Gabriel Roeder Smith & Company
Consultants & Actuaries

MINNESOTA STATE RETIREMENT SYSTEM

CORRECTIONAL EMPLOYEES RETIREMENT FUND

GASB STATEMENTS NO. 67 AND NO. 68 ACCOUNTING AND FINANCIAL REPORTING FOR PENSIONS

JUNE 30, 2014

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December 1, 2014

Minnesota State Retirement System
Correctional Employees Retirement Fund
St. Paul, Minnesota

Dear Board of Directors:

This report provides accounting and financial reporting information that is intended to comply with the Governmental Accounting Standards Board (GASB) Statements No. 67 and No. 68 for the Correctional Employees Retirement Fund ("CERF"). These calculations have been made on a basis that is consistent with our understanding of these accounting standards.

GASB Statement No. 67 is the accounting standard that applies to the financial reports issued by retirement systems. GASB Statement No. 68 establishes accounting and financial reporting for state and local government employers who provide their employees (including former employees) pension benefits through a trust.

Our calculation of the liability associated with the benefits described in this report was performed for the purpose of providing reporting and disclosure information that satisfies the requirements of GASB Statements No. 67 and 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 may produce significantly different results. The information in this report is calculated on a total plan basis. MSRS is responsible for preparing the Schedule of Employer Allocations and the Schedule of Pension Amounts by Employer. This report may be provided to parties other than the Minnesota State Retirement System (MSRS) only in its entirety and only with the permission of MSRS.

This report is based upon information, furnished to us by MSRS, 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.

To the best of our knowledge, the information contained with this report is accurate and fairly represents the actuarial position of the Correctional Employees Retirement Fund as of the measurement date. 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. Brian B. Murphy and Bonita J. Wurst are members of the American Academy of Actuaries (MAAA) and meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinion contained herein.

Respectfully submitted,

By Brian B. Murphy
Brian B. Murphy
FSA, EA, MAAA

By Bonita J. Wurst
Bonita J. Wurst
ASA, EA, MAAA

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SECTION A

EXECUTIVE SUMMARY

EXECUTIVE SUMMARY

As of June 30, 2014 *(Dollars in Thousands)*

	2014
Actuarial Valuation Date	June 30, 2014
Measurement Date of the Net Pension Liability	June 30, 2014
Membership	
Number of	
- Service Retirements	2,075
- Survivors	174
- Disability Retirements	268
- Deferred Retirements	1,232
- Terminated other non-vested	384
- Active Members	4,504
- Total	8,637
Covered-employee Payroll	$ 219,244 [1]
Net Pension Liability	
Total Pension Liability	$ 1,353,386
Plan Fiduciary Net Position	877,056
Net Pension Liability	$ 476,330
Plan Fiduciary Net Position as a Percentage of Total Pension Liability	64.80%
Net Pension Liability as a Percentage of Covered-Employee Payroll	217.26%
Development of the Single Discount Rate	
Single Discount Rate	6.82%
Long-Term Expected Rate of Investment Return	7.90%
Long-Term Municipal Bond Rate [2]	4.29%
Last year ending June 30 in the 2015 to 2114 projection period for which projected benefit payments are fully funded	2056
Total Pension Expense/ (Income)	$ 23,637

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 in the measurement of the Total Pension Liability	$ 3,419	$ 0
Changes in assumptions	0	122,556
Net difference between projected and actual earnings on pension plan investments	$ 0	63,039
Total	$ 3,419	$ 185,595

[1] *Assumed equal to actual member contributions divided by employee contribution rate.*

[2] *Based on the Bond Buyer 20-Bond Index of general obligation municipal bonds as of June 26, 2014 (i.e., the weekly rate closest to but not later than the Measurement Date).*

DISCUSSION

Accounting Standard

For pension plans that are administered through trusts or equivalent arrangements, Governmental Accounting Standards Board (GASB) Statement No. 67, *Financial Reporting for Pension Plans* 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, *Accounting and Financial Reporting for Pensions* 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 and local governmental employers 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 difference between expected and actual experience in the measurement of the Total Pension Liability, assumption changes 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 to 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.

Both GASB Statements No. 67 and No. 68 require the notes to the financial statements for the employers and pension plans to include certain descriptive information about the pension plans through which the pension benefits are provided. The list of disclosure items should include:

- a description of benefits provided by the plan;
- the classes 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 the current discount rate 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 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
- annual money-weighted rate of return.

MSRS' comprehensive annual financial report, which contains the basic financial statements and related note disclosures for the Correctional Employees Retirement Fund can be obtained from MSRS at 60 Empire Drive, Suite 300, St. Paul, MN, 55103 or requested via email at info@msrs.us or telephone at 1-800-657-5757.

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 June 30, 2014 and a measurement date of June 30, 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 long-term expected rate of return on pension plan investments is 7.90%; the municipal bond rate is 4.29% (based on the weekly rate closest to but not later than the measurement date of the 20-Year Bond Buyer Index as published by the Federal Reserve Board); and the resulting single discount rate is 6.82%.

Effective Date and Transition

GASB Statements No. 67 and No. 68 are effective for fiscal years beginning after June 15, 2013, and June 15, 2014 respectively. Earlier application is encouraged by the GASB.

SECTION B

FINANCIAL STATEMENTS

PENSION EXPENSE UNDER GASB STATEMENT NO. 68

Fiscal Year Ended June 30, 2014 *(Dollars in Thousands)*

A. Expense

1.	Service Cost	$	54,443
2.	Interest on the Total Pension Liability		85,702
3.	Current-Period Benefit Changes		0
4.	Employee Contributions (made negative for addition here)		(18,855)
5.	Projected Earnings on Plan Investments (made negative for addition here)		(58,724)
6.	Pension Plan Administrative Expense		657
7.	Other Changes in Plan Fiduciary Net Position		1
8.	Recognition of Outflow (Inflow) of Resources due to differences between expected and actual experience in the measurement of the Total Pension Liability		684
9.	Recognition of Outflow (Inflow) of Resources due to assumption changes		(24,511)
10.	Recognition of Outflow (Inflow) of Resources due to the difference between projected (7.90%) and actual earnings on Pension Plan Investments		(15,760)
11.	**Total Pension Expense / (Income)**	**$**	**23,637**

Statement of Outflows and Inflows Arising from Current Reporting Period

Fiscal Year Ended June 30, 2014 *(Dollars in Thousands)*

A. Outflows (Inflows) of Resources due to Liabilities		
1. Difference between expected and actual experience of the Total Pension Liability (gains) or losses	$	4,103
2. Assumption Changes (gains) or losses	$	(147,067)
3. Recognition period for Liabilities: Average of the expected remaining service lives of all employees {in years}		6.0000
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	$	684
5. Outflow (Inflow) of Resources to be recognized in the current pension expense for Assumption Changes	$	(24,511)
6. Outflow (Inflow) of Resources to be recognized in the current pension expense due to Liabilities	$	(23,827)
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	$	3,419
8. Deferred Outflow (Inflow) of Resources to be recognized in future pension expenses for Assumption Changes	$	(122,556)
9. Deferred Outflow (Inflow) of Resources to be recognized in future pension expenses due to Liabilities	$	(119,137)
B. Outflows (Inflows) of Resources due to Assets		
1. Net difference between projected and actual earnings on pension plan investments (gains) or losses	$	(78,799)
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	$	(15,760)
4. Deferred Outflow (Inflow) of Resources to be recognized in future pension expenses due to Assets	$	(63,039)

STATEMENT OF OUTFLOWS AND INFLOWS ARISING FROM CURRENT AND PRIOR REPORTING PERIODS

Fiscal Year Ended June 30, 2014 *(Dollars in Thousands)*

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/(Inflows) of Resources
1. Due to Liabilities	$ 684	$ 24,511	$ (23,827)
2. Due to Assets	0	15,760	(15,760)
3. Total	$ 684	$ 40,271	$ (39,587)

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

	Outflows of Resources	Inflows of Resources	Net Outflows/(Inflows) of Resources
1. Differences between expected and actual experience	$ 684	$ 0	$ 684
2. Assumption Changes	0	24,511	(24,511)
3. Net Difference between projected and actual earnings on pension plan investments	0	15,760	(15,760)
4. Total	$ 684	$ 40,271	$ (39,587)

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/ (Inflows) of Resources
1. Differences between expected and actual experience	$ 3,419	$ 0	$ 3,419
2. Assumption Changes	0	122,556	(122,556)
3. Net Difference between projected and actual earnings on pension plan investments	0	63,039	(63,039)
4. Total	$ 3,419	$ 185,595	$ (182,176)

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

Year Ending June 30	Net Deferred Outflows/ (Inflows) of Resources
2015	$ (39,587)
2016	(39,587)
2017	(39,587)
2018	(39,586)
2019	(23,829)
Thereafter	0
Total	$ (182,176)

STATEMENT OF FIDUCIARY NET POSITION

As of June 30, 2014 *(Dollars in Thousands)*

Assets		**June 30, 2014**
Cash & Short-term Investments	$	24,460
Receivables		1,607
Investment Pools (at fair value)		852,465
Securities Lending Collateral		94,843
Capital Assets		0
Total Assets	**$**	**973,375**
Total Deferred Outflows of Resources	$	0
Total Liabilities	$	(96,319)
Total Deferred Inflows of Resources	$	0
Net Position Restricted for Pensions	**$**	**877,056**

