Gabriel Roeder Smith & Company
Consultants & Actuaries

CITY OF ST. CLAIR SHORES
POLICE AND FIRE RETIREMENT SYSTEM

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

JUNE 30, 2015

GRS
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September 8, 2015

The Board of Trustees
City of St. Clair Shores Police and Fire Retirement System

Dear Board Members:

This report provides accounting and financial reporting information that is intended to comply with the Governmental Accounting Standards Board (GASB) Statement Nos. 67 and 68 for the City of St. Clair Shores Police and Fire Retirement System. These calculations have been made on a basis that is consistent with our understanding of these Statements.

GASB Statement No. 67 is the accounting standard that applies to the stand-alone 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 satisfying the requirements of GASB Statement Nos. 67 and 68. The calculation of the plan's liability for this report is not 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. This report may be provided to parties other than the City only in its entirety and only with the permission of the City.

This report is based upon information, furnished to us by the City, concerning retirement and ancillary benefits, active members, deferred vested members, retirees and beneficiaries, and financial data. This information was checked for internal consistency, but it was not otherwise audited.

This report complements the actuarial valuation report that was provided to the City and should be considered in conjunction with that report. Please see the actuarial valuation report as of June 30, 2014 for additional discussion of the nature of actuarial calculations and more information related to participant data, economic and demographic assumptions, and benefit provisions.

To the best of our knowledge, the information contained with this report is accurate and fairly represents the actuarial position of the City of St. Clair Shores Police and Fire 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.

Mark Buis and Rebecca L. Stouffer are Members of the American Academy of Actuaries (MAAA) and meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinions contained herein.

The signing actuaries are independent of the plan sponsor.

Respectfully submitted,

By Mark Buis

Mark Buis
FSA, EA, FCA, MAAA

By Rebecca L. Stouffer

Rebecca L. Stouffer
ASA, MAAA

MB/RLS:sc

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SECTION A

EXECUTIVE SUMMARY

EXECUTIVE SUMMARY
AS OF JUNE 30, 2015

		2015
Actuarial Valuation Date		June 30, 2014
Measurement Date of the Net Pension Liability		June 30, 2015
Employer's Fiscal Year Ending Date (Reporting Date)		June 30, 2015
Membership		
Number of		
- Retirees and Beneficiaries		205
- Inactive, Nonretired Members		1
- Active Members		128
- Total		334
Covered Payroll	$	10,493,310
Net Pension Liability		
Total Pension Liability	$	151,560,518
Plan Fiduciary Net Position		99,696,472
Net Pension Liability	$	51,864,046
Plan Fiduciary Net Position as a Percentage of Total Pension Liability		65.78 %
Net Pension Liability as a Percentage of Covered Payroll		494.26 %
Development of the Single Discount Rate		
Single Discount Rate		7.50 %
Long-Term Expected Rate of Investment Return		7.50 %
Long-Term Municipal Bond Rate*		3.80 %
Last year ending June 30 in the 2016 to 2115 projection period for which projected benefit payments are fully funded		2113
Total Pension Expense	$	6,491,367

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	$ 1,809,862	$ -
Changes in assumptions	-	-
Net difference between projected and actual earnings on pension plan investments	3,296,972	-
Total	$ 5,106,834	$ -

**Source: "State & local bonds" rate from Federal Reserve statistical release (H.15) as of 42180. 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).

Paragraph 57 of GASB Statement No. 68 states, "Contributions to the pension plan from the employer subsequent to the measurement date of the collective net pension liability and before the end of the employer's reporting period should be reported as a deferred outflow of resources related to pensions." The information contained in this report does not incorporate any contributions made to the City subsequent to the measurement date of June 30, 2015.

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 benefits provided by the plan;
- 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
- annual money-weighted rate of return.

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
- a 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, 2015.

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 7.50%; the municipal bond rate is 3.80% (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 7.50%.

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.

SECTION B

FINANCIAL STATEMENTS

Auditor's Note – This information is intended to assist in preparation of the financial statements of the City of St. Clair Shores Police and Fire Retirement System. Financial statements are the responsibility of management, subject to the auditor's review. Please let us know if the auditor recommends any changes.

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

A. Expense

1. Service Cost	$	2,368,495
2. Interest on the Total Pension Liability		10,681,279
3. Current-Period Benefit Changes		-
4. Employee Contributions (made negative for addition here)		(493,061)
5. Projected Earnings on Plan Investments (made negative for addition here)		(7,403,847)
6. Pension Plan Administrative Expense		32,976
7. Other Changes in Plan Fiduciary Net Position		-
8. Recognition of Outflow (Inflow) of Resources due to Liabilities		481,282
9. Recognition of Outflow (Inflow) of Resources due to Assets		824,243
10. Total Pension Expense	**$**	**6,491,367**

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	$	2,291,144
2. Assumption Changes (gains) or losses	$	-
3. Recognition period for Liabilities: Average of the expected remaining service lives of all employees {in years}		4.7605
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	$	481,282
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	$	481,282
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	$	1,809,862
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	$	1,809,862
B. Outflows (Inflows) of Resources due to Assets		
1. Net difference between projected and actual earnings on pension plan investments (gains) or losses	$	4,121,215
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	$	824,243
4. Deferred Outflow (Inflow) of Resources to be recognized in future pension expenses due to Assets	$	3,296,972

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	$ 481,282	$ 0	$ 481,282
2. Due to Assets	824,243	-	824,243
3. Total	$ 1,305,525	$ 0	$ 1,305,525

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	$ 481,282	$ 0	$ 481,282
2. Assumption Changes	-	-	-
3. Net Difference between projected and actual earnings on pension plan investments	824,243	-	824,243
4. Total	$ 1,305,525	$ 0	$ 1,305,525

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	$ 1,809,862	$ 0	$ 1,809,862
2. Assumption Changes	-	-	-
3. Net Difference between projected and actual earnings on pension plan investments	3,296,972	-	3,296,972
4. Total	$ 5,106,834	$ 0	$ 5,106,834

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

Year Ending June 30	Net Deferred Outflows of Resources
2016	$ 1,305,525
2017	1,305,525
2018	1,305,525
2019	1,190,258
2020	-
Thereafter	0
Total	$ 5,106,834

STATEMENT OF FIDUCIARY NET POSITION AS OF JUNE 30, 2015

		2015
Assets		
Cash and Deposits	$	2,710,809
Receivables		
Accounts Receivable - Sale of Investments	$	-
Accrued Interest and Other Dividends		117,588
Contributions		1,246,330
Accounts Receivable - Other		313
Total Receivables	$	1,364,231
Investments		
Fixed Income	$	17,939,234
Domestic Equities		57,194,733
International Equities		15,231,391
Real Estate		-
Other		6,233,714
Total Investments	$	96,599,072
Total Assets	$	100,674,112
Liabilities		
Payables		
Accounts Payable - Purchase of Investments	$	-
Accrued Expenses		835,537
Accounts Payable - Other		142,103
Total Liabilities	$	977,640
Net Position Restricted for Pensions	$	99,696,472

