

North Dakota Public Employees Retirement System Results of the July 1, 2010 Actuarial Valuation

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Purposes of the Actuarial Valuation

- Report the Plan's assets
- Estimate the Plan's liabilities
- Determine the recommended contribution for 2010 - 2011
- Provide information for annual financial statements
- Identify emerging trends

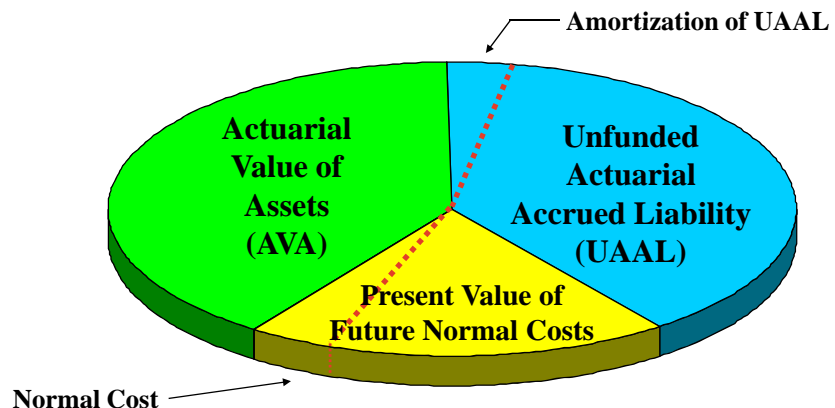
How is an Actuarial Valuation Performed?

The actuaries will:

- Gather data as of the valuation date
- Project a benefit for each member, for each possible benefit
- Apply assumptions about:
 - ❖ Economics (investment return, CPI, pay raises)
 - ❖ People (death, disablement, retirement, turnover)
- Apply assumptions to benefits to determine a total liability and assign liabilities to service
- Apply the funding policy to determine recommended contribution

Annual Recommended Contribution

Present Value of Future Benefits



What is the Current Funding Policy?

- Funding method – “entry age normal”
 - ❖ Allocates benefits earned to periods of employment
 - ❖ Normal cost = benefits earned in next year
 - ❖ Most stable contribution rate as a percent of payroll
- Amortization method – level percent of payroll
 - ❖ Most stable contribution rate as a percent of payroll
- Amortization period – 20-year open
 - ❖ Does this pay off unfunded actuarial accrued liability (UAAL)?

Each year’s recommended contribution is the Plan’s normal cost plus the amortization of the UAAL of the Plan.

Review of 2009-2010

- Significant drop in assets in 2008-2009, still being smoothed into the actuarial value of assets
- Market value return on assets of 13.25% (PERS Fund) was greater than the assumed rate
- Changes to contribution rates and funded ratios were dampened by asset smoothing methods, but the asset losses of 2008-2009 still had a significant effect
- Changes to assumptions approved by the Board as recommended in the Experience Study Analysis resulted in an increase in costs
- Analysis of Highway Patrol experience is ongoing

July 1, 2010 Valuation Results

➤ Recommended contribution

	2010-2011 Percent of Pay	2009-2010 Percent of Pay	Statutory/ Approved Percent of Pay
Main	10.76%	7.74%	4.12%
Judges	14.10%	10.48%	14.52%
National Guard	7.00%	3.71%	6.50%
Law Enforcement (with Prior Service)	10.80%	9.11%	8.31%
Law Enforcement (without Prior Service)	7.53%	6.83%	6.43%
Highway Patrol	22.54%	18.73%	16.70%
Retiree Health	0.89%	1.00%	1.14%
Job Service	0.00%	0.00%	0.00%

➤ Funded Ratio (AVA)

	July 1, 2010	July 1, 2009
PERS	73.4%	85.1%
HPRS	79.8%	87.2%
Retiree Health	47.4%	43.9%
Job Service	103.5%	103.4%

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July 1, 2010 Valuation Results

