

**WYOMING RETIREMENT SYSTEM**

**LAW ENFORCEMENT OFFICERS**

**GASB STATEMENT NOS. 67 AND 68 ACCOUNTING AND  
FINANCIAL REPORTING FOR PENSIONS**

**FOR THE MEASUREMENT DATE OF DECEMBER 31, 2014**

July 27, 2015

The Board of Trustees  
Wyoming Retirement System

Dear Board Members:

This report provides information required by the Wyoming Retirement System (WRS) in connection with the Governmental Accounting Standards Board (GASB) Statement No. 67 "Financial Reporting for Pension Plans" and Statement No. 68 "Accounting and Financial Reporting for Pensions".

The actuarial calculations for this report were prepared for the purpose of complying with the requirements of GASB Statements No. 67 and 68. These calculations have been made on a basis that is consistent with our understanding of this Statement.

The calculation of the liability associated with the benefits described in this report was performed for the purpose of satisfying the requirements of GASB Statement No. 67 and GASB Statement No. 68. The calculation of the plan's liability for this report may not be applicable for funding purposes of the plan. A calculation of the plan's liability for purposes other than satisfying the requirements of GASB Statement No. 67 and No. 68 may produce significantly different results. This report may be provided to parties other than the Wyoming Retirement System ("WRS") only in its entirety and only with the permission of WRS.

This report is based upon information, furnished to us by WRS, concerning retirement and ancillary benefits, active members, deferred vested members, retirees and beneficiaries, and financial data. If your understanding of this information is different, please let us know. This information was checked for internal consistency, but it was not otherwise audited.

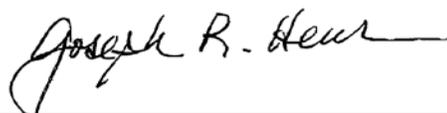
This report complements the actuarial valuation report that was provided to WRS and should be considered in conjunction with that report. Please see the actuarial valuation report as of January 1, 2014 for additional discussion of the nature of actuarial calculations and more information related to participant data.

To the best of our knowledge, the information contained with this report is accurate and fairly represents the actuarial position of the Wyoming Retirement System. All calculations have been made in conformity with generally accepted actuarial principles and practices as well as with the Actuarial Standards of Practice issued by the Actuarial Standards Board. Leslie L. Thompson is a member of the American Academy of Actuaries (MAAA) and meets the Qualification Standards of the American Academy of Actuaries to render the actuarial opinion contained herein. The signing actuaries are independent of the plan sponsor.

Respectfully submitted,

By 

Leslie L. Thompson  
FSA, FCA, EA, MAAA

By 

Joseph R. Herm

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**SECTION A**  
EXECUTIVE SUMMARY

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## EXECUTIVE SUMMARY

### AS OF DECEMBER 31, 2014

Actuarial Valuation Date	January 1, 2014
Measurement Date of the Net Pension Liability	December 31, 2014
Employer's Fiscal Year Ending Date (Reporting Date)	June 30, 2015

**Membership**

Number of	
- Retirees and Beneficiaries	917
- Inactive, Nonretired Members	912
- Active Members	2,808
- Total	4,637
Covered Payroll	\$ 147,790,833

**Net Pension Liability**

Total Pension Liability	\$ 562,530,978
Plan Fiduciary Net Position	533,067,313
Net Pension Liability	\$ 29,463,665
Plan Fiduciary Net Position as a Percentage of Total Pension Liability	94.762%
Net Pension Liability as a Percentage of Covered Payroll	19.936%

**Development of the Single Discount Rate**

Single Discount Rate	7.750%
Long-Term Expected Rate of Investment Return	7.750%
Long-Term Municipal Bond Rate*	3.650%
Last year ending December 31 in the 2014 to 2113 projection period for which projected benefit payments are fully funded	2113

**Total Pension Expense** \$ 13,065,108

**Deferred Outflows and Deferred Inflows of Resources by Source to be recognized in Future Pension Expenses**

	Deferred Outflows of Resources	Deferred Inflows of Resources
Difference between expected and actual experience	\$ -	\$ -
Changes in assumptions	-	-
Net difference between projected and actual earnings on pension plan investments	11,636,170	-
Total	\$ 11,636,170	\$ -

\*Source: "State & local bonds" rate from Federal Reserve statistical release (H.15) as of December 25, 2014. The statistical release describes this rate as "Bond Buyer Index, general obligation, 20 years to maturity, mixed quality." In describing this index, the Bond Buyer notes that the bonds' average credit quality is roughly equivalent to Moody's Investors Service's Aa2 rating and Standard & Poor's Corp.'s AA.

## DISCUSSION

### Accounting Standard

For pension plans that are administered through trusts or equivalent arrangements, Governmental Accounting Standards Board (GASB) Statement No. 67 establishes standards of financial reporting for separately issued financial reports and specifies the required approach for measuring the pension liability. Similarly, GASB Statement No. 68 establishes standards for state and local government employers (as well as non-employer contributing entities) to account for and disclose the net pension liability, pension expense, and other information associated with providing retirement benefits to their employees (and former employees) on their basic financial statements.

The following discussion provides a summary of the information that is required to be disclosed under these accounting standards. A number of these disclosure items are provided in this report. However, certain information, such as notes regarding accounting policies and investments, is not included in this report and the retirement system and/or plan sponsor will be responsible for preparing and disclosing that information to comply with these accounting standards.

### Financial Statements

GASB Statement No. 68 requires state or local governments to recognize the net pension liability and the pension expense on their financial statements. The net pension liability is the difference between the total pension liability and the plan's fiduciary net position. In traditional actuarial terms, this is analogous to the accrued liability less the market value of assets (not the smoothed actuarial value of assets that is often encountered in actuarial valuations performed to determine the employer's contribution requirement).

The pension expense recognized each fiscal year is equal to the change in the net pension liability from the beginning of the year to the end of the year, adjusted for deferred recognition of the liability and investment experience.

Pension plans that prepare their own, stand-alone financial statements are required to present two financial statements – a statement of fiduciary net position and a statement of changes in fiduciary net position in accordance with GASB Statement No. 67. The *statement of fiduciary net position* presents the assets and liabilities of the pension plan at the end of the pension plan's reporting period. The *statement of changes in fiduciary net position* presents the additions, such as contributions and investment income, and deductions, such as benefit payments and expenses, and net increase or decrease in the fiduciary net position.

## Notes to Financial Statements

GASB Statement No. 68 requires the notes of the employer's financial statements to disclose the total pension expense, the pension plan's liabilities and assets, and deferred outflows and inflows of resources related to pensions.

GASB Statement Nos. 67 and 68 require the notes of the financial statements for the employers and pension plans, to include certain additional information. The list of disclosure items should include:

- a description of the types of benefits provided by the plan, as well as automatic or ad hoc COLAs;
- the type of employees and number of members covered by the pension plan;
- a description of the plan's funding policy, which includes member and employer contribution requirements;
- the pension plan's investment policies;
- the pension plan's fiduciary net position, net pension liability, and the pension plan's fiduciary net position as a percentage of the total pension liability;
- the net pension liability using a discount rate that is 1% higher and 1% lower than used to calculate the total pension liability and net pension liability for financial reporting purposes;
- significant assumptions and methods used to calculate the total pension liability;
- inputs to the discount rates; and
- certain information about mortality assumptions and the dates of experience studies.

Retirement systems that issue stand-alone financial statements are required to disclose additional information in accordance with GASB Statement No. 67. This information includes:

- the composition of the pension plan's board and the authority under which benefit terms may be amended;
- a description of how fair value is determined;
- information regarding certain reserves and investments, which include concentrations of investments greater than or equal to 5%, receivables, and insurance contracts excluded from plan assets; and
- the annual money-weighted rate of return on pension plan investments for each year.

## Required Supplementary Information

GASB Statement No. 67 requires a 10-year fiscal history of:

- sources of changes in the net pension liability;
- information about the components of the net pension liability and related ratios, including the pension plan's fiduciary net position as a percentage of the total pension liability, and the net pension liability as a percent of covered-employee payroll; and
- comparison of the actual employer contributions to the actuarially determined contributions based on the plan's funding policy,

## Timing of the Valuation

An actuarial valuation to determine the total pension liability is required to be performed at least every two years. The net pension liability and pension expense should be measured as of the pension plan's fiscal year end (measurement date) on a date that is within the employer's prior fiscal year. If the actuarial valuation used to determine the total pension liability is not calculated as of the measurement date, the total pension liability is required to be rolled forward from the actuarial valuation date to the measurement date.

The total pension liability shown in this report is based on an actuarial valuation performed as of January 1, 2014 and a measurement date of December 31, 2014.

## Single Discount Rate

Projected benefit payments are required to be discounted to their actuarial present values using a Single Discount Rate that reflects (1) a long-term expected rate of return on pension plan investments (to the extent that the plan's fiduciary net position is projected to be sufficient to pay benefits) and (2) tax-exempt municipal bond rate based on an index of 20-year general obligation bonds with an average AA credit rating (which is published by the Federal Reserve) as of the measurement date (to the extent that the contributions for use with the long-term expected rate of return are not met).

For the purpose of this valuation, the expected rate of return on pension plan investments is 7.750%; the municipal bond rate is 3.650% (based on the weekly rate closest to but not later than the measurement date of the "state & local bonds" rate from Federal Reserve statistical release (H.15)); and the resulting Single Discount Rate is 7.750%.

## Effective Date and Transition

GASB Statement Nos. 67 and 68 are effective for fiscal years beginning after June 15, 2013, and June 15, 2014 respectively, earlier application is encouraged by the GASB.

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## **SECTION B**

### FINANCIAL STATEMENTS

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**PENSION EXPENSE UNDER GASB STATEMENT NO. 68**  
**FISCAL YEAR ENDED JUNE 30, 2015**

**A. Expense**

1. Service Cost	\$	22,432,708
2. Interest on the Total Pension Liability		40,636,242
3. Current-Period Benefit Changes		0
4. Employee Contributions (made negative for addition here)		(13,928,652)
5. Projected Earnings on Plan Investments (made negative for addition here)		(39,398,564)
6. Pension Plan Administrative Expense		408,470
7. Other Changes in Plan Fiduciary Net Position		5,861
8. Recognition of Outflow (Inflow) of Resources due to Liabilities		0
9. Recognition of Outflow (Inflow) of Resources due to Assets		2,909,042
10. Recognition of Outflow of Resources due to Contributions made from December 31, 2014 to June 30, 2015		0 *
<b>11. Total Pension Expense</b>	<b>\$</b>	<b>13,065,108</b>

\*In accordance with GASB 71, employers may need to illustrate contributions made from January 1, 2015 through June 30, 2015.