STATEMENT OF CHANGES IN FIDUCIARY NET POSITION FOR YEAR ENDED JUNE 30, 2015

		2015
Additions		
Contributions		
Employer	$	4,958,089
Employee		493,061
Other		235,761
Total Contributions	$	5,686,911
Investment Income		
Net Appreciation in Fair Value of Investments	$	1,750,302
Interest and Dividends		2,320,439
Less Investment Expense		(788,109)
Net Investment Income	$	3,282,632
Other	$	-
Total Additions	$	8,969,543
Deductions		
Benefit Payments, including Refunds of Employee Contributions	$	10,026,409
Pension Plan Administrative Expense		32,976
Other		235,761
Total Deductions	$	10,295,146
Net Increase in Net Position	$	(1,325,603)
Net Position Restricted for Pensions		
Beginning of Year	$	101,022,075
End of Year	$	99,696,472

SECTION C

REQUIRED SUPPLEMENTARY INFORMATION

Auditor's Note – This information is intended to assist in preparation of the financial statements of the City of St. Clair Shores Police and Fire Retirement System. Financial statements are the responsibility of management, subject to the auditor's review. Please let us know if the auditor recommends any changes.

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	$	2,368,495
2. Interest on the total pension liability		10,681,279
3. Changes of benefit terms		0
4. Difference between expected and actual experience of the total pension liability		2,291,144
5. Changes of assumptions		0
6. Benefit payments, including refunds of employee contributions		(10,026,409)
7. Net change in total pension liability	$	5,314,509
8. Total pension liability – beginning		146,246,009
9. Total pension liability – ending	**$**	**151,560,518**
B. Plan fiduciary net position		
1. Contributions – employer	$	4,958,089
2. Contributions – employee		493,061
3. Net investment income		3,282,632
4. Benefit payments, including refunds of employee contributions		(10,026,409)
5. Pension plan administrative expense		(32,976)
6. Other		-
7. Net change in plan fiduciary net position	$	(1,325,603)
8. Plan fiduciary net position – beginning		101,022,075
9. Plan fiduciary net position – ending	**$**	**99,696,472**
C. Net pension liability	**$**	**51,864,046**
D. Plan fiduciary net position as a percentage of the total pension liability		**65.78%**
E. Covered-employee payroll	**$**	**10,493,310**
F. Net pension liability as a percentage of covered employee payroll		**494.26%**

SCHEDULES OF REQUIRED SUPPLEMENTARY INFORMATION

SCHEDULE OF CHANGES IN NET PENSION LIABILITY AND RELATED RATIOS MULTIYEAR

Last 10 Fiscal Years (which may be built prospectively starting from 2014)

Fiscal year ending June 30,	2015	2014	2013	2012	2011	2010	2009	2008	2007	2006
Total Pension Liability										
Service Cost	$ 2,368,495	$ 2,342,273								
Interest on the Total Pension Liability	10,681,279	10,474,643								
Benefit Changes	-	-								
Difference between Expected and Actual Experience	2,291,144	-								
Assumption Changes	-	-								
Benefit Payments and Refunds	(10,026,409)	(10,123,362)								
Net Change in Total Pension Liability	5,314,509	2,693,554								
Total Pension Liability - Beginning	146,246,009	143,552,455								
Total Pension Liability - Ending (a)	$ 151,560,518	$ 146,246,009								
Plan Fiduciary Net Position										
Employer Contributions	$ 4,958,089	$ 4,478,945								
Employee Contributions	493,061	492,602								
Pension Plan Net Investment Income	3,282,632	16,504,013								
Benefit Payments and Refunds	(10,026,409)	(10,123,362)								
Pension Plan Administrative Expense	(32,976)	(24,553)								
Other	-	277,037								
Net Change in Plan Fiduciary Net Position	(1,325,603)	11,604,682								
Plan Fiduciary Net Position - Beginning	101,022,075	89,417,393								
Plan Fiduciary Net Position - Ending (b)	$ 99,696,472	$ 101,022,075								
Net Pension Liability - Ending (a) - (b)	51,864,046	45,223,934								
Plan Fiduciary Net Position as a Percentage of Total Pension Liability	65.78 %	69.08 %								
Covered Employee Payroll	$ 10,493,310	$ 10,455,941								
Net Pension Liability as a Percentage of Covered Employee Payroll	494.26 %	432.52 %								

Notes to Schedule:

Schedules of Required Supplementary Information
Schedule of the Net Pension Liability Multiyear

Last 10 Fiscal Years (which may be built prospectively starting from 2014)

FY Ending June 30,	Total Pension Liability	Plan Net Position	Net Pension Liability	Plan Net Position as a % of Total Pension Liability	Covered Payroll	Net Pension Liability as a % of Covered Payroll
2006						
2007						
2008						
2009						
2010						
2011						
2012						
2013						
2014	$ 146,246,009	$ 101,022,075	$ 45,223,934	69.08 %	$ 10,455,941	432.52 %
2015	151,560,518	99,696,472	51,864,046	65.78 %	10,493,310	494.26 %

SCHEDULE OF CONTRIBUTIONS MULTIYEAR
LAST 10 FISCAL YEARS (WHICH MAY BE BUILT PROSPECTIVELY STARTING FROM 2014)

FY Ending June 30,	Actuarially Determined Contribution*	Actual Contribution	Contribution Deficiency (Excess)	Covered Payroll	Actual Contribution as a % of Covered Payroll
2006					
2007					
2008					
2009					
2010					
2011					
2012					
2013					
2014	$ 4,478,945	$ 4,478,945	$ -	$ 10,455,941	42.84 %
2015	4,958,089	4,958,089	-	10,493,310	47.25 %

* *Actual contributions are based on covered payroll at the time of contribution. It is the actuary's understanding that the City's practice is to contribute the percent-of-payroll employer contribution rate shown in the actuarial valuation report. Because of this understanding, the actuarially determined contribution shown in the Schedule of Contributions is the actual contributions made by the City during the fiscal year.*

NOTES TO SCHEDULE OF CONTRIBUTIONS

Methods and Assumptions Used to Determine Contribution Rates for the Fiscal Year Ending June 30, 2015*:

Actuarial Cost Method	Entry-Age Normal
Amortization Method	Level Percent, Closed
Remaining Amortization Period	26 years
Asset Valuation Method	5-Year smoothed market
Wage Inflation	4.50%
Salary Increases	4.5% to 7.5% including inflation.
Investment Rate of Return	7.5%
Retirement Age	Experience-based table of rates that are specific to the type of eligibility condition. Last updated for the 2009 valuation pursuant to an experience study of the period 2002 - 2007.
Mortality	RP-2000 table projected to 2008. This table provides no margin for future mortality improvement.