- Market value of combined assets for PERS and HPRS was \$1.519 billion vs. \$1.361 billion last year
- Combined actuarial value of assets for PERS and HPRS was \$1.671 billion vs. \$1.667 billion last year
- Total actuarial value of assets is 110.0% of market value of assets
- Significant unrecognized losses will be recognized in subsequent valuations and will result in increases in recommended contributions, unless offset by future gains

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Active Membership - PERS

	Number of Actives	Average Age	Average Service	Total Payroll	Average Payroll
Main	20,372 (+3%)	47.2 (+0.2)	10.5 (+0.1)	\$751m (+10%)	\$36,868 (+6%)
Judges	47 (---)	58.1 (+1.1)	17.0 (+0.2)	\$5.69m (+5%)	\$120,962 (+5%)
National Guard	30 (-17%)	35.1 (+0.7)	4.8 (+1.2)	\$1.26m (-6%)	\$41,990 (+13%)
Law Enforcement (with Prior Service)	187 (+30%)	40.7 (-0.5)	8.8 (+0.1)	\$10.6m (+86%)	\$56,469 (+43%)
Law Enforcement (without Prior Service)	32 (+7%)	36.4 (+1.2)	2.9 (+0.4)	\$1.14m (+20%)	\$35,572 (+12%)
Total	20,668 (+4%)	47.2 (+0.2)	10.4 (---)	\$770m (+10%)	\$37,242 (+6%)

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Inactive Membership - PERS

	Number of Pensions in Force	Average Age	Total Monthly Benefits	Average Monthly Benefits
Main	6,627	72.2	\$6,001,211	\$906
Judges	22	73.9	\$82,022	\$3,728
National Guard	8	64.9	\$9,716	\$1,215
Law Enforcement (with Prior Service)	24	60.3	\$35,360	\$1,473
Law Enforcement (w/o Prior Service)	0	N/A	N/A	N/A
Total	6,681	72.1	\$6,128,309	\$917

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Financial Information - PERS

- Market value of assets increased from \$1.320 billion to \$1.474 billion
- Actuarial value of assets increased from \$1.617 billion to \$1.621 billion
- Ratio of actuarial value to market value is 110.0%
(a \$147 million deferred loss)
- Approximate returns:
 - ❖ Market Value: 13.3% (ten-year average: 3.1%)
 - ❖ Actuarial Value: 1.5% (ten-year average: 5.7%)
- Benefits and administrative expenses:
\$82,252,475 in 2009-2010
- Contributions: \$62,838,002 in 2009-2010

Asset Smoothing Method (PERS and HPRS)

Market Value of assets as of June 30, 2010		\$1,519,023,138
	Original Amount	Unrecognized Amount
Year ended June 30, 2010	\$153,004,660	\$122,403,728
Year ended June 30, 2009	(463,523,678)	(278,114,207)
Year ended June 30, 2008	(133,303,450)	(53,321,380)
Year ended June 30, 2007	285,031,438	57,006,288
Year ended June 30, 2006	152,103,565	0
Total unrecognized return		(\$152,025,571)
Actuarial value of assets		\$1,671,048,709
Actuarial value as a percentage of market value		110.0%

Actuarial Value of Assets is allocated over all of the groups based upon this calculation

Conclusions: Significant unrecognized losses remain and will be reflected in future valuations, unless offset by future gains.

Valuation Results - Main

	July 1, 2010	July 1, 2009		
Actuarial accrued liability	\$2,156,560,553	\$1,861,032,305		
Actuarial value of assets	1,576,794,397	1,577,552,012		
Unfunded actuarial accrued liability	579,766,156	283,480,293		
Recommended Contribution				
	2010 - 2011	2009 - 2010		
	Amount	% of Payroll	Amount	% of Payroll
Normal cost net of contributions	\$39,231,499	5.22%	\$32,462,319	4.75%
Expenses	1,100,000	0.15%	710,000	0.10%
20-Year UAL payment/(credit)	40,462,036	5.39%	19,784,166	2.89%
Actuarial recommended contribution	\$80,793,535	10.76%	\$52,956,485	7.74%
Projected payroll	\$751,067,149		\$684,333,238	
Statutory contribution rate		4.12%		4.12%
Contribution margin/(deficit)		(6.64%)		(3.62%)

