

GASB 67/68 Report
For Use in Financial Statement Reporting



ALSIP FIREFIGHTERS'
PENSION FUND

Actuarial Valuation
as of May 1, 2019

LAUTERBACH & AMEN, LLP

GASB Statements 67 and 68 Actuarial Disclosures



Lauterbach & Amen, LLP

CERTIFIED PUBLIC ACCOUNTANTS

GASB 67: ALSIP FIREFIGHTERS' PENSION FUND

Fiscal Year Ending: April 30, 2020

Actuarial Valuation Date: May 1, 2019

Utilizing Data as of April 30, 2019

Measurement Date: April 30, 2020

GASB 68: VILLAGE OF ALSIP, ILLINOIS

Fiscal Year Ending: April 30, 2020

Actuarial Valuation Date: May 1, 2019

Utilizing Data as of April 30, 2019

Measurement Date: April 30, 2020

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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 assist in the preparation of the Comprehensive Annual Financial Report. The assumptions and methods used in the preparation of this report meet the parameters set for the disclosures presented in the financial section as required by the Governmental Accounting Standards Board. Additional information is provided solely to assist the Auditors in the preparation of the required footnote disclosures.

The results in this report are based on the census data and financial information submitted by the Village of Alsip, Illinois, and may include results from the prior Actuary. We did not prepare the Actuarial Valuations for the years prior to May 1, 2015. Those valuations were prepared by the prior Actuary whose reports have been furnished to us, and our disclosures are based on those reports. An audit of the prior Actuary's results was not performed, but high-level reviews were completed for general reasonableness, as appropriate, based on the purpose of this valuation. The accuracy of the results is dependent on the precision and completeness of the underlying information.

The valuation results summarized in this report involve actuarial calculations that require assumptions about future events. The Village of Alsip, Illinois certain assumptions, while others were the result of guidance and/or judgment from the Plan's Actuary or Advisors. We believe that the assumptions used in this 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 accounting requirements, and the procedures followed and presentation of results conform to generally accepted actuarial principles and practices. The undersigned consultants of Lauterbach & Amen, LLP, with actuarial credentials, meet the Qualification Standards of the American Academy of Actuaries to render this Actuarial Certification. There is no relationship between the Alsip Firefighters' Pension Fund or the Village of Alsip, Illinois and Lauterbach & Amen, LLP that impairs our objectivity.

Respectfully Submitted,

LAUTERBACH & AMEN, LLP

Todd A. Schroeder, ASA, FCA, EA, MAAA

Robert L. Rietz, Jr., FCA, EA, MAAA



PLAN FIDUCIARY NET POSITION

Statement of Plan Fiduciary Net Position
Statement of Changes in Plan Fiduciary Net Position



STATEMENT OF PLAN FIDUCIARY NET POSITION

	<u>4/30/2019</u>	<u>4/30/2020</u>
Assets		
Cash and Cash Equivalents	\$ 518,607	\$ 435,922
Total Cash	<u>518,607</u>	<u>435,922</u>
Receivables:		
Due from Treasury	17,446	16,508
Investment Income - Accrued Interest	65,256	46,607
Total Receivables	<u>82,702</u>	<u>63,115</u>
Investments:		
U.S. Government and Agency Obligations	12,865,336	9,329,662
Mutual Funds	15,032,778	18,893,109
Common Stock	169,186	541,697
Total Investments	<u>28,067,300</u>	<u>28,764,468</u>
Total Assets	<u>28,668,609</u>	<u>29,263,505</u>
Liabilities		
Payables:		
Expenses Due/Unpaid	-	-
Total Liabilities	<u>-</u>	<u>-</u>
Plan Fiduciary Net Position	<u>\$ 28,668,609</u>	<u>\$ 29,263,505</u>

The Plan Fiduciary Net Position shown above is intended to be in accordance with GAAP and the Governmental Accounting Standards Board. The Fair Value of Investments have 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 Value of Investments. The Statement of Plan Fiduciary Net Position for 2020 is based on audited financials.