Other Information:

Notes	1) Benefit multiplier and employee contribution rates/provisions have changed since the measurement date. This change only applies to certain groups and will be reflected in the next fiscal year. The estimated change to the Net Pension Liability is a decrease of $900,000. 2) An experience review has recently been completed. This review includes recommended changes to the mortality assumptions and economic assumptions. These recommendations are currently under consideration by the Board and will be relected in the next fiscal year.

* *Based on valuation assumptions used in the June 30, 2013 actuarial valuation.*

SCHEDULE OF INVESTMENT RETURNS MULTIYEAR
LAST 10 FISCAL YEARS (WHICH MAY BE BUILT PROSPECTIVELY STARTING FROM 2014)

FY Ending June 30,	Annual Return[1]
2006	
2007	
2008	
2009	
2010	
2011	
2012	
2013	
2014	19.03 %
2015	2.59 %

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

SECTION D

NOTES TO FINANCIAL STATEMENTS

Auditor's Note – This information is intended to assist in preparation of the financial statements of the City of St. Clair Shores Police and Fire Retirement System. Financial statements are the responsibility of management, subject to the auditor's review. Please let us know if the auditor recommends any changes.

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(s) and actuary(s). Additional information about the assumed rate of investment return is included in our actuarial valuation report as of June 30, 2014.

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 June 30, 2015, these best arithmetic estimates are summarized in the following table:

ASSET ALLOCATION

Asset Class	Target Allocation	Long-Term Expected Real Rate of Return
US Large Cap Growth Equity	22.50 %	8.10 %
US Large Cap Value Equity	22.50 %	7.70 %
US Mid Cap Growth Equity	2.50 %	9.20 %
US Mid Cap Value Equity	2.50 %	8.50 %
US Small Cap Growth Equity	2.50 %	10.10 %
US Small Cap Value Equity	2.50 %	9.20 %
Europe Equity	9.90 %	8.20 %
Japan Equity	3.30 %	7.70 %
Asia Pacific ex Japan Equity	1.80 %	9.80 %
US Fixed Income	30.00 %	2.70 %
Cash	0.00 %	1.10 %
Total	100.00 %	

The figures in the above table were supplied by Morgan Stanley to the City. Gabriel, Roeder, Smith & Company does not provide investment advice.

Single Discount Rate

A Single Discount Rate of 7.50% 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 7.50%. The projection of cash flows used to determine this Single Discount Rate assumed that plan member contributions will be made at the current contribution rate and that employer contributions will be made at rates equal to the difference between actuarially determined contribution rates and the member rate. 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.

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 7.50%, 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 (SDR) ASSUMPTION

	1% Decrease 6.50%	Current SDR Assumption 7.50%	1% Increase 8.50%
Total Pension Liability	$ 167,495,658	$ 151,560,518	$ 143,498,948
Plan Fiduciary Net Position	$ 99,696,472	$ 99,696,472	$ 99,696,472
Net Pension Liability/(Asset)	$ 67,799,186	$ 51,864,046	$ 43,802,476

SUMMARY OF POPULATION STATISTICS

Inactive Plan Members or Beneficiaries Currently Receiving Benefits	205
Inactive Plan Members Entitled to But Not Yet Receiving Benefits	1
Active Plan Members	128
Total Plan Members	334

SECTION E

SUMMARY OF BENEFITS

BRIEF SUMMARY OF ACT 345 BENEFIT PROVISIONS

SERVICE RETIREMENT

Eligibility	Group
25 or more years of service, regardless of age, or age 60 with 10 years of service	Fire AR4 Fire Hired Before 1/1/2010 Police AR4 Police Police Command
Age 50 with 25 years of service or age 60 with 10 years of service	Fire Hired After 1/1/2010

Annual Amount	Group
2.8% of FAC times first 25 years of service plus 1% of FAC times years of service over 25 Maximum Benefit (percent of FAC): 70% Fire AR4, not to exceed base pay as of termination date 70% Police AR4, not to exceed base pay as of termination date 75% Police hired before 1/1/2011 75% Police Command hired before 4/22/2011 70% Fire	Fire AR4 Police AR4 Police Hired Before 1/1/2011 Police Command Hired Before 4/22/2011 Fire Hired Before 1/1/2010
2.25% of FAC times first 25 years of service plus 1% of FAC times years of service over 25 Maximum Benefit (percent of FAC): 70% 70% Police hired after 1/1/2011	Police Hired After 1/1/2011 Police Command Hired after 4/22/2011 Fire Hired After 1/1/2010
2% of FAC times first 25 years of service plus 1% of FAC times years of service over 25 through 30 years Calculated on base wage only	Fire Hired After 7/8/2015
2.25% of FAC times first 25 years of service plus 1% of FAC times years of service over 25 through 30 years Calculated on base wage only	Police Hired After 7/11/2015

Final Average Compensation (FAC): Highest 3 years out of last 10.

BRIEF SUMMARY OF ACT 345 BENEFIT PROVISIONS (CONTINUED)

DEFERRED RETIREMENT

Eligibility - 10 or more years of service, payable to member or eligible surviving spouse.

Annual Amount - Computed as service retirement but based upon service, FAC and benefit in effect at termination. Benefit begins at date retirement would have occurred had member remained in employment. Benefit to eligible surviving spouse actuarially reduced in accordance with an Option I election.

DEATH AFTER RETIREMENT SURVIVOR'S PENSION

Eligibility - Payable to a surviving spouse, if any, upon the death of a retired member who is receiving a regular straight life pension.

Annual Amount - Spouse's pension equals 60% of the regular straight life pension the deceased retirant was receiving.

NON-DUTY DEATH-IN-SERVICE SURVIVOR'S PENSIONS

Eligibility - Payable to a surviving spouse, if any, upon the death of a member with 10 or more years of service.

Annual Amount - Accrued straight life pension actuarially reduced in accordance with an Option I election.

DUTY DEATH-IN-SERVICE SURVIVOR'S PENSIONS

Eligibility - Payable upon the expiration of worker's compensation to the survivors of a member who died in the line of duty.

Annual Amount - Same amount that was paid by worker's compensation.

NON-DUTY DISABILITY

Eligibility - Payable upon the total and permanent disability of a member with 5 or more years of service.

Annual Amount - To age 55: 1.5% of FAC times years of service. At age 55: Computed like Service Retirement Pension.

DUTY DISABILITY

Eligibility - Payable upon the total and permanent disability of a member in the line of duty.

Annual Amount - To Age 55: 50% of FAC. At Age 55: Computed like Service Retirement Pension with service credit from date of disability to age 55.

