

**CITY OF TROY INCENTIVE PLAN FOR VOLUNTEER
FIREFIGHTERS**

**GASB STATEMENT NO. 67 PLAN REPORTING AND ACCOUNTING
SCHEDULES**

JUNE 30, 2014



November 12, 2014

Mr. Thomas Darling
Director of Financial Services
City of Troy
500 West Big Beaver Road
Troy, Michigan 48084

Re: GASB Statement No. 67 Reporting and Disclosure Information

Dear Tom:

This report provides information required by the Retirement System in connection with the Governmental Accounting Standards Board (GASB) Statement No. 67 “Financial Reporting for Pension Plans.” The information provided herein was prepared for the purpose of assisting the City of Troy Incentive Plan for Volunteer Firefighters to comply with the financial reporting and disclosure requirements of GASB Statement No. 67.

The calculation of the liability associated with the benefits described in this report was performed for the purpose of satisfying the requirements of GASB Statement No. 67 and is not applicable for purposes of funding the Retirement System. A calculation of the Retirement System’s liability for other purposes may produce significantly different results. This report may be provided to parties other than the City of Troy Incentive Plan for Volunteer Firefighters only in its entirety and only with the permission of the City.

The total pension liability, net pension liability, and certain sensitivity information shown in this report are based on an actuarial valuation performed as of December 31, 2013. The total pension liability was rolled-forward from the valuation date to the fiscal year ending June 30, 2014 using generally accepted actuarial principals. There were no significant events or changes in benefit provisions that required an adjustment to the roll-forward liabilities. It is our opinion that the recommended assumptions are internally consistent, reasonable, and comply with the requirements under GASB Statement No. 67.

This report is based upon information, furnished to us by the City of Troy Incentive Plan for Volunteer Firefighters, which includes benefit provisions, membership information, and financial data. We did not audit this data and information, but we did apply a number of tests and concluded that it was reasonable and consistent. GRS is not responsible for the accuracy or completeness of the information provided to us by the City of Troy Incentive Plan for Volunteer Firefighters.

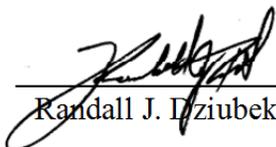
Mr. Thomas Darling
November 12, 2014
Page 2

This report compliments the actuarial valuation report that was provided to the City of Troy Incentive Plan for Volunteer Firefighters and should be considered together as a complete report for the fiscal year ending June 30, 2014. Please see the actuarial valuation report as of December 31, 2013 for additional discussion of the nature of actuarial calculations and more information related to participant data, economic and demographic assumptions, and benefit provisions.

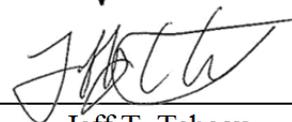
To the best of our knowledge, the information contained with this report is accurate and fairly represents the actuarial position of the City of Troy Incentive Plan for Volunteer Firefighters. All calculations have been made in conformity with generally accepted actuarial principles and practices as well as with the Actuarial Standards of Practice issued by the Actuarial Standards Board. Randall J. Dziubek and Abra D. Hill 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. The signing actuaries are independent of the plan sponsor.

This information is presented in draft form for review by the Retirement System's auditor. Please let us know if there are any items that the auditor changes so that we may maintain consistency with the Retirement System's financial statements.

Respectfully submitted,

By 
Randall J. Dziubek, ASA, EA, MAAA

By 
Abra D. Hill, ASA, MAAA

By 
Jeff T. Tebeau

RJD/ADH:bd

TABLE OF CONTENTS

	<u>Page</u>
Section A	Executive Summary
	Executive Summary 1
	Discussion 2
Section B	Financial Statements
	Statement of Fiduciary Net Position 5
	Statement of Changes in Fiduciary Net Position 6
Section C	Required Supplementary Information
	Schedule of Changes in Net Pension Liability and Related Ratios Multiyear..... 7
	Schedule of Net Pension Liability Multiyear..... 8
	Schedule of Contributions Multiyear..... 9
	Notes to Schedule of Contributions 10
	Schedule of Investment Returns Multiyear..... 11
Section D	Notes to Financial Statements
	Sensitivity of Net Pension Liability to the Single Discount Rate Assumption..... 12
	Summary of Population Statistics 13
Section E	Calculation of the Single Discount Rate
	Calculation of the Single Discount Rate 14
	Projection of Contributions 15
	Projection of Plan Fiduciary Net Position..... 17
	Present Values of Projected Benefits 19
	Projection of Plan Net Position and Benefit Payments..... 21
Section F	Glossary of Terms..... 22

SECTION A
EXECUTIVE SUMMARY

Executive Summary as of June 30, 2014

Actuarial Valuation Date	December 31, 2013
Pension Plan's Fiscal Year Ending Date (Measurement Date & Reporting Date)	June 30, 2014

Membership

Number of	
- Retirees and Beneficiaries	80
- Inactive, Nonretired Members*	27
- Active Members	140
- Total	247
Covered Payroll	\$ -

Net Pension Liability

Total Pension Liability	\$ 16,387,367
Plan Fiduciary Net Position	5,351,492
Net Pension Liability	\$ 11,035,875
Plan Fiduciary Net Position as a Percentage of Total Pension Liability	32.66%
Net Pension Liability as a Percentage of Covered Payroll	N/A

Development of the Single Discount Rate

Single Discount Rate	6.41%
Long-Term Expected Rate of Return	6.50%
Long-Term Municipal Bond Rate	4.29%
Last year ending June 30 in the 2015 to 2114 projection period for which projected benefit payments are fully funded	2066

* Does not include 12 participants on Leave of Absence.

