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27W457 Warrenville Road
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Actuarial Valuation
as of March 1, 2017



SPRINGFIELD
FIREFIGHTERS'
PENSION FUND

GASB 67/68 Reporting

LAUTERBACH & AMEN, LLP

Actuarial GASB Disclosures Statements 67 and 68



Lauterbach & Amen, LLP

CERTIFIED PUBLIC ACCOUNTANTS

GASB 67: SPRINGFIELD FIREFIGHTERS' PENSION FUND

Fiscal Year Ending: February 28, 2017

Actuarial Valuation Date: March 1, 2017

Measurement Date: **February 28, 2017**

GASB 68: CITY OF SPRINGFIELD, ILLINOIS

Fiscal Year Ending: February 28, 2017

Actuarial Valuation Date: March 1, 2017

Measurement Date: **February 28, 2017**

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LAUTERBACH & AMEN, LLP



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ACTUARIAL CERTIFICATION

This certification provides supplemental information as required by the Governmental Accounting Standards Board. The enclosed schedules were prepared by the undersigned to provide general information to assist in the preparation of the Annual Financial Report. The assumptions and methods used in the preparation of this disclosure meet the parameters set for the disclosures presented in the financial section as required by the Governmental Accounting Standards Board. Additional information is also provided solely to assist the auditors in preparation of the required footnote disclosures.

The results in this report are based on information and data submitted by the Springfield Firefighters' Pension Fund and the City of Springfield, Illinois. We did not prepare the actuarial valuations for the years prior to March 1, 2016. Those valuations were prepared by other actuaries whose reports have been furnished to us, and our disclosures are based upon those reports. An audit of the information was not performed, but high-level reviews were performed for general reasonableness as appropriate based on the purpose of the valuation. The accuracy of the results is dependent upon the accuracy and completeness of the underlying information. The results of the actuarial valuation and these supplemental disclosures rely on the information provided.

The valuation results summarized involve actuarial calculations that require assumptions about future events. The City of Springfield, Illinois selected certain assumptions, while others were the result of guidance and/or judgment. We believe that the assumptions used in the valuation are reasonable and appropriate for the purposes for which they have been used.

To the best of our knowledge, all calculations are in accordance with the applicable funding requirements, and the procedures followed and presentation of results conform to generally accepted actuarial principles and practices. The undersigned consultant of Lauterbach & Amen, LLP with actuarial credentials meets the Qualification Standards of the American Academy of Actuaries to render this Actuarial Certification. There is no relationship between the City of Springfield, Illinois and Lauterbach & Amen, LLP that impairs our objectivity.

Respectfully Submitted,

LAUTERBACH & AMEN, LLP

Todd A. Schroeder, EA



PENSION FUND NET POSITION

Statement of Net Position
Statement of Changes in Net Position



STATEMENT OF FIDUCIARY NET POSITION

	<u>2017</u>	<u>2016</u>
Assets		
Cash and Cash Equivalents	\$ 3,078,673	\$ 2,095,962
Total cash	<u>3,078,673</u>	<u>2,095,962</u>
Receivables:		
Due from Treasury	-	-
Investment Income - Accrued Interest	261,861	245,983
Other	10,275	10,243
Total Receivables	<u>272,136</u>	<u>256,226</u>
Investments:		
Fixed Income	38,771,842	37,337,243
Insurance Contracts	12,458,741	11,891,365
Mutual Funds	53,574,266	43,205,717
Common Stock	16,435,600	17,533,966
Total Investments	<u>121,240,449</u>	<u>109,968,291</u>
Total Assets	<u>124,591,258</u>	<u>112,320,479</u>
Liabilities		
Payables:		
Expenses Due/Unpaid	45,553	78,547
Total Liabilities	<u>45,553</u>	<u>78,547</u>
Net Position Restricted for Pensions	<u>\$ 124,545,705</u>	<u>\$ 112,241,932</u>

The Fiduciary Net Position of the Fund shown above is intended to be in accordance with GAAP and Government Accounting Standards Board rules. The Fair Market Value of Investments has been provided by the reporting entity, and the results are being audited by an independent auditor. The level of the assets has been reviewed for reasonableness, but we make no representation as to the accuracy of the measurement of the fair market value of the investments. The assets for 2017 are based on audited financials.



STATEMENT OF CHANGES IN FIDUCIARY NET POSITION

	<u>2017</u>
Additions	
Contributions	
Employer	\$ 10,395,154
Member	1,718,845
Total Contributions	<u>12,113,999</u>
Investment Income	
Net Appreciation in Fair Value of Investments	12,396,481
Interest and Dividends	2,727,526
Less Investment Expense	<u>(219,384)</u>
Net Investment Income	<u>14,904,623</u>
Total Additions	<u>27,018,622</u>
Deductions	
Benefit payments and Refunds of Member Contributions	14,577,712
Administrative Expense	<u>137,137</u>
Total Deductions	<u>14,714,849</u>
Net Increase in Net Position	<u>12,303,773</u>
Net Position Restricted for Pensions	
Beginning of Year	<u>112,241,932</u>
End of Year	<u>\$ 124,545,705</u>

The Changes in Fiduciary Net Position of the Fund shown above is intended to be in accordance with GAAP and Government Accounting Standards Board rules. The changes have been provided by the reporting entity, and the results are being audited by an independent auditor. The changes have been reviewed for reasonableness, but we make no representation as to the accuracy of the measurement of the fair market value of the investments. The assets for 2017 are based on audited financials.



ACTUARIAL PENSION LIABILITY INFORMATION

Statement of Total Pension Liability
Statement of Changes in Total Pension Liability
Statement of Changes in Net Pension Liability
Deferred Outflows and Inflows of Resources
Deferred Outflows and Inflows of Resources – Detail
Pension Expense Development



STATEMENT OF TOTAL PENSION LIABILITY

	<u>2017</u>	<u>2016</u>
Active Employees	\$ 88,164,500	\$ 88,135,446
Inactive Employees		
Terminated Employees - Vested	215,386	200,682
Retired Employees	184,554,242	176,328,438
Disabled Employees	15,104,786	16,084,023
Other Beneficiaries	<u>14,438,075</u>	<u>17,750,350</u>
Total Inactive Employees	<u>214,312,489</u>	<u>210,363,493</u>
Total Pension Liability	<u>\$ 302,476,989</u>	<u>\$ 298,498,939</u>

The Total Pension Liability (TPL) shown is dependent on several factors such as plan provisions and actuarial assumptions used in the report. In addition, the calculation of the TPL may be dependent on the Fiduciary Net Position shown on the prior page. Changes in the Fiduciary Net Position due to any factor including adjustment on final audit could change the TPL. The dependence of the TPL on the Net Position is due to the role of the Net Position (and projected Net Position) on the determination of the discount rate used for the TPL.

The TPL has been determined for GASB 67/68 reporting purposes only. The resulting TPL is intended to be used in the financial statement reporting of the fund and/or the Employer. The resulting liability is not intended to be a representation of the fund liability for other purposes, including but not limited to determination of cash funding requirements and recommendations. The TPL is based on data as of the Data Date shown in this report. The TPL has been determined as of the Actuarial Valuation Date and based on the assumptions shown in this report, and adjusted to the Measurement Date as needed.



STATEMENT OF CHANGES IN TOTAL PENSION LIABILITY

	<u>2017</u>
Changes in Total Pension Liability	
Service Cost	\$ 4,951,770
Interest	19,481,955
Changes of Benefit Terms	-
Differences Between Expected and Actual Experience	(15,137,429)
Changes in Assumptions	9,259,467
Benefit Payments and Refunds	<u>(14,577,712)</u>
Net Change in Total Pension Liability	3,978,050
Total Pension Liability - Beginning	<u>298,498,939</u>
Total Pension Liability - Ending (a)	<u><u>\$ 302,476,989</u></u>
Plan Fiduciary Net Position - Ending (b)	<u><u>\$ 124,545,705</u></u>
Employer's Net Pension Liability - Ending (a) - (b)	<u><u>\$ 177,931,284</u></u>
Plan Fiduciary Net Position as a Percentage of the Total Pension Liability	41%
Covered-Employee Payroll	\$ 19,361,967
Employer's Net Pension Liability as a Percentage of Employee Payroll	919%

The plan Fiduciary Net Position was detailed in the prior section of this report. The employer's Net Pension Liability is the excess of the Total Pension Liability over the plan Fiduciary Net Position.

Total Pension Liability may be dependent on the Net Position of the fund. Changes in the Net Position could change the determination of the Total Pension Liability. Any changes in Net Position including adjustments on final audit can have an impact on Net Pension Liability that extends beyond the dollar-for-dollar change in Net Position.