STATEMENT OF CHANGES IN PLAN FIDUCIARY NET POSITION

	<u>4/30/2020</u>
Additions	
Contributions	
Employer	\$ 2,222,713
Other	90,939
Members	<u>302,931</u>
Total Contributions	<u>2,616,583</u>
Investment Income	
Net Appreciation in Fair Value of Investments	87,159
Interest and Dividends	536,011
Less Investment Expense	<u>(119,623)</u>
Net Investment Income	<u>503,547</u>
Total Additions	<u>3,120,130</u>
Deductions	
Benefit Payments and Refunds of Member Contributions	2,497,504
Administrative Expense	<u>27,730</u>
Total Deductions	<u>2,525,234</u>
Net Increase in Net Position	<u>594,896</u>
Plan Fiduciary Net Position	
Beginning of Year	<u>28,668,609</u>
End of Year	<u><u>\$ 29,263,505</u></u>

The changes in Plan Fiduciary Net Position shown above is intended to be in accordance with GAAP and the Governmental Accounting Standards Board. The Plan activity has been provided by the reporting entity, and the results are being audited by an independent Auditor. The cash flows have been reviewed for reasonableness, but we make no representation as to the accuracy of the measurement of the Fair Value of Investments. The Statement of Changes in Plan Fiduciary Net Position for 2020 is 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>4/30/2019</u>	<u>4/30/2020</u>
Active Members	\$ 20,629,830	\$ 18,588,784
Inactive Members		
Retired Members	20,726,105	25,901,743
Disabled Members	9,377,933	9,264,866
Other Beneficiaries	<u>2,006,468</u>	<u>2,483,937</u>
Total Inactive Members	<u>32,110,506</u>	<u>37,650,546</u>
Total Pension Liability	<u>\$ 52,740,336</u>	<u>\$ 56,239,330</u>

The Total Pension Liability (“TPL”) shown above is dependent on several factors such as Plan Provisions and actuarial assumptions used in this report. In addition, the calculation of the TPL may be dependent on the Plan Fiduciary Net Position shown in the prior section of this report. Changes in the Plan Fiduciary Net Position due to any factor, including adjustments on final audit, could change the TPL. The dependence of the TPL on the Plan Fiduciary Net Position is due to the role of the Plan Fiduciary Net Position (and the Plan’s Projected Fiduciary 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 Plan and/or Employer. The resulting liability is not intended to be a representation of the Plan 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 Actuarial Valuation - Data Date shown in this report. The TPL has been determined as of the Actuarial Valuation Date and based on the assumptions used in this report, and adjusted to the Measurement Date as needed.



STATEMENT OF CHANGES IN TOTAL PENSION LIABILITY

	<u>4/30/2020</u>
Changes in Total Pension Liability	
Service Cost	\$ 849,778
Interest	3,346,953
Changes of Benefit Terms	352,423
Differences Between Expected and Actual Experience	475,298
Change in Assumptions	972,046
Benefit Payments and Refunds	<u>(2,497,504)</u>
Net Change in Total Pension Liability	3,498,994
Total Pension Liability - Beginning	<u>52,740,336</u>
Total Pension Liability - Ending (a)	<u><u>\$ 56,239,330</u></u>
Plan Fiduciary Net Position - Ending (b)	<u><u>\$ 29,263,505</u></u>
Employer's Net Pension Liability - Ending (a) - (b)	<u><u>\$ 26,975,825</u></u>
Plan Fiduciary Net Position as a Percentage of the Total Pension Liability	52.03%
Covered-Employee Payroll	\$ 3,653,778
Employer's Net Pension Liability as a Percentage of Covered-Employee Payroll	738.30%

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 Plan Fiduciary Net Position. Changes in the Plan Fiduciary Net Position could change the determination of the Total Pension Liability. Any changes in the Plan Fiduciary Net Position, including adjustments on final audit, can have an impact on the Employer's Net Pension Liability that extends beyond the dollar-for-dollar change in the Plan Fiduciary Net Position.

Covered-Employee Payroll is estimated based on the prior Covered-Employee Payroll and expected increases for the Plan Members during the Fiscal Year.