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,” replaces the requirements of GASB Statement No. 25, “Financial Reporting for Defined Benefit Pension Plans and Note Disclosures for Defined Contribution Plans,” and GASB Statement No. 50, “Pension Disclosures.” GASB Statement No. 67 establishes standards of financial reporting for separately issued financial reports and specifies the required approach for measuring the pension liability of employers and non-employer contributing entities for benefits provided through the pension plan.

The following discussion provides a summary of the information that is required to be disclosed under this new accounting standard. 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 your internal staff will be responsible for preparing that information to comply with this accounting standard.

Financial Statements

GASB Statement No. 67 requires defined benefit pension plans to present two financial statements – a statement of fiduciary net position and a statement of changes in fiduciary net position.

The *statement of fiduciary net position* presents the following items as of the end of the pension plan’s reporting period, such as:

- assets;
- deferred inflows and outflows of resources;
- liabilities; and
- fiduciary net position (assets, plus deferred outflows, minus liabilities, minus deferred inflows).

The *statement of changes in fiduciary net position* presents the following for the plan’s reporting period:

- additions, such as contributions and investment income;
- deductions, such as benefit payments and expenses; and
- net increase or decrease in the fiduciary net position (the difference between additions and deductions).

Discussion (Continued)

Notes to Financial Statements

GASB Statement No. 67 also requires the notes of the plan's financial statements to include additional disclosure information. This disclosure information should include:

- a description of the types of benefits provided by the plan, as well as automatic or ad hoc COLAs;
- the number and classes of employees covered by the benefit terms;
- the composition of the pension plan's Board and the authority under which benefit terms may be amended;
- a description of the plan's funding policy, which includes member and employer contribution requirements;
- the pension plan's investment policies;
- a description of how fair value is determined;
- concentrations of investments greater than or equal to 5%;
- annual money-weighted rate of return on pension plan investments;
- the portion of the present value of benefits to be provided through the pension plan to current active and inactive plan members;
- the pension plan's fiduciary net position;
- the net pension liability;
- the pension plan's fiduciary net position as a percentage of the total pension liability;
- 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.

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;
- comparison of the actual employer contributions to the actuarially determined contributions based on the plan's funding policy; and
- the annual money-weighted rate of return on pension plan investments for each year.

These tables may be built prospectively as the information becomes available.

Discussion (Concluded)

Measurement of the Net Pension Liability

The net pension liability is to be measured as the total pension liability, less the amount of the pension plan's fiduciary net position. In actuarial terms, this will be 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).

Timing of the Valuation

An actuarial valuation to determine the total pension liability is required to be performed at least every two years. If the actuarial valuation is not calculated as of the plan's fiscal year end, the total pension liability is required to be rolled forward from the actuarial valuation date to the pension plan's fiscal year end.

The total pension liability shown in this report is based on an actuarial valuation performed as of December 31, 2013 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 expected rate of return on pension plan investments is 6.50%; the municipal bond rate is 4.290% (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); and the resulting single discount rate is 6.41%. The 6.50% assumed long-term investment rate of return is based on our understanding that the allocation of invested assets by asset class has recently been changed to a mix of equity and fixed income investment.

Effective Date and Transition

GASB Statement No. 67 is effective for a pension plan's fiscal years beginning after June 15, 2013; however, earlier application is encouraged by the GASB.

SECTION B

FINANCIAL STATEMENTS

Statement of Fiduciary Net Position as of June 30, 2014

Assets

Cash and Deposits	\$	2,980,502
Receivables		
Accounts Receivable - Sale of Investments	\$	-
Accrued Interest and Other Dividends		-
Contributions		-
Accounts Receivable - Other		-
Total Receivables	\$	-
Investments		
Fixed Income	\$	2,372,490
Domestic Equities		-
International Equities		-
Real Estate		-
Other		-
Total Investments	\$	2,372,490
Total Assets	\$	5,352,992

Liabilities

Payables		
Accounts Payable - Purchase of Investments	\$	1,500
Accrued Expenses		-
Accounts Payable - Other		-
Total Liabilities	\$	1,500

Net Position Restricted for Pensions	\$	5,351,492
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Statement of Changes in Fiduciary Net Position for Year Ended June 30, 2014

Additions

Contributions

Employer	\$ 1,078,500
Employee	-
Other	-
Total Contributions	\$ 1,078,500

Investment Income

Net Appreciation in Fair Value of Investments	\$ 88,478
Interest and Dividends	198,185
Less Investment Expense	-
Net Investment Income	\$ 286,663

Other

Total Additions	\$ 1,365,163
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Deductions

Benefit payments, including refunds of employee contributions	\$ 1,379,391
Pension Plan Administrative Expense	12,420
Other	-
Total Deductions	\$ 1,391,811