STATEMENT OF CHANGES IN FIDUCIARY NET POSITION

For the Fiscal Year Ended June 30, 2014 *(Dollars in Thousands)*

Change in Fiduciary Net Position		**Market Value**
Year Ending		**June 30, 2014**
1. Net position at market value at beginning of year	**$**	**747,157**
Additions		
2. Contributions		
a. Member	$	18,855
b. Employer		26,468
c. Other sources		0
d. Total contributions	$	45,323
3. Investment income		
a. Investment income/(loss)	$	138,740
b. Investment expenses		(1,217)
c. Net investment income/(loss)		137,523
4. Other Additions	$	0
5. Total Additions: *(2.d.) + (3.c.) + (4.)*	**$**	**182,846**
Deductions		
6. Benefits Paid		
a. Annuity benefits	$	(50,842)
b. Refunds		(1,447)
c. Total benefits paid	$	(52,289)
7. Expenses		
a. Other deductions	$	(1)
b. Administrative		(657)
c. Total expenses	$	(658)
8. Total deductions: *(6.c.) + (7.c.)*	**$**	**(52,947)**
9. Net increase/(decrease) in fiduciary net position	**$**	**129,899**
10. Net position at market value at end of year *(1.) + (5.) + (8.)*	**$**	**877,056**
11. State Board of Investment calculated investment return		18.6%

SECTION C

REQUIRED SUPPLEMENTARY INFORMATION

SCHEDULE OF CHANGES IN NET PENSION LIABILITY AND RELATED RATIOS CURRENT PERIOD

Fiscal Year Ended June 30, 2014 *(Dollars in Thousands)*

A. Total pension liability			
1. Service Cost	$	54,443	
2. Interest on the Total Pension Liability		85,702	
3. Changes of benefit terms		0	
4. Difference between expected and actual experience of the Total Pension Liability		4,103	
5. Changes of assumptions		(147,067)	(1)
6. Benefit payments, including refunds of employee contributions		(52,289)	
7. Net change in total pension liability	$	(55,108)	
8. Total pension liability – beginning		1,408,494	
9. Total pension liability – ending	**$**	**1,353,386**	
B. Plan fiduciary net position			
1. Contributions – employer	$	26,468	
2. Contributions – employee		18,855	
3. Net investment income		137,523	
4. Benefit payments, including refunds of employee contributions		(52,289)	
5. Pension Plan Administrative Expense		(657)	
6. Other changes		(1)	
7. Net change in plan fiduciary net position	$	129,899	
8. Plan fiduciary net position – beginning		747,157	
9. Plan fiduciary net position – ending	**$**	**877,056**	
C. Net pension liability, *A.9 - B.9.*	**$**	**476,330**	
D. Plan fiduciary net position as a percentage of the total pension liability, *B.9 / A.9.*		**64.80%**	
E. Covered-employee payroll	**$**	**219,244**	(2)
F. Net pension liability as a percentage of covered-employee payroll, *C. / E.*		**217.26%**	

(1) *Assumption changes are summarized on page 28.*
(2) *Assumed equal to actual member contributions divided by employee contribution rate.*

Schedules of Required Supplementary Information

Schedule of Changes in Net Pension Liability and Related Ratios Multiyear *(Dollars in Thousands)*

Last 10 Fiscal Years (which will be built prospectively)

Fiscal year ending June 30,	2014	2013	2012	2011	2010	2009	2008	2007	2006	2005
Total Pension Liability										
Service Cost	$ 54,443									
Interest on the Total Pension Liability	85,702									
Benefit Changes	0									
Difference between Expected and Actual Experience	4,103									
Assumption Changes	(147,067) (1)									
Benefit Payments	(50,842)									
Refunds	(1,447)									
Net Change in Total Pension Liability	$ (55,108)									
Total Pension Liability - Beginning	1,408,494									
Total Pension Liability - Ending (a)	**$ 1,353,386**									
Plan Fiduciary Net Position										
Employer Contributions	$ 26,468									
Employee Contributions	18,855									
Pension Plan Net Investment Income	137,523									
Benefit Payments	(50,842)									
Refunds	(1,447)									
Pension Plan Administrative Expense	(657)									
Other	(1)									
Net Change in Plan Fiduciary Net Position	$ 129,899									
Plan Fiduciary Net Position - Beginning	747,157									
Plan Fiduciary Net Position - Ending (b)	**$ 877,056**									
Net Pension Liability - Ending (a) - (b)	$ 476,330									
Plan Fiduciary Net Position as a Percentage of Total Pension Liability	64.80 %									
Covered-Employee Payroll	$ 219,244 (2)									
Net Pension Liability as a Percentage of Covered-Employee Payroll	217.26 %									

Notes to Schedule:

(1) Assumed equal to plan member contributions divided by employee contribution rate.

(2) Assumption changes are summarized on page 28.

SCHEDULES OF REQUIRED SUPPLEMENTARY INFORMATION

Schedule of Net Pension Liability Multiyear *(Dollars in Thousands)*

Last 10 Fiscal Years (which will be built prospectively)

FY Ending June 30,	Total Pension Liability (a)	Plan Net Position (b)	Net Pension Liability (a) - (b) = (c)	Plan Net Position as a % of Total Pension Liability (b)/(c)	Covered-Employee Payroll (d)	Net Pension Liability as a % of Covered-Employee Payroll (c)/(d)
2005						
2006						
2007						
2008						
2009						
2010						
2011						
2012						
2013						
2014	$ 1,353,386	$ 877,056	$ 476,330	64.80%	$ 219,244	217.26%

SCHEDULE OF CONTRIBUTIONS MULTIYEAR *(Dollars in Thousands)*

Last 10 Fiscal Years

FY Ending June 30,	Actuarially Determined Contribution	Actual Contributions	Contribution Deficiency (Excess)	Covered-Employee Payroll	Actual Contribution as a % of Covered-Employee Payroll
	(a)	(b)	(a) - (b) = (c)	(d)	(b)/(d)
2005	$ 15,189	$ 11,016	$ 4,173	$ 132,335	8.32%
2006	16,871	12,152	4,719	145,879	8.33
2007	29,115	13,927	15,188	167,727	8.30
2008	34,734	18,623	16,111	194,391	9.58
2009	31,738	20,126	11,612	193,445	10.40
2010	32,557	21,988	10,569	192,450	11.43
2011	33,274	23,892	9,382	197,702	12.08
2012	34,806	24,188	10,618	200,035	12.09
2013	34,060	24,632	9,428	204,198	12.06
2014	38,390	26,468	11,922	219,244	12.07

NOTES TO SCHEDULE OF CONTRIBUTIONS

Valuation Date:	June 30, 2014
Notes	Actuarially determined contribution rates are calculated as of each July 1.

Methods and Assumptions Used to Determine Contribution Rates Reported in this Schedule:

Actuarial Cost Method	Entry Age Normal
Amortization Method	Level Percentage of Payroll, Closed
Remaining Amortization Period	24 years
Asset Valuation Method	5-Year smoothed market; no corridor
Inflation	3.00%
Salary Increases	Service based tables ranging from 6.00% with one year of service to 3.75% with 19 or more years of service, including inflation.
Investment Rate of Return	8.00% through June 30, 2017; 8.50% thereafter
Retirement Age	Experience-based table of rates that are specific to the type of eligibility condition. Last updated for the 2012 valuation pursuant to an experience study of the period 2006 - 2011, prepared by a former actuary.
Healthy Post-Retirement Mortality	RP-2000 annuitant generational mortality table, projected with mortality improvement scale AA, white collar adjustment, set forward one year for males and set back one year for females.

Other Information:

Benefit Increases After Retirement	The post-retirement increase is assumed to increase from 2.0% to 2.5% beginning January 1, 2034.
	See separate funding report as of July 1, 2014 for additional detail. To obtain this report, contact MSRS as noted on page 3.

SCHEDULE OF INVESTMENT RETURNS MULTIYEAR

Last 10 Fiscal Years

FY Ending June 30,	Annual Return[1]
2005	
2006	
2007	
2008	
2009	
2010	
2011	
2012	
2013	
2014	18.62 %

[1] *Annual money-weighted rate of return, net of investment expenses.*

The Minnesota State Board of Investment (SBI) compiled this data and the related investment notes and provided it to MSRS for GASB-compliance purposes. MSRS furnished this information to us for inclusion within this report. We did not audit this information. We are not responsible for is accuracy or completeness.

Rate of Return

For the year ended June 30, 2014, the annual money-weighted rate of return for the State Patrol Retirement Fund was 18.62%. The money-weighted rate of return is a method of calculating period-by-period returns on pension plan investments that adjusts for the changing amounts actually invested. For purposes of this schedule, the money-weighted rate of return is calculated as the internal rate of return on pension plan investments, net of pension plan investment expense.

10-Year Schedule of Money-Weighted Investment Return

Ten-year data is not available. Additional years will be provided when they become available.

To request additional information about the computation of the annual money-weighted rate of return and the investments for the Minnesota Retirement Systems (including the investments for MSRS' defined benefit retirement funds), contact SBI at 60 Empire Drive, Suite 355, St. Paul, Minnesota, 55103, via email at minn.sbi@state.mn.us or telephone at (651) 296-3328.

SECTION D

ADDITIONAL FINANCIAL STATEMENT DISCLOSURES

ASSET ALLOCATION

Long-Term Expected Return on Plan Assets

The long-term expected rate of return on pension plan investments was determined using a building-block method. Best estimates for expected future real rates of return (expected returns, net of inflation) are developed for each asset class using both long-term historical returns and long-term capital market expectation from a number of investment management and consulting organizations. The asset class estimates and the target allocations were then combined to produce geometric, long-term expected real rate of return for the portfolio. Inflation expectations were applied to derive the nominal rate of return for the portfolio. For each asset class that is included in the pension plan's target asset allocation as of June 30, 2014, these best estimates are summarized in the following table:

Asset Class	Target Allocation	Long-Term Expected Real Rate of Return (Geometric)
Domestic Stocks	45.00%	5.50%
International Stocks	15.00	6.00
Bonds	18.00	1.45
Alternative Assets	20.00	6.40
Unallocated Cash	2.00	0.50
Total	100.00%	

The Minnesota State Board of Investment (SBI) compiled this data and the related investment notes and provided it to MSRS for GASB-compliance purposes. MSRS furnished this information to us for inclusion within this report. We did not audit this information. We are not responsible for is accuracy or completeness.

