North Dakota Public Employees Retirement System

Experience Review: Follow-Up Information

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Overview: Impact of Recent Bills on Experience Study Results

This report summarizes our proposed assumptions based on the experience study and plan costs reflecting the new legislative bills.

Legislative bills SB2015 and HB1062 were passed changing the retirement eligibility requirements for Main System employees. For employees enrolled after December 31, 2015,

- Attainment of age 65, or age plus service equal to at least 90 (Rule of 90) with for ages 60 or later is required to meet Normal Service Retirement Eligibility.
- The early retirement benefit is equal to the Normal Service Retirement benefit reduced by 8% per year before the earliest of 65 or the age at which Rule of 90 is met.
- DC participants may elect to transfer back into the DB plan within a 3-month period upon payment of the entire account balance back into the DB plan.

Changes to final average compensation definitions, service requirements for retirement from the National Guard System, and USERRA changes were also made.

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Cost Impact on Main System Based on the July 1, 2014 Actuarial Valuation

Description	Current Assumptions	All Proposed Assumptions	All Proposed Assumptions Except Investment Return	All Proposed Assumptions Except for Payroll Growth
Actuarial Accrued Liability	$2,866.5M	$2,848.8M	$2,769.4M	$2,848.8M
Actuarial Value of Assets	$1,837.9M	$1,837.9M	$1,837.9M	$1,837.9M
Unfunded Actuarial Accrued Liability	$1,028.6M	$1,010.9M	$931.5M	$1,010.9M
Funded Percentage	64.1%	64.5%	66.4%	64.5%
Total Normal Cost including Expenses	$99.1M	$123.9M	$119.4M	$119.4M
Actuarially Determined Employer Contribution Rate	11.06%	13.43%	12.51%	13.13%
Employer Statutory Rate	7.12%	7.12%	7.12%	7.12%
Margin / (Deficit)	(3.94)%	(6.31)%	(5.39)%	(6.01)%
Effective Amortization Period	Infinite	Infinite	Infinite	Infinite

Governmental Accounting Standards Board (GASB) Statement No. 67 - Main System

Basis for Main System	Current Plan and Assumptions	All Proposed Assumptions	All Proposed Assumptions Except for Investment Return
1. Total pension liability	$2,846,579,777	$2,848,771,678	$2,769,388,164
2. Plan fiduciary net position	2,211,858,402	2,211,858,402	2,211,858,402
3. Net pension liability/(asset)	634,721,375	636,913,276	557,477,682
4. Plan fiduciary net position as a percentage of the total pension liability	77.70%	77.64%	79.87%
5. Discount Rate	8.00%	7.75%	8.00%

- Based upon calculations required by Statement 67 paragraphs 40-45, the Plan's Fiduciary Net Position is projected to be sufficient to make projected benefit payments. Therefore, the discount rate used to determine the TPL and NPL was determined to be the same as the Plan's long-term expected rate of return on investments, 8.00% or 7.75%, as applicable.

Note: The payroll growth assumption does not affect the calculation of the TPL and NPL for the Main System.

