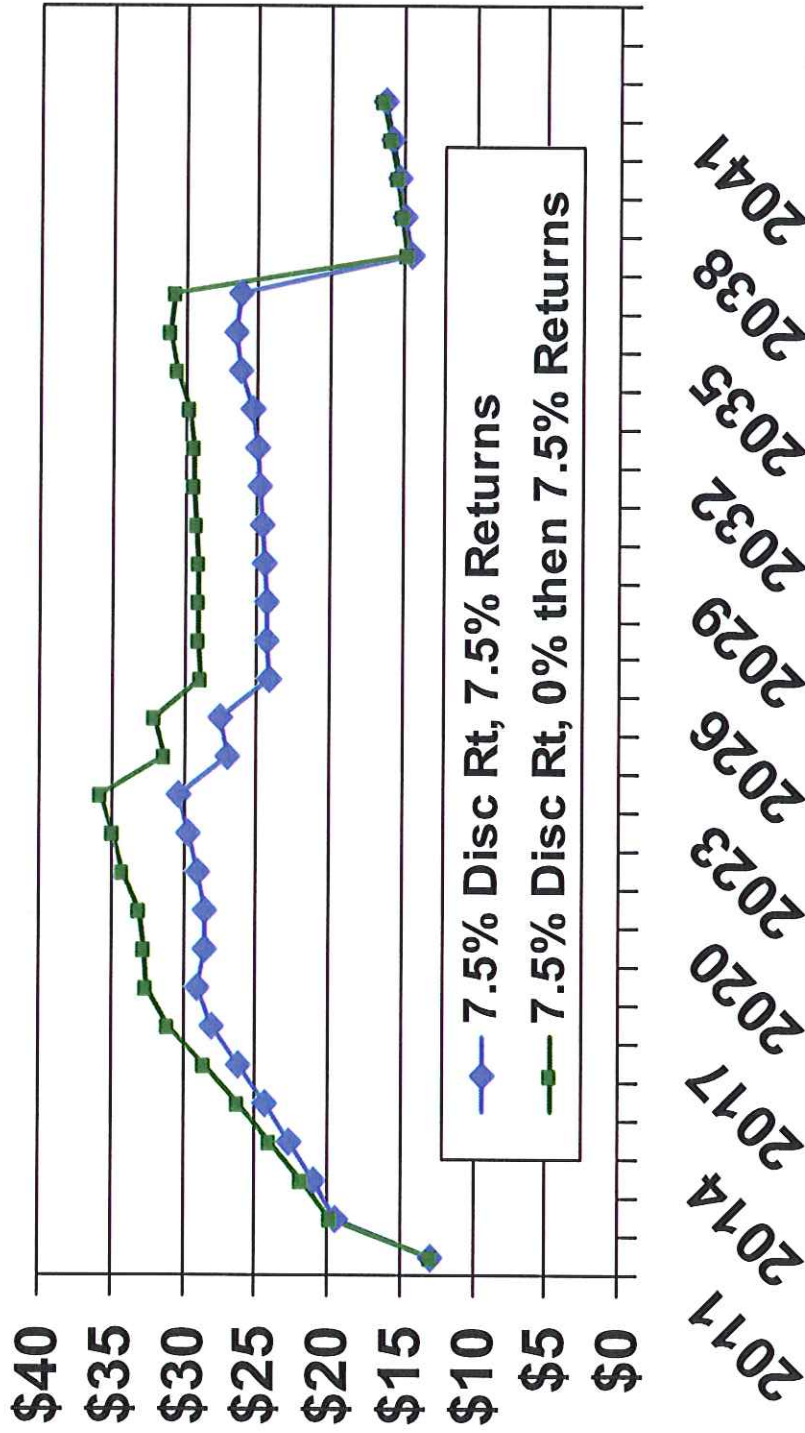
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Projected Contributions (\$millions)