Net Increase in Net Position	\$ (26,648)
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Net Position Restricted for Pensions

Beginning of Year	\$ 5,378,140
End of Year	\$ 5,351,492

SECTION C

REQUIRED SUPPLEMENTARY INFORMATION

Schedules of Required Supplementary Information

Schedule of Changes in Net Pension Liability and Related Ratios Multiyear

Ultimately 10 Years Will Be Displayed

Fiscal year ending June 30,	2014
Total Pension Liability	
Service Cost	\$ 447,479
Interest on the Total Pension Liability	819,211
Benefit Changes	1,727,859
Difference between Expected and Actual Experience	-
Assumption Changes	1,703,002
Benefit Payments	(1,379,391)
Refunds	-
Net Change in Total Pension Liability	3,318,160
Total Pension Liability - Beginning	13,069,207
Total Pension Liability - Ending (a)	\$ 16,387,367
Plan Fiduciary Net Position	
Employer and State Contributions	\$ 1,078,500
Employee Contributions	-
Pension Plan Net Investment Income	286,663
Benefit Payments	(1,379,391)
Refunds	-
Pension Plan Administrative Expense	(12,420)
Other	-
Net Change in Plan Fiduciary Net Position	(26,648)
Plan Fiduciary Net Position - Beginning	5,378,140
Plan Fiduciary Net Position - Ending (b)	\$ 5,351,492
Net Pension Liability - Ending (a) - (b)	11,035,875
Plan Fiduciary Net Position as a Percentage of Total Pension Liability	32.66 %
Covered Employee Payroll	N/A
Net Pension Liability as a Percentage of Covered Employee Payroll	N/A
Notes to Schedule:	N/A

Schedules of Required Supplementary Information

Schedule of the Net Pension Liability Multiyear

Ultimately 10 Years Will Be Displayed

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
2014	\$ 16,387,367	\$ 5,351,492	\$ 11,035,875	32.66%	N/A	N/A

Schedule of Contributions Multiyear
Ultimately 10 Years Will Be Displayed

FY Ending June 30,	Actuarially Determined Contribution	Actual Contribution	Contribution Deficiency (Excess)	Covered Payroll	Actual Contribution as a % of Covered Payroll
2014	\$ 858,472	\$ 1,078,500	\$ (220,028)	N/A	N/A

Notes to Schedule of Contributions

Valuation Date:	December 31, 2013
Notes	Actuarially determined contribution rates are calculated as of December 31, which is 18 months prior to the beginning of the fiscal year which contributions are reported.
Methods and Assumptions Used to Determine Contribution Rates:	
Actuarial Cost Method	Individual Entry-Age Normal
Amortization Method	Level-Dollar, open
Remaining Amortization Period	25 years
Asset Valuation Method	4-Year smoothed market
Wage Inflation	0.00%
Salary Increases	N/A
Investment Rate of Return	6.50%
Retirement Age	Age and Experience-based table of rates that are specific to the type of eligibility condition.
Mortality	RP-2000 Mortality Table projected to 2017 using scale BB.
Other Information:	
Notes	Benefit changes and actuarial assumption changes are reflected in the TPL as of June 30, 2014.

Schedule of Investment Returns Multiyear Ultimately 10 Years Will Be Displayed

FY Ending June 30,	Annual Return¹
2014	4.79 %

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

SECTION D

NOTES TO FINANCIAL STATEMENTS

Single Discount Rate

A single discount rate of 6.41% 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 6.50% and a municipal bond rate of 4.290%. 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 and future contributions were sufficient to finance the benefit payments through the year 2066. As a result, the long-term expected rate of return on pension plan investments was applied to projected benefit payments through the year 2066, and the municipal bond rate was applied to all benefit payments after that date.

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 6.41%, as well as what the plan's net pension liability would be if it were calculated using a single discount rate that is 1-percentage-point lower or 1-percentage-point higher:

Sensitivity of Net Pension Liability to the Single Discount Rate Assumption

	Current Single Discount	
1% Decrease	Rate Assumption	1% Increase
5.41%	6.41%	7.41%
\$13,623,636	\$11,035,875	\$8,929,855

Summary of Population Statistics

Inactive Plan Members or Beneficiaries Currently Receiving Benefits	80
Inactive Plan Members Entitled to But Not Yet Receiving Benefits*	27
Active Plan Members	140
Total Plan Members	<u>247</u>

* Does not include 12 participants on Leave of Absence.

SECTION E

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 “risk-free” rate is required, as described in the following paragraph.

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

For the purpose of this valuation, the expected rate of return on pension plan investments is 6.50%; the municipal bond rate is 4.290%; and the resulting single discount rate is 6.41%.