BRIEF SUMMARY OF ACT 345 BENEFIT PROVISIONS (CONCLUDED)

MEMBER CONTRIBUTIONS

Annual Amount (% of compensation)	Group
5%	Fire AR4 Police AR4 Police Command Hired After 4/22/2011
6%	Police Command Hired Before 4/22/2011
4.5%	Police (effective 7/11/15) Fire (effective 7/20/15)

ANNUITY WITHDRAWAL

Description	Group
Available with reduction in monthly pension	Police hired after 1/1/2011 Police Command hired after 4/22/2011 Fire hired after 1/1/2010
Non-refundable (applicable to contributions made after noted effective date)	Police (effective 7/11/15) Fire (effective 7/20/15)
Available without reduction in monthly pension	All others

POST RETIREMENT INCREASE (Compounded)

All Fire (effective 7/1/94), Police (effective 7/1/95), Police Command (effective 7/1/96), Police AR4 (effective 7/1/96)	5% cost-of-living increases at age 60 or 5 years after retirement, whichever occurs first, second increase of 5% five years after the first increase.
Fire (effective 7/1/00), Police (effective 7/1/01)	5% cost-of-living increases at age 60 or 5 years after retirement, whichever occurs first, second increase of 5% five years after the first increase. A third increase of 5% five years after the second increase.
Police Command (effective 7/1/00), Police AR4 (effective 7/1/00), Fire AR4 (effective 7/1/00)	2.5% cost-of-living increases at age 60 or 3 years after retirement, whichever occurs first, second increase of 5% two years after the first increase. A third increase of 2.5% two years after the second increase. A fourth increase of 5% three years after the third increase.
Fire AR4, Police AR4, and Police Command (effective 3/19/07), Police (effective 4/7/08), Fire (effective 7/1/08)	2.5% cost-of-living increases at age 60 or 3 years after retirement, whichever occurs first, second increase of 2.5% two years after the first increase. A third increase of 2.5% two years after the second increase. A fourth increase of 2.5% three years after the third increase. A fifth increase of 2.5% two years after the fourth increase. A sixth increase of 2.5% three years after the fifth increase.

SECTION F

ACTUARIAL COST METHOD AND ACTUARIAL ASSUMPTIONS

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 normal cost method having the following characteristics:

- The annual normal costs for each individual active member, payable from the date of employment to the date of retirement, are sufficient to accumulate the value of the portion of the member's benefit at the time of retirement, death or disability.

- Each annual normal cost is a constant percentage of the member's year-by-year projected covered pay.

- The normal cost is based on the benefit provisions applicable for new hires within each employee group. For GASB Statement Nos. 67 and 68 purposes, the normal cost is based upon the benefit provisions applicable for current employees.

Unfunded actuarial accrued liabilities were amortized by level (principal and interest combined) percent-of-payroll contributions over a period of 25 years and added to the computed normal cost contribution. Assets in excess of actuarial accrued liabilities were amortized by level (principal & interest combined) percent-of-payroll contributions over a period of 10 years and applied as a credit to the computed normal cost contribution.

The valuation assets used for funding purposes is derived as follows: prior year valuation assets are increased by contribution and expected investment income and reduced by refunds, benefit payments and expenses. To this amount is added 20% of the difference between expected and actual investment income for each of the previous five years. Five-year smoothing was used for the first time in 2009. Previously, four-year smoothing was used. Some prior bases remain on a four-year recognition pattern during the phase-in period.

The market value of assets was used for GASB Statement Nos. 67 and 68 reporting and in the projection of the Plan Fiduciary Net Position shown in section G of this report.

The total pension liability shown in this report is based on an actuarial valuation performed as of June 30, 2014 rolled forward to the measurement date of June 30, 2015. The roll forward procedure increases the June 30, 2014 actuarial accrued liability with normal cost and interest and decreases it with actual benefit payments paid.

Excess Earnings Reserve. An amount equal to the market value of the Excess Earnings Reserve is added to the liabilities to assure proper allocation of assets to liabilities.

ACTUARIAL ASSUMPTIONS USED FOR THE VALUATION

The contribution requirements and benefit values of the System are calculated by applying actuarial assumptions to the benefit provisions and people information furnished, using the actuarial cost method described on the previous page.

The principal areas of financial risk which require assumptions about future experiences are:

- long-term rates of investment return to be generated by the assets of the System
- patterns of pay increases to members
- rates of mortality among members, retirants and beneficiaries
- rates of withdrawal of active members (without entitlement to a retirement benefit)
- rates of disability among members
- the age patterns of actual retirements

The monetary effect of each assumption is calculated for as long as a present covered person survives - - - a period of time which can be as long as a century.

Actual experience of the System will not coincide exactly with assumed experience. Each valuation provides a complete recalculation of assumed future experience and takes into account all past differences between assumed and actual experience. The result is a continual series of adjustments (usually small) to the computed contribution rate.

From time-to-time it becomes appropriate to modify one or more of the assumptions, to reflect experience trends (but not random year-to-year fluctuations).

ACTUARIAL ASSUMPTIONS USED FOR THE VALUATION (CONTINUED)

The rate of investment return was 7.5% (net of expenses) a year, compounded annually. This assumption is used to make money payable at one point in time equal in value to an amount of money payable at another point in time. The assumed real rate of return (the net return in excess of the wage inflation rate) was 3.0%.

The rates of salary increase used for individual members are in accordance with the following table. This assumption is used to project a member's current salary to the salaries upon which benefit amounts will be based.

SAMPLE SALARY ADJUSTMENT FACTORS USED TO PROJECT CURRENT SALARIES

Sample Ages	Percent Increase in Salary During Next Year: Base	Percent Increase in Salary During Next Year: Promotion & Seniority
20	4.5 %	3.0 %
25	4.5	3.0
30	4.5	2.6
35	4.5	1.1
40	4.5	0.2
45	4.5	0.2
50	4.5	0.2
55	4.5	0.1
60	4.5	0.0

If the number of active members remains constant, then the total active member payroll will increase 4.5% annually, the base portion of the individual salary increase assumptions. The base salary increase assumption of 4.5% was first used for the June 30, 1999 valuation.

ACTUARIAL ASSUMPTIONS USED FOR THE VALUATION (CONTINUED)

The mortality table used was the RP2000 table projected to 2008. Mortality rates are set forward 10 years for disabled members. This table was first used for the June 30, 2009 valuation. Sample values follow:

	Single Life Retirement Values			
Sample	Present Value of $1 Monthly for Life		Future Life Expectancy (Years)	
Ages	Men	Women	Men	Women
45	$149.29	$151.48	36.35	38.80
50	143.36	146.18	31.61	34.01
55	135.40	139.10	26.94	29.30
60	125.26	130.06	22.45	24.75
65	113.08	119.19	18.25	20.48
70	99.21	106.71	14.43	16.57
75	83.54	92.73	10.98	13.03
80	67.04	77.45	8.02	9.90

This assumption is used to measure the probabilities of members dying before retirement and the probabilities of each benefit payment being made after retirement. For purposes of the valuation, we assume that 75% of deaths in service are duty related and 25% of deaths in service are non-duty related. No margin for future mortality improvement has been applied.