Governmental Accounting Standards Board (GASB) Statement No. 67 - Main Systems

Basis for Main Systems	Current Plan and Assumptions	All Proposed Assumptions Except for Investment Return	All Proposed Assumptions
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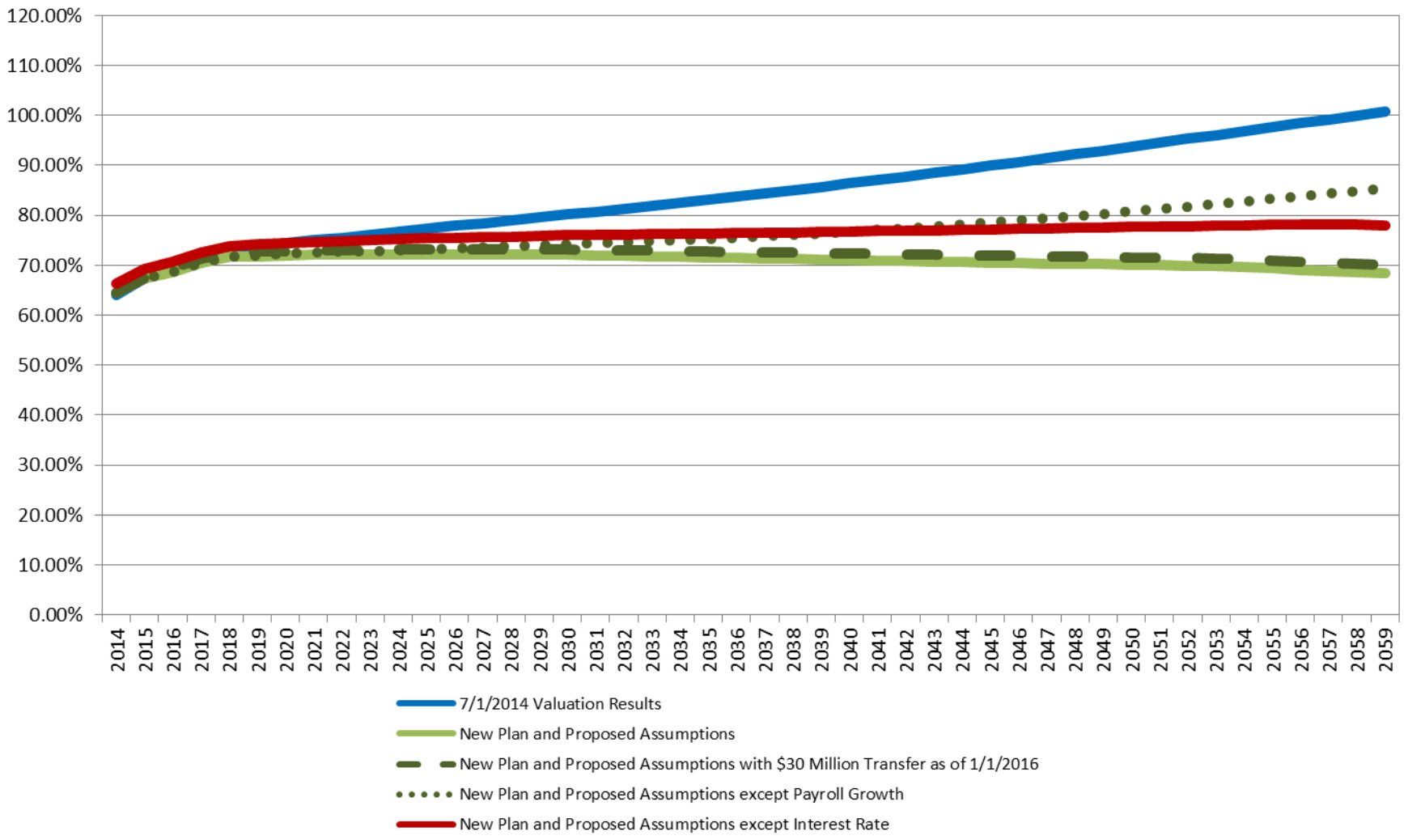
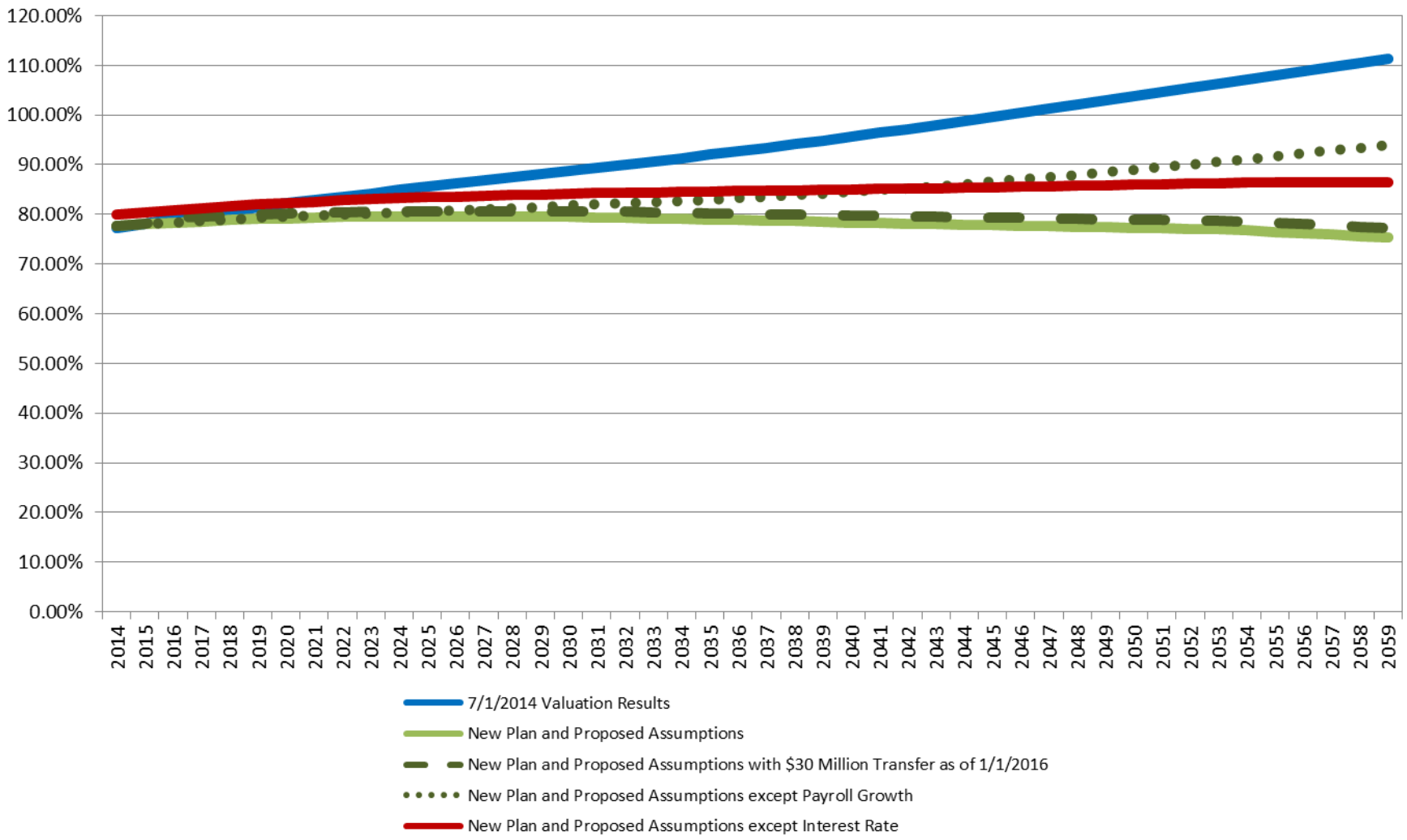
Cost Impact Projections – Main System