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	Payroll for Current Employees	Contributions from Current Employees	Service Cost and Expense Contributions	UAL Contributions	Total Contributions
0	\$ -	-			
1	-	\$ -	\$ 431,042	\$ 2,510,617	\$ 2,941,660
2	-	-	407,195	641,340	1,048,535
3	-	-	386,489	665,363	1,051,852
4	-	-	366,494	683,296	1,049,790
5	-	-	346,386	684,596	1,030,982
6	-	-	326,311	672,971	999,282
7	-	-	306,839	661,543	968,382
8	-	-	289,007	650,309	939,316
9	-	-	272,712	639,266	911,977
10	-	-	255,342	628,410	883,752
11	-	-	237,026	617,739	854,765
12	-	-	220,358	607,249	827,607
13	-	-	205,031	596,937	801,968
14	-	-	190,320	586,800	777,119
15	-	-	176,363	576,835	753,198
16	-	-	162,696	567,039	729,736
17	-	-	148,776	557,410	706,186
18	-	-	134,314	547,945	682,258
19	-	-	120,036	538,640	658,676
20	-	-	107,228	529,493	636,721
21	-	-	95,996	520,501	616,497
22	-	-	84,772	511,662	596,435
23	-	-	73,138	502,974	576,111
24	-	-	62,103	494,432	556,535
25	-	-	51,865	486,036	537,901
26	-	-	41,933	477,783	519,715
27	-	-	32,685	469,669	502,354
28	-	-	25,012	461,693	486,705
29	-	-	19,167	453,853	473,020
30	-	-	14,816	446,146	460,962
31	-	-	11,387	438,570	449,956
32	-	-	8,638	431,122	439,760
33	-	-	6,673	423,801	430,474
34	-	-	5,262	416,604	421,867
35	-	-	4,000	409,530	413,530
36	-	-	2,784	402,575	405,359
37	-	-	1,800	395,739	397,540
38	-	-	1,114	389,019	390,133
39	-	-	602	382,413	383,015
40	-	-	258	375,919	376,177
41	-	-	97	369,535	369,632
42	-	-	26	363,260	363,285
43	-	-	-	357,091	357,091
44	-	-	-	351,027	351,027
45	-	-	-	345,066	345,066
46	-	-	-	339,207	339,207
47	-	-	-	333,446	333,446
48	-	-	-	327,784	327,784
49	-	-	-	322,218	322,218
50	-	-	-	316,746	316,746

Single Discount Rate Development Projection of Contributions (Concluded)

Year	Payroll for Current Employees	Contributions from Current Employees	Service Cost and Expense Contributions	UAL Contributions	Total Contributions
51	\$ -	\$ -	\$ -	\$ 311,367	\$ 311,367
52	-	-	-	306,080	306,080
53	-	-	-	300,882	300,882
54	-	-	-	295,773	295,773
55	-	-	-	290,750	290,750
56	-	-	-	285,813	285,813
57	-	-	-	280,959	280,959
58	-	-	-	276,188	276,188
59	-	-	-	271,498	271,498
60	-	-	-	266,887	266,887
61	-	-	-	262,355	262,355
62	-	-	-	257,900	257,900
63	-	-	-	253,521	253,521
64	-	-	-	249,215	249,215
65	-	-	-	244,983	244,983
66	-	-	-	240,823	240,823
67	-	-	-	236,734	236,734
68	-	-	-	232,714	232,714
69	-	-	-	228,762	228,762
70	-	-	-	224,877	224,877
71	-	-	-	221,058	221,058
72	-	-	-	217,304	217,304
73	-	-	-	213,614	213,614
74	-	-	-	209,987	209,987
75	-	-	-	206,421	206,421
76	-	-	-	202,916	202,916
77	-	-	-	199,470	199,470
78	-	-	-	196,082	196,082
79	-	-	-	192,753	192,753
80	-	-	-	189,479	189,479
81	-	-	-	186,262	186,262
82	-	-	-	183,099	183,099
83	-	-	-	179,989	179,989
84	-	-	-	176,933	176,933
85	-	-	-	173,928	173,928
86	-	-	-	170,975	170,975
87	-	-	-	168,071	168,071
88	-	-	-	165,217	165,217
89	-	-	-	162,412	162,412
90	-	-	-	159,654	159,654
91	-	-	-	156,943	156,943
92	-	-	-	154,277	154,277
93	-	-	-	151,658	151,658
94	-	-	-	149,082	149,082
95	-	-	-	146,551	146,551
96	-	-	-	144,062	144,062
97	-	-	-	141,616	141,616
98	-	-	-	139,211	139,211
99	-	-	-	136,847	136,847
100	-	-	-	134,523	134,523