At MSRS' direction, for purposes of this valuation, the long-term expected rate of return assumption is 7.90%. This assumption is based on a review of inflation and investment return assumptions dated September 11, 2014.

SENSITIVITY OF NET PENSION LIABILITY TO THE SINGLE DISCOUNT RATE ASSUMPTION

Single Discount Rate

A single discount rate of 6.82% was used to measure the total pension liability. This single discount rate was based on an expected rate of return on pension plan investments of 7.90% and a municipal bond rate of 4.29%. 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 contribution rate. Based on these assumptions, the pension plan's fiduciary net position and future contributions were sufficient to fully finance the benefit payments through the year ending June 30, 2055 and assets were projected to be depleted in the year ending June 30, 2056. As a result, the long-term expected rate of return on pension plan investments was applied to projected benefit payments through the point of asset depletion in the year ending June 30, 2056, and the municipal bond rate was applied to all benefit payments after the point of asset depletion.

Regarding the sensitivity of the net pension liability to changes in the single discount rate, the following presents the fund's net pension liability, calculated using a single discount rate of 6.82%, as well as what the fund's net pension liability would be if it were calculated using a single discount rate that is 1-percentage-point lower (5.82%) or 1-percentage-point higher (7.82%) than the current rate.

Sensitivity of Net Pension Liability to the Single Discount Rate Assumption

(Dollars in Thousands)

1% Decrease 5.82%	Current Single Discount Rate Assumption 6.82%	1% Increase 7.82%
$681,822	$476,330	$309,149

A single discount rate of 6.08% was used for the measurement date as of July 1, 2013. For more information on the calculation of the single discount rate, refer to Section G of this report.

GASB STATEMENT NO. 68 RECONCILIATION *(Dollars in Thousands)*

	Total Pension Liability (a)	Plan Fiduciary Net Position (b)	Net Pension Liability (a) - (b)	Deferred Outflows	Deferred Inflows	Pension Expense
Balance Beginning of Year	**$ 1,408,494**	**$ 747,157**	**$ 661,337**	**$ 0**	**$ 0**	
Changes for the Year:						
Service Cost	$ 54,443		$ 54,443			$ 54,443
Interest on Total Pension Liability	85,702		85,702			85,702
Interest on Plan Fiduciary Net Position [1]		$ 58,724	(58,724)			(58,724)
Changes in Benefit Terms						
Liability Experience Gains and Losses	4,103		4,103	$ 3,419		684
Changes in Assumptions	(147,067)		(147,067)		$ 122,556	(24,511)
Contributions - Employer		26,468	(26,468)			
Contributions - Employees		18,855	(18,855)			(18,855)
Asset Gain/(Loss) [1]		78,799	(78,799)		63,039	(15,760)
Benefit Payouts	(52,289)	(52,289)				
Administrative Expenses		(657)	657			657
Other Changes		(1)	1			1
Net Changes	**$ (55,108)**	**$ 129,899**	**$ (185,007)**	**$ 3,419**	**$ 185,595**	**$ 23,637**
Balance End of Year	**$ 1,353,386**	**$ 877,056**	**$ 476,330**	**$ 3,419**	**$ 185,595**	

(1) The sums of these items equals the net investment income of $137,523.

SUMMARY OF POPULATION STATISTICS

	Actives	Terminated: Deferred Retirement	Terminated: Other Non-Vested	Recipients: Service Retirement	Recipients: Disability Retirement	Recipients: Survivor	Total
Members on 7/1/2013	**4,384**	**1,196**	**413**	**1,920**	**258**	**196**	**8,367**
New Members	510	0	0	0	0	0	**510**
Return to active	32	(20)	(12)	0	0	0	**0**
Terminated non-vested	(99)	0	99	0	0	0	**0**
Service retirements	(115)	(27)	0	142	0	0	**0**
Terminated deferred	(105)	105	0	0	0	0	**0**
Terminated refund/transfer	(77)	(18)	(144)	0	0	0	**(239)**
Deaths	(9)	(2)	0	(21)	(3)	(2)	**(37)**
New beneficiary	0	0	0	0	0	19	**19**
Disabled	(12)	0	0	0	12	0	**0**
Unexpected status change	(5)	(2)	28	34	1	(39)	**17**
Net change	120	36	(29)	155	10	(22)	**270**
Members on 6/30/2014	**4,504**	**1,232**	**384**	**2,075**	**268**	**174**	**8,637**

SECTION E

SUMMARY OF BENEFITS

Summary of Plan Provisions

Following is a summary of the major plan provisions used in the valuation of this report. MSRS is solely responsible for the validity, accuracy and comprehensiveness of this information. If any of the plan provisions shown below are not accurate and complete, the valuation results may differ significantly from those shown in this report and may require a revision of this report.

Plan year	July 1 through June 30	
Eligibility	State employees in covered correctional service. Certain state employees with 75 percent working time spent in direct contact with inmates or patients are also eligible.	
Contributions	Shown as a percent of salary:	
Effective date	**Member**	**Employer**
July 1, 2010 to June 30, 2014	8.60%	12.10%
July 1, 2014*	9.10%	12.85%
	Member contributions are "picked up" according to the provisions of Internal Revenue Code 414(h). **Increase is effective the first day of the first full pay period beginning after July 1, 2014.*	
Allowable service	Service during which member contributions were made. May also include certain leave of absence, military service and periods while temporary Worker's Compensation is paid.	
Salary	Includes wages, allowances and fees. Excludes lump sum payments of separation and reduced salary while receiving Worker's Compensation benefits.	
Average salary	Average of the five highest successive years of Salary. Average Salary is based on all Allowable Service if less than five years.	
Vesting	Hired before July 1, 2010:	100% vested after 3 years of Allowable Service.
	Hired after June 30, 2010:	50% vested after 5 years of Allowable Service; 60% vested after 6 years of Allowable Service; 70% vested after 7 years of Allowable Service; 80% vested after 8 years of Allowable Service; 90% vested after 9 years of Allowable Service; 100% vested after 10 years of Allowable Service.
Retirement		
Normal retirement benefit		
Age/Service requirement	Age 55 and vested. Proportionate Retirement Annuity is available at age 65 and one year of Allowable Service.	
Amount	2.40% (2.20% if first hired after June 30, 2010) of Average Salary for each year of Allowable Service, pro-rata for completed months.	
Early retirement		
Age/Service requirement	Age 50 and vested.	
Amount	Normal Retirement Benefit based on Allowable Service and Average Salary at retirement date reduced by 2/10% (5/12% if first hired after June 30, 2010 or if hired before July 1, 2010 and retire after June 30, 2015) per month for each month that the member is under age 55.	

Summary of Plan Provisions (Continued)

Retirement (Continued)

Form of payment	Life annuity. Actuarially equivalent options are: 50%, 75%, or 100% Joint and Survivor, or 15-year certain. If a Joint and Survivor benefit is elected and the beneficiary predeceases the annuitant, the annuitant's benefit increases to the Life Annuity amount. This "bounce back" is subsidized by the plan.
Benefit increases	Since 2011, benefit recipients have received annual 2.0% benefit increases. If the accrued liability funding ratio reaches 90% (on a Market Value of Assets basis) for two consecutive years, the benefit increase will revert to 2.5%. A benefit recipient who has been receiving a benefit for at least 18 full months as of the January 1 increase will receive a full increase. Members receiving benefits for at least six months but less than 18 full months as of the January 1 increase will receive a pro rata increase.

Disability

Duty Disability	
Age/Service requirement	Physically or mentally unable to perform normal job duties as a direct result of a disability relating to an incident while performing the duties of the job which present inherent dangers to the employee. Members who become disabled after June 30, 2009 will have disability benefits converted to retirement benefits at age 55 instead of age 65.
Amount	50.00% of Average Salary plus 2.40% (2.20% if first hired after June 30, 2010) of Average Salary for each year in excess of 20 years and 10 months of Allowable Service (pro rata for completed months). Payment begins at disability and ends at age 55 (age 65 if disabled prior to July 1, 2009) or the five-year anniversary of the effective date of the disability benefit, whichever is later. Payments stop earlier if disability ceases or death occurs. Benefits may be paid upon re-employment but salary plus benefit cannot exceed current salary of position held at time of disability. Member is reclassified from disabled to retired at age 55 (age 65 if disabled prior to July 1, 2009). Optional amount continues. Otherwise, normal retirement benefit equal to the disability benefit paid, or an actuarially equivalent option.
Regular Disability	
Age/Service requirement	At least one year of covered Correctional service for employees hired before July 1, 2009, or a vested Correctional employee hired after June 30, 2009, and the employee is determined to have a regular disability not related to an incident while performing the duties of the job.