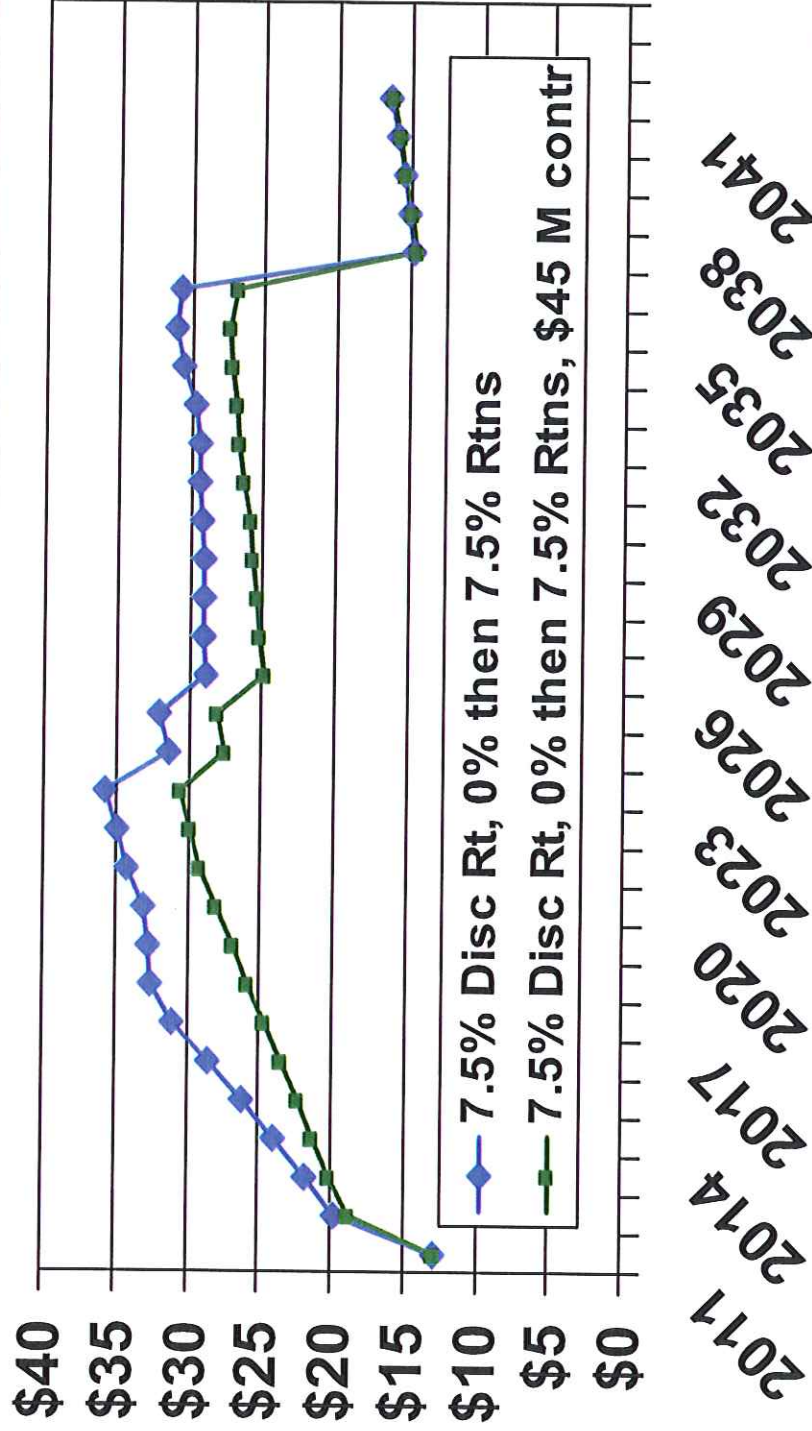
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Projected Contributions (\$millions)



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Projected Contributions (\$millions)



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Discussion/ Next Steps

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Actual future experience is unpredictable.

Future contribution rates will vary.

The numbers disclosed represent our best approximation of what future contributions may be.