STATEMENT OF CHANGES IN NET PENSION LIABILITY

The table below illustrates the changes in 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 a component of Pension Expense, unless permitted to be recognized as a Deferred Outflow or Inflow of Resources.

	Increase (Decrease)		
	Total Pension Liability (a)	Plan Fiduciary Net Position (b)	Net Pension Liability (a) - (b)
Balances Beginning at 05/01/2019	\$ 52,740,336	\$ 28,668,609	\$ 24,071,727
Changes for the Year:			
Service Cost	849,778	-	849,778
Interest	3,346,953	-	3,346,953
Actuarial Experience	475,298	-	475,298
Change in Assumptions	972,046	-	972,046
Changes of Benefit Terms	352,423	-	352,423
Contributions - Employer	-	2,222,713	(2,222,713)
Contributions - Members	-	302,931	(302,931)
Contributions - Other	-	90,939	(90,939)
Net Investment Income	-	503,547	(503,547)
Benefit Payments and Refunds	(2,497,504)	(2,497,504)	-
Administrative Expense	-	(27,730)	27,730
Net Changes	<u>\$ 3,498,994</u>	<u>\$ 594,896</u>	<u>\$ 2,904,098</u>
Balances Ending at 04/30/2020	<u>\$ 56,239,330</u>	<u>\$ 29,263,505</u>	<u>\$ 26,975,825</u>

The changes in Total Pension Liability shown 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 differences between expected and actual experience, or changes in assumptions regarding future events, are recognized in Pension Expense over the expected remaining service life of all Members (active and retired) in the Pension Plan. The net difference in projected and actual earnings on Pension Plan investments over the measurement period are recognized over a 5-year period. Amounts not yet recognized are summarized below:

	Deferred Outflows of Resources	Deferred Inflows of Resources	Total Deferred Amounts
Differences Between Expected and Actual Experience	\$ 463,524	\$ 243,713	\$ 219,811
Change in Assumptions	2,964,635	140,822	2,823,813
Net Difference Between Projected and Actual Earnings on Pension Plan Investments	1,424,020	176,305	1,247,715
Contributions Subsequent to the Measurement Date*	-	-	-
Total	<u>\$ 4,852,179</u>	<u>\$ 560,840</u>	<u>\$ 4,291,339</u>

*Contributions Subsequent to the Measurement Date may be recognized as a reduction to the Net Pension Liability. 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	
April 30:	
2021	\$ 962,590
2022	1,048,225
2023	938,330
2024	918,873
2025	202,545
Thereafter	220,776



DEFERRED OUTFLOWS AND INFLOWS OF RESOURCES – DETAIL

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	4/30/2020 Expense Recognized	4/30/2020 Deferred Balance
Asset Loss	4/30/2020	5.00	\$ 1,362,881	5.00	\$ 272,577	\$ 1,090,304
Change in Assumptions Loss	4/30/2020	7.08	972,046	7.08	137,295	834,751
Actuarial Loss	4/30/2020	7.08	475,298	7.08	67,133	408,165
Asset Loss	4/30/2019	5.00	556,196	4.00	111,240	333,716
Actuarial Gain	4/30/2019	6.61	(20,423)	5.61	(3,090)	(14,243)
Asset Gain	4/30/2018	5.00	(226,683)	3.00	(45,337)	(90,672)
Change in Assumptions Loss	4/30/2018	6.96	3,242,788	4.96	465,918	1,845,034
Actuarial Gain	4/30/2018	6.96	(16,832)	4.96	(2,419)	(9,575)
Asset Gain	4/30/2017	5.00	(428,181)	2.00	(85,637)	(85,633)
Change in Assumptions Gain	4/30/2017	6.96	(331,122)	3.96	(47,575)	(140,822)
Actuarial Gain	4/30/2017	6.96	(517,055)	3.96	(74,290)	(219,895)
Asset Loss	4/30/2016	5.00	1,727,335	1.00	345,467	-
Change in Assumptions Loss	4/30/2016	7.04	983,020	3.04	139,634	284,850
Actuarial Loss	4/30/2016	7.04	191,044	3.04	27,137	55,359
Total			\$ 7,970,312		\$ 1,308,053	\$ 4,291,339