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Valuation Results - Judges

	July 1, 2010	July 1, 2009		
Actuarial accrued liability	\$29,409,638	\$26,345,343		
Actuarial value of assets	29,587,439	29,218,689		
Unfunded actuarial accrued liability	(177,801)	(2,873,346)		
Recommended Contribution				
	2010 - 2011	2009 - 2010		
	Amount	% of Payroll	Amount	% of Payroll
Normal cost net of contributions	\$806,888	14.19%	\$773,568	14.22%
Expenses	7,500	0.13%	5,000	0.09%
20-Year UAAL payment/(credit)	(12,915)	(0.22%)	(208,710)	(3.83%)
Actuarial recommended contribution	\$801,473	14.10%	\$569,858	10.48%
Projected payroll	\$5,685,227		\$5,439,847	
Statutory contribution rate		14.52%		14.52%
Contribution margin/(deficit)		0.42%		4.04%

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Valuation Results – National Guard

	July 1, 2010	July 1, 2009		
Actuarial accrued liability	\$2,277,471	\$1,847,643		
Actuarial value of assets	2,090,625	2,073,688		
Unfunded actuarial accrued liability	186,846	(226,045)		
Recommended Contribution				
	2010 - 2011	2009 - 2010		
	Amount	% of Payroll	Amount	% of Payroll
Normal cost net of contributions	\$72,099	5.72%	\$64,226	4.81%
Expenses	3,000	0.24%	1,115	0.08%
20-Year UAAL payment/(credit)	13,040	1.04%	(15,776)	(1.18%)
Actuarial recommended contribution	\$88,139	7.00%	\$49,565	3.71%
Projected payroll	\$1,259,707		\$1,336,097	
Approved contribution rate		6.50%		6.50%
Contribution margin/(deficit)		(0.50%)		2.79%

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Valuation Results – Law Enforcement with Prior Main Service

	July 1, 2010	July 1, 2009		
Actuarial accrued liability	\$19,671,308	\$11,537,085		
Actuarial value of assets	12,911,814	8,032,215		
Unfunded actuarial accrued liability	6,759,494	3,504,870		
Recommended Contribution				
	2010 - 2011		2009 - 2010	
	Amount	% of Payroll	Amount	% of Payroll
Normal cost net of contributions	\$666,678	6.31%	\$269,203	4.74%
Expenses	2,500	0.02%	3,253	0.06%
20-Year UAAL payment/(credit)	471,747	4.47%	244,606	4.31%
Actuarial recommended contribution	\$1,140,925	10.80%	\$517,062	9.11%
Projected payroll	\$10,559,725		\$5,677,624	
Approved contribution rate		8.31%		8.31%
Contribution margin/(deficit)		(2.49%)		(0.80%)

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Valuation Results – Law Enforcement without Prior Main Service

	July 1, 2010		July 1, 2009	
Actuarial accrued liability	\$467,150		\$438,380	
Actuarial value of assets	338,824		271,197	
Unfunded actuarial accrued liability	128,326		167,183	
Recommended Contribution				
	2010 - 2011		2009 - 2010	
	Amount	% of Payroll	Amount	% of Payroll
Normal cost net of contributions	\$69,312	6.09%	\$52,596	5.53%
Expenses	7,500	0.66%	632	0.07%
20-Year UAAL payment/(credit)	8,956	0.78%	11,668	1.23%
Actuarial recommended contribution	\$85,768	7.53%	\$64,896	6.83%
Projected payroll	\$1,138,300		\$949,790	
Approved contribution rate		6.43%		6.43%
Contribution margin/(deficit)		(1.10%)		(0.40%)