- Projections of estimated funded ratios for 45 years
  - Baseline based on July 1, 2014 actuarial valuation results using current assumptions
- Includes the current contribution rates as follows:
  - Member rate is 7.00% for fiscal years ending June 30, 2015 and thereafter
  - Employer rate is 7.12% for fiscal years ending June 30, 2015 and thereafter
- Includes the legislative plan changes adopted in legislative bills SB2015 and HB1062 as “New Plan”.
- Both the funded ratios under the actuarial value of assets (AVA) and market value of assets (MVA) are shown for:
  - New Plan and Proposed Assumptions
  - New Plan and Proposed Assumptions except Payroll Growth
  - New Plan and Proposed Assumptions with $30 Million Transfer as of 1/1/2016
  - New Plan and Proposed Assumptions except Interest Rate

Projected Funded Ratios (AVA Basis) – Main System



Projected Funded Ratios (MVA Basis) – Main System



Summary of Assumptions

- The following exhibits summarize the economic and demographic assumptions for each system. The descriptions have been shortened for ease of reference. Full details of the assumptions are available in the Experience Review: July 2009 – June 2014 Presentation dated May 21, 2015.

- Projections, by their nature, are not a guarantee of future results. The modeling projections are intended to serve as illustrations of future financial outcomes that are based on the information available to us at the time the modeling is undertaken and completed, and the assumptions and methodologies described herein. Emerging results may differ significantly if the actual experience proves to be different from these assumptions or if alternative methodologies are used. Actual experience may differ due to such variables as demographic experience, the economy, stock market performance and the regulatory environment.

The projections were made using generally accepted actuarial practices and are based on the July 1, 2014 Actuarial Valuation. Calculations were completed under the supervision of Tammy F. Dixon, FSA, MAAA, Enrolled Actuary.

Summary of Assumptions – Main System

Assumption	Current	Proposed
Inflation/Productivity	3.50%/1.00% (4.50% Payroll Growth)	2.75%/1.25% (4.00% Payroll Growth)
Salary Scale	Based on age/service	Based on age/service, split by State/Non-State
Investment Return	8.00%	7.75%
Administrative Expenses	$1,100,000	Load based on prior year
Termination	Based on age/service	No change
Disability	Gender-distinct rates based on age	Lower rates at all ages
Active Retirements	Based on age/eligibility for unreduced benefits	Adjusted rates at some ages
Inactive Retirements	Earlier of age 64 and unreduced retirement	Same as active rates
Active/Inactive Healthy Mortality Table	RP-2000 Combined Healthy, with setback	RP-2000 Combined Healthy, with setback, projected generationally using SSA 2014 Intermediate Cost scale from 2014
Disabled Mortality	RP-2000 Disabled Mortality Table set back one year for males (no setback for females)	RP-2000 Disabled Mortality Table set back one year for males (no setback for females) multiplied by 125%
Spouse Information	80% of males and 65% of females married, male spouses are three years older	75% are married. No other changes.
Benefit election	Married elect 50% joint & survivor, non-married elect life annuity	50% elect life annuity, 45% elect 50% joint & survivor, 5% elect refund of contributions
Refund of Contributions	Only if account balance is higher than value of annuity	No Change
Account balance due to vested Employer Contributions (PEP)	Those contributing continue to contribute. Those who haven't contributed will not contribute in the future.	No Change