**STATEMENT OF OUTFLOWS AND INFLOWS ARISING FROM CURRENT REPORTING  
PERIOD  
FISCAL YEAR ENDED JUNE 30, 2015**

**A. Outflows (Inflows) of Resources due to Liabilities**

1. Difference between expected and actual experience of the Total Pension Liability (gains) or losses	\$	-
2. Assumption Changes (gains) or losses	\$	-
3. Recognition period for Liabilities: Average of the expected remaining service lives of all employees {in years }		1.0000
4. Outflow (Inflow) of Resources to be recognized in the current pension expense for the Difference between expected and actual experience of the Total Pension Liability	\$	-
5. Outflow (Inflow) of Resources to be recognized in the current pension expense for Assumption Changes	\$	-
6. Outflow (Inflow) of Resources to be recognized in the current pension expense due to Liabilities	\$	-
7. Deferred Outflow (Inflow) of Resources to be recognized in future pension expenses for the Difference between expected and actual experience of the Total Pension Liability	\$	-
8. Deferred Outflow (Inflow) of Resources to be recognized in future pension expenses for Assumption Changes	\$	-
9. Deferred Outflow (Inflow) of Resources to be recognized in future pension expenses due to Liabilities	\$	-

**B. Outflows (Inflows) of Resources due to Assets**

1. Net difference between projected and actual earnings on pension plan investments (gains) or losses	\$	14,545,212
2. Recognition period for Assets {in years }		5.0000
3. Outflow (Inflow) of Resources to be recognized in the current pension expense due to Assets	\$	2,909,042
3. Deferred Outflow (Inflow) of Resources to be recognized in future pension expenses due to Assets	\$	11,636,170

**STATEMENT OF OUTFLOWS AND INFLOWS ARISING FROM CURRENT AND PRIOR  
REPORTING PERIODS  
FISCAL YEAR ENDED JUNE 30, 2015**

**A. Outflows and Inflows of Resources due to Liabilities and Assets to be recognized in Current Pension Expense**

	Outflows of Resources	Inflows of Resources	Net Outflows of Resources
1. due to Liabilities	\$ -	\$ 0	\$ -
2. due to Assets	2,909,042	-	2,909,042
<b>3. Total</b>	<b>\$ 2,909,042</b>	<b>\$ 0</b>	<b>\$ 2,909,042</b>

**B. Outflows and Inflows of Resources by Source to be recognized in Current Pension Expense**

	Outflows of Resources	Inflows of Resources	Net Outflows of Resources
1. Differences between expected and actual experience	\$ -	\$ 0	\$ -
2. Assumption Changes	-	-	0
3. Net Difference between projected and actual earnings on pension plan investments	2,909,042	-	2,909,042
<b>4. Total</b>	<b>\$ 2,909,042</b>	<b>\$ 0</b>	<b>\$ 2,909,042</b>

**C. Deferred Outflows and Deferred Inflows of Resources by Source to be recognized in Future Pension Expenses**

	Deferred Outflows of Resources	Deferred Inflows of Resources	Net Deferred Outflows of Resources
1. Differences between expected and actual experience	\$ -	\$ 0	\$ -
2. Assumption Changes	-	-	0
3. Net Difference between projected and actual earnings on pension plan investments	11,636,170	-	11,636,170
<b>4. Total</b>	<b>\$ 11,636,170</b>	<b>\$ 0</b>	<b>\$ 11,636,170</b>

**D. Deferred Outflows and Deferred Inflows of Resources by Year to be recognized in Future Pension Expenses**

Fiscal Year Ending June 30	Net Deferred Outflows of Resources
2016	\$ 2,909,042
2017	2,909,042
2018	2,909,042
2019	2,909,044
2020	-
Thereafter	0
<b>Total</b>	<b>\$ 11,636,170</b>

**STATEMENT OF FIDUCIARY NET POSITION  
AS OF DECEMBER 31, 2014**

	<b>2014</b>
<b>Assets</b>	
Cash and Deposits	\$ 31,903,659
Receivables	
Accounts Receivable - Sale of Investments	\$ 264,760
Accrued Interest and Other Dividends	1,385,126
Contributions	2,412,460
Accounts Receivable - Other	78,383,634
Total Receivables	\$ 82,445,980
Investments	
Fixed Income	\$ 107,207,132
Domestic Equities	270,727,631
International Equities	-
Real Estate	-
Other	168,153,136
Total Investments	\$ 546,087,899
<b>Total Assets</b>	<b>\$ 660,437,538</b>
 <b>Liabilities</b>	
Payables	
Accounts Payable - Purchase of Investments	\$ 4,843,369
Accrued Expenses	929,697
Accounts Payable - Other	121,597,159
<b>Total Liabilities</b>	<b>\$ 127,370,225</b>
 <b>Net Position Restricted for Pensions</b>	<b>\$ 533,067,313</b>

**STATEMENT OF CHANGES IN FIDUCIARY NET POSITION  
FOR YEAR ENDED DECEMBER 31, 2014**

	<b>2014</b>
<b>Additions</b>	
Contributions	
Employer	\$ 13,308,281
Employee	13,314,132
Other	803,152
Total Contributions	\$ 27,425,565
Investment Income	
Net Appreciation in Fair Value of Investments	\$ 15,396,450
Interest and Dividends	12,827,661
Less Investment Expense	(3,370,759)
Net Investment Income	\$ 24,853,352
Other	\$ -
<b>Total Additions</b>	<b>\$ 52,278,917</b>
<b>Deductions</b>	
Benefit Payments, including Refunds of Employee Contributions	\$ 27,320,442
Pension Plan Administrative Expense	408,470
Other	5,861
<b>Total Deductions</b>	<b>\$ 27,734,773</b>
<b>Net Increase in Net Position</b>	<b>\$ 24,544,144</b>
<b>Net Position Restricted for Pensions</b>	
Beginning of Year	\$ 508,523,169
End of Year	<b>\$ 533,067,313</b>

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**SECTION C**

REQUIRED SUPPLEMENTARY INFORMATION

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**SCHEDULE OF CHANGES IN NET PENSION LIABILITY AND RELATED RATIOS**  
**CURRENT PERIOD**  
**FISCAL YEAR ENDED JUNE 30, 2015**

**A. Total pension liability**

1. Service Cost	\$	22,432,708
2. Interest on the Total Pension Liability		40,636,242
3. Changes of benefit terms		0
4. Difference between expected and actual experience of the Total Pension Liability		0
5. Changes of assumptions		0
6. Benefit payments, including refunds of employee contributions		(27,320,442)
7. Net change in total pension liability	\$	35,748,508
8. Total pension liability – beginning		526,782,470
9. Total pension liability – ending	<b>\$</b>	<b>562,530,978</b>

**B. Plan fiduciary net position**

1. Contributions – employer	\$	13,308,281
2. Contributions – employee		13,314,132
3. Net investment income		24,853,352
4. Benefit payments, including refunds of employee contributions		(27,320,442)
5. Pension Plan Administrative Expense		(408,470)
6. Other		797,291
7. Net change in plan fiduciary net position	\$	24,544,144
8. Plan fiduciary net position – beginning		508,523,169
9. Plan fiduciary net position – ending	<b>\$</b>	<b>533,067,313</b>

**C. Net pension liability**

<b>\$</b>	<b>29,463,665</b>
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**D. Plan fiduciary net position as a percentage  
of the total pension liability**

<b>94.76%</b>
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**E. Covered-employee payroll**

<b>\$</b>	<b>147,790,833</b>
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**F. Net pension liability as a percentage  
of covered employee payroll**

<b>19.94%</b>
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**Notes to Schedule:**

Other changes to Plan Fiduciary Net Position includes member redeposits, member service purchase contributions, other funding sources, and depreciation expenses.

**SCHEDULES OF REQUIRED SUPPLEMENTARY INFORMATION**  
**SCHEDULE OF CHANGES IN NET PENSION LIABILITY AND RELATED RATIOS MULTIYEAR**

Measurement date as of December 31,	<u>2014</u>
<b>Total Pension Liability</b>	
Service Cost	\$ 22,432,708
Interest on the Total Pension Liability	40,636,242
Benefit Changes	-
Difference between Expected and Actual Experience	-
Assumption Changes	-
Benefit Payments	(23,209,837)
Refunds	(4,110,605)
<b>Net Change in Total Pension Liability</b>	<u>35,748,508</u>
<b>Total Pension Liability - Beginning</b>	<u>526,782,470</u>
<b>Total Pension Liability - Ending (a)</b>	<u>\$ 562,530,978</u>
<b>Plan Fiduciary Net Position</b>	
Employer Contributions	\$ 13,308,281
Employee Contributions	13,314,132
Pension Plan Net Investment Income	24,853,352
Benefit Payments	(23,209,837)
Refunds	(4,110,605)
Pension Plan Administrative Expense	(408,470)
Other	797,291
<b>Net Change in Plan Fiduciary Net Position</b>	<u>24,544,144</u>
<b>Plan Fiduciary Net Position - Beginning</b>	<u>508,523,169</u>
<b>Plan Fiduciary Net Position - Ending (b)</b>	<u>\$ 533,067,313</u>
<b>Net Pension Liability - Ending (a) - (b)</b>	\$ 29,463,665
<b>Plan Fiduciary Net Position as a Percentage of Total Pension Liability</b>	94.76%
<b>Covered Employee Payroll</b>	\$ 147,790,833
<b>Projected Valuation Payroll</b>	\$ 154,071,943
<b>Net Pension Liability as a Percentage of Covered Employee Payroll</b>	19.94%
<b>Notes to Schedule:</b>	
Other changes to Plan Fiduciary Net Position includes member redeposits, member service purchase contributions, other funding sources, and depreciation expenses.	