Covered employee payroll is based on total covered payroll for the fund members during the fiscal year.



STATEMENT OF CHANGES IN NET PENSION LIABILITY

The table below illustrates the change in the Net Pension Liability (NPL) from the prior Measurement Date to the current Measurement Date. Under Statement 68, the difference between the NPL from the prior measurement date to the current measurement date should be recognized as an expense, unless permitted to be recognized as a deferred outflow or inflow of resources.

	Increase (Decrease)		
	Total Pension Liability	Plan Fiduciary Net Position	Net Pension Liability
	(a)	(b)	(a) - (b)
Balances Beginning at 03/01/16	<u>\$ 298,498,939</u>	<u>\$ 112,241,932</u>	<u>\$ 186,257,007</u>
Changes for the year:			
Service Cost	4,951,770	-	4,951,770
Interest	19,481,955	-	19,481,955
Actuarial Experience	(2,744,644)	-	(2,744,644)
Assumptions Changes	(3,133,319)	-	(3,133,319)
Plan Changes	-	-	-
Contributions - Employer	-	10,395,154	(10,395,154)
Contributions - Employee	-	1,718,845	(1,718,845)
Contributions - Other	-	-	-
Net Investment Income	-	14,904,623	(14,904,623)
Benefit payments, including refunds	(14,577,712)	(14,577,712)	-
Administrative Expense	-	(137,137)	137,137
Net Changes	<u>3,978,050</u>	<u>12,303,773</u>	<u>(8,325,723)</u>
Balances Beginning at 02/28/17	<u><u>\$ 302,476,989</u></u>	<u><u>\$ 124,545,705</u></u>	<u><u>\$ 177,931,284</u></u>

The changes in total pension liability above are described on the prior page. The plan fiduciary net position was detailed in the prior section of this report. The employer's Net Pension Liability is the excess of the Total Pension Liability over the plan fiduciary net position.



DEFERRED OUTFLOWS AND INFLOWS OF RESOURCES

The table below shows the cumulative amounts to be shown as deferred outflows and inflows of resources. Changes in total pension liability related to the difference in actual and expected experience, or changes in assumptions regarding future events, are recognized in pension expense over the expected remaining service life of all employees (active and retired) in the pension fund. Differences in projected and actual earnings over the measurement period are recognized over a 5-year period. Amounts not yet recognized are summarized below:

	<u>Deferred Outflows of Resources</u>	<u>Deferred Inflows of Resources</u>
Differences Between Expected and Actual Experience	\$ 2,981,582	\$ 2,360,240
Changes of Assumptions	10,095,442	2,694,478
Net Difference Between Projected and Actual Earnings on Pension Plan Investments	8,579,993	5,710,974
Contributions Subsequent to the Measurement Date*	-	-
Total	<u>\$ 21,657,017</u>	<u>\$ 10,765,692</u>

* Contributions subsequent to the measurement date may be recognized as a reduction to the NPL. The amount is not known as of the date of this report. Subsequent to the measurement date, the following amounts will be recognized in pension expense in the upcoming years:

Year ended February, 28:

2018	\$ 3,203,659
2019	3,203,659
2020	3,203,655
2021	343,662
2022	1,771,404
Thereafter	(834,714)



DEFERRED OUTFLOWS AND INFLOWS OF RESOURCES - DETAILS

The table below shows the annual detail amounts that have been summarized on the prior page. Under Statement 68, the level of detail shown on the prior page is sufficient for financial statement reporting. The detail shown below is primarily for tracking purposes.

Pension Expense Source	Date Established	Initial Period	Initial Balance	Remaining Period	2/28/2017 Expense Recognized	2/28/2017 Deferred Balance
Asset (Gain)/Loss	2/28/2017	5.00	\$ (7,138,718)	5.00	\$ (1,427,744)	\$ (5,710,974)
Change in Assumptions (Gain)/Loss	2/28/2017	7.14	(3,133,319)	7.14	(438,841)	(2,694,478)
Actuarial (Gain)/Loss	2/28/2017	7.14	(2,744,644)	7.14	(384,404)	(2,360,240)
Asset (Gain)/Loss	2/29/2016	5.00	14,299,991	4.00	2,859,999	8,579,993
Change in Assumptions (Gain)/Loss	2/29/2016	7.04	14,101,572	6.04	2,003,065	10,095,442
Actuarial (Gain)/Loss	2/29/2016	7.04	4,164,750	6.04	591,584	2,981,582
Total			\$ 19,549,632		\$ 3,203,659	\$ 10,891,325

Each detail item in the chart above was established as of the fiscal year end shown and the full amount deferred has been determined as of that time. Any events that occur in subsequent fiscal years do not have an impact on the prior fiscal year. The bases are established independently each year.



PENSION EXPENSE DEVELOPMENT

The table below displays the pension expense development for the current year. The pension expense includes items that change the Net Pension Liability from one year to the next, netted out for amounts that are deferred under GASB pronouncement, plus any amounts that are being recognized that were deferred previously.

See below for development of the pension expense:

	<u>2017</u>
Pension Expense/(Income) Under GASB 68	
Service Cost	\$ 4,951,770
Interest	19,481,955
Plan Changes	-
Contributions - Employee	(1,718,845)
Contributions - Other	-
Expected Investment Income	(7,765,905)
Administrative Expense	137,137
Other Changes	-
Initial Pension Expense/(Income)	15,086,111
Recognition of Outflow/(Inflow) of Resources due to Liabilities	1,771,404
Recognition of Outflow/(Inflow) of Resources due to Assets	1,432,255
Total Pension Expense/(Income)	<u>\$ 18,289,770</u>



ACTUARIAL ASSUMPTION INFORMATION

Statement of Significant Actuarial Assumptions
Assumption Changes
Notes on Actuarial Assumptions
Postemployment Benefit Changes
Expected Return on Pension Plan Investments
Municipal Bond Rate
Discount Rate
Sensitivity of the Discount Rate



STATEMENT OF SIGNIFICANT ACTUARIAL ASSUMPTIONS

Actuarial Assumptions (Economic)

Discount Rate used for the Total Pension Liability	6.69%
Long-Term Expected Rate of Return on Plan Assets	7.00%
High Quality 20 Year Tax-Exempt G.O. Bond Rate	3.95%
Projected Individual Salary Increases	4.00% - 16.79%
Projected Increase in Total Payroll	3.25%
Consumer Price Index (Urban)	2.50%
Inflation Rate Included	2.50%

Actuarial Assumptions (Demographic)

Mortality Table	L&A 2016 Illinois Firefighters Mortality Rates; See Details on Page 15
Retirement Rates	L&A 2016 Illinois Firefighters Retirement Rates Capped at age 65
Disability Rates	L&A 2016 Illinois Firefighters Disability Rates
Termination Rates	L&A 2016 Illinois Firefighters Termination Rates
Percent Married	80.0%

All rates shown in the economic assumptions are assumed to be annual rates, compounded on an annual basis. For more information on the selection of the actuarial assumptions, please see the assumption document prepared for the Fund.

ASSUMPTION CHANGES

The assumptions were changed from the prior year.

The assumed rate on High Quality 20 Year Tax-Exempt G.O. Bonds was changed from 3.34% to 3.95% for the current year. The underlying index used is The Bond Buyer 20-Bond GO Index as discussed in more detail later in this section. The choice of index is unchanged from the prior year. The rate has



been updated to the current fiscal year end based on changes in market conditions as reflected in the Index. The change was made to reflect our understanding of the requirements of GASB under Statement 67 and Statement 68.

The discount rate used in the determination of the Total Pension Liability was changed from 6.62% to 6.69%. The discount rate is impacted by a couple of metrics. Any change in the underlying High Quality 20 Year Tax Exempt G.O. Bond Rate will impact the blended discount rate.

In addition, there are changes that can be made that impact the projection of the Net Position of the fund. For example, changes in the formal or informal funding policy can impact the discount rate. Actual changes in the net position from one year to the next can impact the projections as well.

In the current valuation, we have updated the mortality assumption to include mortality improvements as stated in the most recently released MP-2016 table. In addition, the rates are being applied on a fully-generational basis. These changes were made to better reflect the future anticipated experience in the fund. See page 15 for more details on the specific mortality updates made.