Each detail amount shown 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 the Pension Expense development:

	<u>4/30/2020</u>
Pension Expense/(Income) Under GASB 68	
Service Cost	\$ 849,778
Interest	3,346,953
Changes of Benefit Terms	352,423
Contributions - Members	(302,931)
Contributions - Other	(90,939)
Expected Investment Income	(1,866,428)
Administrative Expense	27,730
Other Changes	-
Initial Pension Expense/(Income)	<u>\$ 2,316,586</u>
Recognition of Outflow/(Inflow) of Resources Due to Liabilities	709,743
Recognition of Outflow/(Inflow) of Resources Due to Assets	598,310
Total Pension Expense/(Income)	<u>\$ 3,624,639</u>



ACTUARIAL ASSUMPTIONS 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	6.50%
Expected Rate of Return on Investments	6.50%
High-Quality 20 Year Tax-Exempt G.O. Bond Rate	2.56%
Projected Individual Pay Increases	3.75% - 35.57%
Projected Total Payroll Increases	3.25%
Consumer Price Index (Urban)	2.25%
Inflation Rate	2.25%

Actuarial Assumptions (Demographic)

Mortality Rates*	Pub-2010 Adjusted for Plan Status, Demographics, and Illinois Public Pension Data, as Described
Retirement Rates	100% of L&A 2020 Illinois Firefighters Retirement Rates Capped at Age 65
Termination Rates	100% of L&A 2020 Illinois Firefighters Termination Rates
Disability Rates	100% of L&A 2020 Illinois Firefighters Disability Rates
Marital Assumptions	Active Members: 80% Retiree & Disabled Members: 80%

*See the *Notes on Actuarial Assumptions* section of this report for further details on Mortality Rates.

The actuarial assumptions (economic) rates shown above are assumed to be annual rates, compounded on an annual basis. For more information on the selection of the actuarial assumptions, please see the Actuarial Assumption Summary document prepared for the Plan, available upon request.

ASSUMPTION CHANGES

The assumptions were changed from the prior year.

The High-Quality 20 Year Tax-Exempt General Obligation (“G.O.”) Bond Rate assumption was changed from 3.79% to 2.56% for the current year. The underlying index used is The Bond Buyer 20-Bond G.O. 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 remained constant at 6.50%. 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.

We performed a comprehensive study of Firefighters and Firefighter Pension Funds in Illinois. We reviewed the results of the study as well as the demographic experience of the Fund. The actuarial assumptions were changed in the current year to the rates shown on the prior page of this report. The assumptions impacted include:

- Projected Individual Pay Increases
- Inflation Rate (CPI-U)
- Mortality Rates
- Mortality Improvement Rates
- Retirement Rates
- Termination Rates
- Disability Rates

The above stated assumption changes were made to better reflect the future anticipated experience of the Plan.

In addition, there are changes that can be made that impact the projection of the Plan Fiduciary Net Position. For example, changes in the Formal or Informal Funding Policy can impact the Discount Rate. Actual changes in the Plan Fiduciary Net Position from one year to the next can impact the projections as well.



NOTES ON ACTUARIAL ASSUMPTIONS

Projected Individual Pay Increases

Projected individual pay increases include a long-term average increase for inflation, average annual increases for promotions, and any additional increases for a step program. Projected individual pay increases for active Members hired at age 40 or older are assumed annual increases at the ultimate rate reduced by 50 basis points, without adjustments in early service years. Sample rates are as follows:

Service	Rate	Service	Rate
0	6.25%	8	3.75%
1	6.10%	9	3.75%
2	5.95%	10	3.75%
3	9.39%	15	3.75%
4	10.58%	20	3.75%
5	35.57%	25	3.75%
6	3.75%	30	3.75%
7	3.75%	35	3.75%

Actuarial Assumptions (Demographic)

Active Mortality follows the Sex Distinct Raw Rates as developed in the PubS-2010(A) Study. Mortality improvement uses MP-2019 Improvement Rates applied on a fully generational basis.