Single Discount Rate Development Projection of Plan Fiduciary Net Position

Year	Projected Beginning		Projected Total		Projected Benefit		Projected		Projected Ending Plan	
	Plan	Net Position	Contributions	Payments	Investment	Earnings at 6.50%	Net Position			
	(a)	(b)	(c)	(d)	(e)=(a)+(b)-(c)+(d)					
1	\$	5,351,492	\$	2,941,660	\$	604,642	\$	422,604	\$	8,111,114
2		8,111,114		1,048,535		644,571		540,145		9,055,222
3		9,055,222		1,051,852		698,201		599,902		10,008,775
4		10,008,775		1,049,790		758,522		659,888		10,959,931
5		10,959,931		1,030,982		821,578		719,094		11,888,429
6		11,888,429		999,282		887,728		776,316		12,776,300
7		12,776,300		968,382		952,653		830,963		13,622,992
8		13,622,992		939,316		1,013,022		883,137		14,432,422
9		14,432,422		911,977		1,073,107		932,953		15,204,246
10		15,204,246		883,752		1,133,541		980,286		15,934,743
11		15,934,743		854,765		1,192,093		1,024,968		16,622,382
12		16,622,382		827,607		1,254,660		1,066,794		17,262,122
13		17,262,122		801,968		1,321,896		1,105,406		17,847,600
14		17,847,600		777,119		1,387,156		1,140,580		18,378,143
15		18,378,143		753,198		1,451,939		1,172,228		18,851,630
16		18,851,630		729,736		1,519,107		1,200,105		19,262,364
17		19,262,364		706,186		1,590,079		1,223,779		19,602,251
18		19,602,251		682,258		1,664,509		1,242,726		19,862,726
19		19,862,726		658,676		1,736,574		1,256,597		20,041,425
20		20,041,425		636,721		1,801,565		1,265,431		20,142,013
21		20,142,013		616,497		1,862,869		1,269,361		20,165,002
22		20,165,002		596,435		1,925,374		1,268,215		20,104,278
23		20,104,278		576,111		1,988,664		1,261,593		19,953,318
24		19,953,318		556,535		2,052,382		1,249,116		19,706,587
25		19,706,587		537,901		2,113,552		1,230,526		19,361,461
26		19,361,461		519,715		2,164,048		1,205,895		18,923,024
27		18,923,024		502,354		2,201,418		1,175,646		18,399,606
28		18,399,606		486,705		2,224,931		1,140,371		17,801,751
29		17,801,751		473,020		2,228,836		1,100,948		17,146,883
30		17,146,883		460,962		2,216,429		1,058,393		16,449,809
31		16,449,809		449,956		2,196,215		1,013,378		15,716,927
32		15,716,927		439,760		2,169,674		966,263		14,953,278
33		14,953,278		430,474		2,136,513		917,390		14,164,628
34		14,164,628		421,867		2,097,234		867,109		13,356,369
35		13,356,369		413,530		2,056,051		815,622		12,529,470
36		12,529,470		405,359		2,011,056		763,052		11,686,826
37		11,686,826		397,540		1,955,020		709,822		10,839,168
38		10,839,168		390,133		1,890,500		656,552		9,995,352
39		9,995,352		383,015		1,820,039		603,730		9,162,057
40		9,162,057		376,177		1,743,926		551,782		8,346,090
41		8,346,090		369,632		1,665,273		501,050		7,551,499
42		7,551,499		363,285		1,585,631		451,747		6,780,899
43		6,780,899		357,091		1,505,739		404,015		6,036,266
44		6,036,266		351,027		1,426,381		357,958		5,318,871
45		5,318,871		345,066		1,347,795		313,651		4,629,793
46		4,629,793		339,207		1,270,136		271,158		3,970,022
47		3,970,022		333,446		1,193,503		230,540		3,340,504
48		3,340,504		327,784		1,117,974		191,856		2,742,170
49		2,742,170		322,218		1,043,616		155,165		2,175,937
50		2,175,937		316,746		970,516		120,523		1,642,689

Single Discount Rate Development

Projection of Plan Fiduciary Net Position (Concluded)

Year	Projected Beginning Plan Net Position	Projected Total Contributions	Projected Benefit Payments	Projected Investment Earnings at 6.50%	Projected Ending Plan Net Position
	(a)	(b)	(c)	(d)	(e)=(a)+(b)-(c)+(d)
51	\$ 1,642,689	\$ 311,367	\$ 898,794	\$ 87,984	\$ 1,143,246
52	1,143,246	306,080	828,625	57,596	678,296
53	678,296	300,882	760,254	29,395	248,319
54	248,319	295,773	693,968	3,403	-
55	-	290,750	630,058	-	-
56	-	285,813	568,794	-	-
57	-	280,959	510,421	-	-
58	-	276,188	455,143	-	-
59	-	271,498	403,114	-	-
60	-	266,887	354,422	-	-
61	-	262,355	309,106	-	-
62	-	257,900	267,186	-	-
63	-	253,521	228,655	795	25,661
64	-	249,215	193,509	1,782	57,489
65	-	244,983	161,756	2,662	85,890
66	-	240,823	133,401	3,436	110,858
67	-	236,734	108,424	4,104	132,414
68	-	232,714	86,759	4,669	150,624
69	-	228,762	68,283	5,133	165,612
70	-	224,877	52,819	5,504	177,562
71	-	221,058	40,133	5,787	186,712
72	-	217,304	29,942	5,993	193,356
73	-	213,614	21,930	6,132	197,816
74	-	209,987	15,772	6,213	200,427
75	-	206,421	11,144	6,247	201,524
76	-	202,916	7,740	6,243	201,419
77	-	199,470	5,290	6,211	200,391
78	-	196,082	3,562	6,158	198,678
79	-	192,753	2,367	6,090	196,476
80	-	189,479	1,555	6,011	193,935
81	-	186,262	1,013	5,926	191,175
82	-	183,099	655	5,836	188,280
83	-	179,989	422	5,744	185,312
84	-	176,933	270	5,651	182,314
85	-	173,928	173	5,558	179,314
86	-	170,975	110	5,466	176,331
87	-	168,071	70	5,374	173,376
88	-	165,217	44	5,284	170,457
89	-	162,412	27	5,194	167,579
90	-	159,654	17	5,107	164,743
91	-	156,943	10	5,020	161,952
92	-	154,277	6	4,935	159,206
93	-	151,658	4	4,851	156,505
94	-	149,082	2	4,769	153,849
95	-	146,551	1	4,688	151,237
96	-	144,062	1	4,608	148,670
97	-	141,616	0	4,530	146,145
98	-	139,211	0	4,453	143,664
99	-	136,847	0	4,378	141,224
100	-	134,523	-	4,303	138,826