NOTES ON ACTUARIAL ASSUMPTIONS

Individual Pay Increases

Individual pay increases include provisions for annual cost of living increases, plus any additional increases in pensionable pay provided (step increases, longevity increases, promotions, educations, etc). Sample rates are as follows:

Service	Rate	Service	Rate
0	16.79%	8	4.00%
1	15.00%	9	5.95%
2	13.61%	10	4.00%
3	4.00%	15	4.00%
4	6.75%	20	4.00%
5	4.00%	25	4.00%
6	4.00%	30	4.00%
7	4.00%		

Demographic Assumptions

Active Mortality follows the Sex Distinct Raw Rates as Developed in the RP-2014 Study, with Blue Collar Adjustment. These Rates are Improved Generationally using MP-2016 Improvement Rates.

Retiree Mortality follows the L&A Assumption Study for Firefighters 2016. These Rates are Experience Weighted with the Raw Rates as Developed in the RP-2014 Study, with Blue Collar Adjustment and Improved Generationally using MP-2016 Improvement Rates.

Disabled Mortality follows the Sex Distinct Raw Rates as Developed in the RP-2014 Study for Disabled Participants, with Blue Collar Adjustment. These Rates are Improved Generationally using MP-2016 Improvement Rates.

Spouse Mortality follows the Sex Distinct Raw Rates as Developed in the RP-2014 Study. These Rates are Improved Generationally using MP-2016 Improvement Rates.

Other demographic assumption rates are based on a review of assumptions in the L&A 2016 study for Illinois Firefighters.



POSTEMPLOYMENT BENEFIT CHANGES

Eligibility for postemployment benefit increases is determined based on the Illinois Pension code. Tier 1 Firefighter retirees are provided with an annual 3.0% increase in retirement benefits by statute when eligible. Tier 2 Firefighter retirees are provided postemployment benefit increases based on one-half of the Consumer Price Index (Urban) for the prior September.

The CPI-U for September, 1985 was 108.3. The CPI-U for September, 2015 was 237.9. The average increase in the CPI-U for September, 1985 through September, 2015 was 2.66% (on a compounded basis).



EXPECTED RETURN ON PENSION PLAN INVESTMENTS

The long-term expected rate of return on assets is intended to represent the best estimate of future real rates of return and is shown for each of the major asset classes in the investment policy. The expected rates of return shown below have been provided in the prior fiscal year by the investment professionals that work with the Pension Fund. Long-term Real Rates of Return are shown as the Expected Rate of Return, net of the assumed inflation rate.

There are multiple approaches seen to providing these rates. Typically, the information is either based on capital market projections, or historical rates seen for the asset classes. We do not provide an opinion on the reasonableness of the returns provided nor the reasonableness of the approach used in the determination of the rates provided. The information provided is shown below for convenience.

The rates provided in the table below are based on an arithmetic average. The Investment Policy Statement will provide more detail regarding the Fund's policies on asset allocation targets and acceptable ranges.

<u>Asset Class</u>	<u>Long-Term Expected Rate of Return</u>	<u>Long-Term Inflation Expectations</u>	<u>Long-Term Expected Real Rate of Return</u>	<u>Target Allocation</u>
Fixed Income	3.70%	2.20%	1.50%	35.00%
US Equity	8.20%	2.20%	6.00%	34.00%
International Equity	8.50%	2.20%	6.30%	20.00%
Real Estate	8.10%	2.20%	5.90%	8.00%
Global Tactical	6.30%	2.20%	4.10%	3.00%
Cash	2.50%	2.20%	0.30%	0.00%

Long-term expected real returns under GASB are expected to reflect the period of time that begins when a plan member begins to provide service to the employer and ends at the point when all benefits to the plan member have been paid. The rates provided above are intended to estimate those figures.

The expected inflation rate is 2.20% and is included in the total long-term rate of return on investments. The inflation rate is from the same source as the long-term real rates of return, and is not necessarily reflective of the inflation measures used for other purposes in the report.

Geometric rates of return are equal to arithmetic rates of return when the annual returns exhibit no volatility over time. When arithmetic returns are volatile on a year-to-year basis, the actual realized geometric returns over time will be lower. The higher the volatility, the greater the difference.



MUNICIPAL BOND RATE

The municipal bond rate assumption is based on The Bond Buyer 20-Bond GO Index. The rate shown earlier in the Actuarial Assumption section is the February 23, 2017 rate. The 20-Bond GO Index is based on an average of certain general obligation municipal bonds maturing in 20 years and having an average rating equivalent of Moody's Aa2 and Standard & Poor's AA.

The 20-Bond Index consists of 20 general obligation bonds that mature in 20 years. The average rating of the 20 bonds is roughly equivalent to Moody's Investors Service's Aa2 rating and Standard & Poor's Corp.'s AA.

The indexes represent theoretical yields rather than actual price or yield quotations. Municipal bond traders are asked to estimate what a current-coupon bond for each issuer in the indexes would yield if the bond was sold at par value. The indexes are simple averages of the average estimated yields of the bonds.

DISCOUNT RATE

The discount rate used in the determination of the Total Pension Liability is based on a combination of the expected long-term rate of return on plan investments and the municipal bond rate.

Cash flow projections were used to determine the extent which the plan's future net position will be able to cover future benefit payments. To the extent future benefit payments are covered by the plan's projected net position, the expected rate of return on plan investments is used to determine the portion of the net pension liability associated with those payments. To the extent future benefit payments are not covered by the plan's projected net position, the municipal bond rate is used to determine the portion of the net pension liability associated with those payments.

Projected benefit payments are determined during the actuarial process based on the assumptions. More details on the assumptions are in the prior section. The expected contributions are based on the funding policy of the plan. The funding policy is discussed in more detail in a later section.



SENSITIVITY OF THE DISCOUNT RATE

The Net Pension Liability has been determined using the discount rate listed in the assumption section. Below is a table illustrating the sensitivity of the Net Pension Liability to the discount rate assumption.

	1% Decrease (5.69%)	Current Discount Rate (6.69%)	1% Increase (7.69%)
Employer Net Pension Liability	\$221,616,018	\$177,931,284	\$142,386,178

The sensitivity of the Net Pension Liability to the discount rate is based primarily on two factors:

1. The duration of the plan's expected benefit payments. Younger plans with benefit payments further in the future will be more sensitive to changes in the discount rate.
2. The funded percentage of the plan (ratio of the net position to the total pension liability). The higher the funded percentage, the higher the sensitivity to the discount rate.



PARTICIPANT DATA

Participant Demographic Data
Expected Future Working Lifetime



PARTICIPANT DEMOGRAPHIC DATA

The chart below summarizes the employee count and payroll as of the Actuarial Valuation Date:

	<u>2017</u>	<u>2016</u>
Inactive Plan Members or Beneficiaries Currently Receiving Benefits	253	253
Inactive Plan Members Entitled to But Not Yet Receiving Benefits	1	1
Active Plan Members	<u>214</u>	<u>215</u>
Total	<u>468</u>	<u>469</u>
Payroll of Active Plan Members	<u>\$ 17,678,177</u>	<u>\$ 16,982,730</u>

Participant count is shown as of the Actuarial Valuation Date. Pay is the active pensionable pay as of the Actuarial Valuation Date.

Total Payroll for the current year includes assumed 5.00% COLA increases applied to each active member's salary in anticipation of future retroactive pay increases upon contract settlement. The 5.00% COLA increases are intended to represent two years' worth of contract negotiations.

EXPECTED FUTURE WORKING LIFETIME

The chart below summarizes the expected future working lifetime of fund members:

	<u>2017</u>	<u>2016</u>
Average Future Working Career (In Years)		
Active Plan Members	15.62	15.38
Inactive Plan Members	0.00	0.00
Total	7.14	7.05

The expected future working lifetime is measured as of the Actuarial Valuation Date and is based on the demographic assumptions used in the preparation of the Actuary's report.



FUNDING POLICY

Components of the Actuarially Determined Contributions
Formal Funding Policy
Informal Funding Policy
Funding Policy – Other Considerations



COMPONENTS OF THE ACTUARIALLY DETERMINED CONTRIBUTION

The Actuarially Determined Contribution (ADC) includes the determination of the Normal Cost contribution for active plan members, as well as provision for the payment of unfunded liability.

The actuarial funding method used in the determination of the normal cost and the actuarial liability is the Projected Unit Credit Cost method. The method allocates normal cost contributions by employee over the working career of the employee.

Unfunded liability is the excess of the actuarial liability over the actuarial value of assets. The actuarially determined contribution includes a payment towards unfunded liability existing at the actuarial valuation date. The payment towards unfunded liability is set up as a level percent of payroll payment that is expected to increase during the payment period. The period of repayment as of the Actuarial Valuation Date is 23 years.

The Actuarial Value of Assets smooths gains and losses on the market value of assets over a 5-year period.

Under no circumstances will the Actuarially Determined Contribution be less than the amount determined as the Statutory Minimum Contribution under Illinois statutes.