Summary of Plan Provisions (Continued)

Disability (Continued)	
Amount	Normal retirement benefit based on covered Correctional Service (minimum of 15 years if hired prior to July 1, 2009) and Average Salary at disability. Payment begins at disability and ends at age 55 (age 65 if disabled prior to July 1, 2009) or the five-year anniversary of the effective date of the disability benefit, whichever is later. Payments stop earlier if disability ceases or death occurs. Benefits may be paid upon re-employment but salary plus benefit cannot exceed current salary of position held at time of disability. Member is reclassified from disabled to retired at age 55 (age 65 if disabled prior to July 1, 2009). Optional amount continues. Otherwise, normal retirement benefit equal to the disability benefit paid, or an actuarially equivalent option.
Benefit Increases	Same as for retirement.
Death	
Surviving spouse benefit	
Age/Service requirement	Member at any age or former member age 50 or older who dies before retirement or disability benefit commences and was vested. If a former member dies before age 55 and has less than 30 years of Allowable Service, benefits commence when the former member would have been age 55. If an active member dies, benefits may commence immediately, regardless of age.
Amount	Surviving spouse receives the 100% joint and survivor benefits using the Normal Retirement formula above. If commencement is prior to age 55, the appropriate early retirement formula described above applies except that one-half the monthly reduction factor is used from age 50 to the commencement age and the Rule of 90 does not apply. In lieu of this benefit, the surviving spouse may elect a refund of member contributions with interest or an actuarially equivalent term certain annuity (lump sum payable to estate at death).
Benefit increases	Same as for retirement.
Surviving dependent children's benefit	
Age/service requirement	If no surviving spouse, all dependent children (biological or adopted) below age 20 who are dependent for more than half of their support on deceased member.
Amount	Actuarially equivalent to surviving spouse 100% joint and survivor annuity payable to the later of age 20 or five years. The amount is to be proportionally divided among surviving children.
Benefit increases	Same as for retirement.
Refund of contributions with interest	
Age/service requirement	Active employee dies and survivor benefits are not payable or a former employee dies before annuity begins. If accumulated member contributions with interest exceed total payments to the surviving spouse and children, then the remainder is paid out.

Summary of Plan Provisions (Continued)

Death (Continued) Amount	Member's contributions with 6.00% interest compounded daily until July 1, 2011 and 4.00% thereafter.
Termination Refund of contributions Age/Service requirement	Termination of state service.
Amount	Member's contributions with 6.00% interest through June 30, 2011 compounded daily. Beginning July 1, 2011, a member's contributions will increase at 4.00% interest compounded daily. If a member is vested, a deferred annuity may be elected in lieu of a refund.
Deferred benefit Age/service requirement	Partially or fully vested.
Amount	Benefit computed under law in effect at termination and increased by the following annual augmentation percentage: (a.) 0.00% before July 1, 1971; (b.) 5.00% from July 1, 1971 to January 1, 1981; (c.) 3.00% thereafter (2.50% if hired after June 30, 2006) until January 1 of the year following attainment of age 55 or January 1, 2012, whichever is earlier; and (d.) 5.00% thereafter until the annuity begins (2.50% if hired after June 30, 2006), but before January 1, 2012; (e.) 2.00% from January 1, 2012 thereafter. Amount is payable at normal or early retirement.
Optional form conversion factors	Actuarially equivalent factors based on RP-2000 mortality for healthy annuitants, white collar adjustment, projected to 2027 using scale AA, set forward one year for males and set back one year for females, blended 70% males, and 6.5% interest.
Combined service annuity	Members are eligible for combined service benefits if they: (a.) Have sufficient allowable service in total that equals or exceeds the applicable service credit vesting requirement of the retirement plan with the longest applicable service credit vesting requirement; (b.) Have at least six months of allowable service credit in each plan worked under; and (c.) Are not in receipt of a benefit from another plan, or have applied for benefits with an effective date within one year. Members who meet the above requirements must have their benefit based on the following: (a.) Allowable service in all covered plans are combined in order to determine eligibility for early retirement. (b.) Average salary is based on the high five consecutive years during their entire service in all covered plans.

Summary of Plan Provisions (Concluded)

Contribution Stabilizer	The following is a summary of contribution stabilizer provisions in Minnesota Statute 352.045: • If a contribution sufficiency of at least 1.0% has existed for two consecutive years, member contributions are decreased by at most 0.25% and employer contributions are decreased by at most 0.375% to a level that is necessary to maintain a 1.0% sufficiency. A contribution rate decrease under this section must not be made until at least two years have passed since fully implementing a previous decrease. • If a contribution deficiency of at least 0.5% has existed for two consecutive years, the member and employer contribution rates are increased as follows: o If the contribution deficiency is less than 2.0%, member contributions are increased 0.25% and employer contributions are increased by 0.375%. o If the contribution deficiency is greater than 1.99% and less than 4.01%, member contributions are increased 0.50% and employer contributions are increased by 0.75%. o If the contribution deficiency is greater than 4.0%, member contributions are increased by 0.75% and employer contributions are increased by 1.125%.
Changes in plan provisions	Member contribution rates increased from 8.6% to 9.1% of pay and employer contribution rates increased from 12.1% to 12.85% of pay effective the first day of the first full pay period beginning after July 1, 2014. Effective July 1, 2014, the funding ratio threshold that must be attained to pay a 2.5% post-retirement benefit increase to benefit recipients was changed from 90% for one year to 90% for two consecutive years.

SECTION F

ACTUARIAL COST METHOD AND ACTUARIAL ASSUMPTIONS

Actuarial Methods

Actuarial Cost Method

Normal cost and the allocation of benefit values between service rendered before and after the valuation date were determined using an **Individual Entry-Age Actuarial Cost Method** having the following characteristics:

(i) the annual normal cost for each individual active member, payable from the date of employment to the date of retirement, is sufficient to accumulate the value of the member's benefit at the time of retirement;

(ii) each annual normal cost is a constant percentage of the member's year by year projected covered pay.

Actuarial gains/(losses), as they occur, reduce (increase) the Total Pension Liability.

Valuation of Future Post-Retirement Benefit Increases

Benefit recipients receive a future annual 2.0% post-retirement benefit increase. If the funding ratio reaches 90% (based on a 2.5% post-retirement benefit increase assumption) for two consecutive years, the benefit increase will revert to 2.5%.

To determine an assumption regarding a future change in the post-retirement benefit increase, we performed a projection of liabilities and assets based on the following methods and assumptions:

- Future investment returns of 7.90%
- Liabilities and normal cost based on statutory funding assumptions
  - Discount rate of 8.00% through June 30, 2017; 8.50% thereafter
  - Statutory salary increases (rate of 6.00% at year 1 declining to 3.75% at years 19 and later)
- Open group; stable active population (new member profile based on average new members hired in recent years)
- The postretirement benefit increase rate is assumed to be 2.0% per year until the funding ratio threshold required to pay a 2.5% postretirement benefit increase is reached
- Current statutory contributions (i.e., not including potential contribution increases under the contribution stabilizer statutes) as directed by MSRS.

Based on these assumptions and methods, the projection indicates that this plan is expected to attain the funding ratio threshold required to pay a 2.5% postretirement benefit increase in the year 2065, and that the plan would begin paying 2.5% benefit increases on January 1, 2066. This assumption is reflected in our calculations.

To determine the Total Pension Liability as of July 1, 2013, we performed a similar projection, and assumed the plan would pay the 2.0% benefit increases indefinitely.

Decrement Timing

All decrements are assumed to occur mid-year.

Asset Valuation Method

Fair value of assets.

Summary of Actuarial Assumptions

The following assumptions were used in valuing the liabilities and benefits under the plan. All demographic actuarial assumptions are prescribed by Minnesota Statutes, the Legislative Commission on Pensions and Retirement (LCPR), or the MSRS Board of Directors. These parties are responsible for selecting the assumptions used for this valuation. The demographic assumptions prescribed are based on the last experience study, dated February 2012, prepared by a former actuary. The economic assumptions are based on a review of inflation and investment return assumptions dated September 11, 2014.

The Allowance for Combined Service Annuity was also based on a recommendation by a former actuary. We are unable to judge the reasonableness of this assumption without performing a substantial amount of additional work beyond the scope of the assignment.

Investment return	7.90% per annum
Benefit increases after retirement	2.00% per annum through 2065 and 2.5% per annum thereafter
Salary increases	Reported salary at valuation date increased according to the rate table, to current fiscal year and annually for each future year. Prior fiscal year salary is annualized for members with less than one year of service.
Payroll growth	3.50% per year.
Inflation	2.75% per year.
Mortality rates	
Healthy Pre-retirement	RP-2000 employee generational mortality table projected with mortality improvement scale AA, white collar adjustment.
Healthy Post-retirement	RP-2000 annuitant generational mortality table projected with mortality improvement scale AA, white collar adjustment, set forward one year for males and set back one year for females. The RP-2000 employee mortality table as published by the Society of Actuaries (SOA) contains mortality rates for ages 15 to 70 and the annuitant mortality table contains mortality rates for ages 50 to 120. We have applied the annuitant mortality table for active members beyond age 70 until the assumed retirement age and the employee mortality table for annuitants younger than age 50.
Disabled	RP-2000 disabled mortality table.
Retirement	Members retiring from active status are assumed to retire according to the age related rates shown in the rate table. Members who have attained the highest assumed retirement age are assumed to retire in one year.
Withdrawal	Select and Ultimate rates based on actual experience. Ultimate rates after the third year are shown in rate table. Select rates in the first three years are:

Year	Select Withdrawal Rates
1	20%
2	15%
3	8%

Summary of Actuarial Assumptions (Continued)

Disability	Age-related rates based on experience; see table of sample rates. All incidences are assumed to be duty-related.
Allowance for combined service annuity	Liabilities for former members are increased by 30.00% to account for the effect of some participants having eligibility for a Combined Service Annuity.
Administrative expenses	For purposes of the projection of Plan Fiduciary Net Position, total prior year administrative expenses expressed as a percentage of prior year projected payroll are assumed to increase 3.50% per year and are allocated to the closed group based on the ratio of closed group payroll to total payroll.
Refund of contributions	Account balances accumulate interest until normal retirement date and are discounted back to the valuation date. All employees withdrawing after becoming eligible for a deferred benefit take the larger of their contributions accumulated with interest or the value of their deferred benefit.
Commencement of deferred benefits	Members receiving deferred annuities (including current terminated deferred members) are assumed to begin receiving benefits at age 55.
Percentage married	85% of active members are assumed to be married. Actual marital status is used for members in payment status.
Age of spouse	Females are assumed to be three years younger than their male spouses.
Form of payment	Married members retiring from active status are assumed to elect subsidized joint and survivor form of annuity as follows: Males: 10% elect 50% Joint & Survivor option 10% elect 75% Joint & Survivor option 40% elect 100% Joint & Survivor option Females: 10% elect 50% Joint & Survivor option 10% elect 75% Joint & Survivor option 30% elect 100% Joint & Survivor option Remaining married members and unmarried members are assumed to elect the Straight Life option. Members receiving deferred annuities (including current terminated deferred members) are assumed to elect a straight life annuity, except that current terminated deferred members who terminated prior to July 1, 1997 are assumed to receive the Level Social Security option to age 62.
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.
Decrement operation	Withdrawal decrements do not operate during retirement eligibility.
Service credit accruals	It is assumed that members accrue one year of service credit per year.