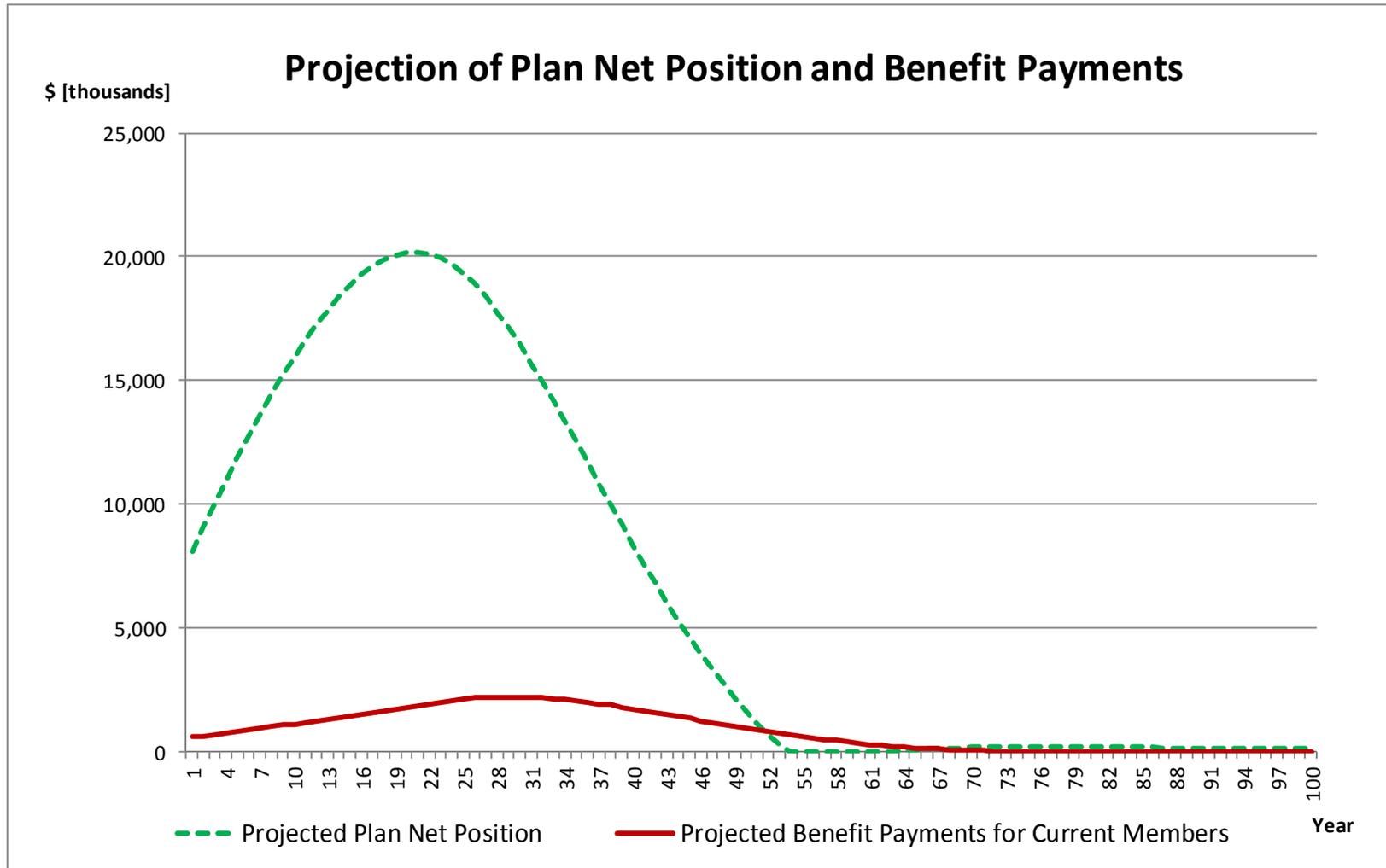
Single Discount Rate Development Present Values of Projected Benefits