**SCHEDULES OF REQUIRED SUPPLEMENTARY INFORMATION**  
**SCHEDULE OF THE NET PENSION LIABILITY MULTIYEAR**  
**Last 10 Plan Years (which may be built prospectively)**

<b>FY Ending December 31,</b>	<b>Total Pension Liability</b>	<b>Plan Net Position</b>	<b>Net Pension Liability</b>	<b>Plan Net Position as a % of Total Pension Liability</b>	<b>Covered Payroll</b>	<b>Net Pension Liability as a % of Covered Payroll</b>
2014	\$ 562,530,978	\$ 533,067,313	\$ 29,463,665	94.76%	\$ 147,790,833	19.94%

**SCHEDULE OF CONTRIBUTIONS MULTIYEAR  
LAST 10 PLAN YEARS**

<b>FY Ending December 31,</b>	<b>Actuarially Determined Contribution</b>	<b>Actual Contribution*</b>	<b>Contribution Deficiency (Excess)</b>	<b>Covered Payroll</b>	<b>Actual Contribution as a % of Covered Payroll</b>
2014	\$ 11,812,078	\$ 13,308,281	\$ (1,496,203)	\$ 147,790,833	9.00%

\* Includes other funding sources but excludes member redeposits and member service purchase contributions.

## NOTES TO SCHEDULE OF CONTRIBUTIONS

<b>Valuation Date:</b>	January 1, 2014
Notes	Actuarially determined contribution rates are calculated as of July 1 each year for implementation the following fiscal year.
<b>Methods and Assumptions Used to Determine Contribution Rates:</b>	
Actuarial Cost Method	Entry Age Normal
Amortization Method	Level Percentage of Payroll, Open
Remaining Amortization Period	30 years
Asset Valuation Method	5-Year smoothed market
Inflation	3.25%
Salary Increases	4.25% to 8.00% including inflation
Investment Rate of Return	7.75%
Retirement Age	Experience-based table of rates that are specific to the type of eligibility condition. Last updated for the 2014 valuation pursuant to an experience study of the period 2007 - 2011.
Post-Retirement Mortality	RP-2000 Combined Mortality Table, generational projected with Scale BB. Males: No set back with a 104% multiplier. Females: Set forward 1 year with a 90% multiplier.
Pre-Retirement Mortality	RP-2000 Combined Mortality Table, generational projected with Scale BB. Males: Set back 4 years with a 104% multiplier. Females: Set back 3 years with a 90% multiplier.
<b>Other Information:</b>	
Notes	There were no benefit changes during the year.

**SCHEDULE OF INVESTMENT RETURNS MULTIYEAR  
LAST 10 PLAN YEARS**

<b>FY Ending December 31,</b>	<b>Annual Return<sup>1</sup></b>
2014	4.70 %

<sup>1</sup> Annual money-weighted rate of return, net of investment expenses.

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**SECTION D**

NOTES TO FINANCIAL STATEMENTS

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### Long-Term Expected Return on Plan Assets

The assumed rate of investment return was adopted by the plan’s trustees after considering input from the plan’s investment consultant and actuary. Additional information about the assumed rate of investment return is included in our actuarial valuation report as of January 1, 2014. In addition, a five year experience study was completed as of December 31, 2011 and this study provides a detailed analysis regarding recommendations on the long term rates for inflation and the real rate of return. The assumed rate of investment return of 7.75% falls within a reasonable range of the long-term expected rate of return.

The long-term expected rate of return on pension plan investments was determined using a building-block method in which expected future real rates of return (expected returns, net of pension plan investment expense and inflation) are developed for each major asset class. These real rates of return are combined to produce the long-term expected rate of return by weighting the expected future real rates of return by the target asset allocation percentage and by adding expected inflation. For each major asset class that is included in the pension plan’s target asset allocation as of January 1, 2014, these best estimates are summarized in the following table:

#### ASSET ALLOCATION

<u>Asset Class</u>	<u>Target Allocation</u>	<u>Long-Term Expected Real Rate of Return</u>
Cash	2.50%	0.50%
Fixed Income	15.00%	0.80%
Equity	55.00%	5.26%
Marketable Alternatives	15.50%	3.79%
Private Markets	12.00%	5.76%
<b>Total</b>	<u>100.00%</u>	

The figures in the above table were supplied by NEPC; the investment consulting firm to the Wyoming Retirement System. Gabriel, Roeder, Smith and Company does not provide investment advice.

### Single Discount Rate

A Single Discount Rate of 7.750% was used to measure the total pension liability. This Single Discount Rate was based on the expected rate of return on pension plan investments of 7.750%. The projection of cash flows used to determine this Single Discount Rate assumed that plan member and employer contributions will be made at the current scheduled contribution rates. Based on these assumptions, the pension plan's fiduciary net position was projected to be available to make all projected future benefit payments of current plan members. Therefore, the long-term expected rate of return on pension plan investments was applied to all periods of projected benefit payments to determine the total pension liability.

### Sensitivity of Results

Regarding the sensitivity of the net pension liability to changes in the Single Discount Rate, the following presents the plan's net pension liability, calculated using a Single Discount Rate of 7.750%, as well as what the plan's net pension liability would be if it were calculated using a Single Discount Rate that is one percent lower or one percent higher:

#### SENSITIVITY OF NET PENSION LIABILITY TO THE SINGLE DISCOUNT RATE ASSUMPTION

1% Decrease	Current Single Discount Rate Assumption	1% Increase
6.750%	7.750%	8.750%
\$102,877,872	\$29,463,665	-\$31,120,275

**SUMMARY OF POPULATION STATISTICS**

Inactive Plan Members or Beneficiaries Currently Receiving Benefits	917
Inactive Plan Members Entitled to But Not Yet Receiving Benefits	912
Active Plan Members	<u>2,808</u>
Total Plan Members	4,637

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**SECTION E**

**SUMMARY OF BENEFITS**

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## SUMMARY OF PLAN PROVISIONS

<b>Covered Members</b>	County sheriffs, deputy county sheriffs, municipal police officers; Investigator of the Wyoming Livestock Board; meeting the specifications of W.S.7-2-101(a)(iv)(E), investigators employed by the Wyoming State Board of Outfitters and professional guides meeting the specifications of W.S. 7-2-101(a)(iv)(J); Correctional officers, probation and parole agents employed by the Wyoming Department of Corrections, Wyoming Law Enforcement Academy instructors, University of Wyoming campus police officers; And full-time dispatchers or detention officers for law enforcement agencies.
<b>Final Average Salary</b>	Employee's average annual salary for the highest paid five continuous years of service.
<b>Service Retirement</b>	
Eligibility	Age 60 with four or more years of service as a law enforcement officer or any age with at least twenty years of service as a law enforcement officer. Early retirement benefits are payable to any law enforcement officer who has at least four but less than twenty years of service and are at least age 50. Early retirement benefits are actuarially reduced by 5% per year before age 60.
Monthly Benefit	2.50% of employee's highest five-year average salary for each year of credited service, not to exceed 75.0% of final average salary.
Vesting	Any employee who has left employment with four or more years of service, and who has not withdrawn accumulated contributions, is eligible to receive the above benefit or can elect to receive a lump-sum refund of contributions with interest. An employee who terminates with less than four years of service is only eligible for the lump-sum benefit.
<b>Duty Disability Retirement</b>	
Eligibility	No age or service eligibility requirements. Partial or total disability resulting from an individual and specific act, the type of which would normally occur only while employed as an employee, or as otherwise defined under W.S. 9-3-432(h).
Monthly Benefit	62.5% of Final Salary.
<b>Non-duty Disability Retirement</b>	
Eligibility	10 years of credited service. Partial or total disability, but not eligible for duty disability.
Monthly Benefit	50.0% of Final Salary.

**Pre-retirement Duty Death Benefit**

Eligibility	No age or service requirements.
Monthly Benefit	62.5% of member's final actual salary, payable to the surviving spouse plus 6% of the member's final actual salary for each unmarried child under 18. Payment shall not exceed the member's final actual salary.

**Pre-retirement Nonduty Death Benefit**

Eligibility	No age or service requirements.
Monthly Benefit	50% of the member's final actual salary payable to the surviving spouse plus 6% of the member's final actual salary for each unmarried child under 18. Payment shall not exceed 100% of the member's final actual salary.

**Contributions**

Employee	8.6% of salary. The employer may subsidize all or part of the employee contributions.
Employer	8.6% of salary.
Interest	5.5% annually.

**Cost-of-Living Improvements**

W.S. 9-3-454 prohibits benefit changes, including cost-of-living increases, unless the funded ratio stays above 100% plus a margin for adverse experience throughout the life of the benefit change.

**Optional Forms of Payment**

Option 1 (normal form)	Monthly benefit for life with a lump-sum death benefit equal to the excess (if any) of the employee contributions with interest over the total benefits received.
Option 2	Monthly benefit for life. Upon death, 100% of the benefit continues to be paid to the beneficiary.
Option 2P	Monthly benefit for life. Upon death, 100% of the benefit continues to be paid to the beneficiary. Benefit reverts to Option 1 amount but without the cash refund feature upon beneficiary death.
Option 3	Monthly benefit for life. Upon death, 50% of the benefit continues to be paid to the beneficiary.
Option 3P	Monthly benefit for life. Upon death, 50% of the benefit continues to be paid to the beneficiary. Benefit reverts to Option 1 amount but without the cash refund feature upon beneficiary death.
Option 4	Monthly benefit for life with a guarantee of 120 monthly payments.
Option 5	The largest possible monthly benefit payable for life with no lump-sum death benefit.
Other	Grandfathered group of retirees has an optional form which, upon death, 66.67% of the benefit continues to be paid to the beneficiary.

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## **SECTION F**

### **ACTUARIAL COST METHOD AND ACTUARIAL ASSUMPTIONS**

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## SUMMARY OF ACTUARIAL METHODS AND ASSUMPTIONS

The following methods and assumptions were used in preparing the January 1, 2014 actuarial valuation report.

### 1. Valuation Date

The valuation date for any given year is January 1<sup>st</sup>, the first day of each plan year. This is the date as of which the actuarial present value of future benefits and the actuarial value of assets are determined.

### 2. Actuarial Cost Method

The actuarial valuation uses the Entry Age Normal (EAN) actuarial cost method, amortized as a level percentage of payroll. Under this method, the employer contribution is the sum of (i) the employer normal cost rate, and (ii) the rate that will amortize the unfunded actuarial accrued liability (UAAL).