The rates of retirement used to measure the probabilities of eligible members retiring during the next year were as follows:

	All Others	Fire Hired After 1/1/2010
Retirement Ages	Percent of Active Members Retiring within Next Year	Percent of Active Members Retiring within Next Year
45	30 %	%
46	30	
47	30	
48	30	
49	30	
50	30	50
51	30	30
52	40	40
53	40	40
54	40	40
55	40	40
56	50	50
57	50	50
58	50	50
59	50	50
60	100	100

A member is eligible for retirement after 25 or more years of service, or after attaining age 60 with 10 years of service. Fire members hired after 1/1/2010 are eligible for retirement after attaining age 50 with 25 years of service, or after attaining age 60 with 10 years of service.

ACTUARIAL ASSUMPTIONS USED FOR THE VALUATION (CONCLUDED)

Rates of separation from active membership were as shown below (rates do not apply to members eligible to retire and do not include separation on account of death or disability). This assumption measures the probabilities of members remaining in employment.

Sample Ages	Years of Service	% of Active Members Separating within Next Year
ALL	0	10.00 %
	1	7.00
	2	5.00
	3	4.00
	4	3.50
25	5 & Over	3.50
30		2.90
35		1.50
40		0.60
45		0.50
50		0.50
55		0.50
60		0.50

Rates of disability were as follows:

Sample Ages	% of Active Members Becoming Disabled within Next Year	
	Men	Women
20	0.08%	0.10%
25	0.08%	0.10%
30	0.08%	0.10%
35	0.08%	0.10%
40	0.20%	0.36%
45	0.27%	0.41%
50	0.49%	0.57%
55	0.89%	0.77%
60	1.41%	1.02%

For purposes of the valuation we assume that 75% of disabilities are duty related and 25% of disabilities are non-duty related.

Miscellaneous and Technical Assumptions

Marriage Assumption:	100% of males and 100% of females are assumed to be married for purposes of death-in-service benefits. Male spouses are assumed to be three years older than female spouses.
Pay Increase Timing:	Middle of the valuation year.
Decrement Timing:	Decrements of all types are assumed to occur mid-year.
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 Relativity:	Decrement rates are used directly from the experience study, without adjustment for multiple decrement table effects.
Decrement Operation:	All decrements the first 5 years of service. Only mortality operates during retirement eligibility.
Service Credit Accruals:	It is assumed that members accrue one year of service credit per year.
Incidence of Contributions:	Contributions are assumed to be received continuously throughout the year based upon the computed percent of payroll shown in this report, and the actual payroll payable at the time contributions are made.
Normal Form of Benefit:	A 60% automatic joint and survivor payment is the assumed normal form of benefit for married people.
Benefit Service:	Exact fractional service is used to determine the amount of benefit payable.

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 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 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 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 7.50%; the municipal bond rate is 3.80%; and the resulting Single Discount Rate is 7.50%.

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

Year	Projected Payroll for Current Employees	Projected Contributions from Current Employees	Projected Service Cost and Expense Contributions	Projected UAL Contributions	Projected Total Contributions
1	10,449,148	$ 466,150	$ 1,961,070	$ 3,071,119	$ 5,498,340
2	10,623,366	476,008	1,989,786	3,177,071	5,642,865
3	10,571,988	472,581	1,975,644	3,218,283	5,666,508
4	10,306,365	462,509	1,916,197	3,363,105	5,741,812
5	9,883,697	443,220	1,828,562	3,514,445	5,786,227
6	9,441,582	419,750	1,740,282	3,672,595	5,832,627
7	9,083,933	400,639	1,668,646	3,837,862	5,907,147
8	8,776,138	385,088	1,605,801	4,010,566	6,001,454
9	8,501,062	378,460	1,541,779	4,191,041	6,111,281
10	8,213,690	366,745	1,479,784	4,379,638	6,226,167
11	7,885,993	351,220	1,412,404	4,576,722	6,340,345
12	7,481,244	333,441	1,329,067	4,782,674	6,445,182
13	7,079,011	315,888	1,246,729	4,997,894	6,560,512
14	6,838,204	305,326	1,195,399	5,222,800	6,723,524
15	6,649,485	297,093	1,153,969	5,457,826	6,908,888
16	6,426,133	287,418	1,105,341	5,703,428	7,096,187
17	6,193,480	277,409	1,054,616	5,960,082	7,292,107
18	5,975,235	267,916	1,006,156	6,228,286	7,502,357
19	5,583,493	250,020	926,533	6,508,559	7,685,112
20	4,934,082	219,969	802,116	6,801,444	7,823,528
21	4,256,918	189,125	675,530	7,107,509	7,972,164
22	3,350,621	148,847	522,741	7,427,347	8,098,935
23	2,328,536	103,702	361,269	7,761,577	8,226,548
24	1,564,756	70,039	241,257	8,110,848	8,422,144
25	991,122	44,455	152,462	8,475,836	8,672,753
26	595,066	26,669	91,621	0	118,290
27	359,195	16,128	55,004	-	71,133
28	205,074	9,236	31,285	-	40,521
29	111,138	5,017	16,903	-	21,920
30	58,662	2,656	8,860	-	11,515
31	28,889	1,319	4,294	-	5,613
32	12,248	564	1,798	-	2,362
33	4,808	221	706	-	928
34	1,975	92	272	-	364
35	548	26	74	-	100
36	-	-	-	-	-
37	-	-	-	-	-
38	-	-	-	-	-
39	-	-	-	-	-
40	-	-	-	-	-
41	-	-	-	-	-
42	-	-	-	-	-
43	-	-	-	-	-
44	-	-	-	-	-
45	-	-	-	-	-
46	-	-	-	-	-
47	-	-	-	-	-
48	-	-	-	-	-
49	-	-	-	-	-
50	-	-	-	-	-