FORMAL FUNDING POLICY

There is no Formal Funding Policy that exists between the Pension Board and the City at this time.

INFORMAL FUNDING POLICY

In determining the most appropriate informal funding policy, GASB provides the following guidance in the Statement:

Application of professional judgment should consider the most recent five-year contribution history of the employers and nonemployer contributing entities as a key indicator of future contributions from those sources and should reflect all other known events and conditions.... the amount of projected cash flows for contributions from employers and nonemployer contributing entities should be limited to an average of contributions from those sources over the most recent five-year period and may be modified based on consideration of subsequent events. For this purpose, the basis for the average (for example, percentage of covered payroll contributed or percentage of actuarially determined contributions made) should be a matter of professional judgment.



In our review of informal funding policy, the following factors are considered and described herein:

1. The five-year contribution history of the Employer (with a focus on the average contributions from those sources)
2. All other known events and conditions
3. Consideration of subsequent events

Five-Year Contribution History of the Employer

Employer contributions (under the informal policy) should be limited to the average over the most recent five years. In determining the basis for the average we reviewed three possibilities: (a) the average dollar contribution; (b) the average percent of pensionable pay; and (c) the average percent of the actuarial determined contribution. Please see the table below for a summary of these values:

<u>Fiscal Year End</u>	<u>Employer Contributions</u>	<u>Most Applicable ADC</u>	<u>% of ADC</u>	<u>Covered Payroll</u>	<u>% of Payroll</u>
2/28/2017	\$10,395,154	\$10,395,154	100%	\$19,361,967	53.69%
2/28/2016	\$9,786,645	\$9,786,645	100%	\$16,982,730	57.63%
2/28/2015	\$9,473,179	\$9,473,179	100%	\$16,985,797	55.77%
2/28/2014	\$9,599,575	\$9,599,575	100%	\$16,810,957	57.10%
2/28/2013	\$9,206,265	\$9,206,265	100%	\$15,938,419	57.76%

When compared to the other policies reviewed, history suggests that a contribution as a percent of the actuarially determined contribution is the least volatile, and as a result, the most stable contribution method under an informal funding policy.

Other Known Events and Conditions

GASB has a provision for consideration of any other known events or conditions in the most recent five-year history in applying judgement for the informal funding policy. There are no events or conditions that have been considered in the development of the informal funding policy.

Consideration of Subsequent Events

GASB has a provision for modification based on consideration of subsequent events in development of the informal funding policy. There are no subsequent events that have been considered in the development of the informal funding policy.



Informal Funding Policy – Selected

The informal funding policy that has been determined for future contributions is 100.00% of the actuarially determined contribution. This represents the full future contributions expected to be made.

FUNDING POLICY – OTHER CONSIDERATIONS

Under GASB, the future contribution amount is not intended to include dollars contributed on behalf of future employees. Contributions are only intended to cover contributions towards the Normal Cost of existing employees as of the Actuarial Valuation Date as well as payment of unfunded liability on behalf of the current existing employees. Contributions under the funding policy have been adjusted as necessary to exclude dollars that would be anticipated to be contributed on behalf of future employees hired after the actuarial valuation date.

The contribution level may not pay off the unfunded liability during the active working lifetimes of current employees. In that case contributions will persist beyond the working lifetimes of current employees. To the extent a portion of the above total contribution is anticipated to pay contributions for future employee normal cost, the amount has been netted out. The remaining amount is anticipated to be paid towards the unfunded liability existing for current employees.

The actuarial determined contribution is determined annually based on the parameters previously discussed. The funding methods and procedures are assumed to continue into the future. The tax levy in the next December is assumed to be the actuarially determined contribution. Funding is assumed to go into the fund during the next full fiscal year.



SCHEDULES OF REQUIRED SUPPLEMENTARY INFORMATION

Schedule of Changes in the Net Pension Liability
Schedule of Total Pension Liability and Related Ratios
Schedule of Contributions



SCHEDULE OF CHANGES IN THE NET PENSION LIABILITY

	2017	2016	2015	2014	2013	2012	2011	2010	2009	2008
Total Pension Liability										
Service Cost	\$ 4,951,770	\$ 5,111,168	\$ 5,438,758							
Interest	19,481,955	17,506,592	17,749,350							
Changes of Benefit Terms	-	-	-							
Differences Between Expected and Actual Experience	(2,744,644)	4,164,750	-							
Changes in Assumptions	(3,133,319)	14,101,572	-							
Benefit Payments and Refunds	(14,577,712)	(13,670,346)	(12,922,751)							
Net Change In Total Pension Liability	3,978,050	27,213,736	10,265,357							
Total Pension Liability - Beginning	298,498,939	271,285,203	261,019,846							
Total Pension Liability - Ending (a)	\$302,476,989	\$298,498,939	\$271,285,203							
Plan Fiduciary Net Position										
Contributions - Employer	\$ 10,395,154	\$ 9,786,645	9,973,179							
Contributions - Member	1,718,845	1,696,300	1,704,162							
Contributions - Other	-	-	7,144,916							
Net Investment Income	14,904,623	(5,946,400)	(12,922,751)							
Benefit Payments and Refunds	(14,577,712)	(13,670,346)	(133,317)							
Administrative Expense	(137,137)	(109,969)	-							
Other	-	-	-							
Net Change in Plan Fiduciary Net Position	12,303,773	(8,243,770)	5,766,189							
Plan Fiduciary Net Position - Beginning	112,241,932	120,485,702	114,719,513							
Plan Fiduciary Net Position - Ending (b)	\$124,545,705	\$112,241,932	\$120,485,702							
Employer Net Pension Liability - Ending (a) - (b)	\$177,931,284	\$186,257,007	\$150,799,501							

The current year information was developed in the completion of this report.



SCHEDULE OF TOTAL PENSION LIABILITY AND RELATED RATIO

	<u>2017</u>	<u>2016</u>	<u>2015</u>	<u>2014</u>	<u>2013</u>	<u>2012</u>	<u>2011</u>	<u>2010</u>	<u>2009</u>	<u>2008</u>
Total Pension Liability - Ending (a)	<u>\$ 302,476,989</u>	<u>\$ 298,498,939</u>	<u>271,285,203</u>							
Plan Fiduciary Net Position - Ending (b)	<u>\$ 124,545,705</u>	<u>\$ 112,241,932</u>	<u>120,485,702</u>							
Employer Net Pension Liability - Ending (a) - (b)	<u>\$ 177,931,284</u>	<u>\$ 186,257,007</u>	<u>150,799,501</u>							
Plan Fiduciary Net Position as a Percentage of the Total Pension Liability	41.18%	37.60%	44.41%							
Covered-Employee Payroll	\$ 19,361,967	\$16,982,730	\$16,985,797							
Employer Net Pension Liability as a Percentage of Covered-Employee Payroll	918.97%	1096.74%	887.80%							

Covered employee payroll shown for the current year is the total covered pay for the fiscal year for all fund members.



SCHEDULE OF CONTRIBUTIONS

	<u>2017</u>	<u>2016</u>	<u>2015</u>	<u>2014</u>	<u>2013</u>	<u>2012</u>	<u>2011</u>	<u>2010</u>	<u>2009</u>	<u>2008</u>
Actuarially Determined Contribution	\$10,395,154	\$9,786,645	\$9,473,179							
Contributions in Relation to the Actuarially Determined Contribution	<u>10,395,154</u>	<u>9,786,645</u>	<u>9,973,179</u>							
Contribution Deficiency (excess)	<u>\$ -</u>	<u>\$ -</u>	<u>\$ (500,000)</u>							
Covered-Employee Payroll	<u>\$ 19,361,967</u>	<u>\$ 16,982,730</u>	<u>\$16,985,797</u>							
Contributions as a Percentage of Covered-Employee Payroll	53.7%	57.6%	58.7%							

NOTES TO SCHEDULE OF CONTRIBUTIONS

The actuarially determined contribution shown for the current year is from the March 1, 2015 actuary's report completed by Goldstein & Associates, Ltd. for the tax levy recommendation for the December 2015 tax levy.