- a. The valuation is prepared on the projected benefit basis, under which the present value, at the investment return rate assumed to be earned in the future (currently 7.75%), of each participant's expected benefit payable at retirement or death is determined, based on his/her age, service, sex and compensation. The calculations take into account the probability of a participant's death or termination of employment prior to becoming eligible for a benefit, as well as the possibility of his/her terminating with a service, disability, or survivor's benefit. Future salary increases are also anticipated. The present value of the expected benefits payable for the active participants is added to the present value of the expected future payments to retired participants and beneficiaries to obtain the present value of all expected benefits payable from the Fund on account of the present group of participants and beneficiaries.
- b. The employer contributions required to support the benefits of the Fund are determined using a level funding approach, and consist of a normal cost contribution and an accrued liability contribution.
- c. The normal cost contribution is determined using the "entry age normal" actuarial cost method. Under this method, a calculation is made to determine the average uniform and constant percentage rate of employer contribution which, if applied to the compensation of each new participant during the entire period of his/her anticipated covered service, would be required to meet the cost of all benefits payable on his/her behalf based on the benefits provisions applicable for the individual member.

- d. The unfunded actuarial accrued liability contributions are determined by subtracting the actuarial value of assets from the actuarial accrued liability and amortizing the result over 30 years from the valuation date.

### 3. Actuarial Value of Assets

The actuarial value of assets is based on the market value of assets with a five-year phase-in of actual investment return in excess of (less than) expected investment income, with interest, dividends, and other income recognized immediately. Expected investment income is determined using the assumed investment return rate and the market value of assets (adjusted for receipts and disbursements during the year). The returns are computed net of administrative and investment expenses. An adjustment is made if the actuarial value is not within 20% of the Market Value. For any year following a year in which the 20% of market value adjustment was applied, the actuarial value is determined as if the adjustment was not applied in the previous year.

### 4. Economic Assumptions

#### a. Investment return

7.75% per year, compounded annually, composed of an assumed 3.25% inflation rate and a 4.50% net real rate of return. This rate represents the assumed return, net of investment expenses.

#### b. Salary increase rate

Age	Rate
20	8.00%
25	8.00%
30	6.75%
35	6.00%
40	5.50%
45	5.00%
50	5.00%
55	4.25%
60	4.25%

- c. Payroll growth rate: In the amortization of the unfunded actuarial accrued liability, payroll is assumed to increase 4.25% per year. This increase rate is solely due to the effect of inflation on salaries, with no allowance for future membership growth.

5. Demographic Assumptionsa. Mortality

Healthy Pre-Retirement Mortality:

RP-2000 Combined Mortality Table, fully generational, projected with Scale BB

Males: Set back 4 years with a multiplier of 104%

Females: Set back 3 years with a multiplier of 90%

Healthy Post-Retirement Mortality:

RP-2000 Combined Mortality Table, fully generational, projected with Scale BB

Males: No set back with a multiplier of 104%

Females: Set forward 1 year with a multiplier of 90%

Disabled Mortality:

RP-2000 Disabled Mortality Table, fully generational, projected with Scale BB

Males: Set forward 5 years with a multiplier of 120%

Females: Set forward 5 years with a multiplier of 120%

Age	Pre-Retirement		Post-Retirement		Disabled	
	Projected to 2015 using Scale BB					
	Male	Female	Male	Female	Male	Female
20	0.03%	0.02%	0.03%	0.02%	2.59%	0.85%
25	0.04%	0.02%	0.04%	0.02%	2.59%	0.85%
30	0.04%	0.02%	0.04%	0.03%	2.59%	0.85%
35	0.05%	0.03%	0.08%	0.04%	2.59%	0.85%
40	0.08%	0.05%	0.11%	0.07%	2.59%	0.85%
45	0.11%	0.07%	0.15%	0.11%	3.32%	1.32%
50	0.16%	0.11%	0.21%	0.16%	4.07%	1.84%
55	0.24%	0.17%	0.36%	0.25%	4.54%	2.25%
60	0.42%	0.28%	0.63%	0.44%	5.02%	2.81%
65	0.71%	0.50%	1.11%	0.82%	5.99%	3.77%
70	1.23%	0.91%	1.84%	1.40%	7.85%	5.23%
75			3.14%	2.33%	10.46%	7.24%
80			5.34%	3.81%	13.55%	10.03%
85			9.18%	6.49%	18.64%	14.24%
90			16.16%	11.19%	29.33%	21.33%
95			25.42%	17.15%	39.52%	27.24%
100			34.25%	21.38%	47.75%	35.17%

65% of active deaths are assumed to be duty-related

b. Disability and Withdrawal

Age	Disability		Withdrawal		Withdrawal		
	Male	Female	Ultimate		Service	First five years	
			Male	Female		Male	Female
20	0.07%	0.07%	10.00%	10.00%	1	25%	32%
25	0.07%	0.07%	10.00%	10.00%	2	20%	22%
30	0.07%	0.07%	7.50%	7.50%	3	13%	20%
35	0.08%	0.08%	6.50%	6.50%	4	11%	15%
40	0.18%	0.18%	6.00%	6.00%	5	11%	12%
45	0.38%	0.38%	5.00%	5.00%			
50	0.67%	0.67%	3.00%	3.00%			
55	1.14%	1.14%	3.00%	3.00%			
60	2.22%	2.22%	3.00%	3.00%			

65% of active disabilities are assumed to be duty-related

c. Retirement Rates

Age	Reduced Rate	Unreduced Rate	Age	Reduced Rate	Unreduced Rate
50	8%	20%	58	8%	15%
51	6%	18%	59	15%	15%
52	6%	18%	60	NA	15%
53	9%	18%	61	NA	25%
54	9%	18%	62	NA	25%
55	12%	15%	63	NA	10%
56	9%	15%	64	NA	25%
57	9%	15%	65	NA	100%

10% is assumed for members with at least 20 years of service before age 50

**MISCELLANEOUS AND TECHNICAL ASSUMPTIONS**

- a. Percent married: 85.00% of employees are assumed to be married. (No beneficiaries other than the spouse assumed.)
- b. Age difference: Male members are assumed to be three years older than their spouses, and female members are assumed to be three years younger than their spouses.
- c. Percent electing annuity on death (when eligible): All of the spouses of vested, married participants are assumed to elect an annuity.
- d. Percent electing deferred termination benefit: It is assumed that 45% of active members who terminate with a vested deferred benefit will elect to have their contributions refunded.
- e. Assumed age for commencement of deferred benefits: Members electing to receive a deferred benefit are assumed to commence receipt at the first age at which unreduced benefits are available, which for this plan is age 60.
- f. No benefit data is available for members entitled to deferred benefits. The present value of benefits expected to be paid to vested inactive non-retired members is approximated using the data provided.
- g. There will be no recoveries once disabled.
- h. No children are assumed for purposes of valuing the ordinary death benefit.
- i. Administrative expenses: Assumed to be the average of the prior two years, with each year projected at 6.5% to the valuation date.
- j. Pay increase timing: Beginning of (fiscal) year. This is equivalent to assuming that reported pay represents amount paid to members during the year ended on the valuation date.
- k. Decrement timing: Decrements of all types are assumed to occur mid-year.
- l. Eligibility testing: Eligibility for benefits is determined based upon the age nearest birthday and service nearest whole year on the date the decrement is assumed to occur.
- m. Incidence of Contributions: Contributions are assumed to be received continuously throughout the year based upon the computed percent of payroll shown in the report, and the actual payroll payable at the time contributions are made.
- n. Benefit Service: All members are assumed to accrue one year of service each year.

## **EXPERIENCE ANALYSIS**

An experience study was conducted on behalf of all WRS' plans covering the five year period ending December 31, 2011. That study provided a detailed analysis concerning the development of the long term inflation rate, real rate of return and discount rate. The study also analyzed each major actuarial assumption (e.g. mortality, salary increases, retirement, termination and disability) and proposed assumptions consistent with the findings. For further information on the experience study and related assumption recommendation, the reader is directed to request the December 31, 2011 Wyoming Retirement System Experience Study.

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## **SECTION G**

### **CALCULATION OF THE SINGLE DISCOUNT RATE**

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## CALCULATION OF THE SINGLE DISCOUNT RATE

GASB Statement No. 67 includes a specific requirement for the discount rate that is used for the purpose of the measurement of the Total Pension Liability. This rate considers the ability of the fund to meet benefit obligations in the future. To make this determination, employer contributions, employee contributions, benefit payments, expenses and investment returns are projected into the future. The Plan Net Position (assets) in future years can then be determined and compared to its obligation to make benefit payments in those years. As long as assets are projected to be on hand in a future year, the assumed valuation discount rate is used. In years where assets are not projected to be sufficient to meet benefit payments, the use of a “risk-free” rate is required, as described in the following paragraph.

The Single Discount Rate (SDR) is equivalent to applying these two rates to the benefits that are projected to be paid during the different time periods. The SDR reflects (1) the long-term expected rate of return on pension plan investments (during the period in which the fiduciary net position is projected to be sufficient to pay benefits) and (2) tax-exempt municipal bond rate based on an index of 20-year general obligation bonds with an average AA credit rating (which is published by the Federal Reserve) as of the measurement date (to the extent that the contributions for use with the long-term expected rate of return are not met).

For the purpose of this valuation, the expected rate of return on pension plan investments is 7.750%; the municipal bond rate is 3.650%; and the resulting Single Discount Rate is 7.750%.

The tables in this section provide background for the development of the Single Discount Rate.

The **Projection of Contributions** table shows the development of expected contributions in future years. Normal Cost contributions for future hires are not included (nor are their liabilities).

The **Projection of Plan Fiduciary Net Position** table shows the development of expected asset levels in future years.

The **Present Values of Projected Benefit Payments** table shows the development of the Single Discount Rate (SDR). It breaks down the benefit payments into present values for funded and unfunded portions and shows the equivalent total at the SDR.