SINGLE DISCOUNT RATE DEVELOPMENT
PROJECTION OF PLAN FIDUCIARY NET POSITION

Year	Projected Beginning Plan Net Position	Projected Total Contributions	Projected Benefit Payments	Projected Administrative Expenses	Projected Investment Earnings at 7.50%	Projected Ending Plan Net Position
	(a)	(b)	(c)	(d)	(e)	(f)=(a)+(b)-(c)-(d)+(e)
1	$ 99,696,472	$ 5,498,340	$ 9,873,565	$ -	$ 7,316,131	$ 102,637,377
2	102,637,377	5,642,865	10,169,021	-	7,531,141	105,642,362
3	105,642,362	5,666,508	10,638,435	-	7,740,101	108,410,536
4	108,410,536	5,741,812	11,165,156	-	7,931,091	110,918,284
5	110,918,284	5,786,227	11,698,526	-	8,101,168	113,107,153
6	113,107,153	5,832,627	12,016,044	-	8,255,350	115,179,087
7	115,179,087	5,907,147	12,363,337	-	8,400,701	117,123,598
8	117,123,598	6,001,454	12,636,329	-	8,539,960	119,028,683
9	119,028,683	6,111,281	12,920,143	-	8,676,435	120,896,256
10	120,896,256	6,226,167	13,226,530	-	8,809,451	122,705,344
11	122,705,344	6,340,345	13,531,533	-	8,938,106	124,452,263
12	124,452,263	6,445,182	13,968,512	-	9,056,895	125,985,829
13	125,985,829	6,560,512	14,159,078	-	9,169,142	127,556,405
14	127,556,405	6,723,524	14,175,103	-	9,292,348	129,397,174
15	129,397,174	6,908,888	14,346,649	-	9,430,914	131,390,327
16	131,390,327	7,096,187	14,454,438	-	9,583,329	133,615,404
17	133,615,404	7,292,107	14,597,761	-	9,752,146	136,061,896
18	136,061,896	7,502,357	14,625,165	-	9,942,366	138,881,454
19	138,881,454	7,685,112	15,140,955	-	10,141,569	141,567,179
20	141,567,179	7,823,528	15,478,676	-	10,335,660	144,247,692
21	144,247,692	7,972,164	15,712,445	-	10,533,564	147,040,975
22	147,040,975	8,098,935	15,986,035	-	10,737,654	149,891,528
23	149,891,528	8,226,548	16,287,591	-	10,945,040	152,775,526
24	152,775,526	8,422,144	16,416,718	-	11,163,788	155,944,740
25	155,944,740	8,672,753	16,437,031	-	11,409,959	159,590,420
26	159,590,420	118,290	16,339,892	-	11,371,969	154,740,787
27	154,740,787	71,133	16,145,330	-	11,013,674	149,680,263
28	149,680,263	40,521	15,896,501	-	10,642,170	144,466,454
29	144,466,454	21,920	15,598,336	-	10,261,428	139,151,466
30	139,151,466	11,515	15,267,023	-	9,874,621	133,770,579
31	133,770,579	5,613	14,908,997	-	9,484,020	128,351,214
32	128,351,214	2,362	14,536,843	-	9,091,151	122,907,884
33	122,907,884	928	14,147,947	-	8,697,169	117,458,034
34	117,458,034	364	13,747,222	-	8,303,165	112,014,340
35	112,014,340	100	13,338,965	-	7,909,911	106,585,386
36	106,585,386	-	12,915,742	-	7,518,320	101,187,963
37	101,187,963	-	12,482,961	-	7,129,449	95,834,451
38	95,834,451	-	12,041,599	-	6,744,187	90,537,039
39	90,537,039	-	11,588,363	-	6,363,570	85,312,247
40	85,312,247	-	11,127,066	-	5,988,697	80,173,878
41	80,173,878	-	10,659,636	-	5,620,531	75,134,773
42	75,134,773	-	10,187,888	-	5,259,969	70,206,854
43	70,206,854	-	9,714,299	-	4,907,813	65,400,368
44	65,400,368	-	9,240,161	-	4,564,786	60,724,993
45	60,724,993	-	8,766,648	-	4,231,568	56,189,913
46	56,189,913	-	8,295,107	-	3,908,801	51,803,607
47	51,803,607	-	7,826,751	-	3,597,073	47,573,930
48	47,573,930	-	7,362,643	-	3,296,937	43,508,224
49	43,508,224	-	6,903,862	-	3,008,902	39,613,264
50	39,613,264	-	6,451,355	-	2,733,443	35,895,352

SINGLE DISCOUNT RATE DEVELOPMENT
PROJECTION OF PLAN FIDUCIARY NET POSITION
(CONCLUDED)