GASB METHODS AND PROCEDURES

GASB Methods and Procedures
Methodology for Deferred Outflows and Inflows



GASB METHODS AND PROCEDURES

	Statement 67	Statement 68
	<u>Pension Fund Financials</u>	<u>Employer Financials</u>
Fiscal Year End for Reporting	February 28, 2017	February 28, 2017
Measurement Date	February 28, 2017	February 28, 2017
Actuarial Valuation Date	March 1, 2017	March 1, 2017
Actuarial Valuation - Data Date	February 28, 2017	February 28, 2017
Asset Valuation Method	Market Value	Market Value
Actuarial Cost Method	Entry Age Normal (Level %)	Entry Age Normal (Level %)

Methodology Used in the Determination of Deferred Inflows and Outflows of Resources

Amortization Method	Straight Line	Straight Line
Amortization Period		
Actuarial Experience (TPL)	7.14 Years	7.14 Years
Changes in Assumptions	7.14 Years	7.14 Years
Asset Experience	5.00 Years	5.00 Years



SUPPLEMENTARY TABLES

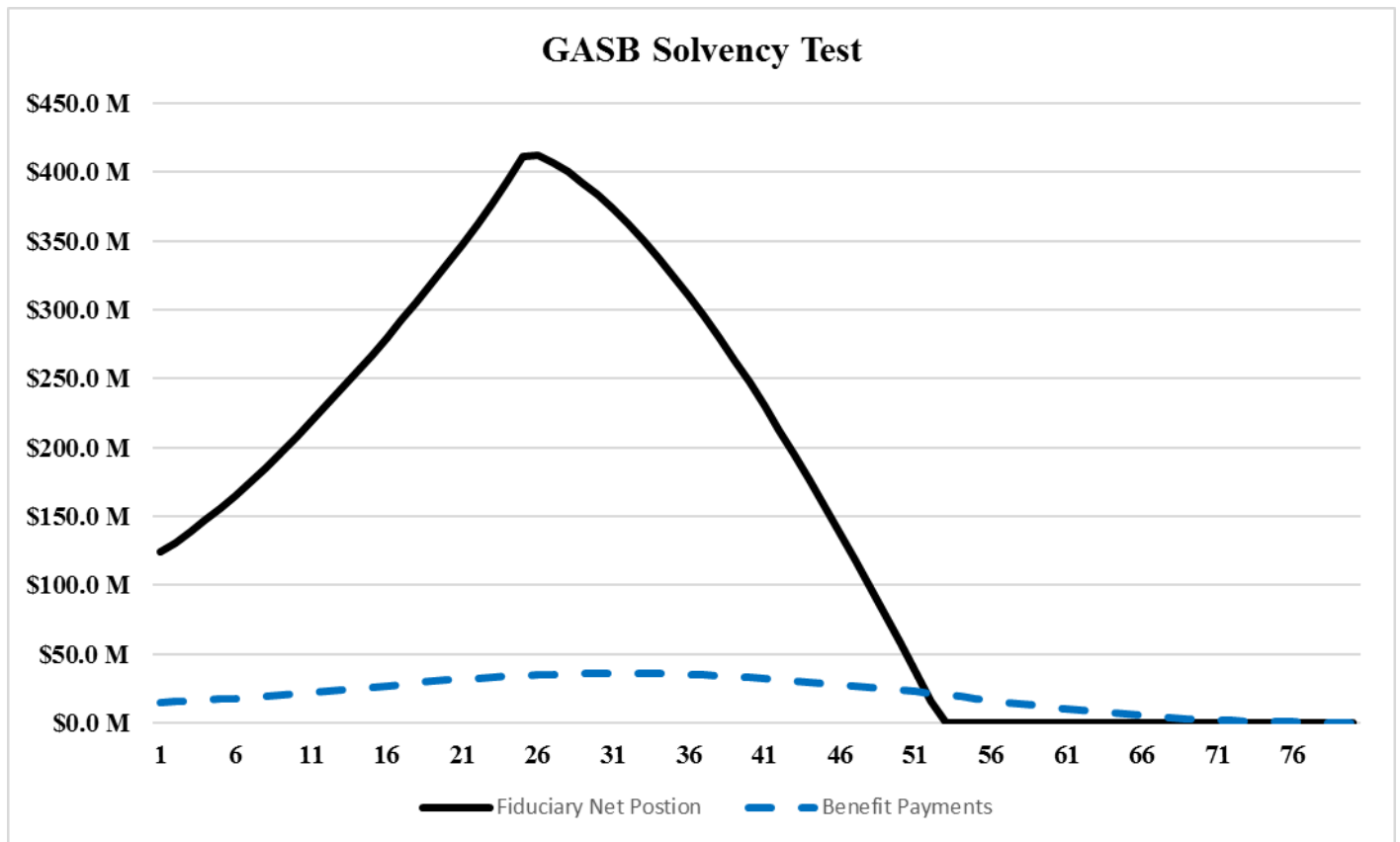
GASB Projections – Summary and Procedure
GASB Projections - Limitations
Projection of Contributions
Projection of the Pension Fund's Fiduciary Net Position
Actuarial Present Value of Projected Benefit Payments



GASB PROJECTIONS – SUMMARY AND PROCEDURE

GASB requires a solvency test to use in the determination of the discount rate each year. The Fiduciary Net Position of the fund is projected forward. To the extent the Net Position of the Fund is anticipated to be greater than \$0, benefit payments during that time period are discounted based on the expected rate of return on plan assets.

If the Fiduciary Net Position of the fund is anticipated to go to \$0 prior to the payment of future benefit payments for employees who are in the fund as of the Actuarial Valuation Date, then remaining expected future benefit payments are discounted using a high quality Municipal Bond rate as described in the assumption section of the report. Below is a chart with a high level summary of the projections:



The plan's projected net position is expected to cover future benefit payments in full for the current employees through 2068.



GASB PROJECTIONS – LIMITATIONS

Projections of any type require assumptions about future events. The projections required for GASB reporting are deterministic in nature. That means that values are projected forward under one set of assumptions which can be thought of as the average result. Actual results could vary, and projections of one deterministic assumption set do not necessarily provide a framework for making risk management or funding policy decisions. Projections that deal with risk management are outside the scope of this report.

In addition, GASB requirements create results that are specific only to financial statement reporting, and should not be used or interpreted for other purposes. For example, GASB cash flow projections do not entail the total expected cash flows of the pension fund, but rather a subset of cash flows specific to members who are in the pension fund as of the Actuarial Valuation date. While the likely expectation may be that new employees are hired to replace the old, cash flows attributable to their benefits are not considered. Under GASB, when the Net Position goes to \$0, that represents only the Net Position for the assets attributable to the current fund members.

GASB also mandates certain assumptions that are made in the projection process. Most notably, future contributions under an informal funding policy. In proposing an informal funding policy, GASB suggests a focus be placed on the average contribution rate over the past 5 years. Assumed contributions noted in this section may be based on the five year average, unless a formal funding policy is in place.

Contributions reflecting informal funding policy are applied under GASB, whether or not the future results dictate a need for more or less contributions. This would not be the case with other uses for projections. Any events that are taken into account (past or future) in the informal funding policy are discussed in the “Funding Policy” section of this report.

The further you look forward with projections, the more sensitive the results are to assumptions. With projections that run out close to 80 years, a small change in an assumption will have a dramatic impact in the look of the projections on the following pages. If there is no change to the solvency of the fund as determined by GASB, big swings in the projection results may not necessarily lead to big swings in the determination of the Total Pension Liability.

We recommend the projections are not used for any other purposes, other than providing backup information for purposes of the financial statement report.

The following pages provide the detail behind the charts shown on the chart in this section.