**SINGLE DISCOUNT RATE DEVELOPMENT PROJECTION  
OF CONTRIBUTIONS ENDING DECEMBER 31 FOR 2014 TO 2063**

Year	Payroll for	Payroll for Future	Total Employee	Contributions from	Employer	Employer	Total
	Current Employees	Employees	Payroll	Current Employees	Contributions for	Contributions	
	(a)	(b)=max(0,(c)-(a))	(c)	(d)	Current Employees	Related to Payroll of Future Employees	Contributions
					(e)=(a)*ER%	(f) = (b)*netER%	(g)=(d)+(e)+(f)
2014	\$ 146,757,237	\$ 7,314,706	\$ 154,071,943	\$ 13,314,132	\$ 14,111,433	\$ -	\$ 27,425,565
2015	137,262,268	23,357,733	160,620,001	11,804,555	11,804,555	434,485	24,043,595
2016	130,394,221	37,052,130	167,446,351	11,213,903	11,213,903	698,928	23,126,734
2017	124,687,647	49,875,174	174,562,821	10,723,138	10,723,138	952,502	22,398,778
2018	119,712,690	62,269,051	181,981,741	10,295,291	10,295,291	1,203,360	21,793,942
2019	114,916,467	74,799,498	189,715,965	9,882,816	9,882,816	1,464,559	21,230,191
2020	110,095,809	87,683,085	197,778,894	9,468,240	9,468,240	1,740,564	20,677,044
2021	105,176,835	101,007,662	206,184,497	9,045,208	9,045,208	2,032,076	20,122,492
2022	100,271,430	114,675,908	214,947,338	8,623,343	8,623,343	2,338,050	19,584,736
2023	95,348,133	128,734,467	224,082,600	8,199,939	8,199,939	2,660,879	19,060,757
2024	90,310,121	143,295,990	233,606,111	7,766,670	7,766,670	3,002,580	18,535,920
2025	85,284,828	158,249,543	243,534,371	7,334,495	7,334,495	3,361,661	18,030,651
2026	80,193,235	173,691,347	253,884,582	6,896,618	6,896,618	3,739,597	17,532,833
2027	74,949,632	189,725,045	264,674,677	6,445,668	6,445,668	4,138,369	17,029,705
2028	69,457,603	206,465,748	275,923,351	5,973,354	5,973,354	4,560,164	16,506,872
2029	63,819,092	223,831,001	287,650,093	5,488,442	5,488,442	5,002,727	15,979,611
2030	58,237,059	241,638,163	299,875,222	5,008,387	5,008,387	5,462,344	15,479,118
2031	52,625,153	259,994,766	312,619,919	4,525,763	4,525,763	5,941,229	14,992,755
2032	46,963,773	278,942,493	325,906,266	4,038,885	4,038,885	6,438,982	14,516,752
2033	41,420,862	298,336,420	339,757,282	3,562,194	3,562,194	6,953,077	14,077,465
2034	36,176,323	318,020,643	354,196,966	3,111,164	3,111,164	7,477,177	13,699,505
2035	31,349,544	337,900,793	369,250,337	2,696,061	2,696,061	8,005,771	13,397,893
2036	26,949,811	357,993,665	384,943,476	2,317,684	2,317,684	8,538,587	13,173,955
2037	23,032,030	378,271,544	401,303,574	1,980,755	1,980,755	9,075,239	13,036,749
2038	19,521,487	398,837,489	418,358,976	1,678,848	1,678,848	9,617,839	12,975,535
2039	16,384,916	419,754,316	436,139,232	1,409,103	1,409,103	10,167,078	12,985,284
2040	13,648,103	441,027,046	454,675,149	1,173,737	1,173,737	10,723,001	13,070,475
2041	11,269,988	462,728,855	473,998,843	969,219	969,219	11,286,933	13,225,371
2042	9,245,525	484,898,269	494,143,794	795,115	795,115	11,859,406	13,449,636
2043	7,548,707	507,596,198	515,144,905	649,189	649,189	12,442,451	13,740,829
2044	6,113,315	530,925,248	537,038,563	525,745	525,745	13,038,352	14,089,842
2045	4,919,373	554,943,329	559,862,702	423,066	423,066	13,649,007	14,495,139
2046	3,904,037	579,752,830	583,656,867	335,747	335,747	14,277,212	14,948,706
2047	3,042,018	605,420,266	608,462,284	261,614	261,614	14,924,605	15,447,833
2048	2,340,470	631,981,461	634,321,931	201,280	201,280	15,592,559	15,995,119
2049	1,752,452	659,528,161	661,280,613	150,711	150,711	16,283,453	16,584,875
2050	1,255,368	688,129,671	689,385,039	107,962	107,962	16,998,877	17,214,801
2051	869,150	717,814,753	718,683,903	74,747	74,747	17,739,787	17,889,281
2052	577,579	748,650,390	749,227,969	49,672	49,672	18,507,929	18,607,273
2053	352,785	780,717,373	781,070,158	30,340	30,340	19,305,263	19,365,943
2054	189,215	814,076,425	814,265,640	16,273	16,273	20,133,439	20,165,985
2055	91,501	848,780,429	848,871,930	7,869	7,869	20,993,871	21,009,609
2056	46,048	884,902,939	884,948,987	3,960	3,960	21,888,629	21,896,549
2057	20,488	922,538,831	922,559,319	1,762	1,762	22,820,073	22,823,597
2058	6,947	961,761,143	961,768,090	597	597	23,790,286	23,791,480
2059	1,924	1,002,641,310	1,002,643,234	165	165	24,801,214	24,801,544
2060	251	1,045,255,320	1,045,255,571	22	22	25,854,836	25,854,880
2061	-	1,089,678,933	1,089,678,933	-	-	26,953,142	26,953,142
2062	-	1,135,990,288	1,135,990,288	-	-	28,098,113	28,098,113
2063	-	1,184,269,875	1,184,269,875	-	-	29,291,778	29,291,778

**SINGLE DISCOUNT RATE DEVELOPMENT PROJECTION**

## OF CONTRIBUTIONS ENDING DECEMBER 31 FOR 2064 TO 2113

Year	Payroll for		Total Employee Payroll	Contributions from Current Employees	Employer Contributions for Current Employees	Employer Contributions Related to Payroll of Future Employees	Total Contributions
	Current Employees	Future Employees					
	(a)	(b)=max(0,(c)-(a))	(c)	(d)	(e)=(a)*ER%	(f) = (b)*netER%	(g)=(d)+(e)+(f)
2064	\$ -	\$ 1,234,601,345	\$ 1,234,601,345	\$ -	\$ -	\$ 30,536,216	\$ 30,536,216
2065	-	1,287,071,902	1,287,071,902	-	-	31,833,606	31,833,606
2066	-	1,341,772,458	1,341,772,458	-	-	33,186,205	33,186,205
2067	-	1,398,797,787	1,398,797,787	-	-	34,596,360	34,596,360
2068	-	1,458,246,693	1,458,246,693	-	-	36,066,524	36,066,524
2069	-	1,520,222,177	1,520,222,177	-	-	37,599,243	37,599,243
2070	-	1,584,831,620	1,584,831,620	-	-	39,197,165	39,197,165
2071	-	1,652,186,964	1,652,186,964	-	-	40,863,058	40,863,058
2072	-	1,722,404,910	1,722,404,910	-	-	42,599,804	42,599,804
2073	-	1,795,607,119	1,795,607,119	-	-	44,410,405	44,410,405
2074	-	1,871,920,422	1,871,920,422	-	-	46,297,984	46,297,984
2075	-	1,951,477,040	1,951,477,040	-	-	48,265,807	48,265,807
2076	-	2,034,414,814	2,034,414,814	-	-	50,317,275	50,317,275
2077	-	2,120,877,444	2,120,877,444	-	-	52,455,932	52,455,932
2078	-	2,211,014,735	2,211,014,735	-	-	54,685,474	54,685,474
2079	-	2,304,982,861	2,304,982,861	-	-	57,009,756	57,009,756
2080	-	2,402,944,633	2,402,944,633	-	-	59,432,799	59,432,799
2081	-	2,505,069,780	2,505,069,780	-	-	61,958,799	61,958,799
2082	-	2,611,535,246	2,611,535,246	-	-	64,592,127	64,592,127
2083	-	2,722,525,494	2,722,525,494	-	-	67,337,347	67,337,347
2084	-	2,838,232,827	2,838,232,827	-	-	70,199,213	70,199,213
2085	-	2,958,857,722	2,958,857,722	-	-	73,182,685	73,182,685
2086	-	3,084,609,175	3,084,609,175	-	-	76,292,934	76,292,934
2087	-	3,215,705,065	3,215,705,065	-	-	79,535,352	79,535,352
2088	-	3,352,372,530	3,352,372,530	-	-	82,915,560	82,915,560
2089	-	3,494,848,363	3,494,848,363	-	-	86,439,417	86,439,417
2090	-	3,643,379,418	3,643,379,418	-	-	90,113,034	90,113,034
2091	-	3,798,223,043	3,798,223,043	-	-	93,942,778	93,942,778
2092	-	3,959,647,522	3,959,647,522	-	-	97,935,288	97,935,288
2093	-	4,127,932,542	4,127,932,542	-	-	102,097,484	102,097,484
2094	-	4,303,369,675	4,303,369,675	-	-	106,436,580	106,436,580
2095	-	4,486,262,886	4,486,262,886	-	-	110,960,096	110,960,096
2096	-	4,676,929,059	4,676,929,059	-	-	115,675,869	115,675,869
2097	-	4,875,698,544	4,875,698,544	-	-	120,592,072	120,592,072
2098	-	5,082,915,732	5,082,915,732	-	-	125,717,222	125,717,222
2099	-	5,298,939,651	5,298,939,651	-	-	131,060,198	131,060,198
2100	-	5,524,144,586	5,524,144,586	-	-	136,630,259	136,630,259
2101	-	5,758,920,731	5,758,920,731	-	-	142,437,053	142,437,053
2102	-	6,003,674,862	6,003,674,862	-	-	148,490,640	148,490,640
2103	-	6,258,831,044	6,258,831,044	-	-	154,801,509	154,801,509
2104	-	6,524,831,363	6,524,831,363	-	-	161,380,592	161,380,592
2105	-	6,802,136,696	6,802,136,696	-	-	168,239,287	168,239,287
2106	-	7,091,227,506	7,091,227,506	-	-	175,389,477	175,389,477
2107	-	7,392,604,675	7,392,604,675	-	-	182,843,549	182,843,549
2108	-	7,706,790,374	7,706,790,374	-	-	190,614,417	190,614,417
2109	-	8,034,328,965	8,034,328,965	-	-	198,715,545	198,715,545
2110	-	8,375,787,946	8,375,787,946	-	-	207,160,967	207,160,967
2111	-	8,731,758,934	8,731,758,934	-	-	215,965,317	215,965,317
2112	-	9,102,858,689	9,102,858,689	-	-	225,143,849	225,143,849
2113	-	9,489,730,183	9,489,730,183	-	-	234,712,466	234,712,466