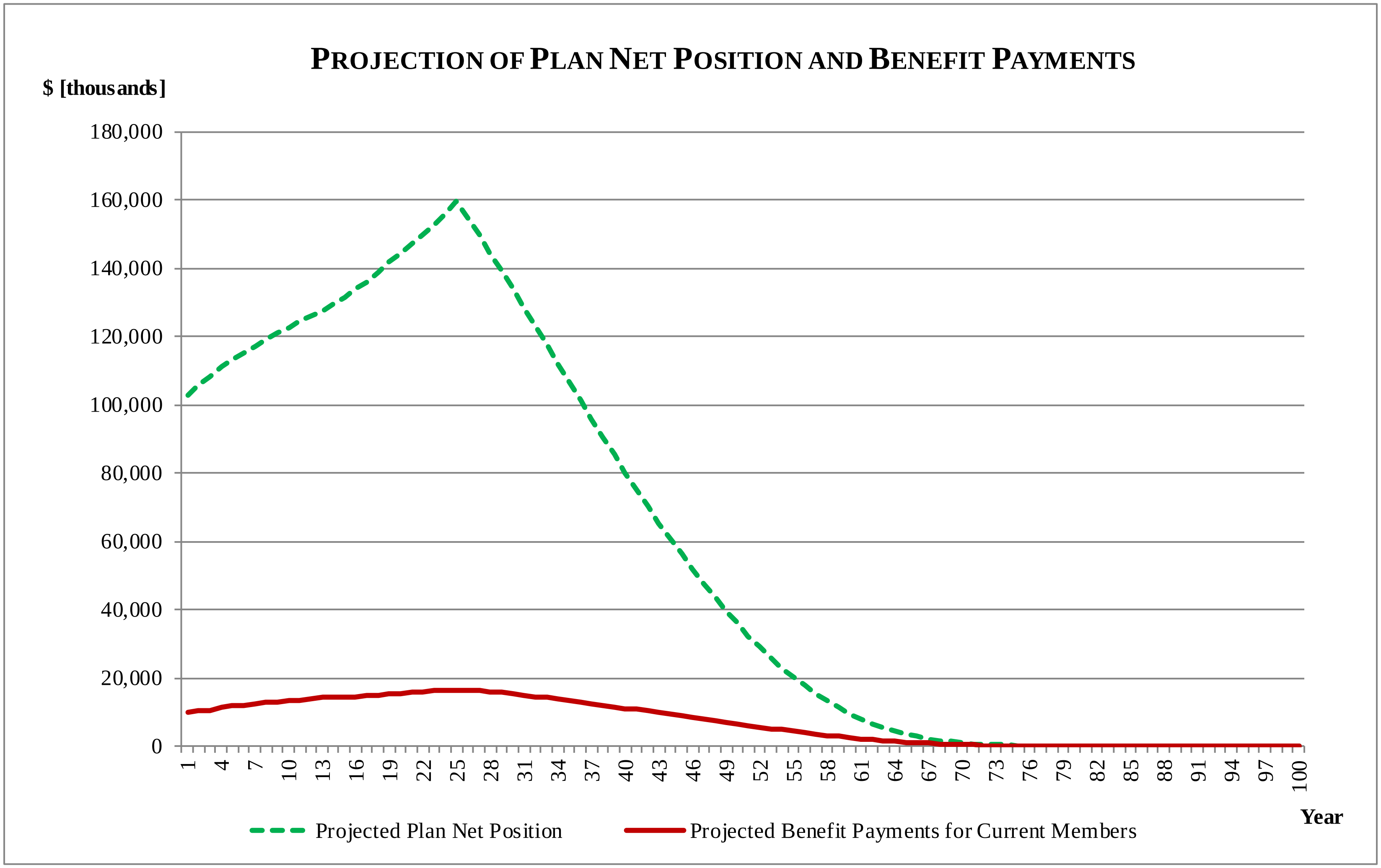
Year	Projected Beginning Plan Net Position	Projected Total Contributions	Projected Benefit Payments	Projected Administrative Expenses	Projected Investment Earnings at 7.50%	Projected Ending Plan Net Position
	(a)	(b)	(c)	(d)	(e)	(f)=(a)+(b)-(c)-(d)+(e)
51	$ 35,895,352	$ -	$ 6,005,910	$ -	$ 2,471,001	$ 32,360,443
52	32,360,443	-	5,568,354	-	2,221,995	29,014,083
53	29,014,083	-	5,139,593	-	1,986,806	25,861,296
54	25,861,296	-	4,720,689	-	1,765,772	22,906,379
55	22,906,379	-	4,312,843	-	1,559,171	20,152,707
56	20,152,707	-	3,917,257	-	1,367,212	17,602,661
57	17,602,661	-	3,535,252	-	1,190,024	15,257,433
58	15,257,433	-	3,168,266	-	1,027,645	13,116,812
59	13,116,812	-	2,817,743	-	880,006	11,179,075
60	11,179,075	-	2,485,167	-	746,922	9,440,830
61	9,440,830	-	2,172,056	-	628,083	7,896,857
62	7,896,857	-	1,879,915	-	523,042	6,539,983
63	6,539,983	-	1,610,177	-	431,209	5,361,015
64	5,361,015	-	1,364,046	-	351,849	4,348,819
65	4,348,819	-	1,142,369	-	284,097	3,490,547
66	3,490,547	-	945,523	-	226,975	2,771,999
67	2,771,999	-	773,264	-	179,427	2,178,162
68	2,178,162	-	624,748	-	140,358	1,693,772
69	1,693,772	-	498,689	-	108,670	1,303,753
70	1,303,753	-	393,390	-	83,296	993,660
71	993,660	-	306,804	-	63,227	750,083
72	750,083	-	236,678	-	47,541	560,946
73	560,946	-	180,699	-	35,417	415,665
74	415,665	-	136,627	-	26,144	305,181
75	305,181	-	102,371	-	19,119	221,929
76	221,929	-	76,031	-	13,845	159,743
77	159,743	-	55,956	-	9,920	113,707
78	113,707	-	40,781	-	7,026	79,953
79	79,953	-	29,397	-	4,914	55,469
80	55,469	-	20,929	-	3,390	37,930
81	37,930	-	14,693	-	2,304	25,541
82	25,541	-	10,158	-	1,542	16,924
83	16,924	-	6,908	-	1,015	11,031
84	11,031	-	4,616	-	657	7,072
85	7,072	-	3,030	-	419	4,461
86	4,461	-	1,954	-	263	2,770
87	2,770	-	1,239	-	162	1,693
88	1,693	-	773	-	99	1,018
89	1,018	-	475	-	59	602
90	602	-	288	-	35	348
91	348	-	172	-	20	196
92	196	-	101	-	11	106
93	106	-	58	-	6	54
94	54	-	32	-	3	24
95	24	-	16	-	1	10
96	10	-	7	-	0	3
97	3	-	3	-	0	1
98	1	-	1	-	0	0
99	0	-	-	-	0	0
100	0	-	-	-	0	0

SINGLE DISCOUNT RATE DEVELOPMENT
PRESENT VALUES OF PROJECTED BENEFITS

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 (vf)	Present Value of All 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	$ 99,696,472	$ 9,873,565	$ 9,873,565	$ -	$ 9,522,912	$ -	$ 9,522,912
2	102,637,377	10,169,021	10,169,021	-	9,123,605	-	9,123,605
3	105,642,362	10,638,435	10,638,435	-	8,878,847	-	8,878,847
4	108,410,536	11,165,156	11,165,156	-	8,668,324	-	8,668,324
5	110,918,284	11,698,526	11,698,526	-	8,448,762	-	8,448,762
6	113,107,153	12,016,044	12,016,044	-	8,072,628	-	8,072,628
7	115,179,087	12,363,337	12,363,337	-	7,726,463	-	7,726,463
8	117,123,598	12,636,329	12,636,329	-	7,346,110	-	7,346,110
9	119,028,683	12,920,143	12,920,143	-	6,987,074	-	6,987,074
10	120,896,256	13,226,530	13,226,530	-	6,653,735	-	6,653,735
11	122,705,344	13,531,533	13,531,533	-	6,332,251	-	6,332,251
12	124,452,263	13,968,512	13,968,512	-	6,080,689	-	6,080,689
13	125,985,829	14,159,078	14,159,078	-	5,733,623	-	5,733,623
14	127,556,405	14,175,103	14,175,103	-	5,339,640	-	5,339,640
15	129,397,174	14,346,649	14,346,649	-	5,027,218	-	5,027,218
16	131,390,327	14,454,438	14,454,438	-	4,711,617	-	4,711,617
17	133,615,404	14,597,761	14,597,761	-	4,426,359	-	4,426,359
18	136,061,896	14,625,165	14,625,165	-	4,125,273	-	4,125,273
19	138,881,454	15,140,955	15,140,955	-	3,972,800	-	3,972,800
20	141,567,179	15,478,676	15,478,676	-	3,778,059	-	3,778,059
21	144,247,692	15,712,445	15,712,445	-	3,567,551	-	3,567,551
22	147,040,975	15,986,035	15,986,035	-	3,376,438	-	3,376,438
23	149,891,528	16,287,591	16,287,591	-	3,200,121	-	3,200,121
24	152,775,526	16,416,718	16,416,718	-	3,000,457	-	3,000,457
25	155,944,740	16,437,031	16,437,031	-	2,794,577	-	2,794,577
26	159,590,420	16,339,892	16,339,892	-	2,584,243	-	2,584,243
27	154,740,787	16,145,330	16,145,330	-	2,375,323	-	2,375,323
28	149,680,263	15,896,501	15,896,501	-	2,175,548	-	2,175,548
29	144,466,454	15,598,336	15,598,336	-	1,985,807	-	1,985,807
30	139,151,466	15,267,023	15,267,023	-	1,808,026	-	1,808,026
31	133,770,579	14,908,997	14,908,997	-	1,642,443	-	1,642,443
32	128,351,214	14,536,843	14,536,843	-	1,489,716	-	1,489,716
33	122,907,884	14,147,947	14,147,947	-	1,348,709	-	1,348,709
34	117,458,034	13,747,222	13,747,222	-	1,219,078	-	1,219,078
35	112,014,340	13,338,965	13,338,965	-	1,100,348	-	1,100,348
36	106,585,386	12,915,742	12,915,742	-	991,103	-	991,103
37	101,187,963	12,482,961	12,482,961	-	891,064	-	891,064
38	95,834,451	12,041,599	12,041,599	-	799,589	-	799,589
39	90,537,039	11,588,363	11,588,363	-	715,807	-	715,807
40	85,312,247	11,127,066	11,127,066	-	639,361	-	639,361
41	80,173,878	10,659,636	10,659,636	-	569,770	-	569,770
42	75,134,773	10,187,888	10,187,888	-	506,562	-	506,562
43	70,206,854	9,714,299	9,714,299	-	449,316	-	449,316
44	65,400,368	9,240,161	9,240,161	-	397,568	-	397,568
45	60,724,993	8,766,648	8,766,648	-	350,879	-	350,879
46	56,189,913	8,295,107	8,295,107	-	308,842	-	308,842
47	51,803,607	7,826,751	7,826,751	-	271,074	-	271,074
48	47,573,930	7,362,643	7,362,643	-	237,209	-	237,209
49	43,508,224	6,903,862	6,903,862	-	206,910	-	206,910
50	39,613,264	6,451,355	6,451,355	-	179,859	-	179,859