PROJECTION OF CONTRIBUTIONS – YEARS 1 TO 30

Year	Projected Covered-Employee Payroll			Projected Contributions			
	Current Employees (a)	Future Employees (b)	Total Employee Payroll (c) = (a) + (b)	Current Employees (d) - Notes	Employer Contributions for Current Employees (e) - Notes	Contributions Related to Pay of Future Employees (f) - Notes	Total Contributions (d) + (e) + (f)
1	\$ 17,678,161	\$ -	\$ 17,678,161	\$ 1,671,470	\$ 11,184,141	\$ -	\$ 12,855,611
2	18,129,741	122,960	18,252,701	1,714,167	12,636,970	-	14,351,137
3	18,528,450	317,464	18,845,914	1,751,865	13,144,677	-	14,896,542
4	18,930,005	528,401	19,458,406	1,789,832	13,666,493	-	15,456,325
5	19,075,939	1,014,865	20,090,804	1,803,630	14,201,263	-	16,004,893
6	19,200,446	1,543,310	20,743,756	1,815,402	14,729,934	-	16,545,336
7	19,151,091	2,266,837	21,417,928	1,810,736	15,260,119	-	17,070,855
8	19,112,410	3,001,600	22,114,010	1,807,078	15,776,572	-	17,583,650
9	18,808,809	4,023,907	22,832,716	1,778,373	16,287,744	-	18,066,117
10	18,594,512	4,980,267	23,574,779	1,758,111	16,735,686	-	18,493,797
11	18,246,360	6,094,599	24,340,959	1,725,193	17,207,197	-	18,932,390
12	17,813,672	7,318,368	25,132,040	1,684,283	17,663,189	-	19,347,472
13	17,234,484	8,714,348	25,948,832	1,629,520	18,126,857	-	19,756,377
14	16,541,889	10,250,280	26,792,169	1,564,036	18,552,556	-	20,116,591
15	15,865,883	11,797,031	27,662,914	1,500,119	18,999,584	-	20,499,704
16	14,993,126	13,568,833	28,561,959	1,417,600	19,471,468	-	20,889,068
17	14,012,675	15,477,548	29,490,223	1,324,898	19,940,641	-	21,265,540
18	13,037,073	17,411,582	30,448,655	1,232,655	20,395,191	-	21,627,846
19	12,107,513	19,330,723	31,438,236	1,144,765	20,890,485	-	22,035,250
20	11,125,574	21,334,405	32,459,979	1,051,923	21,450,984	-	22,502,907
21	10,137,130	23,377,798	33,514,928	958,466	22,024,566	-	22,983,032
22	9,168,886	25,435,277	34,604,163	866,918	22,652,912	-	23,519,831
23	8,180,856	27,547,943	35,728,799	773,500	23,344,684	-	24,118,183
24	7,338,524	29,551,460	36,889,984	693,857	24,076,302	-	24,770,159
25	6,511,579	31,577,330	38,088,909	615,670	7,255,863	-	7,871,533
26	5,661,761	33,665,038	39,326,799	535,320	1,664,076	-	2,199,396
27	4,802,839	35,802,080	40,604,919	454,108	1,436,941	-	1,891,049
28	4,077,927	37,846,652	41,924,579	385,568	1,214,737	-	1,600,305
29	3,333,853	39,953,275	43,287,128	315,216	1,046,453	-	1,361,669
30	2,642,821	42,051,139	44,693,960	249,879	801,213	-	1,051,092

Column d – Contributions from employees to the pension fund (employees as of the valuation date)

Column e – Employer contributions to the fund excluding contributions for employees hired after the actuarial valuation date

Column f – Contributions from future employees to the extent they are anticipated to be greater than required to pay their total normal cost



PROJECTION OF CONTRIBUTIONS – YEARS 31 TO 60

Year	Projected Covered-Employee Payroll			Projected Contributions			
	Current Employees (a)	Future Employees (b)	Total Employee Payroll (c) = (a) + (b)	Current Employees (d) - Notes	Employer Contributions for Current Employees (e) - Notes	Contributions Related to Pay of Future Employees (f) - Notes	Total Contributions (d) + (e) + (f)
31	\$ 2,008,637	\$ 44,137,877	\$ 46,146,514	\$ 189,917	\$ 584,373	\$ -	\$ 774,290
32	1,509,511	46,136,764	47,646,275	142,724	403,137	-	545,861
33	1,119,426	48,075,353	49,194,779	105,842	271,777	-	377,618
34	804,403	49,989,206	50,793,609	76,056	183,094	-	259,150
35	553,269	51,891,133	52,444,402	52,312	118,493	-	170,805
36	338,422	53,810,423	54,148,845	31,998	74,495	-	106,493
37	206,857	55,701,825	55,908,682	19,558	45,800	-	65,358
38	96,377	57,629,337	57,725,714	9,112	28,513	-	37,625
39	40,061	59,561,739	59,601,800	3,788	-	-	3,788
40	-	61,538,859	61,538,859	-	-	-	-
41	-	63,538,872	63,538,872	-	-	-	-
42	-	65,603,885	65,603,885	-	-	-	-
43	-	67,736,011	67,736,011	-	-	-	-
44	-	69,937,432	69,937,432	-	-	-	-
45	-	72,210,398	72,210,398	-	-	-	-
46	-	74,557,236	74,557,236	-	-	-	-
47	-	76,980,346	76,980,346	-	-	-	-
48	-	79,482,207	79,482,207	-	-	-	-
49	-	82,065,379	82,065,379	-	-	-	-
50	-	84,732,504	84,732,504	-	-	-	-
51	-	87,486,310	87,486,310	-	-	-	-
52	-	90,329,615	90,329,615	-	-	-	-
53	-	93,265,328	93,265,328	-	-	-	-
54	-	96,296,451	96,296,451	-	-	-	-
55	-	99,426,086	99,426,086	-	-	-	-
56	-	102,657,434	102,657,434	-	-	-	-
57	-	105,993,800	105,993,800	-	-	-	-
58	-	109,438,599	109,438,599	-	-	-	-
59	-	112,995,353	112,995,353	-	-	-	-
60	-	116,667,702	116,667,702	-	-	-	-

Column d – Contributions from employees to the pension fund (employees as of the valuation date)

Column e – Employer contributions to the fund excluding contributions for employees hired after the actuarial valuation date

Column f – Contributions from future employees to the extent they are anticipated to be greater than required to pay their total normal cost



PROJECTION OF CONTRIBUTIONS – YEARS 61 TO 80

Year	Projected Covered-Employee Payroll			Projected Contributions			
	Current Employees (a)	Future Employees (b)	Total Employee Payroll (c) = (a) + (b)	Current Employees (d) - Notes	Employer Contributions for Current Employees (e) - Notes	Contributions Related to Pay of Future Employees (f) - Notes	Total Contributions (d) + (e) + (f)
61	\$ -	\$ 120,459,402	\$ 120,459,402	\$ -	\$ -	\$ -	\$ -
62	-	124,374,333	124,374,333	-	-	-	-
63	-	128,416,499	128,416,499	-	-	-	-
64	-	132,590,035	132,590,035	-	-	-	-
65	-	136,899,211	136,899,211	-	-	-	-
66	-	141,348,436	141,348,436	-	-	-	-
67	-	145,942,260	145,942,260	-	-	-	-
68	-	150,685,383	150,685,383	-	-	-	-
69	-	155,582,658	155,582,658	-	-	-	-
70	-	160,639,095	160,639,095	-	-	-	-
71	-	165,859,865	165,859,865	-	-	-	-
72	-	171,250,311	171,250,311	-	-	-	-
73	-	176,815,946	176,815,946	-	-	-	-
74	-	182,562,464	182,562,464	-	-	-	-
75	-	188,495,744	188,495,744	-	-	-	-
76	-	194,621,856	194,621,856	-	-	-	-
77	-	200,947,066	200,947,066	-	-	-	-
78	-	207,477,846	207,477,846	-	-	-	-
79	-	214,220,876	214,220,876	-	-	-	-
80	-	221,183,054	221,183,054	-	-	-	-

NOTES TO PROJECTION OF CONTRIBUTIONS

Total payroll is assumed to increase annually at the assumed payroll increase rate shown in the assumption section of this report. Payroll for current employees (employees active as of the actuarial valuation date) has been projected on an employee by employee basis, using expected pay increases and probability of remaining in active employment for future periods.

Employer contributions are related to current employees in the fund as of the Actuarial Valuation Date. To the extent future contributions under the Employer funding policy are made to cover the Normal Cost of providing benefits for future employees, those contributions have been excluded out for purposes of these projections and this report.

Contributions are based on the Funding Policy described in an earlier section of this report. The contributions do not factor in changes in funding policy based on an assumed Employer decision if the projections were to play out in this fashion. The only future events that have been considered were outlined in the funding policy section of the report. Contributions from future employees have not been included. It is assumed that contributions made by future employees will not exceed the Normal Cost of their participation in the Fund. In addition, contributions by the employer on behalf of service for future employees have not been included per the GASB parameters.