**SINGLE DISCOUNT RATE DEVELOPMENT PROJECTION  
OF PLAN FIDUCIARY NET POSITION ENDING DECEMBER 31 FOR 2014 TO 2063**

Year	Projected Beginning Plan Net Position	Projected Total Contributions	Projected Benefit Payments	Projected Administrative Expenses	Projected Investment Earnings at 7.750%	Projected Ending Plan Net Position
	(a)	(b)	(c)	(d)	(e)	(f)=(a)+(b)-(c)-(d)+(e)
2014	\$ 508,523,169	\$ 27,425,565	\$ 27,320,442	\$ 414,331	\$ 24,853,352	\$ 533,067,313
2015	533,067,313	24,043,595	29,242,359	513,984	41,095,478	568,450,044
2016	568,450,044	23,126,734	31,267,333	530,688	43,725,136	603,503,892
2017	603,503,892	22,398,778	33,265,225	547,935	46,337,497	638,427,007
2018	638,427,007	21,793,942	35,312,074	565,743	48,942,526	673,285,658
2019	673,285,658	21,230,191	37,526,814	584,130	51,537,715	707,942,620
2020	707,942,620	20,677,044	39,827,369	603,114	54,114,390	742,303,570
2021	742,303,570	20,122,492	42,184,433	622,715	56,665,898	776,284,811
2022	776,284,811	19,584,736	44,616,123	642,953	59,185,755	809,796,226
2023	809,796,226	19,060,757	47,053,674	663,849	61,669,477	842,808,938
2024	842,808,938	18,535,920	49,589,012	685,424	64,110,773	875,181,195
2025	875,181,195	18,030,651	52,201,584	707,700	66,500,214	906,802,776
2026	906,802,776	17,532,833	54,774,953	730,700	68,833,224	937,663,180
2027	937,663,180	17,029,705	57,517,727	754,448	71,100,570	967,521,280
2028	967,521,280	16,506,872	60,498,948	778,968	73,280,392	996,030,628
2029	996,030,628	15,979,611	63,559,961	804,284	75,352,452	1,022,998,447
2030	1,022,998,447	15,479,118	66,753,988	830,423	77,300,973	1,048,194,126
2031	1,048,194,126	14,992,755	69,965,456	857,412	79,111,994	1,071,476,008
2032	1,071,476,008	14,516,752	73,164,622	885,278	80,775,525	1,092,718,384
2033	1,092,718,384	14,077,465	76,342,023	914,050	82,283,183	1,111,822,960
2034	1,111,822,960	13,699,505	79,406,428	943,757	83,631,756	1,128,804,036
2035	1,128,804,036	13,397,893	82,128,690	974,429	84,831,634	1,143,930,444
2036	1,143,930,444	13,173,955	84,540,119	1,006,098	85,902,511	1,157,460,692
2037	1,157,460,692	13,036,749	86,583,177	1,038,796	86,866,953	1,169,742,421
2038	1,169,742,421	12,975,535	88,284,942	1,072,557	87,750,463	1,181,110,920
2039	1,181,110,920	12,985,284	89,659,677	1,107,415	88,578,289	1,191,907,401
2040	1,191,907,401	13,070,475	90,681,528	1,143,406	89,378,030	1,202,530,972
2041	1,202,530,972	13,225,371	91,375,065	1,180,567	90,179,460	1,213,380,171
2042	1,213,380,171	13,449,636	91,793,914	1,218,935	91,011,415	1,224,828,373
2043	1,224,828,373	13,740,829	91,793,247	1,258,550	91,908,243	1,237,425,647
2044	1,237,425,647	14,089,842	91,521,020	1,299,453	92,906,600	1,251,601,616
2045	1,251,601,616	14,495,139	91,036,066	1,341,685	94,037,485	1,267,756,489
2046	1,267,756,489	14,948,706	90,279,986	1,385,290	95,333,829	1,286,373,748
2047	1,286,373,748	15,447,833	89,269,969	1,430,312	96,832,343	1,307,953,642
2048	1,307,953,642	15,995,119	88,045,211	1,476,797	98,570,402	1,332,997,156
2049	1,332,997,156	16,584,875	86,619,584	1,524,793	100,586,088	1,362,023,743
2050	1,362,023,743	17,214,801	84,921,987	1,574,349	102,922,273	1,395,664,480
2051	1,395,664,480	17,889,281	82,925,635	1,625,515	105,629,048	1,434,631,658
2052	1,434,631,658	18,607,273	80,755,873	1,678,344	108,756,808	1,479,561,522
2053	1,479,561,522	19,365,943	78,460,460	1,732,890	112,352,936	1,531,087,050
2054	1,531,087,050	20,165,985	76,050,197	1,789,209	116,466,101	1,589,879,729
2055	1,589,879,729	21,009,609	73,550,140	1,847,358	121,147,472	1,656,639,312
2056	1,656,639,312	21,896,549	70,983,982	1,907,397	126,450,368	1,732,094,850
2057	1,732,094,850	22,823,597	68,383,016	1,969,387	132,429,974	1,816,996,019
2058	1,816,996,019	23,791,480	65,755,303	2,033,392	139,144,110	1,912,142,915
2059	1,912,142,915	24,801,544	63,105,120	2,099,477	146,654,670	2,018,394,532
2060	2,018,394,532	25,854,880	60,438,455	2,167,710	155,028,036	2,136,671,282
2061	2,136,671,282	26,953,142	57,760,381	2,238,161	164,335,408	2,267,961,290
2062	2,267,961,290	28,098,113	55,075,527	2,310,901	174,653,254	2,413,326,229
2063	2,413,326,229	29,291,778	52,387,498	2,386,005	186,063,790	2,573,908,294

**SINGLE DISCOUNT RATE DEVELOPMENT PROJECTION  
OF PLAN FIDUCIARY NET POSITION ENDING DECEMBER 31 FOR 2064 TO 2113**

Year	Projected Beginning Plan Net Position	Projected Total Contributions	Projected Benefit Payments	Projected Administrative Expenses	Projected Investment Earnings at 7.750%	Projected Ending Plan Net Position
	(a)	(b)	(c)	(d)	(e)	(f)=(a)+(b)-(c)-(d)+(e)
2064	\$ 2,573,908,294	\$ 30,536,216	\$ 49,700,341	\$ 2,463,550	\$ 198,655,458	\$ 2,750,936,077
2065	2,750,936,077	31,833,606	47,018,996	2,543,615	212,523,366	2,945,730,438
2066	2,945,730,438	33,186,205	44,348,473	2,626,282	227,769,772	3,159,711,660
2067	3,159,711,660	34,596,360	41,694,564	2,711,636	244,504,615	3,394,406,435
2068	3,394,406,435	36,066,524	39,063,466	2,799,764	262,846,068	3,651,455,796
2069	3,651,455,796	37,599,243	36,460,250	2,890,756	282,921,210	3,932,625,243
2070	3,932,625,243	39,197,165	33,889,517	2,984,706	304,866,791	4,239,814,975
2071	4,239,814,975	40,863,058	31,356,016	3,081,709	328,829,997	4,575,070,305
2072	4,575,070,305	42,599,804	28,864,736	3,181,865	354,969,255	4,940,592,763
2073	4,940,592,763	44,410,405	26,422,228	3,285,276	383,455,046	5,338,750,710
2074	5,338,750,710	46,297,984	24,036,622	3,392,047	414,470,723	5,772,090,748
2075	5,772,090,748	48,265,807	21,716,426	3,502,289	448,213,444	6,243,351,284
2076	6,243,351,284	50,317,275	19,470,908	3,616,113	484,895,209	6,755,476,747
2077	6,755,476,747	52,455,932	17,310,927	3,733,637	524,743,927	7,311,632,041
2078	7,311,632,041	54,685,474	15,248,009	3,854,980	568,004,577	7,915,219,104
2079	7,915,219,104	57,009,756	13,294,702	3,980,267	614,940,474	8,569,894,365
2080	8,569,894,365	59,432,799	11,463,616	4,109,626	665,834,660	9,279,588,581
2081	9,279,588,581	61,958,799	9,766,557	4,243,189	720,991,472	10,048,529,107
2082	10,048,529,107	64,592,127	8,213,984	4,381,093	780,738,296	10,881,264,453
2083	10,881,264,453	67,337,347	6,814,209	4,523,479	845,427,493	11,782,691,605
2084	11,782,691,605	70,199,213	5,572,342	4,670,492	915,438,559	12,758,086,543
2085	12,758,086,543	73,182,685	4,489,074	4,822,283	991,180,540	13,813,138,412
2086	13,813,138,412	76,292,934	3,561,419	4,979,007	1,073,094,650	14,953,985,569
2087	14,953,985,569	79,535,352	2,782,475	5,140,825	1,161,657,071	16,187,254,693
2088	16,187,254,693	82,915,560	2,140,702	5,307,902	1,257,382,019	17,520,103,667
2089	17,520,103,667	86,439,417	1,621,385	5,480,409	1,360,825,004	18,960,266,294
2090	18,960,266,294	90,113,034	1,208,667	5,658,522	1,472,586,225	20,516,098,364
2091	20,516,098,364	93,942,778	886,740	5,842,424	1,593,314,093	22,196,626,071
2092	22,196,626,071	97,935,288	640,255	6,032,303	1,723,708,966	24,011,597,767
2093	24,011,597,767	102,097,484	455,050	6,228,353	1,864,527,136	25,971,538,984
2094	25,971,538,984	106,436,580	318,627	6,430,774	2,016,585,073	28,087,811,236
2095	28,087,811,236	110,960,096	220,158	6,639,774	2,180,763,985	30,372,675,385
2096	30,372,675,385	115,675,869	150,449	6,855,567	2,358,014,728	32,839,359,967
2097	32,839,359,967	120,592,072	101,877	7,078,373	2,549,363,106	35,502,134,895
2098	35,502,134,895	125,717,222	68,442	7,308,420	2,755,915,580	38,376,390,835
2099	38,376,390,835	131,060,198	45,654	7,545,944	2,978,865,427	41,478,724,861
2100	41,478,724,861	136,630,259	30,258	7,791,187	3,219,499,386	44,827,033,062
2101	44,827,033,062	142,437,053	19,930	8,044,401	3,479,204,850	48,440,610,634
2102	48,440,610,634	148,490,640	13,034	8,305,844	3,759,477,632	52,340,260,029
2103	52,340,260,029	154,801,509	8,459	8,575,784	4,061,930,353	56,548,407,647
2104	56,548,407,647	161,380,592	5,442	8,854,497	4,388,301,492	61,089,229,793
2105	61,089,229,793	168,239,287	3,447	9,142,268	4,740,465,156	65,988,788,521
2106	65,988,788,521	175,389,477	2,137	9,439,392	5,120,441,609	71,275,178,078
2107	71,275,178,078	182,843,549	1,280	9,746,172	5,530,408,622	76,978,682,797
2108	76,978,682,797	190,614,417	734	10,062,923	5,972,713,716	83,131,947,273
2109	83,131,947,273	198,715,545	395	10,389,968	6,449,887,351	89,770,159,806
2110	89,770,159,806	207,160,967	204	10,727,642	6,964,657,142	96,931,250,070
2111	96,931,250,070	215,965,317	103	11,076,290	7,519,963,186	104,656,102,181
2112	104,656,102,181	225,143,849	49	11,436,269	8,118,974,570	112,988,784,282
2113	112,988,784,282	234,712,466	31	11,807,948	8,765,107,165	121,976,795,933