Summary of Actuarial Assumptions (Continued)

Unknown data for certain members	To prepare this report, GRS has used and relied on participant data supplied by MSRS. Although GRS has reviewed the data in accordance with Actuarial Standards of Practice No. 23, GRS has not verified or audited any of the data or information provided. In cases where submitted data was missing or incomplete, the following assumptions were applied: <u>Data for active members</u>: There were 11 members reported with zero or invalid salary. We used prior year salary (11 members). There were no members reported with missing service. There were no members reported with missing or invalid gender or birth dates. <u>Data for terminated members</u>: There were 54 members reported without a benefit. If available, we calculated benefits for these members using the reported Average Salary, Credited Service and Termination Date provided. If Average Salary was not reported (26 members), we assumed a value of $30,000. If Credited Service was not reported (3 members), we assumed a value of 7.5 years. There were no members reported without a Termination Date. There were 66 members who terminated after June 30, 1997 and who were reported with a benefit in the Accelerated to Age 62 option. Based on direction from MSRS, we adjusted benefits for these members to reflect the assumed life annuity election. There were no members reported with missing or invalid gender or birth dates. <u>Data for members receiving benefits</u>: There were no members reported with missing or invalid birth dates. There were 5 members reported with an invalid gender. We assumed male gender for the valuation. There were retired members reported with a survivor option and an invalid or missing survivor gender (379 members) and/or survivor date of birth (322 members). We used the valuation assumptions if the survivor gender or date of birth was missing or invalid. There were 2 members reported without a benefit. Due to the small number of members with missing benefits, we made no adjustment to the reported data for members receiving benefits.

Summary of Actuarial Assumptions (Continued)

Unknown data for certain members	Data for members receiving benefits: There were 19 retirees reported with a survivor option and a survivor date of death. We assumed no benefit was payable to the survivor, and the member benefit already reflected the increase to the life annuity value (i.e., "bounce back"), if applicable. There were 44 retirees reported with a bounce back annuity but were not reported with a reasonable reduction factor. A factor of 0.80, 0.85 and 0.90 was assumed for the 100%, 75% and 50% joint and survivor annuity, respectively. There was 1 retired member with an accelerated benefit election and an invalid end date. We assumed the benefit ends on the member's 62nd birthday. There were no survivors reported on the data file with an expired benefit. At MSRS' direction, we changed the status of 40 members who were reported with a disabled status at the beginning of the year and a retired status at the end of the year back to disabled status.
Changes in actuarial assumptions	The single discount rate changed from 6.08% as of July 1, 2013 to 6.82% as of July 1, 2014. As of July 1, 2013, the post-retirement benefit increase is assumed to be 2.0% indefinitely. As of July 1, 2014, the benefit increase rate is assumed to increase from 2.0% to 2.5% on January 1, 2066.

Summary of Actuarial Assumptions (Continued)

	Rate (%)*					
	Healthy Post-Retirement Mortality**		Healthy Pre-Retirement Mortality**		Disability Mortality	
Age	Male	Female	Male	Female	Male	Female
20	0.04%	0.02%	0.03%	0.02%	2.26%	0.75%
25	0.04	0.02	0.04	0.02	2.26	0.75
30	0.04	0.02	0.04	0.03	2.26	0.75
35	0.06	0.04	0.06	0.05	2.26	0.75
40	0.10	0.06	0.09	0.06	2.26	0.75
45	0.15	0.09	0.13	0.10	2.26	0.75
50	0.60	0.15	0.20	0.16	2.90	1.15
55	0.54	0.32	0.27	0.24	3.54	1.65
60	0.73	0.51	0.43	0.38	4.20	2.18
65	1.30	0.82	0.67	0.59	5.02	2.80
70	2.14	1.37	0.98	0.88	6.26	3.76

* *Generally, mortality rates are expected to increase as age increases. Due to the combination of pre-retirement rates, post-retirement rates, the white collar adjustment, and Projection Scale AA, the prescribed mortality tables have a few ages where assumed mortality decreases slightly instead of increases. We have used the rates as prescribed, but note that the prescribed assumption may not be reasonable at every age. If the rates were reasonably adjusted so that they decreased at all ages, we would not expect the valuation results to be materially different.*

** *These rates were adjusted for mortality improvements using projection scale AA.*

	Withdrawal Rates After Third Year		Disability Retirement	
Age	Male	Female	Male	Female
20	13.20%	8.80%	0.05%	0.05%
25	8.10	7.80	0.08	0.08
30	5.00	7.45	0.11	0.11
35	3.45	7.10	0.15	0.15
40	2.55	5.70	0.24	0.24
45	1.95	3.50	0.39	0.39
50	0.00	0.00	0.67	0.67
55	0.00	0.00	1.17	1.17
60	0.00	0.00	1.88	1.88
65	0.00	0.00	0.00	0.00

Summary of Actuarial Assumptions (Concluded)

Age	Percent Retiring
50	5%
51	3
52	3
53	3
54	5
55	55
56	12
57	12
58	10
59	10
60	10
61	10
62	30
63	30
64	30
65	50
66	50
67	50
68	50
69	50
70+	100

Salary Scale	
Year	Increase
1	5.75%
2	5.60
3	5.45
4	5.30
5	5.15
6	5.00
7	4.85
8	4.70
9	4.55
10	4.40
11	4.30
12	4.20
13	4.10
14	4.00
15	3.90
16	3.80
17	3.70
18	3.60
19+	3.50

SECTION G

CALCULATION OF THE SINGLE DISCOUNT RATE

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 Fiduciary 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 long-term expected rate of return is used as the discount rate. In years where assets are not projected to be sufficient to meet benefit payments, the use of a “risk-free” municipal bond 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 plan 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 Board (FRB)) 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 7.90%; the municipal bond rate is 4.29% (based on the FRB rate as of June 26, 2014). **The resulting single discount rate as of July 1, 2014 is 6.82%.**

Benefit payments projected to occur up through June 30, 2055 were fully funded and benefit payments projected to occur in the year ended June 30, 2056 were partially funded. Assets were projected to be fully depleted by the fiscal year ending June 30, 2056. Benefit payments were discounted using 7.9%, the long-term expected rate of return on pension plan investments, as long as assets were sufficient to fund the benefit payments. Beginning in the July 1, 2055 to June 30, 2056 fiscal year, when benefit payments exceed the Plan’s Fiduciary Net Position, benefit payments were discounted at 4.29%, the municipal bond rate. An equivalent single discount rate was determined that produced approximately the same present value of projected benefits when applied to all years of projected benefits as the present value of projected benefits using 7.90% through the point of asset depletion and 4.29% after. For more information on the calculation of the equivalent present value of projected benefits, see pages 37 – 38 of this report.

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.

CALCULATION OF THE SINGLE DISCOUNT RATE (continued)

We performed a similar analysis as of July 1, 2013. Based on the long-term expected rate of return of 7.90% and a municipal bond rate of 4.63% (based on the FRB rate as of June 27, 2013), the plan is projected to have sufficient assets to pay benefits through the year ending June 30, 2043 and to pay partial benefits in the year ending June 30, 2044. We used the same procedure described above for to determine an equivalent discount rate. **The resulting single discount rate as of July 1, 2013 is 6.08%.**