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Funded Ratio History - Main

Year	Actuarial Accrued Liability (millions)	Actuarial Value of Assets (millions)	Funded Ratio
2001	\$994	\$1,096	110%
2002	1,087	1,130	104%
2003	1,170	1,145	98%
2004	1,251	1,172	94%
2005	1,333	1,210	91%
2006	1,450	1,286	89%
2007	1,576	1,470	93%
2008	1,700	1,571	92%
2009	1,861	1,578	85%
2010	2,157	1,577	73%

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Funded Ratio History - Judges

Year	Actuarial Accrued Liability (millions)	Actuarial Value of Assets (millions)	Funded Ratio
2001	\$13.9	\$17.9	130%
2002	15.5	19.0	122%
2003	17.3	19.8	115%
2004	18.4	20.8	113%
2005	19.8	21.7	109%
2006	21.7	23.3	108%
2007	23.1	26.8	116%
2008	24.7	28.8	117%
2009	26.3	29.2	111%
2010	29.4	29.6	101%

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Funded Ratio History – National Guard

Year	Actuarial Accrued Liability (millions)	Actuarial Value of Assets (millions)	Funded Ratio
2001	\$1.02	\$1.27	125%
2002	0.94	1.31	139%
2003	1.05	1.32	126%
2004	1.15	1.38	120%
2005	1.36	1.46	108%
2006	1.56	1.58	101%
2007	1.73	1.89	109%
2008	1.80	2.05	114%
2009	1.85	2.07	112%
2009	2.28	2.09	92%

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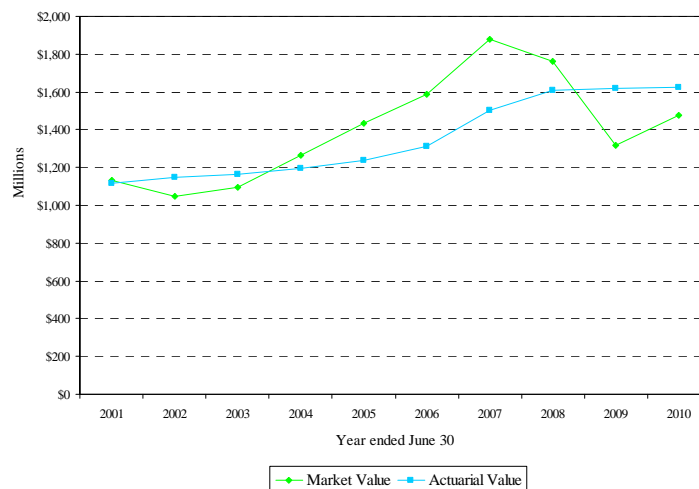
Funded Ratio History – Law Enforcement

WITH PRIOR SERVICE			
Year	Actuarial Accrued Liability (millions)	Actuarial Value of Assets (millions)	Funded Ratio
2005	\$6.40	\$2.62	41%
2006	7.00	3.12	45%
2007	9.28	3.97	43%
2008	10.56	7.59	72%
2009	11.54	8.03	70%
2010	19.67	12.91	66%
WITHOUT PRIOR SERVICE			
Year	Actuarial Accrued Liability	Actuarial Value of Assets	Funded Ratio
2005	\$87,000	\$42,000	48%
2006	123,000	73,000	59%
2007	367,000	127,000	35%
2008	368,000	175,000	48%
2009	438,000	271,000	62%
2010	467,000	339,000	73%

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Funded Ratio History – PERS

Chart 1
Value of Assets for PERS



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Membership – Highway Patrol

	2010	2009	Change
Number of actives	139	133	+ 4.5%
Average age	36.9	37.0	- 0.1
Average service	10.4	10.6	- 0.2
Total payroll	\$7,737,624	\$7,009,297	+ 10.4%
Average payroll	\$55,666	\$52,701	+ 5.6%
Number of pensioners and beneficiaries	113	109*	+ 3.7%
Average age	66.4	65.9	+ 0.5
Total annual benefits	\$3,502,382	\$3,324,423	+ 5.4%
Average monthly benefit	\$2,583	\$2,542	+ 1.6%