Retiree Mortality follows the L&A Assumption Study for Firefighters 2020. These rates are experience weighted with the Sex Distinct Raw Rates as developed in the PubS-2010(A) Study improved to 2017 using MP-2019 Improvement Rates. These rates are then improved fully generationally using MP-2019 Improvement Rates.

Disabled Mortality follows the L&A Assumption Study for Firefighters 2020. These rates are experience weighted with the Sex Distinct Raw Rates as developed in the PubS-2010 Study for disabled participants improved to 2017 using MP-2019 Improvement Rates. These rates are then improved fully generationally using MP-2019 Improvement Rates.

Spouse Mortality follows the Sex Distinct Raw Rates as developed in the PubS-2010(A) Study for contingent survivors. For all rates not provided there (ages 45 and younger) the PubG-2010 Study for general employees was used. Mortality improvement uses MP-2019 Improvement Rates applied on a fully generational basis.

Other actuarial assumptions (demographic) rates are based on a review of the L&A Assumption Study for Firefighters 2020.



POSTEMPLOYMENT BENEFIT CHANGES

In the current year, we have updated the Plan benefit changes under PA-101-0610 (SB 1300), which went into effect on January 1, 2020. These legislative changes reflect modifications to the Tier II Plan Provisions. A summary of the changes is available upon request.

Eligibility for postemployment benefit increases is determined based on the Illinois Pension Code. Tier 1 Firefighter retirees are provided with an annual increase of 3.00% of the current retirement benefits by statute when eligible. Tier 2 Firefighter retirees are provided postemployment benefit increases based on the lesser of 3.00% of the original retirement benefits or 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 2019 was 256.8. The average increase in the CPI-U for September 1985 through September 2019 was 2.58% (on a compounded basis).



EXPECTED RETURN ON PENSION PLAN INVESTMENTS

The Long-Term Expected Rate of Return 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 by the State of Illinois Department of Insurance Actuarial Experience Study dated September 26, 2012. The table below illustrates the best estimate of Long-Term Expected Real Rates of Return developed for each of the major asset classes, adjusted for expected inflation.

<u>Asset Class</u>	<u>Long-Term Expected Rate of Return</u>	<u>Long-Term Inflation Expectation</u>	<u>Long-Term Expected Real Rate of Return</u>
US Large Cap Equity	8.30%	2.50%	5.80%
US Mid Cap Equity	9.30%	2.50%	6.80%
US Small Cap Equity	9.30%	2.50%	6.80%
Non-US Developed Large Cap Equity Unhedged	8.40%	2.50%	5.90%
Emerging Markets Equity Unhedged	10.50%	2.50%	8.00%
US Corporate Bonds	4.20%	2.50%	1.70%
US Government Fixed Income	3.20%	2.50%	0.70%
US Cash	3.00%	2.50%	0.50%
Global Real Estate - REITS	8.30%	2.50%	5.80%
Commodities - Long Only	4.90%	2.50%	2.40%

Long-Term Expected Real Rates of Return 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 Long-Term Inflation Expectation is 2.50% and is included in the Long-Term Expected Rates of Return. The Long-Term Inflation Expectation is from the same source as the Long-Term Expected 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. Higher volatility results in a greater difference.



MUNICIPAL BOND RATE

The Municipal Bond Rate assumption is based on the Bond Buyer 20-Bond G.O. Index. The rate shown earlier in this section of the report is the April 30, 2020, rate. The 20-Bond G.O. 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 G.O. 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 indices 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 indices would yield if the bond was sold at par value. The indices 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 Rate of Return on Plan Investments and the Municipal Bond Rate.

Cash flow projections were used to determine the extent to which the Plan's Projected Fiduciary Net Position will be able to cover Projected Benefit Payments. To the extent that Projected Benefit Payments are covered by the Plan's Projected Fiduciary 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 that Projected Benefit Payments are not covered by the Plan's Projected Fiduciary 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 earlier in this section of the report. The expected contributions are based on the funding policy of the Plan. The funding policy is discussed in more detail in the *Funding Policy* section of this report.