PROJECTION OF THE PENSION PLAN'S FIDUCIARY NET POSITION – YEARS 1 TO 30

Year	Projected Beginning Fiduciary Net Position (a)	Projected Total Contributions (b)	Projected Benefit Payments (c)	Projected Administrative Expenses (d)	Projected Investment Earnings (e)	Projected Ending Fiduciary Net Position (a)+(b)-(c)-(d)+(e)
1	\$ 124,545,705	\$ 12,855,611	\$ 14,997,477	\$ 126,916	\$ 8,548,803	\$ 130,825,726
2	130,825,726	14,351,137	15,470,784	130,089	9,013,602	138,589,593
3	138,589,593	14,896,542	16,011,501	133,341	9,553,305	146,894,598
4	146,894,598	15,456,325	16,599,706	136,675	10,129,626	155,744,168
5	155,744,168	16,004,893	17,233,050	140,091	10,742,169	165,118,088
6	165,118,088	16,545,336	17,899,029	143,594	11,390,044	175,010,845
7	175,010,845	17,070,855	18,605,543	147,184	12,072,398	185,401,371
8	185,401,371	17,583,650	19,446,255	150,863	12,784,539	196,172,442
9	196,172,442	18,066,117	20,267,929	154,635	13,523,132	207,339,128
10	207,339,128	18,493,797	21,138,904	158,501	14,286,156	218,821,676
11	218,821,676	18,932,390	22,057,309	162,463	15,069,932	230,604,227
12	230,604,227	19,347,472	23,059,559	166,525	15,871,112	242,596,727
13	242,596,727	19,756,377	24,060,125	170,688	16,686,871	254,809,162
14	254,809,162	20,116,591	25,025,740	174,955	17,517,882	267,242,940
15	267,242,940	20,499,704	26,039,559	179,329	18,363,336	279,887,093
16	279,887,093	20,889,068	27,111,319	183,812	19,221,661	292,702,690
17	292,702,690	21,265,540	28,138,207	188,407	20,093,192	305,734,807
18	305,734,807	21,627,846	29,084,670	193,118	20,982,294	319,067,160
19	319,067,160	22,035,250	30,047,741	197,946	21,893,089	332,749,812
20	332,749,812	22,502,907	30,975,716	202,894	22,831,317	346,905,426
21	346,905,426	22,983,032	31,835,853	207,966	23,805,371	361,650,010
22	361,650,010	23,519,831	32,665,943	213,166	24,823,287	377,114,019
23	377,114,019	24,118,183	33,330,199	218,495	25,899,086	393,582,595
24	393,582,595	24,770,159	33,942,654	223,957	27,048,515	411,234,657
25	411,234,657	7,871,533	34,540,223	229,556	27,789,887	412,126,298
26	412,126,298	2,199,396	35,107,546	235,295	27,673,424	406,656,277
27	406,656,277	1,891,049	35,511,735	241,177	27,267,537	400,061,951
28	400,061,951	1,600,305	35,878,566	247,207	26,784,743	392,321,226
29	392,321,226	1,361,669	36,150,839	253,387	26,226,465	383,505,133
30	383,505,133	1,051,092	36,339,705	259,722	25,593,810	373,550,608

Column b – Contributions on behalf of current employees only as of the Actuarial Valuation Date.

Column d – Based on average administrative expenses in recent years and projected to increase going forward.

Column e – Based on the current expected return on assets. Does not factor in allocation changes.



PROJECTION OF THE PENSION PLAN'S FIDUCIARY NET POSITION – YEARS 31 TO 60

Year	Projected Beginning Fiduciary Net Position (a)	Projected Total Contributions (b)	Projected Benefit Payments (c)	Projected Administrative Expenses (d)	Projected Investment Earnings (e)	Projected Ending Fiduciary Net Position (a)+(b)-(c)-(d)+(e)
31	\$ 373,550,608	\$ 774,290	\$ 36,406,881	\$ 266,215	\$ 24,886,664	\$ 362,538,467
32	362,538,467	545,861	36,330,405	272,870	24,111,862	350,592,915
33	350,592,915	377,618	36,174,209	279,692	23,276,191	337,792,824
34	337,792,824	259,150	35,911,356	286,684	22,385,822	324,239,757
35	324,239,757	170,805	35,585,523	293,851	21,445,787	309,976,975
36	309,976,975	106,493	35,135,713	301,197	20,461,078	295,107,635
37	295,107,635	65,358	34,636,496	308,727	19,436,282	279,664,051
38	279,664,051	37,625	34,066,323	316,446	18,374,140	263,693,048
39	263,693,048	3,788	33,452,643	324,357	17,276,424	247,196,261
40	247,196,261	-	32,778,527	332,466	16,144,854	230,230,122
41	230,230,122	-	32,071,083	340,777	14,981,693	212,799,955
42	212,799,955	-	31,328,702	349,297	13,787,267	194,909,223
43	194,909,223	-	30,547,947	358,029	12,561,936	176,565,183
44	176,565,183	-	29,725,791	366,980	11,306,316	157,778,728
45	157,778,728	-	28,859,275	376,154	10,021,271	138,564,569
46	138,564,569	-	27,946,063	385,558	8,707,913	118,940,861
47	118,940,861	-	26,984,995	395,197	7,367,554	98,928,223
48	98,928,223	-	25,975,635	405,077	6,001,651	78,549,161
49	78,549,161	-	24,918,195	415,204	4,611,772	57,827,534
50	57,827,534	-	23,814,250	425,584	3,199,533	36,787,233
51	36,787,233	-	22,667,243	436,224	1,766,485	15,450,252
52	15,450,252	-	21,480,092	447,129	314,065	-
53	-	-	20,258,209	-	-	-
54	-	-	19,008,848	-	-	-
55	-	-	17,739,987	-	-	-
56	-	-	16,461,541	-	-	-
57	-	-	15,184,132	-	-	-
58	-	-	13,917,365	-	-	-
59	-	-	12,672,028	-	-	-
60	-	-	11,459,253	-	-	-

Column b – Contributions on behalf of current employees only as of the Actuarial Valuation Date.

Column d – Based on average administrative expenses in recent years and projected to increase going forward.

Column e – Based on the current expected return on assets. Does not factor in allocation changes.



PROJECTION OF THE PENSION PLAN'S FIDUCIARY NET POSITION – YEARS 61 TO 80

Year	Projected Beginning Fiduciary Net Position (a)	Projected Total Contributions (b)	Projected Benefit Payments (c)	Projected Administrative Expenses (d)	Projected Investment Earnings (e)	Projected Ending Fiduciary Net Position (a)+(b)-(c)-(d)+(e)
61	\$ -	\$ -	\$ 10,288,586	\$ -	\$ -	\$ -
62	-	-	9,168,418	-	-	-
63	-	-	8,106,459	-	-	-
64	-	-	7,108,971	-	-	-
65	-	-	6,180,731	-	-	-
66	-	-	5,325,755	-	-	-
67	-	-	4,546,222	-	-	-
68	-	-	3,842,845	-	-	-
69	-	-	3,215,243	-	-	-
70	-	-	2,661,539	-	-	-
71	-	-	2,178,576	-	-	-
72	-	-	1,762,378	-	-	-
73	-	-	1,408,111	-	-	-
74	-	-	1,110,407	-	-	-
75	-	-	863,454	-	-	-
76	-	-	661,559	-	-	-
77	-	-	498,931	-	-	-
78	-	-	370,036	-	-	-
79	-	-	269,614	-	-	-
80	-	-	192,736	-	-	-

NOTES TO PROJECTION OF FIDUCIARY NET POSITION

Total contributions are Employee and Employer contributions anticipated to be made under the funding policy on behalf of employees in the fund as of the Actuarial Valuation Date. The amounts shown were detailed earlier in this section.

Projected benefit payments shown represent only employees active as of the Actuarial Valuation Date. The fund will also be paying benefit payments in the future on behalf of employees hired after the Actuarial Valuation Date, but those have not been estimated for this purpose.

Projected investment earnings are based on the current expected rate of return on plan assets. Administrative expenses are not typically charged on a per employee basis. Administrative expenses shown have not been adjusted to distinguish between current employees and future employees.

The projected Net Position represents assets held or projected to be held on behalf of current employees as of the Actuarial Valuation Date. The fund will also hold assets in the future on behalf of new employees that are not shown here.