SINGLE DISCOUNT RATE DEVELOPMENT

Projection of Contributions *(Dollars in Thousands)*

	Projected Covered-Employee Payroll			Projected Contributions			
Year	Payroll for Current Employees	Payroll for New Employees	Total Employee Payroll	Contributions from Current Employees	Employer Contributions for Current Employees	Contributions on Future Payroll toward Current UAL*	Total Contributions
	(a)	(b)	(c) = (a) + (b)	(d) = (a) x 9.10%	(e) = (a) x 12.85%	(f)	(g) = (d) + (e) + (f)
0	$ 219,244		$ 219,244				
1	226,466		226,466	$ 20,608	$ 29,101		$ 49,709
2	215,990	$ 18,402	234,392	19,655	27,755	$ 839	48,249
3	207,158	35,438	242,596	18,851	26,620	1,616	47,087
4	198,563	52,524	251,087	18,069	25,515	2,395	45,979
5	189,856	70,019	259,875	17,277	24,396	3,193	44,866
6	181,341	87,629	268,970	16,502	23,302	3,996	43,800
7	172,668	105,716	278,384	15,713	22,188	4,821	42,722
8	163,975	124,153	288,128	14,922	21,071	5,661	41,654
9	155,425	142,787	298,212	14,144	19,972	6,511	40,627
10	147,195	161,455	308,650	13,395	18,915	7,362	39,672
11	139,625	179,827	319,452	12,706	17,942	8,200	38,848
12	131,942	198,691	330,633	12,007	16,955	9,060	38,022
13	124,264	217,941	342,205	11,308	15,968	9,938	37,214
14	117,338	236,844	354,182	10,678	15,078	10,800	36,556
15	110,681	255,898	366,579	10,072	14,222	11,669	35,963
16	104,010	275,399	379,409	9,465	13,365	12,558	35,388
17	97,451	295,237	392,688	8,868	12,522	13,463	34,853
18	90,869	315,563	406,432	8,269	11,677	14,390	34,336
19	84,370	336,288	420,658	7,678	10,842	15,335	33,855
20	78,000	357,381	435,381	7,098	10,023	16,297	33,418
21	71,556	379,063	450,619	6,512	9,195	17,285	32,992
22	64,739	401,652	466,391	5,891	8,319	18,315	32,525
23	57,779	424,935	482,714	5,258	7,425	19,377	32,060
24	51,126	448,483	499,609	4,652	6,570	20,451	31,673
25	44,823	472,273	517,096	4,079	5,760	21,536	31,375
26	38,676	496,518	535,194	3,520	4,970	22,641	31,131
27	32,909	521,017	553,926	2,995	4,229	23,758	30,982
28	27,743	545,570	573,313	2,525	3,565	24,878	30,968
29	23,023	570,356	593,379	2,095	2,958	26,008	31,061
30	18,815	595,332	614,147	1,712	2,418	27,147	31,277
31	15,167	620,476	635,643	1,380	1,949	28,294	31,623
32	12,062	645,828	657,890	1,098	1,550	29,450	32,098
33	9,487	671,429	680,916	863	1,219	30,617	32,699
34	7,413	697,335	704,748	675	953	31,799	33,427
35	5,719	723,695	729,414	520	735	33,001	34,256
36	4,290	750,654	754,944	390	551	34,230	35,171
37	3,122	778,245	781,367	284	401	35,488	36,173
38	2,189	806,526	808,715	199	281	36,778	37,258
39	1,467	835,553	837,020	133	188	38,101	38,422
40	934	865,382	866,316	85	120	39,461	39,666
41	565	896,072	896,637	51	73	40,861	40,985
42	322	927,697	928,019	29	41	42,303	42,373
43	172	960,327	960,499	16	22	43,791	43,829
44	86	994,031	994,117	8	11	45,328	45,347
45	41	1,028,870	1,028,911	4	5	46,916	46,925
46	18	1,064,905	1,064,923	2	2	48,560	48,564
47	7	1,102,188	1,102,195	1	1	50,260	50,262
48	2	1,140,770	1,140,772	0	0	52,019	52,019
49	1	1,180,698	1,180,699	0	0	53,840	53,840
50	0	1,222,024	1,222,024	0	0	55,724	55,724

**Contributions related to future employees in excess of normal cost and expenses of 17.39% of pay.*

For purposes of this projection, based on GASB guidance, we assumed the current contribution rates would continue after the plan becomes fully funded. If we reflected a decrease in contribution rates due to full funding, future assets and contributions would be less than what is shown herein.

SINGLE DISCOUNT RATE DEVELOPMENT

Projection of Contributions (continued) *(Dollars in Thousands)*

	Projected Covered-Employee Payroll			Projected Contributions			
Year	Payroll for Current Employees	Payroll for New Employees	Total Employee Payroll	Contributions from Current Employees	Employer Contributions for Current Employees	Contributions on Future Payroll toward Current UAL*	Total Contributions
	(a)	(b)	(c) = (a) + (b)	(d) = (a) x 9.10%	(e) = (a) x 12.85%	(f)	(g) = (d) + (e) + (f)
51	$ 0	$ 1,264,794	$ 1,264,794	$ 0	$ 0	$ 57,675	$ 57,675
52	0	1,309,062	1,309,062	0	0	59,693	59,693
53	0	1,354,879	1,354,879	0	0	61,783	61,783
54	0	1,402,300	1,402,300	0	0	63,945	63,945
55	0	1,451,381	1,451,381	0	0	66,183	66,183
56	0	1,502,179	1,502,179	0	0	68,499	68,499
57	0	1,554,755	1,554,755	0	0	70,897	70,897
58	0	1,609,172	1,609,172	0	0	73,378	73,378
59	0	1,665,493	1,665,493	0	0	75,946	75,946
60	0	1,723,785	1,723,785	0	0	78,605	78,605
61	0	1,784,117	1,784,117	0	0	81,356	81,356
62	0	1,846,562	1,846,562	0	0	84,203	84,203
63	0	1,911,191	1,911,191	0	0	87,150	87,150
64	0	1,978,083	1,978,083	0	0	90,201	90,201
65	0	2,047,316	2,047,316	0	0	93,358	93,358
66	0	2,118,972	2,118,972	0	0	96,625	96,625
67	0	2,193,136	2,193,136	0	0	100,007	100,007
68	0	2,269,896	2,269,896	0	0	103,507	103,507
69	0	2,349,342	2,349,342	0	0	107,130	107,130
70	0	2,431,569	2,431,569	0	0	110,880	110,880
71	0	2,516,674	2,516,674	0	0	114,760	114,760
72	0	2,604,757	2,604,757	0	0	118,777	118,777
73	0	2,695,924	2,695,924	0	0	122,934	122,934
74	0	2,790,281	2,790,281	0	0	127,237	127,237
75	0	2,887,941	2,887,941	0	0	131,690	131,690
76	0	2,989,019	2,989,019	0	0	136,299	136,299
77	0	3,093,635	3,093,635	0	0	141,070	141,070
78	0	3,201,912	3,201,912	0	0	146,007	146,007
79	0	3,313,979	3,313,979	0	0	151,117	151,117
80	0	3,429,968	3,429,968	0	0	156,407	156,407
81	0	3,550,017	3,550,017	0	0	161,881	161,881
82	0	3,674,268	3,674,268	0	0	167,547	167,547
83	0	3,802,867	3,802,867	0	0	173,411	173,411
84	0	3,935,967	3,935,967	0	0	179,480	179,480
85	0	4,073,726	4,073,726	0	0	185,762	185,762
86	0	4,216,307	4,216,307	0	0	192,264	192,264
87	0	4,363,877	4,363,877	0	0	198,993	198,993
88	0	4,516,613	4,516,613	0	0	205,958	205,958
89	0	4,674,694	4,674,694	0	0	213,166	213,166
90	0	4,838,309	4,838,309	0	0	220,627	220,627
91	0	5,007,650	5,007,650	0	0	228,349	228,349
92	0	5,182,917	5,182,917	0	0	236,341	236,341
93	0	5,364,319	5,364,319	0	0	244,613	244,613
94	0	5,552,071	5,552,071	0	0	253,174	253,174
95	0	5,746,393	5,746,393	0	0	262,036	262,036
96	0	5,947,517	5,947,517	0	0	271,207	271,207
97	0	6,155,680	6,155,680	0	0	280,699	280,699
98	0	6,371,129	6,371,129	0	0	290,523	290,523
99	0	6,594,118	6,594,118	0	0	300,692	300,692
100	0	6,824,912	6,824,912	0	0	311,216	311,216

**Contributions related to future employees in excess of normal cost and expenses of 17.39% of pay.*

For purposes of this projection, based on GASB guidance, we assumed the current contribution rates would continue after the plan becomes fully funded. If we reflected a decrease in contribution rates due to full funding, future assets and contributions would be less than what is shown herein.

SINGLE DISCOUNT RATE DEVELOPMENT

Projection of Plan Fiduciary Net Position *(Dollars in Thousands)*

Year	Projected Beginning Plan Fiduciary Net Position	Projected Total Contributions	Projected Benefit Payments	Projected Administrative Expenses	Projected Investment Earnings at 7.90%	Projected Ending Plan Net Position
	(a)	(b)	(c)	(d)	(e)	(f)=(a)+(b)-(c)-(d)+(e)
1	$ 877,056	$ 49,709	$ 56,757	$ 702	$ 68,987	$ 938,293
2	938,293	48,249	60,811	670	73,612	998,673
3	998,673	47,087	64,637	642	78,190	1,058,671
4	1,058,671	45,979	68,632	616	82,734	1,118,136
5	1,118,136	44,866	72,817	589	87,227	1,176,823
6	1,176,823	43,800	77,329	562	91,648	1,234,380
7	1,234,380	42,722	82,538	535	95,953	1,289,982
8	1,289,982	41,654	88,167	508	100,087	1,343,048
9	1,343,048	40,627	93,936	482	104,017	1,393,274
10	1,393,274	39,672	99,744	456	107,723	1,440,469
11	1,440,469	38,848	105,481	433	111,198	1,484,601
12	1,484,601	38,022	111,305	409	114,428	1,525,337
13	1,525,337	37,214	117,435	385	117,378	1,562,109
14	1,562,109	36,556	123,458	364	120,025	1,594,868
15	1,594,868	35,963	129,180	343	122,369	1,623,677
16	1,623,677	35,388	135,057	322	124,396	1,648,082
17	1,648,082	34,853	140,860	302	126,079	1,667,852
18	1,667,852	34,336	146,782	282	127,392	1,682,516
19	1,682,516	33,855	152,698	262	128,304	1,691,715
20	1,691,715	33,418	158,490	242	128,790	1,695,191
21	1,695,191	32,992	164,464	222	128,817	1,692,314
22	1,692,314	32,525	170,828	201	128,326	1,682,136
23	1,682,136	32,060	177,335	179	127,253	1,663,935
24	1,663,935	31,673	183,552	158	125,560	1,637,458
25	1,637,458	31,375	189,296	139	123,234	1,602,632
26	1,602,632	31,131	194,838	120	120,260	1,559,065
27	1,559,065	30,982	199,651	102	116,626	1,506,920
28	1,506,920	30,968	203,479	86	112,359	1,446,682
29	1,446,682	31,061	206,662	71	107,481	1,378,491
30	1,378,491	31,277	209,062	58	102,009	1,302,657
31	1,302,657	31,623	210,677	47	95,970	1,219,526
32	1,219,526	32,098	211,502	37	89,389	1,129,474
33	1,129,474	32,699	211,499	29	82,299	1,032,944
34	1,032,944	33,427	210,631	23	74,735	930,452
35	930,452	34,256	209,076	18	66,730	822,344
36	822,344	35,171	206,992	13	58,306	708,816
37	708,816	36,173	204,387	10	49,477	590,069
38	590,069	37,258	201,312	7	40,258	466,266
39	466,266	38,422	197,799	5	30,659	337,543
40	337,543	39,666	193,882	3	20,690	204,014
41	204,014	40,985	189,593	2	10,358	65,762
42	65,762	42,373	184,971	1	0	0
43	0	43,829	180,059	1	0	0
44	0	45,347	174,886	0	0	0
45	0	46,925	169,483	0	0	0
46	0	48,564	163,876	0	0	0
47	0	50,262	158,082	0	0	0
48	0	52,019	152,113	0	0	0
49	0	53,840	145,981	0	0	0
50	0	55,724	139,699	0	0	0

For purposes of this projection, based on GASB guidance, we assumed the current contribution rates would continue after the plan becomes fully funded. If we reflected a decrease in contribution rates due to full funding, future assets and contributions would be less than what is shown herein.