* Excludes 1 suspended retiree

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Financial Information – Highway Patrol

- Market value of assets increased from \$41.0 million to \$44.8 million
- Actuarial value of assets decreased from \$50.2 million to \$49.3 million
- Ratio of actuarial value to market value is 110% (a \$4.5 million deferred loss)
- Approximate returns:
 - ❖ Market Value: 13.3% (ten-year average: 3.1%)
 - ❖ Actuarial Value: 1.2% (ten-year average: 5.8%)
- Benefits and administrative expenses: \$3,420,306 in 2009 - 2010
- Contributions: \$1,937,833 in 2009 - 2010

Valuation Results – Highway Patrol

	July 1, 2010	July 1, 2009		
Actuarial accrued liability	\$61,782,124	\$57,555,716		
Actuarial value of assets	49,325,610	50,197,136		
Unfunded actuarial accrued liability	12,456,514	7,358,580		
Recommended Contribution				
	2010 - 2011	2009 - 2010		
	Amount	% of Payroll	Amount	% of Payroll
Normal cost net of contributions	\$858,927	11.10%	\$783,034	11.17%
Expenses	\$16,000	0.21%	\$16,000	0.23%
20-Year UAAL payment/(credit)	\$869,343	11.23%	\$513,557	7.33%
Actuarial recommended contribution	\$1,744,270	22.54%	\$1,312,591	18.73%
Projected payroll	\$7,737,624		\$7,009,297	
Statutory contribution rate		16.70%		16.70%
Contribution margin/(deficit)		(5.84%)		(2.03)%

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Funded Ratio History – Highway Patrol

Year	Actuarial Accrued Liability (millions)	Actuarial Value of Assets (millions)	Funded Ratio
2001	\$38.1	\$38.8	102%
2002	40.5	39.5	97%
2003	42.4	39.6	93%
2004	44.5	40.0	90%
2005	46.3	40.7	88%
2006	49.1	42.8	87%
2007	51.5	48.2	94%
2008	54.6	50.8	93%
2009	57.6	50.2	87%
2010	61.8	49.3	80%

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Membership – Retiree Health Insurance Credit Fund

	2010	2009	Change
Number of actives	21,047	20,317	+ 3.6%
Average age	47.1	46.9	+ 0.2
Average service	10.4	10.4	---
Total payroll	\$793,633,973	\$719,811,815	+ 10.3%
Average payroll	\$37,708	\$35,429	+ 6.4%
Number of pensioners and beneficiaries	4,105	4,030	+ 1.9%
Average age	73.3	73.0	+ 0.3
Total annual benefits	\$5,664,900	\$5,464,680	+ 3.7%
Average monthly benefit	\$115	\$113	+ 1.8%

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Financial Information – Retiree Health Insurance Credit Fund

- Market value of assets increased from \$36.1 million to \$45.8 million
- Actuarial value of assets increased from \$44.8 million to \$48.7 million
- Ratio of actuarial value to market value is 106.4% (a \$2.9 million deferred loss)
- Approximate returns:
 - ❖ Market Value: 17.7% (ten-year average: 1.8%)
 - ❖ Actuarial Value: 2.0% (ten-year average: 4.1%)
- Benefits and administrative expenses: \$12,332,936 in 2009 - 2010
- Contributions: \$15,304,255 in 2009 - 2010

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Valuation Results – Retiree Health Insurance Credit Fund

	July 1, 2010	July 1, 2009		
Actuarial accrued liability	\$102,805,439	\$102,191,552		
Actuarial value of assets	\$48,723,475	\$44,829,007		
Unfunded actuarial accrued liability	\$54,081,964	\$57,362,545		
Recommended Contribution				
	2010 - 2011	2009 - 2010		
	Amount	% of Payroll	Amount	% of Payroll
Normal cost	\$3,181,820	0.40%	\$3,265,124	0.45%
Expenses	\$97,000	0.01%	\$65,000	0.01%
UAAL payment*	\$3,774,395	0.48%	\$3,868,909	0.54%
Actuarial recommended contribution	\$7,053,215	0.89%	\$7,199,033	1.00%
Projected payroll	\$793,633,973		\$719,811,815	
Statutory contribution rate		1.14%		1.14%
Contribution margin/(deficit)		0.25%		0.14%