ACTUARIAL PRESENT VALUES OF PROJECTED BENEFIT PAYMENTS – YEARS 1 TO 30

Year	Projected Beginning Fiduciary Net Position	Projected Benefit Payments	Projected Benefit Payments		Present Value (PV) of Projected Benefit Payments		
			"Funded" Portion of Benefit Payments	"Unfunded" Portion of Benefit Payments	PV of "Funded" Portion of Benefit Payments (7.00%)	PV of "Unfunded" Portion of Benefit Payments (3.95%)	PV of Total Projected Payments Using the Single Discount Rate (6.69%)
1	\$ 124,545,705	\$ 14,997,477	\$ 14,997,477	\$ -	\$ 14,498,608	\$ -	\$ 14,519,657
2	130,825,726	15,470,784	15,470,784	-	13,977,730	-	14,038,695
3	138,589,593	16,011,501	16,011,501	-	13,519,873	-	13,618,296
4	146,894,598	16,599,706	16,599,706	-	13,099,574	-	13,233,277
5	155,744,168	17,233,050	17,233,050	-	12,709,696	-	12,876,725
6	165,118,088	17,899,029	17,899,029	-	12,337,259	-	12,535,713
7	175,010,845	18,605,543	18,605,543	-	11,985,269	-	12,213,446
8	185,401,371	19,446,255	19,446,255	-	11,707,324	-	11,964,874
9	196,172,442	20,267,929	20,267,929	-	11,403,739	-	11,688,473
10	207,339,128	21,138,904	21,138,904	-	11,115,694	-	11,426,341
11	218,821,676	22,057,309	22,057,309	-	10,839,840	-	11,175,154
12	230,604,227	23,059,559	23,059,559	-	10,591,014	-	10,950,357
13	242,596,727	24,060,125	24,060,125	-	10,327,630	-	10,709,062
14	254,809,162	25,025,740	25,025,740	-	10,039,358	-	10,440,391
15	267,242,940	26,039,559	26,039,559	-	9,762,675	-	10,182,156
16	279,887,093	27,111,319	27,111,319	-	9,499,529	-	9,936,491
17	292,702,690	28,138,207	28,138,207	-	9,214,337	-	9,666,185
18	305,734,807	29,084,670	29,084,670	-	8,901,189	-	9,364,813
19	319,067,160	30,047,741	30,047,741	-	8,594,328	-	9,068,242
20	332,749,812	30,975,716	30,975,716	-	8,280,140	-	8,762,114
21	346,905,426	31,835,853	31,835,853	-	7,953,331	-	8,440,736
22	361,650,010	32,665,943	32,665,943	-	7,626,828	-	8,117,744
23	377,114,019	33,330,199	33,330,199	-	7,272,821	-	7,763,442
24	393,582,595	33,942,654	33,942,654	-	6,921,927	-	7,410,346
25	411,234,657	34,540,223	34,540,223	-	6,582,981	-	7,067,961
26	412,126,298	35,107,546	35,107,546	-	6,253,370	-	6,733,576
27	406,656,277	35,511,735	35,511,735	-	5,911,556	-	6,384,008
28	400,061,951	35,878,566	35,878,566	-	5,581,889	-	6,045,510
29	392,321,226	36,150,839	36,150,839	-	5,256,307	-	5,709,427
30	383,505,133	36,339,705	36,339,705	-	4,938,101	-	5,379,375

The projected Fiduciary Net Position and the Projected Benefit Payments are based only on the current employee group as of the Actuarial Valuation Date. The development of the Projected Fiduciary Net Position was shown in more detail earlier in this section.



ACTUARIAL PRESENT VALUES OF PROJECTED BENEFIT PAYMENTS – YEARS 31 TO 60

Year	Projected Beginning Fiduciary Net Position	Projected Benefit Payments	Projected Benefit Payments		Present Value (PV) of Projected Benefit Payments		
			"Funded" Portion of Benefit Payments	"Unfunded" Portion of Benefit Payments	PV of "Funded" Portion of Benefit Payments (7.00%)	PV of "Unfunded" Portion of Benefit Payments (3.95%)	PV of Total Projected Payments Using the Single Discount Rate (6.69%)
31	\$ 373,550,608	\$ 36,406,881	\$ 36,406,881	\$ -	\$ 4,623,579	\$ -	\$ 5,051,381
32	362,538,467	36,330,405	36,330,405	-	4,312,025	-	4,724,689
33	350,592,915	36,174,209	36,174,209	-	4,012,604	-	4,409,388
34	337,792,824	35,911,356	35,911,356	-	3,722,848	-	4,102,866
35	324,239,757	35,585,523	35,585,523	-	3,447,728	-	3,810,704
36	309,976,975	35,135,713	35,135,713	-	3,181,447	-	3,526,606
37	295,107,635	34,636,496	34,636,496	-	2,931,069	-	3,258,505
38	279,664,051	34,066,323	34,066,323	-	2,694,223	-	3,003,903
39	263,693,048	33,452,643	33,452,643	-	2,472,606	-	2,764,823
40	247,196,261	32,778,527	32,778,527	-	2,264,280	-	2,539,234
41	230,230,122	32,071,083	32,071,083	-	2,070,478	-	2,328,644
42	212,799,955	31,328,702	31,328,702	-	1,890,234	-	2,132,103
43	194,909,223	30,547,947	30,547,947	-	1,722,549	-	1,948,606
44	176,565,183	29,725,791	29,725,791	-	1,566,531	-	1,777,263
45	157,778,728	28,859,275	28,859,275	-	1,421,371	-	1,617,261
46	138,564,569	27,946,063	27,946,063	-	1,286,349	-	1,467,884
47	118,940,861	26,984,995	26,984,995	-	1,160,852	-	1,328,525
48	98,928,223	25,975,635	25,975,635	-	1,044,328	-	1,198,643
49	78,549,161	24,918,195	24,918,195	-	936,275	-	1,077,746
50	57,827,534	23,814,250	23,814,250	-	836,257	-	965,413
51	36,787,233	22,667,243	22,667,243	-	743,906	-	861,293
52	15,450,252	21,480,092	15,450,252	6,029,840	473,883	820,058	765,006
53	-	20,258,209	-	20,258,209	-	2,650,423	676,248
54	-	19,008,848	-	19,008,848	-	2,392,464	594,754
55	-	17,739,987	-	17,739,987	-	2,147,921	520,248
56	-	16,461,541	-	16,461,541	-	1,917,393	452,485
57	-	15,184,132	-	15,184,132	-	1,701,399	391,201
58	-	13,917,365	-	13,917,365	-	1,500,198	336,081
59	-	12,672,028	-	12,672,028	-	1,314,054	286,820
60	-	11,459,253	-	11,459,253	-	1,143,139	243,106

The projected Fiduciary Net Position and the Projected Benefit Payments are based only on the current employee group as of the Actuarial Valuation Date. The development of the Projected Fiduciary Net Position was shown in more detail earlier in this section.



ACTUARIAL PRESENT VALUES OF PROJECTED BENEFIT PAYMENTS – YEARS 61 TO 80

Year	Projected Beginning Fiduciary Net Position	Projected Benefit Payments	Projected Benefit Payments		Present Value (PV) of Projected Benefit Payments		
			"Funded" Portion of Benefit Payments	"Unfunded" Portion of Benefit Payments	PV of "Funded" Portion of Benefit Payments (7.00%)	PV of "Unfunded" Portion of Benefit Payments (3.95%)	PV of Total Projected Payments Using the Single Discount Rate (6.69%)
61	\$ -	\$ 10,288,586	\$ -	\$ 10,288,586	\$ -	\$ 987,356	\$ 204,584
62	-	9,168,418	-	9,168,418	-	846,424	170,878
63	-	8,106,459	-	8,106,459	-	719,947	141,612
64	-	7,108,971	-	7,108,971	-	607,367	116,399
65	-	6,180,731	-	6,180,731	-	507,996	94,855
66	-	5,325,755	-	5,325,755	-	421,092	76,609
67	-	4,546,222	-	4,546,222	-	345,797	61,295
68	-	3,842,845	-	3,842,845	-	281,190	48,563
69	-	3,215,243	-	3,215,243	-	226,327	38,084
70	-	2,661,539	-	2,661,539	-	180,231	29,548
71	-	2,178,576	-	2,178,576	-	141,921	22,670
72	-	1,762,378	-	1,762,378	-	110,445	17,189
73	-	1,408,111	-	1,408,111	-	84,891	12,873
74	-	1,110,407	-	1,110,407	-	64,399	9,515
75	-	863,454	-	863,454	-	48,174	6,935
76	-	661,559	-	661,559	-	35,507	4,980
77	-	498,931	-	498,931	-	25,761	3,520
78	-	370,036	-	370,036	-	18,380	2,447
79	-	269,614	-	269,614	-	12,883	1,671
80	-	192,736	-	192,736	-	8,860	1,120

NOTES TO THE ACTUARIAL PRESENT VALUE OF PROJECTED BENEFIT PAYMENTS

The projected Fiduciary Net Position and the Projected Benefit Payments are based only on the current employee group as of the Actuarial Valuation Date. The development of the Net Position was shown in more detail earlier in this section.

The Funded and Unfunded portion of the Benefit Payments is split based on the time that the Fiduciary Net Position is projected to go to \$0 (based on assets for current fund members).

The Present Value of the Funded portion and Unfunded portion of the benefit payments has been determined separately. The PV of the funded portion of the benefit payments uses the assumption for the expected rate of return on plan assets. The PV of the unfunded portion of the benefit payments has been determined using the high quality Municipal Bond Rate as of the Measurement Date as described in the Actuarial Assumption section of the report.

The discount rate used for GASB purposes is the rate that is when applied to the total Projected Benefit payments results in a present value that equals the sum of the present value of the funded and unfunded payments. The discount rate has been rounded to four decimal places. Therefore, the resulting present value comparisons might show a slight difference due to rounding.