SINGLE DISCOUNT RATE DEVELOPMENT

Projection of Plan Fiduciary Net Position (continued) *(Dollars in Thousands)*

Year	Projected Beginning Plan Fiduciary Net Position	Projected Total Contributions	Projected Benefit Payments	Projected Administrative Expenses	Projected Investment Earnings at 7.90%	Projected Ending Plan Net Position
	(a)	(b)	(c)	(d)	(e)	(f)=(a)+(b)-(c)-(d)+(e)
51	$ 0	$ 57,675	$ 133,281	$ 0	$ 0	$ 0
52	0	59,693	127,027	0	0	0
53	0	61,783	120,942	0	0	0
54	0	63,945	114,691	0	0	0
55	0	66,183	108,285	0	0	0
56	0	68,499	101,743	0	0	0
57	0	70,897	95,092	0	0	0
58	0	73,378	88,357	0	0	0
59	0	75,946	81,577	0	0	0
60	0	78,605	74,806	0	0	0
61	0	81,356	68,095	0	0	0
62	0	84,203	61,499	0	0	0
63	0	87,150	55,077	0	0	0
64	0	90,201	48,891	0	0	0
65	0	93,358	43,000	0	0	0
66	0	96,625	37,453	0	0	0
67	0	100,007	32,297	0	0	0
68	0	103,507	27,567	0	0	0
69	0	107,130	23,284	0	0	0
70	0	110,880	19,458	0	0	0
71	0	114,760	16,088	0	0	0
72	0	118,777	13,158	0	0	0
73	0	122,934	10,643	0	0	0
74	0	127,237	8,514	0	0	0
75	0	131,690	6,735	0	0	0
76	0	136,299	5,268	0	0	0
77	0	141,070	4,074	0	0	0
78	0	146,007	3,116	0	0	0
79	0	151,117	2,357	0	0	0
80	0	156,407	1,761	0	0	0
81	0	161,881	1,300	0	0	0
82	0	167,547	947	0	0	0
83	0	173,411	681	0	0	0
84	0	179,480	482	0	0	0
85	0	185,762	337	0	0	0
86	0	192,264	232	0	0	0
87	0	198,993	157	0	0	0
88	0	205,958	104	0	0	0
89	0	213,166	68	0	0	0
90	0	220,627	44	0	0	0
91	0	228,349	28	0	0	0
92	0	236,341	17	0	0	0
93	0	244,613	10	0	0	0
94	0	253,174	6	0	0	0
95	0	262,036	4	0	0	0
96	0	271,207	2	0	0	0
97	0	280,699	1	0	0	0
98	0	290,523	0	0	0	0
99	0	300,692	0	0	0	0
100	0	311,216	0	0	0	0

For purposes of this projection, based on GASB guidance, we assumed the current contribution rates would continue after the plan becomes fully funded. If we reflected a decrease in contribution rates due to full funding, future assets and contributions would be less than what is shown herein.

SINGLE DISCOUNT RATE DEVELOPMENT

Present Values of Projected Benefits *(Dollars in Thousands)*

Year	Projected Beginning Plan Fiduciary Net Position	Projected Benefit Payments	Funded Portion of Benefit Payments	Unfunded Portion of Benefit Payments	Present Value of Funded Benefit Payments using Expected Return Rate (v)	Present Value of Unfunded Benefit Payments using Municipal Bond Rate (vf)	Present Value of Benefit Payments using Single Discount Rate (sdr)
(a)	(b)	(c)	(d)	(e)	(f)=(d)*v^((a)-.5)	(g)=(e)*vf ^((a)-.5)	(h)=((c)/(1+sdr)^(a-.5)
1	$ 877,056	$ 56,757	$ 56,757	$ 0	$ 54,640	$ 0	$ 54,916
2	938,293	60,811	60,811	0	54,256	0	55,081
3	998,673	64,637	64,637	0	53,447	0	54,809
4	1,058,671	68,632	68,632	0	52,596	0	54,481
5	1,118,136	72,817	72,817	0	51,717	0	54,113
6	1,176,823	77,329	77,329	0	50,901	0	53,797
7	1,234,380	82,538	82,538	0	50,352	0	53,755
8	1,289,982	88,167	88,167	0	49,847	0	53,755
9	1,343,048	93,936	93,936	0	49,221	0	53,616
10	1,393,274	99,744	99,744	0	48,438	0	53,296
11	1,440,469	105,481	105,481	0	47,473	0	52,764
12	1,484,601	111,305	111,305	0	46,427	0	52,122
13	1,525,337	117,435	117,435	0	45,397	0	51,482
14	1,562,109	123,458	123,458	0	44,231	0	50,667
15	1,594,868	129,180	129,180	0	42,893	0	49,630
16	1,623,677	135,057	135,057	0	41,561	0	48,576
17	1,648,082	140,860	140,860	0	40,173	0	47,428
18	1,667,852	146,782	146,782	0	38,797	0	46,267
19	1,682,516	152,698	152,698	0	37,406	0	45,059
20	1,691,715	158,490	158,490	0	35,982	0	43,782
21	1,695,191	164,464	164,464	0	34,604	0	42,532
22	1,692,314	170,828	170,828	0	33,312	0	41,357
23	1,682,136	177,335	177,335	0	32,049	0	40,192
24	1,663,935	183,552	183,552	0	30,744	0	38,945
25	1,637,458	189,296	189,296	0	29,384	0	37,599
26	1,602,632	194,838	194,838	0	28,030	0	36,229
27	1,559,065	199,651	199,651	0	26,620	0	34,754
28	1,506,920	203,479	203,479	0	25,144	0	33,159
29	1,446,682	206,662	206,662	0	23,667	0	31,528
30	1,378,491	209,062	209,062	0	22,189	0	29,858
31	1,302,657	210,677	210,677	0	20,723	0	28,167
32	1,219,526	211,502	211,502	0	19,281	0	26,472
33	1,129,474	211,499	211,499	0	17,869	0	24,782
34	1,032,944	210,631	210,631	0	16,493	0	23,105
35	930,452	209,076	209,076	0	15,173	0	21,470
36	822,344	206,992	206,992	0	13,922	0	19,899
37	708,816	204,387	204,387	0	12,740	0	18,394
38	590,069	201,312	201,312	0	11,630	0	16,960
39	466,266	197,799	197,799	0	10,590	0	15,601
40	337,543	193,882	193,882	0	9,620	0	14,315
41	204,014	189,593	189,593	0	8,719	0	13,105
42	65,762	184,971	65,762	119,209	2,803	20,857	11,969
43	0	180,059	0	180,059	0	30,207	10,908
44	0	174,886	0	174,886	0	28,132	9,918
45	0	169,483	0	169,483	0	26,141	8,998
46	0	163,876	0	163,876	0	24,237	8,145
47	0	158,082	0	158,082	0	22,418	7,355
48	0	152,113	0	152,113	0	20,684	6,626
49	0	145,981	0	145,981	0	19,034	5,952
50	0	139,699	0	139,699	0	17,466	5,333