SINGLE DISCOUNT RATE DEVELOPMENT
PRESENT VALUES OF PROJECTED BENEFITS
(CONCLUDED)

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 (vf)	Present Value of All 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	$ 35,895,352	$ 6,005,910	$ 6,005,910	$ -	$ 155,758	$ -	$ 155,758
52	32,360,443	5,568,354	5,568,354	-	134,336	-	134,336
53	29,014,083	5,139,593	5,139,593	-	115,341	-	115,341
54	25,861,296	4,720,689	4,720,689	-	98,549	-	98,549
55	22,906,379	4,312,843	4,312,843	-	83,753	-	83,753
56	20,152,707	3,917,257	3,917,257	-	70,764	-	70,764
57	17,602,661	3,535,252	3,535,252	-	59,408	-	59,408
58	15,257,433	3,168,266	3,168,266	-	49,526	-	49,526
59	13,116,812	2,817,743	2,817,743	-	40,974	-	40,974
60	11,179,075	2,485,167	2,485,167	-	33,616	-	33,616
61	9,440,830	2,172,056	2,172,056	-	27,331	-	27,331
62	7,896,857	1,879,915	1,879,915	-	22,005	-	22,005
63	6,539,983	1,610,177	1,610,177	-	17,533	-	17,533
64	5,361,015	1,364,046	1,364,046	-	13,816	-	13,816
65	4,348,819	1,142,369	1,142,369	-	10,764	-	10,764
66	3,490,547	945,523	945,523	-	8,287	-	8,287
67	2,771,999	773,264	773,264	-	6,305	-	6,305
68	2,178,162	624,748	624,748	-	4,738	-	4,738
69	1,693,772	498,689	498,689	-	3,518	-	3,518
70	1,303,753	393,390	393,390	-	2,582	-	2,582
71	993,660	306,804	306,804	-	1,873	-	1,873
72	750,083	236,678	236,678	-	1,344	-	1,344
73	560,946	180,699	180,699	-	955	-	955
74	415,665	136,627	136,627	-	671	-	671
75	305,181	102,371	102,371	-	468	-	468
76	221,929	76,031	76,031	-	323	-	323
77	159,743	55,956	55,956	-	221	-	221
78	113,707	40,781	40,781	-	150	-	150
79	79,953	29,397	29,397	-	101	-	101
80	55,469	20,929	20,929	-	67	-	67
81	37,930	14,693	14,693	-	44	-	44
82	25,541	10,158	10,158	-	28	-	28
83	16,924	6,908	6,908	-	18	-	18
84	11,031	4,616	4,616	-	11	-	11
85	7,072	3,030	3,030	-	7	-	7
86	4,461	1,954	1,954	-	4	-	4
87	2,770	1,239	1,239	-	2	-	2
88	1,693	773	773	-	1	-	1
89	1,018	475	475	-	1	-	1
90	602	288	288	-	0	-	0
91	348	172	172	-	0	-	0
92	196	101	101	-	0	-	0
93	106	58	58	-	0	-	0
94	54	32	32	-	0	-	0
95	24	16	16	-	0	-	0
96	10	7	7	-	0	-	0
97	3	3	3	-	0	-	0
98	1	1	1	-	0	-	0
99	0	-	-	-	-	-	-
100	0	-	-	-	-	-	-
				Totals	$ 173,104,482	$ -	$ 173,104,482


PROJECTION OF PLAN NET POSITION AND BENEFIT PAYMENTS
$ [thousands]
180,000
160,000
140,000
120,000
100,000
80,000
60,000
40,000
20,000
0
Year
Projected Plan Net Position
Projected Benefit Payments for Current Members

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 payments at predetermined rates of interest and 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.
Actuarial Valuation Date	The date as of which an actuarial valuation is performed.
Actuarially Determined Contribution (ADC) or Annual Required Contribution (ARC)	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 employees that are provided with pensions through the pension plan.
Deferred Retirement Option Program (DROP)	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.
Deferred Inflows and Outflows	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	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.

Glossary of Terms

Entry Age Actuarial Cost Method (EAN)	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.
GASB	The Governmental Accounting Standards Board is an organization that exists in order to promulgate accounting standards for governmental entities.
Fiduciary Net Position	The fiduciary net position is the market value of the assets of the trust dedicated to the defined benefit provisions.
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 contributing 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, plan members are not considered non-employer contributing entities.
Normal Cost	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

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.

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 Benefit Changes
4. Employee Contributions (made negative for addition here)
5. Projected Earnings on Plan Investments (made negative for addition here)
6. Pension Plan Administrative Expense
7. Other Changes in Plan Fiduciary Net Position
8. Recognition of Outflow (Inflow) of Resources due to Liabilities
9. Recognition of Outflow (Inflow) of Resources due to Assets

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 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.