Year	Projected Beginning 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	\$ 5,351,492	\$ 604,642	\$ 604,642	\$ -	\$ 585,900	\$ -	\$ 586,159
2	8,111,114	644,571	644,571	-	586,470	-	587,247
3	9,055,222	698,201	698,201	-	596,495	-	597,813
4	10,008,775	758,522	758,522	-	608,477	-	610,360
5	10,959,931	821,578	821,578	-	618,836	-	621,299
6	11,888,429	887,728	887,728	-	627,851	-	630,907
7	12,776,300	952,653	952,653	-	632,648	-	636,289
8	13,622,992	1,013,022	1,013,022	-	631,680	-	635,876
9	14,432,422	1,073,107	1,073,107	-	628,306	-	633,038
10	15,204,246	1,133,541	1,133,541	-	623,184	-	628,431
11	15,934,743	1,192,093	1,192,093	-	615,374	-	621,104
12	16,622,382	1,254,660	1,254,660	-	608,143	-	614,347
13	17,262,122	1,321,896	1,321,896	-	601,627	-	608,302
14	17,847,600	1,387,156	1,387,156	-	592,797	-	599,903
15	18,378,143	1,451,939	1,451,939	-	582,612	-	590,116
16	18,851,630	1,519,107	1,519,107	-	572,360	-	580,245
17	19,262,364	1,590,079	1,590,079	-	562,536	-	570,789
18	19,602,251	1,664,509	1,664,509	-	552,927	-	561,535
19	19,862,726	1,736,574	1,736,574	-	541,658	-	550,576
20	20,041,425	1,801,565	1,801,565	-	527,634	-	536,794
21	20,142,013	1,862,869	1,862,869	-	512,289	-	521,644
22	20,165,002	1,925,374	1,925,374	-	497,163	-	506,688
23	20,104,278	1,988,664	1,988,664	-	482,165	-	491,836
24	19,953,318	2,052,382	2,052,382	-	467,243	-	477,036
25	19,706,587	2,113,552	2,113,552	-	451,801	-	461,678
26	19,361,461	2,164,048	2,164,048	-	434,362	-	444,250
27	18,923,024	2,201,418	2,201,418	-	414,895	-	424,714
28	18,399,606	2,224,931	2,224,931	-	393,734	-	403,408
29	17,801,751	2,228,836	2,228,836	-	370,352	-	379,787
30	17,146,883	2,216,429	2,216,429	-	345,812	-	354,935
31	16,449,809	2,196,215	2,196,215	-	321,745	-	330,525
32	15,716,927	2,169,674	2,169,674	-	298,457	-	306,872
33	14,953,278	2,136,513	2,136,513	-	275,958	-	283,989
34	14,164,628	2,097,234	2,097,234	-	254,352	-	261,985
35	13,356,369	2,056,051	2,056,051	-	234,138	-	241,378
36	12,529,470	2,011,056	2,011,056	-	215,037	-	221,882
37	11,686,826	1,955,020	1,955,020	-	196,287	-	202,713
38	10,839,168	1,890,500	1,890,500	-	178,224	-	184,222
39	9,995,352	1,820,039	1,820,039	-	161,109	-	166,679
40	9,162,057	1,743,926	1,743,926	-	144,950	-	150,093
41	8,346,090	1,665,273	1,665,273	-	129,965	-	134,695
42	7,551,499	1,585,631	1,585,631	-	116,197	-	120,532
43	6,780,899	1,505,739	1,505,739	-	103,608	-	107,568
44	6,036,266	1,426,381	1,426,381	-	92,157	-	95,764
45	5,318,871	1,347,795	1,347,795	-	81,765	-	85,040
46	4,629,793	1,270,136	1,270,136	-	72,351	-	75,316
47	3,970,022	1,193,503	1,193,503	-	63,836	-	66,511
48	3,340,504	1,117,974	1,117,974	-	56,147	-	58,551
49	2,742,170	1,043,616	1,043,616	-	49,214	-	51,366
50	2,175,937	970,516	970,516	-	42,973	-	44,892

Single Discount Rate Development

Present Values of Projected Benefits (Concluded)

Year	Projected Beginning Plan 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	\$ 1,642,689	\$ 898,794	\$ 898,794	\$ -	\$ 37,368	\$ -	\$ 39,072
52	1,143,246	828,625	828,625	-	32,348	-	33,853
53	678,296	760,254	678,296	81,958	24,864	9,033	29,190
54	248,319	693,968	248,319	445,649	8,547	47,099	25,041
55	-	630,058	-	630,058	-	63,849	21,366
56	-	568,794	-	568,794	-	55,270	18,127
57	-	510,421	-	510,421	-	47,557	15,287
58	-	455,143	-	455,143	-	40,663	12,811
59	-	403,114	-	403,114	-	34,533	10,664
60	-	354,422	-	354,422	-	29,113	8,811
61	-	309,106	-	309,106	-	24,346	7,222
62	-	267,186	-	267,186	-	20,178	5,867
63	-	228,655	-	228,655	-	16,558	4,718
64	-	193,509	-	193,509	-	13,437	3,753
65	-	161,756	-	161,756	-	10,770	2,948
66	-	133,401	-	133,401	-	8,517	2,285
67	-	108,424	-	108,424	-	6,637	1,745
68	-	86,759	-	86,759	-	5,093	1,312
69	-	68,283	-	68,283	-	3,843	971
70	-	52,819	-	52,819	-	2,851	706
71	-	40,133	-	40,133	-	2,077	504
72	-	29,942	-	29,942	-	1,486	353
73	-	21,930	-	21,930	-	1,043	243
74	-	15,772	-	15,772	-	720	164
75	-	11,144	-	11,144	-	487	109
76	-	7,740	-	7,740	-	325	71
77	-	5,290	-	5,290	-	213	46
78	-	3,562	-	3,562	-	137	29
79	-	2,367	-	2,367	-	88	18
80	-	1,555	-	1,555	-	55	11
81	-	1,013	-	1,013	-	34	7
82	-	655	-	655	-	21	4
83	-	422	-	422	-	13	3
84	-	270	-	270	-	8	2
85	-	173	-	173	-	5	1
86	-	110	-	110	-	3	1
87	-	70	-	70	-	2	0
88	-	44	-	44	-	1	0
89	-	27	-	27	-	1	0
90	-	17	-	17	-	0	0
91	-	10	-	10	-	0	0
92	-	6	-	6	-	0	0
93	-	4	-	4	-	0	0
94	-	2	-	2	-	0	0
95	-	1	-	1	-	0	0
96	-	1	-	1	-	0	0
97	-	0	-	0	-	0	0
98	-	0	-	0	-	0	0
99	-	0	-	0	-	0	0
100	-	-	-	-	-	-	-
Totals	\$	19,458,927	\$	446,066	\$	19,904,993	