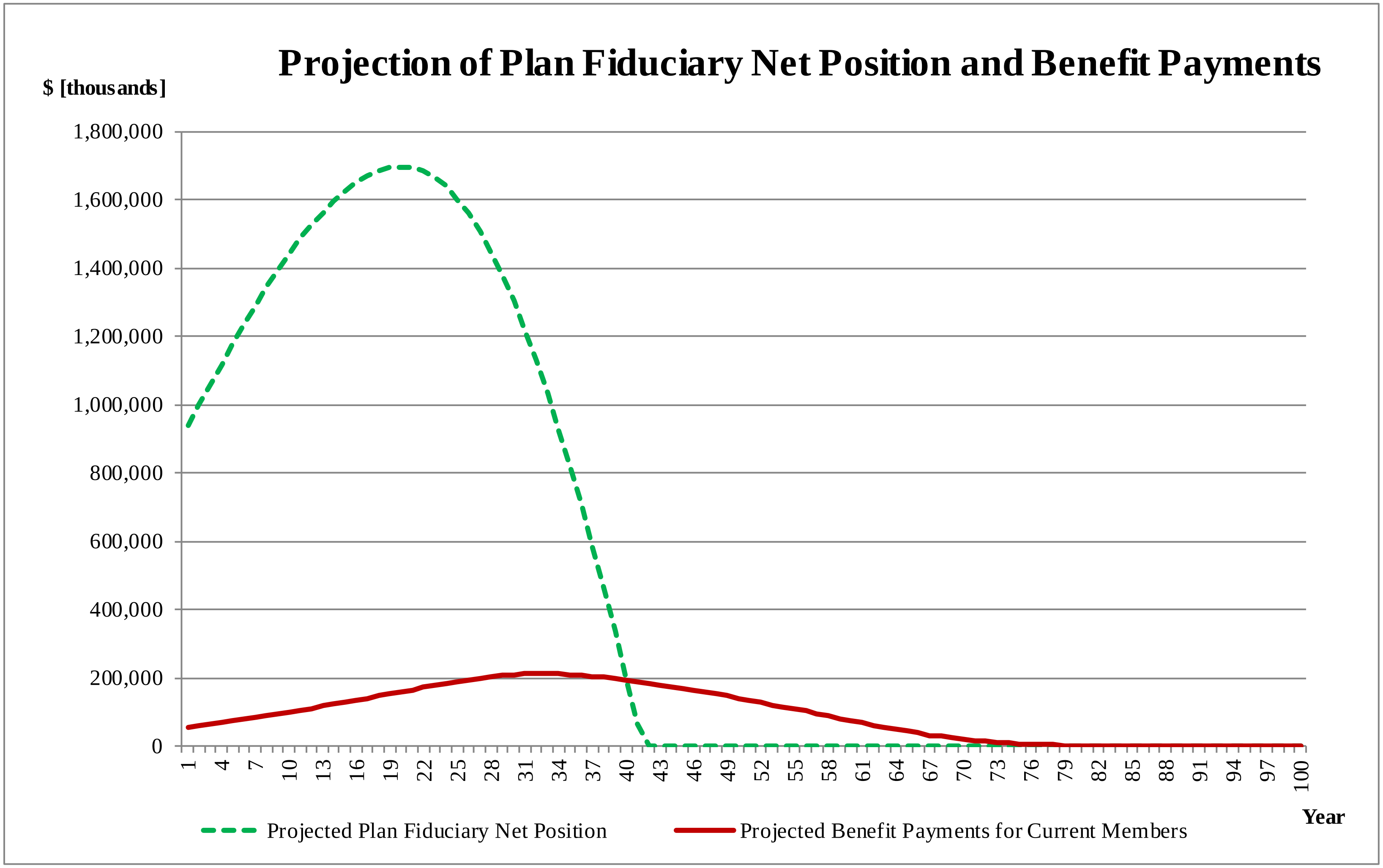
For purposes of this projection, based on GASB guidance, we assumed the current contribution rates would continue after the plan becomes fully funded. If we reflected a decrease in contribution rates due to full funding, future assets and contributions would be less than what is shown herein.

SINGLE DISCOUNT RATE DEVELOPMENT

Present Values of Projected Benefits (continued) *(Dollars in Thousands)*

Year	Projected Beginning Plan Fiduciary Net Position	Projected Benefit Payments	Funded Portion of Benefit Payments	Unfunded Portion of Benefit Payments	Present Value of Funded Benefit Payments using Expected Return Rate (v)	Present Value of Unfunded Benefit Payments using Municipal Bond Rate (vf)	Present Value of Benefit Payments using Single Discount Rate (sdr)
(a)	(b)	(c)	(d)	(e)	(f)=(d)*v^((a)-.5)	(g)=(e)*vf ^((a)-.5)	(h)=((c)/(1+sdr)^(a-.5)
51	$ 0	$ 133,281	$ 0	$ 133,281	$ 0	$ 15,978	$ 4,763
52	0	127,027	0	127,027	0	14,602	4,250
53	0	120,942	0	120,942	0	13,330	3,788
54	0	114,691	0	114,691	0	12,121	3,363
55	0	108,285	0	108,285	0	10,973	2,972
56	0	101,743	0	101,743	0	9,886	2,614
57	0	95,092	0	95,092	0	8,860	2,287
58	0	88,357	0	88,357	0	7,894	1,990
59	0	81,577	0	81,577	0	6,988	1,720
60	0	74,806	0	74,806	0	6,145	1,476
61	0	68,095	0	68,095	0	5,363	1,258
62	0	61,499	0	61,499	0	4,645	1,064
63	0	55,077	0	55,077	0	3,988	892
64	0	48,891	0	48,891	0	3,395	741
65	0	43,000	0	43,000	0	2,863	610
66	0	37,453	0	37,453	0	2,391	498
67	0	32,297	0	32,297	0	1,977	402
68	0	27,567	0	27,567	0	1,618	321
69	0	23,284	0	23,284	0	1,310	254
70	0	19,458	0	19,458	0	1,050	199
71	0	16,088	0	16,088	0	833	154
72	0	13,158	0	13,158	0	653	118
73	0	10,643	0	10,643	0	506	89
74	0	8,514	0	8,514	0	388	67
75	0	6,735	0	6,735	0	295	49
76	0	5,268	0	5,268	0	221	36
77	0	4,074	0	4,074	0	164	26
78	0	3,116	0	3,116	0	120	19
79	0	2,357	0	2,357	0	87	13
80	0	1,761	0	1,761	0	62	9
81	0	1,300	0	1,300	0	44	6
82	0	947	0	947	0	31	4
83	0	681	0	681	0	21	3
84	0	482	0	482	0	14	2
85	0	337	0	337	0	10	1
86	0	232	0	232	0	6	1
87	0	157	0	157	0	4	1
88	0	104	0	104	0	3	0
89	0	68	0	68	0	2	0
90	0	44	0	44	0	1	0
91	0	28	0	28	0	1	0
92	0	17	0	17	0	0	0
93	0	10	0	10	0	0	0
94	0	6	0	6	0	0	0
95	0	4	0	4	0	0	0
96	0	2	0	2	0	0	0
97	0	1	0	1	0	0	0
98	0	0	0	0	0	0	0
99	0	0	0	0	0	0	0
100	0	0	0	0	0	0	0
				Totals	$ 1,381,061	$ 348,021	$ 1,729,082

For purposes of this projection, based on GASB guidance, we assumed the current contribution rates would continue after the plan becomes fully funded. If we reflected a decrease in contribution rates due to full funding, future assets and contributions would be less than what is shown herein.



Note: Assets are expected to be fully depleted in year 42 (year ending June 30, 2056).

SECTION H

GLOSSARY OF TERMS

GLOSSARY OF TERMS

Actuarial Accrued Liability (AAL)	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."
Actuarial Assumptions	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.
Accrued Service	Service credited under the system which was rendered before the date of the actuarial valuation.
Actuarial Equivalent	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.
Actuarial Cost Method	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.
Actuarial Gain (Loss)	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.
Actuarial Present Value (APV)	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 benefit payments at predetermined rates of interest to reflect the expected effects of the time value (present value) of money and the probabilities of payment.
Actuarial Valuation	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 performed in conformity with Actuarial Standards of Practice unless otherwise specified by the GASB.
Actuarial Valuation Date	The date as of which an actuarial valuation is performed.
Actuarially Determined Contribution (ADC)	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

Amortization Payment — The amortization payment is the periodic payment required to pay off an interest-discounted amount with payments of interest and principal.

Amortization Method — 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.

Cost-of-Living Adjustments — Postemployment benefit changes intended to adjust benefit payments for the effects of inflation.

Cost-Sharing Multiple-Employer Defined Benefit Pension Plan (cost-sharing pension plan) — 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.

Covered-Employee Payroll — The payroll of covered employees, which is typically only the pensionable pay and does not include pay above any pay cap.

Deferred Inflows and Outflows of Resources — 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.

Discount Rate or Single Discount Rate — 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:

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;
2. The present value of the benefit payments not in (1) above, discounted using the municipal bond rate.

Entry Age Actuarial Cost Method (EAN) — The EAN is a funding 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.

GLOSSARY OF TERMS

Fiduciary Net Position	The fiduciary net position is the value of the net assets of the trust restricted for pension benefits.
GASB	The Governmental Accounting Standards Board is an organization that exists with authority to promulgate accounting standards for state and local governmental entities.
Long-Term Expected Rate of Return	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.
Money-Weighted Rate of Return	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.
Multiple-Employer Defined Benefit Pension Plan	A multiple-employer plan is a defined benefit pension plan that is used to provide pensions to the employees of more than one employer.
Municipal Bond Rate	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.
Net Pension Liability (NPL)	The NPL is the liability of employers and non-employer contribution entities to plan members for benefits provided through a defined benefit pension plan.
Non-Employer Contributing Entities	Non-employer contributing 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 No. 67 and No. 68 plan members are not considered non-employer contribution entities.
Normal Cost	The actuarial present value of the pension trust benefits allocated to the current year by the actuarial cost method.
Other Postemployment Benefits (OPEB)	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.
Real Rate of Return	The real rate of return is the rate of return on an investment after adjustment to eliminate inflation.
Service Cost	The service cost is the portion of the actuarial present value of projected benefit payments that is attributed to a valuation year.

GLOSSARY OF TERMS

Total Pension Expense The total pension expense is the sum of the following items that are recognized at the end of the employer's fiscal year:

1. Service Cost
2. Interest on the Total Pension Liability
3. Current-Period Changes in Benefit Terms
4. Employee Contributions
5. Projected Earnings on Plan Investments
6. Pension Plan Administrative Expense
7. Other Changes in Plan Fiduciary Net Position
8. Recognition of Outflow (Inflow) of Resources due to the difference between expected and actual in measurement of the Total Pension Liability
9. Recognition of Outflow (Inflow) of Resources due to Assumption Changes
10. Recognition of Outflow (Inflow) of Resources due to the difference between projected and actual earnings on pension plan investments

Total Pension Liability (TPL) The TPL is the portion of the actuarial present value of projected benefit payments that is attributed to past periods of member service.

Unfunded Actuarial Accrued Liability (UAAL) The UAAL is the difference between actuarial accrued liability and valuation assets.

Valuation Assets The valuation assets are the plan fiduciary net position used in determining the net position liability of the plan. For purposes of the GASB Statement No. 67, the asset valuation method is equal to the market value of assets.