*Closed amortization ending July 1, 2030

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Funded Ratio History – Retiree Health Insurance Credit Fund

Year	Actuarial Accrued Liability (millions)	Actuarial Value of Assets (millions)	Funded Ratio
2001	\$65.5	\$24.8	38%
2002	69.0	26.4	38%
2003	72.0	27.5	38%
2004	74.6	28.9	39%
2005	78.1	30.9	40%
2006	82.6	34.0	41%
2007	85.3	38.9	46%
2008	87.6	42.5	49%
2009	102.2	44.8	44%
2010	102.8	48.7	47%

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Membership – Job Service

	2010	2009	Change
Number of actives	31	35	- 11.4%
Average age	58.0	57.3	+ 0.7
Average service	34.1	33.4	+ 0.7
Total projected compensation	\$1,611,216	\$1,709,424	- 5.7%
Average payroll	\$51,975	\$48,841	+ 6.4%
Number of pensioners and beneficiaries*	122	120	+ 1.7%
Average age	?	?	?
Total annual benefits*	\$3,245,084	\$3,176,263	+ 2.2%
Average monthly benefit*	\$2,217	\$2,206	+ 0.5%

* Not including annuities paid by Travelers

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Financial Information – Job Service

- Market value of assets increased from \$72.2 million to \$77.7 million
- Actuarial value of assets decreased from \$74.5 million to \$73.5 million
- Ratio of actuarial value to market value is 95% (a \$4.2 million deferred gain)
- Approximate returns:
 - ❖ Market Value: 13.2% (nine-year average: 4.8%)
 - ❖ Actuarial Value: 3.8% (nine-year average: 4.5%)
- Benefits and administrative expenses:
 - \$3,916,314 in 2009 - 2010
- Contributions: \$114,626 in 2009 - 2010

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Valuation Results – Job Service

	July 1, 2010	July 1, 2009
Actuarial present value of benefits	\$70,986,876	\$72,043,372
Actuarial value of assets	\$73,458,863	\$74,472,806
Unfunded present value of benefits	\$0	\$0

If the actuarial present value of benefits is greater than the actuarial value of assets, a required contribution would be triggered under the current funding method.

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Funded Ratio History – Job Service

Year	Actuarial Present Value of Benefits (millions)	Actuarial Value of Assets (millions)	Funded Ratio
2001	\$58.7	\$70.8	121%
2002	59.9	67.6	113%
2003	60.7	66.0	109%
2004	61.8	67.5	109%
2005	63.3	69.3	109%
2006	70.0	70.6	101%
2007	71.7	75.7	106%
2008	71.8	77.0	107%
2009	72.0	74.5	103%
2010	71.0	73.5	103%

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Conclusions

- Recommendations from experience study resulted in increases in costs for most groups.
- Significant asset losses will be recognized over the next five years, potentially leading to increased contribution requirements

Recommended contribution

	2010-2011 (AVA) Percent of Pay	2010-2011 (MVA) Percent of Pay
Main	10.76%	12.09%
Judges	14.10%	17.54%
National Guard	7.00%	8.05%
Law Enforcement (with Prior Service)	10.80%	11.58%
Law Enforcement (without Prior Service)	7.53%	7.72%
Highway Patrol	22.54%	26.59%
Retiree Health	0.89%	0.91%
Job Service	0.00%	0.00%

Conclusions

- Potential risks to the system:
 - Continued aging of population
 - Unforeseen demographic “shocks”
 - Change in asset return environment
- Board should consider projections, studies, etc., to help quantify these risks, and make changes to the system, if appropriate
- The asset valuation and amortization methods should be reviewed to make sure that they are in line with the Board’s funding objectives