Summary of Assumptions – Judges

Assumption	Current	Proposed
Inflation/Productivity	3.50%/0.50% (4.00% Payroll Growth)	2.75%/0.75% (3.50% Payroll Growth)
Salary Scale	5% for all years	4% for all years
Investment Return	8.00%	7.75%
Administrative Expenses	$7,500	Load based on prior year
Termination	Rates based on age	Eliminate rates
Disability	Gender-distinct rates based on age	Lower rates at all ages
Active Retirements	Rates based on age	Adjusted rates based on age
Inactive Retirements	Earlier of age 64 and unreduced retirement	Same as active rates
Active/Inactive Healthy Mortality Table	RP-2000 Combined Healthy, with setback	RP-2000 Combined Healthy, with setback, projected generationally using SSA 2014 Intermediate Cost scale from 2014
Disabled Mortality	RP-2000 Disabled Mortality Table set back one year for males (no setback for females)	RP-2000 Disabled Mortality Table set back one year for males (no setback for females) multiplied by 125%
Spouse Information	100% of all participants are married, male spouses are three years older than female spouses	No changes
Benefit election	Married elect 50% joint & survivor, non-married elect life annuity	All elect 50% joint & survivor
Refund of Contributions	Only if account balance is higher than value of annuity	No Change

Summary of Assumptions – National Guard

Assumption	Current	Proposed
Inflation/Productivity	3.50%/1.00% (4.50% Payroll Growth)	2.75%/1.25% (4.00% Payroll Growth)
Salary Scale	Based on age/service	Based on age/service, adjusted for recent experience
Investment Return	8.00%	7.75%
Administrative Expenses	$3,000	Load based on prior year
Termination	Based on age/service	No change
Disability	Gender-distinct rates based on age	Lower rates at all ages
Active Retirements	Rates based on age	Adjusted rates based on age
Inactive Retirements	Age 55	Same as active rates
Active/Inactive Healthy Mortality Table	RP-2000 Combined Healthy, with setback	RP-2000 Combined Healthy, with setback, projected generationally using SSA 2014 Intermediate Cost scale from 2014
Disabled Mortality	RP-2000 Disabled Mortality Table set back one year for males (no setback for females)	RP-2000 Disabled Mortality Table set back one year for males (no setback for females) multiplied by 125%
Spouse Information	80% of males and 65% of females married, male spouses are three years older	75% are married. No other changes.
Benefit election	Married elect 50% joint & survivor, non-married elect life annuity	50% elect life annuity, 45% elect 50% joint & survivor, 5% elect refund of contributions
Refund of Contributions	Only if account balance is higher than value of annuity	No Change
Account balance due to vested Employer Contributions (PEP)	Those contributing continue to contribute. Those who haven't contributed will not contribute in the future.	No Change

Summary of Assumptions – Law Enforcement with Prior Service

Assumption	Current	Proposed
Inflation/Productivity	3.50%/1.00% (4.50% Payroll Growth)	2.75%/1.25% (4.00% Payroll Growth)
Salary Scale	Based on age/service	Based on age/service, adjusted for recent experience
Investment Return	8.00%	7.75%
Administrative Expenses	$2,500	Load based on prior year
Termination	Based on age/service	No change
Disability	Gender-distinct rates based on age	Lower rates at all ages
Active Retirements	Rates based on age	Adjusted rates based on age
Inactive Retirements	Earlier of age 55 and unreduced retirement	Same as active rates
Active/Inactive Healthy Mortality Table	RP-2000 Combined Healthy, with setback	RP-2000 Combined Healthy, with setback, projected generationally using SSA 2014 Intermediate Cost scale from 2014
Disabled Mortality	RP-2000 Disabled Mortality Table set back one year for males (no setback for females)	RP-2000 Disabled Mortality Table set back one year for males (no setback for females) multiplied by 125%
Spouse Information	80% of males and 65% of females married, male spouses are three years older	75% are married. No other changes.
Benefit election	Married elect 50% joint & survivor, non-married elect life annuity	50% elect life annuity, 45% elect 50% joint & survivor, 5% elect refund of contributions
Refund of Contributions	Only if account balance is higher than value of annuity	No Change
Account balance due to vested Employer Contributions (PEP)	Those contributing continue to contribute. Those who haven't contributed will not contribute in the future.	No Change