**SINGLE DISCOUNT RATE DEVELOPMENT PRESENT VALUES  
OF PROJECTED BENEFITS ENDING DECEMBER 31 FOR 2014 TO 2063**

Year	Projected Beginning Plan Net Position	Projected Benefit Payments	Funded Portion of Projected Benefit Payments	Unfunded Portion of Projected Benefit Payments	Present Value of Funded Benefit Payments using	Present Value of Unfunded Benefit Payments using	Present Value of All Benefit Payments using
					Expected Return Rate (v)	Municipal Bond Rate (vf)	Single Discount Rate (SDR)
(a)	(b)	(c)	(d)	(e)	(f)=(d)*v <sup>-(a)-5</sup>	(g)=(e)*vf <sup>-(a)-5</sup>	(h)=(c)/(1+SDR) <sup>-(a)-5</sup>
2014	\$ 508,523,169	\$ 27,320,442	\$ 27,320,442	\$ -	\$ 26,319,588	\$ -	\$ 26,319,588
2015	533,067,313	29,242,359	29,242,359	-	26,144,870	-	26,144,870
2016	568,450,044	31,267,333	31,267,333	-	25,944,640	-	25,944,640
2017	603,503,892	33,265,225	33,265,225	-	25,617,101	-	25,617,101
2018	638,427,007	35,312,074	35,312,074	-	25,237,450	-	25,237,450
2019	673,285,658	37,526,814	37,526,814	-	24,891,248	-	24,891,248
2020	707,942,620	39,827,369	39,827,369	-	24,517,112	-	24,517,112
2021	742,303,570	42,184,433	42,184,433	-	24,100,310	-	24,100,310
2022	776,284,811	44,616,123	44,616,123	-	23,656,199	-	23,656,199
2023	809,796,226	47,053,674	47,053,674	-	23,154,179	-	23,154,179
2024	842,808,938	49,589,012	49,589,012	-	22,646,653	-	22,646,653
2025	875,181,195	52,201,584	52,201,584	-	22,125,086	-	22,125,086
2026	906,802,776	54,774,953	54,774,953	-	21,545,969	-	21,545,969
2027	937,663,180	57,517,727	57,517,727	-	20,997,542	-	20,997,542
2028	967,521,280	60,498,948	60,498,948	-	20,497,329	-	20,497,329
2029	996,030,628	63,559,961	63,559,961	-	19,985,536	-	19,985,536
2030	1,022,998,447	66,753,988	66,753,988	-	19,480,142	-	19,480,142
2031	1,048,194,126	69,965,456	69,965,456	-	18,948,782	-	18,948,782
2032	1,071,476,008	73,164,622	73,164,622	-	18,389,989	-	18,389,989
2033	1,092,718,384	76,342,023	76,342,023	-	17,808,475	-	17,808,475
2034	1,111,822,960	79,406,428	79,406,428	-	17,191,012	-	17,191,012
2035	1,128,804,036	82,128,690	82,128,690	-	16,501,499	-	16,501,499
2036	1,143,930,444	84,540,119	84,540,119	-	15,764,278	-	15,764,278
2037	1,157,460,692	86,583,177	86,583,177	-	14,983,990	-	14,983,990
2038	1,169,742,421	88,284,942	88,284,942	-	14,179,578	-	14,179,578
2039	1,181,110,920	89,659,677	89,659,677	-	13,364,618	-	13,364,618
2040	1,191,907,401	90,681,528	90,681,528	-	12,544,719	-	12,544,719
2041	1,202,530,972	91,375,065	91,375,065	-	11,731,473	-	11,731,473
2042	1,213,380,171	91,793,914	91,793,914	-	10,937,585	-	10,937,585
2043	1,224,828,373	91,793,247	91,793,247	-	10,150,817	-	10,150,817
2044	1,237,425,647	91,521,020	91,521,020	-	9,392,773	-	9,392,773
2045	1,251,601,616	91,036,066	91,036,066	-	8,671,000	-	8,671,000
2046	1,267,756,489	90,279,986	90,279,986	-	7,980,497	-	7,980,497
2047	1,286,373,748	89,269,969	89,269,969	-	7,323,633	-	7,323,633
2048	1,307,953,642	88,045,211	88,045,211	-	6,703,624	-	6,703,624
2049	1,332,997,156	86,619,584	86,619,584	-	6,120,723	-	6,120,723
2050	1,362,023,743	84,921,987	84,921,987	-	5,569,157	-	5,569,157
2051	1,395,664,480	82,925,635	82,925,635	-	5,047,088	-	5,047,088
2052	1,434,631,658	80,755,873	80,755,873	-	4,561,513	-	4,561,513
2053	1,479,561,522	78,460,460	78,460,460	-	4,113,091	-	4,113,091
2054	1,531,087,050	76,050,197	76,050,197	-	3,699,990	-	3,699,990
2055	1,589,879,729	73,550,140	73,550,140	-	3,320,981	-	3,320,981
2056	1,656,639,312	70,983,982	70,983,982	-	2,974,582	-	2,974,582
2057	1,732,094,850	68,383,016	68,383,016	-	2,659,479	-	2,659,479
2058	1,816,996,019	65,755,303	65,755,303	-	2,373,350	-	2,373,350
2059	1,912,142,915	63,105,120	63,105,120	-	2,113,871	-	2,113,871
2060	2,018,394,532	60,438,455	60,438,455	-	1,878,927	-	1,878,927
2061	2,136,671,282	57,760,381	57,760,381	-	1,666,515	-	1,666,515
2062	2,267,961,290	55,075,527	55,075,527	-	1,474,758	-	1,474,758
2063	2,413,326,229	52,387,498	52,387,498	-	1,301,884	-	1,301,884

**SINGLE DISCOUNT RATE DEVELOPMENT PRESENT VALUES**

## OF PROJECTED BENEFITS ENDING DECEMBER 31 FOR 2064 TO 2113

Year	Projected Beginning Plan Net Position	Projected Benefit Payments	Funded Portion of Projected Benefit Payments	Unfunded Portion of Projected Benefit Payments	Present Value of Funded Benefit Payments using Expected Return Rate (v)	Present Value of Unfunded Benefit Payments using Municipal Bond Rate (v <sup>f</sup> )	Present Value of All Benefit Payments using Single Discount Rate (SDR)
(a)	(b)	(c)	(d)	(e)	(f)=(d)*v <sup>a</sup> ((a)-.5)	(g)=(e)*v <sup>f</sup> ((a)-.5)	(h)=((c)/(1+SDR)) <sup>a</sup> ((a)-.5)
2064	\$ 2,573,908,294	\$ 49,700,341	\$ 49,700,341	\$ -	\$ 1,146,270	\$ -	\$ 1,146,270
2065	2,750,936,077	47,018,996	47,018,996	-	1,006,430	-	1,006,430
2066	2,945,730,438	44,348,473	44,348,473	-	880,991	-	880,991
2067	3,159,711,660	41,694,564	41,694,564	-	768,697	-	768,697
2068	3,394,406,435	39,063,466	39,063,466	-	668,389	-	668,389
2069	3,651,455,796	36,460,250	36,460,250	-	578,976	-	578,976
2070	3,932,625,243	33,889,517	33,889,517	-	499,447	-	499,447
2071	4,239,814,975	31,356,016	31,356,016	-	428,872	-	428,872
2072	4,575,070,305	28,864,736	28,864,736	-	366,401	-	366,401
2073	4,940,592,763	26,422,228	26,422,228	-	311,273	-	311,273
2074	5,338,750,710	24,036,622	24,036,622	-	262,802	-	262,802
2075	5,772,090,748	21,716,426	21,716,426	-	220,356	-	220,356
2076	6,243,351,284	19,470,908	19,470,908	-	183,361	-	183,361
2077	6,755,476,747	17,310,927	17,310,927	-	151,294	-	151,294
2078	7,311,632,041	15,248,009	15,248,009	-	123,680	-	123,680
2079	7,915,219,104	13,294,702	13,294,702	-	100,080	-	100,080
2080	8,569,894,365	11,463,616	11,463,616	-	80,089	-	80,089
2081	9,279,588,581	9,766,557	9,766,557	-	63,325	-	63,325
2082	10,048,529,107	8,213,984	8,213,984	-	49,428	-	49,428
2083	10,881,264,453	6,814,209	6,814,209	-	38,055	-	38,055
2084	11,782,691,605	5,572,342	5,572,342	-	28,881	-	28,881
2085	12,758,086,543	4,489,074	4,489,074	-	21,593	-	21,593
2086	13,813,138,412	3,561,419	3,561,419	-	15,899	-	15,899
2087	14,953,985,569	2,782,475	2,782,475	-	11,528	-	11,528
2088	16,187,254,693	2,140,702	2,140,702	-	8,231	-	8,231
2089	17,520,103,667	1,621,385	1,621,385	-	5,786	-	5,786
2090	18,960,266,294	1,208,667	1,208,667	-	4,003	-	4,003
2091	20,516,098,364	886,740	886,740	-	2,726	-	2,726
2092	22,196,626,071	640,255	640,255	-	1,826	-	1,826
2093	24,011,597,767	455,050	455,050	-	1,205	-	1,205
2094	25,971,538,984	318,627	318,627	-	783	-	783
2095	28,087,811,236	220,158	220,158	-	502	-	502
2096	30,372,675,385	150,449	150,449	-	318	-	318
2097	32,839,359,967	101,877	101,877	-	200	-	200
2098	35,502,134,895	68,442	68,442	-	125	-	125
2099	38,376,390,835	45,654	45,654	-	77	-	77
2100	41,478,724,861	30,258	30,258	-	48	-	48
2101	44,827,033,062	19,930	19,930	-	29	-	29
2102	48,440,610,634	13,034	13,034	-	18	-	18
2103	52,340,260,029	8,459	8,459	-	11	-	11
2104	56,548,407,647	5,442	5,442	-	6	-	6
2105	61,089,229,793	3,447	3,447	-	4	-	4
2106	65,988,788,521	2,137	2,137	-	2	-	2
2107	71,275,178,078	1,280	1,280	-	1	-	1
2108	76,978,682,797	734	734	-	1	-	1
2109	83,131,947,273	395	395	-	0	-	0
2110	89,770,159,806	204	204	-	0	-	0
2111	96,931,250,070	103	103	-	0	-	0
2112	104,656,102,181	49	49	-	0	-	0
2113	112,988,784,282	31	31	-	0	-	0
<b>Totals</b>					\$ 686,337,222	\$ -	\$ 686,337,222