SECTION F

GLOSSARY OF TERMS

Glossary of Terms

<i>Actuarial Accrued Liability (AAL)</i>	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."
<i>Actuarial Assumptions</i>	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.
<i>Accrued Service</i>	Service credited under the system which was rendered before the date of the actuarial valuation.
<i>Actuarial Equivalent</i>	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.
<i>Actuarial Cost Method</i>	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.
<i>Actuarial Gain (Loss)</i>	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.
<i>Actuarial Present Value (APV)</i>	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.
<i>Actuarial Valuation</i>	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.
<i>Actuarial Valuation Date</i>	The date as of which an actuarial valuation is performed.
<i>Actuarially Determined Contribution (ADC) or Annual Required Contribution (ARC)</i>	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

<i>Amortization Payment</i>	The amortization payment is the periodic payment required to pay off an interest-discounted amount with payments of interest and principal.
<i>Amortization Method</i>	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).
<i>Cost-of-Living Adjustments</i>	Postemployment benefit changes intended to adjust benefit payments for the effects of inflation.
<i>Cost-Sharing Multiple-Employer Defined Benefit Pension Plan (cost-sharing pension plan)</i>	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.
<i>Covered-Employee Payroll</i>	The payroll of covered employees, which is typically only the pensionable pay and does not include pay above any pay cap.
<i>Deferred Retirement Option Program (DROP)</i>	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.
<i>Deferred Inflows and Outflows</i>	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.
<i>Discount Rate</i>	For GASB purposes, the discount rate is the single rate of return that results in the present value of all projected benefit payments to be equal to the sum of the funded and unfunded projected benefit payments, specifically: <ol style="list-style-type: none"> 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

<i>Entry Age Actuarial Cost Method (EAN)</i>	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.
<i>GASB</i>	The Governmental Accounting Standards Board is an organization that exists in order to promulgate accounting standards for governmental entities.
<i>Fiduciary Net Position</i>	The fiduciary net position is the value of the assets of the trust.
<i>Long-Term Expected Rate of Return</i>	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.
<i>Money-Weighted Rate of Return</i>	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.
<i>Multiple-Employer Defined Benefit Pension Plan</i>	A multiple-employer plan is a defined benefit pension plan that is used to provide pensions to the employees of more than one employer.
<i>Municipal Bond Rate</i>	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.
<i>Net Pension Liability (NPL)</i>	The NPL is the liability of employers and non-employer contribution entities to plan members for benefits provided through a defined benefit pension plan.
<i>Non-Employer Contribution Entities</i>	Non-employer contribution entities are entities that make contributions to a pension plan that is used to provide pensions to the employees of other entities. For purposes of the GASB Accounting statement plan members are not considered non-employer contribution entities.
<i>Normal Cost</i>	The actuarial present value of the pension trust benefits allocated to the current year by the actuarial cost method.

Glossary of Terms

<i>Other Postemployment Benefits (OPEB)</i>	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.
<i>Real Rate of Return</i>	The real rate of return is the rate of return on an investment after adjustment to eliminate inflation.
<i>Service Cost</i>	The service cost is the portion of the actuarial present value of projected benefit payments that is attributed to a valuation year.
<i>Total Pension Expense</i>	<p>The total pension expense is the sum of the following items that are recognized at the end of the employer's fiscal year:</p> <ol style="list-style-type: none"> 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
<i>Total Pension Liability (TPL)</i>	The TPL is the portion of the actuarial present value of projected benefit payments that is attributed to past periods of member service.
<i>Unfunded Actuarial Accrued Liability (UAAL)</i>	The UAAL is the difference between actuarial accrued liability and valuation assets.
<i>Valuation Assets</i>	The valuation assets are the assets used in determining the unfunded liability of the plan. For purposes of the GASB Statement No. 67, the valuation asset is equal to the market value of assets.

November 12, 2014

Mr. Thomas Darling
Director of Financial Services
City of Troy
500 West Big Beaver Road
Troy, Michigan 48084

Dear Tom,

Please find enclosed 5 copies of the GASB Statement No. 67 Accounting and Financial Reporting for Pensions report of the City of Troy Incentive Plan for Volunteer Firefighters.

We will be happy to meet with the Board to discuss the results of this report.

Sincerely yours,



Randall J. Dziubek, ASA, EA, MAAA



Jeff T. Tebeau

RJD:bd
Enclosures