Summary of Assumptions – Law Enforcement without Prior Service

Assumption	Current	Proposed
Inflation/Productivity	3.50%/1.00% (4.50% Payroll Growth)	2.75%/1.25% (4.00% Payroll Growth)
Salary Scale	Based on age/service	Based on age/service, adjusted for recent experience
Investment Return	8.00%	7.75%
Administrative Expenses	$7,500	Load based on prior year
Termination	Rates based on age/service	No change
Disability	Gender-distinct rates based on age	Lower rates at all ages
Active Retirements	Rates based on age	Adjusted rates based on age
Inactive Retirements	Earlier of age 55 and unreduced retirement	Same as active rates
Active/Inactive Healthy Mortality Table	RP-2000 Combined Healthy, with setback	RP-2000 Combined Healthy, with setback, projected generationally using SSA 2014 Intermediate Cost scale from 2014
Disabled Mortality	RP-2000 Disabled Mortality Table set back one year for males (no setback for females)	RP-2000 Disabled Mortality Table set back one year for males (no setback for females) multiplied by 125%
Spouse Information	80% of males and 65% of females married, male spouses are three years older	75% are married. No other changes.
Benefit election	Married elect 50% joint & survivor, non-married elect life annuity	50% elect life annuity, 45% elect 50% joint & survivor, 5% elect refund of contributions
Refund of Contributions	Only if account balance is higher than value of annuity	No Change
Account balance due to vested Employer Contributions (PEP)	Those contributing continue to contribute. Those who haven't contributed will not contribute in the future.	No Change

Summary of Assumptions – Highway Patrolmen

Assumption	Current	Proposed
Inflation/Productivity	3.50%/1.00% (4.50% Payroll Growth)	2.75%/1.25% (4.00% Payroll Growth)
Salary Scale	Based on age/service	Based on age/service, adjusted for recent experience
Investment Return	8.00%	7.75%
Administrative Expenses	$18,000	Load based on prior year
Termination	Based on age/service	No change
Disability	Rates based on age	Lower rates at all ages
Active Retirements	Based on age/eligibility for unreduced benefits	Adjusted rates at some ages
Inactive Retirements	Age 55	Same as active rates
Active/Inactive Healthy Mortality Table	RP-2000 Combined Healthy, with setback	RP-2000 Combined Healthy, with setback, projected generationally using SSA 2014 Intermediate Cost scale from 2014
Disabled Mortality	RP-2000 Disabled Mortality Table set back one year for males (no setback for females)	RP-2000 Disabled Mortality Table set back one year for males (no setback for females) multiplied by 125%
Spouse Information	90% of non-retired members are married, male spouses are three years older than female spouses	100% are married. No other changes.
Benefit election	Married elect 50% joint & survivor, non-married elect life annuity	100% elect 50% joint & survivor
Indexing for benefits of inactive members	4.5% per annum	4.0% per annum
Refund of Contributions	Only if account balance is higher than value of annuity	No Change

Summary of Assumptions – Job Service

Assumption	Current	Proposed
Inflation/Productivity	3.50%/1.00%	2.75%/1.25%
Salary Scale	5.00%	3.50%
Investment Return	8.00%	7.75%
Administrative Expenses	Implicitly included in the investment return assumption	Load based on prior year
COLA	5.00%	3.00%
Termination	Rates based on age	Not applicable
Disability	Rates based on age	Lower rates at all ages
Active Retirements	75% retire when first eligible. The rest retire at Normal Retirement Age	Adjusted rates based on age
Inactive Retirements	100% at first optional retirement age	Same as active rates
Active/Inactive Healthy Mortality Table	1994 Group Annuity Mortality Table	RP-2000 Combined Healthy, with setback, projected generationally using SSA 2014 Intermediate Cost scale from 2014
Disabled Mortality	1983 Railroad Retirement Board Disabled Life Mortality Table	RP-2000 Disabled Mortality Table set back one year for males (no setback for females) multiplied by 125%
Spouse Information	85% of all non-retired are married, male spouses are four years older than female spouses	No change
Benefit election	All participants are assumed to elect the 10-year certain and life annuity	55% elect 10-year certain and life, 45% elect 55% joint & survivor