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## **SECTION H**

### **GLOSSARY OF TERMS**

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## GLOSSARY OF TERMS

<b><i>Actuarial Accrued Liability (AAL)</i></b>	The AAL is the difference between the actuarial present value of all benefits and the actuarial value of future normal costs. The definition comes from the fundamental equation of funding which states that the present value of all benefits is the sum of the Actuarial Accrued Liability and the present value of future normal costs. The AAL may also be referred to as "accrued liability" or "actuarial liability."
<b><i>Actuarial Assumptions</i></b>	These assumptions are estimates of future experience with respect to rates of mortality, disability, turnover, retirement, rate or rates of investment income and compensation increases. Actuarial assumptions are generally based on past experience, often modified for projected changes in conditions. Economic assumptions (compensation increases, payroll growth, inflation and investment return) consist of an underlying real rate of return plus an assumption for a long-term average rate of inflation.
<b><i>Accrued Service</i></b>	Service credited under the system which was rendered before the date of the actuarial valuation.
<b><i>Actuarial Equivalent</i></b>	A single amount or series of amounts of equal actuarial value to another single amount or series of amounts, computed on the basis of appropriate actuarial assumptions.
<b><i>Actuarial Cost Method</i></b>	A mathematical budgeting procedure for allocating the dollar amount of the actuarial present value of the pension trust benefits between future normal cost and actuarial accrued liability. The actuarial cost method may also be referred to as the actuarial funding method.
<b><i>Actuarial Gain (Loss)</i></b>	The difference in liabilities between actual experience and expected experience during the period between two actuarial valuations is the gain (loss) on the accrued liabilities.
<b><i>Actuarial Present Value (APV)</i></b>	The amount of funds currently required to provide a payment or series of payments in the future. The present value is determined by discounting future payments at predetermined rates of interest and probabilities of payment.
<b><i>Actuarial Valuation</i></b>	The actuarial valuation report determines, as of the actuarial valuation date, the service cost, total pension liability, and related actuarial present value of projected benefit payments for pensions.
<b><i>Actuarial Valuation Date</i></b>	The date as of which an actuarial valuation is performed.
<b><i>Actuarially Determined Contribution (ADC) or Annual Required Contribution (ARC)</i></b>	A calculated contribution into a defined benefit pension plan for the reporting period, most often determined based on the funding policy of the plan. Typically the Actuarially Determined Contribution has a normal cost payment and an amortization payment.

## GLOSSARY OF TERMS

<b><i>Amortization Payment</i></b>	The amortization payment is the periodic payment required to pay off an interest-discounted amount with payments of interest and principal.
<b><i>Amortization Method</i></b>	The method used to determine the periodic amortization payment may be a level dollar amount, or a level percent of pay amount. The period will typically be expressed in years, and the method will either be “open” (meaning, reset each year) or “closed” (the number of years remaining will decline each year).
<b><i>Cost-of-Living Adjustments</i></b>	Postemployment benefit changes intended to adjust benefit payments for the effects of inflation.
<b><i>Cost-Sharing Multiple-Employer Defined Benefit Pension Plan (cost-sharing pension plan)</i></b>	A multiple-employer defined benefit pension plan in which the pension obligations to the employees of more than one employer are pooled and pension plan assets can be used to pay the benefits of the employees of any employer that provides pensions through the pension plan.
<b><i>Covered-Employee Payroll</i></b>	The payroll of employees that are provided with pensions through the pension plan.
<b><i>Deferred Retirement Option Program (DROP)</i></b>	A program that permits a plan member to elect a calculation of benefit payments based on service credits and salary, as applicable, as of the DROP entry date. The plan member continues to provide service to the employer and is paid for the service by the employer after the DROP entry date; however, the pensions that would have been paid to the plan member are credited to an individual member account within the defined benefit pension plan until the end of the DROP period. Other variations for DROP exist and will be more fully detailed in the plan provision section of the valuation report.
<b><i>Deferred Inflows and Outflows</i></b>	The deferred inflows and outflows of pension resources are amounts used under GASB Statement No. 68 in developing the annual pension expense. Deferred inflows and outflows arise with differences between expected and actual experiences; changes of assumptions. The portion of these amounts not included in pension expense should be included in the deferred inflows or outflows of resources.
<b><i>Discount Rate</i></b>	For GASB purposes, the discount rate is the single rate of return that results in the present value of all projected benefit payments to be equal to the sum of the funded and unfunded projected benefit payments, specifically: <ol style="list-style-type: none"> <li>1. The benefit payments to be made while the pension plans’ fiduciary net position is projected to be greater than the benefit payments that are projected to be made in the period; and</li> <li>2. The present value of the benefit payments not in (1) above, discounted using the municipal bond rate.</li> </ol>

## GLOSSARY OF TERMS

<b><i>Entry Age Actuarial Cost Method (EAN)</i></b>	The EAN is a cost method for allocating the costs of the plan between the normal cost and the accrued liability. The actuarial present value of the projected benefits of each individual included in an actuarial valuation is allocated on a level basis (either level dollar or level percent of pay) over the earnings or service of the individual between entry age and assumed exit ages(s). The portion of the actuarial present value allocated to a valuation year is the normal cost. The portion of this actuarial present value not provided for at a valuation date by the actuarial present value of future normal costs is the actuarial accrued liability. The sum of the accrued liability plus the present value of all future normal costs is the present value of all benefits.
<b><i>GASB</i></b>	The Governmental Accounting Standards Board is an organization that exists in order to promulgate accounting standards for governmental entities.
<b><i>Fiduciary Net Position</i></b>	The fiduciary net position is the market value of the assets of the trust dedicated to the defined benefit provisions.
<b><i>Long-Term Expected Rate of Return</i></b>	The long-term rate of return is the expected return to be earned over the entire trust portfolio based on the asset allocation of the portfolio.
<b><i>Money-Weighted Rate of Return</i></b>	The money-weighted rate of return is a method of calculating the returns that adjusts for the changing amounts actually invested. For purposes of GASB Statement No. 67, money-weighted rate of return is calculated as the internal rate of return on pension plan investments, net of pension plan investment expense.
<b><i>Multiple-Employer Defined Benefit Pension Plan</i></b>	A multiple-employer plan is a defined benefit pension plan that is used to provide pensions to the employees of more than one employer.
<b><i>Municipal Bond Rate</i></b>	The Municipal Bond Rate is the discount rate to be used for those benefit payments that occur after the assets of the trust have been depleted.
<b><i>Net Pension Liability (NPL)</i></b>	The NPL is the liability of employers and non-employer contribution entities to plan members for benefits provided through a defined benefit pension plan.
<b><i>Non-Employer Contribution Entities</i></b>	Non-employer contribution entities are entities that make contributions to a pension plan that is used to provide pensions to the employees of other entities. For purposes of the GASB accounting statements, plan members are not considered non-employer contribution entities.
<b><i>Normal Cost</i></b>	The portion of the actuarial present value allocated to a valuation year is called the normal cost. For purposes of application to the requirements of this Statement, the term normal cost is the equivalent of service cost.

**GLOSSARY OF TERMS**

<b><i>Other Postemployment Benefits (OPEB)</i></b>	All postemployment benefits other than retirement income (such as death benefits, life insurance, disability, and long-term care) that are provided separately from a pension plan, as well as postemployment healthcare benefits regardless of the manner in which they are provided. Other post-employment benefits do not include termination benefits.
<b><i>Real Rate of Return</i></b>	The real rate of return is the rate of return on an investment after adjustment to eliminate inflation.
<b><i>Service Cost</i></b>	The service cost is the portion of the actuarial present value of projected benefit payments that is attributed to a valuation year.
<b><i>Total Pension Expense</i></b>	The total pension expense is the sum of the following items that are recognized at the end of the employer’s fiscal year: <ol style="list-style-type: none"><li>1. Service Cost</li><li>2. Interest on the Total Pension Liability</li><li>3. Current-Period Benefit Changes</li><li>4. Employee Contributions (made negative for addition here)</li><li>5. Projected Earnings on Plan Investments (made negative for addition here)</li><li>6. Pension Plan Administrative Expense</li><li>7. Other Changes in Plan Fiduciary Net Position</li><li>8. Recognition of Outflow (Inflow) of Resources due to Liabilities</li><li>9. Recognition of Outflow (Inflow) of Resources due to Assets</li></ol>
<b><i>Total Pension Liability (TPL)</i></b>	The TPL is the portion of the actuarial present value of projected benefit payments that is attributed to past periods of member service.
<b><i>Unfunded Actuarial Accrued Liability (UAAL)</i></b>	The UAAL is the difference between actuarial accrued liability and valuation assets.
<b><i>Valuation Assets</i></b>	The valuation assets are the assets used in determining the unfunded liability of the plan. For purposes of GASB Statement Nos. 67 and 68, the valuation assets are equal to the market value of assets.