SENSITIVITY OF THE DISCOUNT RATE

The Employer's Net Pension Liability has been determined using the Discount Rate listed in this section of the report. Below is a table illustrating the sensitivity of the Employer's Net Pension Liability to the Discount Rate assumption.

	1% Decrease (5.50%)	Current Discount Rate (6.50%)	1% Increase (7.50%)
Employer's Net Pension Liability	\$35,256,709	\$26,975,825	\$20,257,865

The sensitivity of the Employer's Net Pension Liability to the Discount Rate is based primarily on two factors:

1. The duration of the Plan's Projected Benefit Payments. Younger Plans with benefit payments further in the future will be more sensitive to changes in the Discount Rate.
2. The Percent Funded of the Plan (ratio of the Plan Fiduciary Net Position to the Total Pension Liability). The higher the Percent Funded, 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 Member count and payroll as of the Actuarial Valuation Date:

	<u>4/30/2018</u> <u>(FYE 2019)</u>	<u>4/30/2019</u> <u>(FYE 2020)</u>
Inactive Plan Members or Beneficiaries Currently Receiving Benefits	39	42
Inactive Plan Members Entitled to But Not Yet Receiving Benefits	0	0
Active Plan Members	35	36
Total	<u>74</u>	<u>78</u>
Payroll of Active Plan Members	<u>\$ 3,069,553</u>	<u>\$ 3,025,985</u>

Member counts shown above are as of the Actuarial Valuation Date for the two most recent Fiscal Years. Payroll of Active Plan Members is the pensionable salary for active Plan Members as of the Actuarial Valuation – Data Date. For the Fiscal Year Ending April 30, 2020, a beginning of year Actuarial Valuation Date was used along with a rollforward of liabilities to the end of the Fiscal Year based on assumptions and standard rollforward techniques.

The census information used in this valuation is based on the report filed with the Illinois Department of Insurance for the fiscal year ended April 30, 2019.

EXPECTED FUTURE WORKING LIFETIME

The chart below summarizes the expected future working lifetime of Plan Members as of:

	<u>4/30/2018</u> <u>(FYE 2019)</u>	<u>4/30/2019</u> <u>(FYE 2020)</u>
Average Future Working Career (In Years)		
Active Plan Members	13.97	15.34
Inactive Plan Members	0.00	0.00
Total	6.61	7.08

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 this 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 a provision for the payment towards Unfunded Liability.

The actuarial funding method used in the determination of the Normal Cost and the Actuarial Accrued Liability is the Entry Age Normal Cost Method (level percent of pay). The method allocates Normal Cost Contributions by Members over the working career of the Member as a level percent of pay.

Unfunded Liability is the excess of the Actuarial Accrued 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 current Employer Contributions are being compared to the Actuarially Determined Contribution as developed in the May 1, 2018 Actuarial Valuation. The period of repayment as of that valuation is based on a layered amortization with new sources of Unfunded Liability paid off over 15 years.

Beginning with the fiscal year ended April 30, 2018, the Village has implemented layered amortization to mitigate future volatility in the determination of the actuarial contribution. Any unfunded liability as of April 30, 2017 will be full-amortized by April 30, 2040. Any new unfunded liability of this date, and any that should emerge in a subsequent fiscal year, will be paid over a separate 15-year period.

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 State Statutes.

FORMAL FUNDING POLICY

There is a Sustainable Retiree Defined Benefit Funding Policy that exists between the Pension Board and the Village at this time. Adopted by the Village on May 21, 2018, the policy states that the Village will contribute 100% of the Actuarially Determined Contribution, calculated based on the above-stated Funding Policy parameters. The economic and demographic assumptions disclosed in this report are the same as those referenced in the Funding Policy. Please refer to this document for full details on the assumptions and objectives between the Village and Pension Board.

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. Five-Year Contribution History of the Employer (with a focus on the average contributions from those sources)
2. Other Known Events and Conditions
3. Consideration of Subsequent Events

Five-Year Contribution History of the Employer

Employer Contributions (under the Informal Funding 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 Actuarially Determined Contribution. Please see the table below for a summary of these values:

Fiscal Year End	Employer Contributions	Most Applicable ADC	% of ADC	Covered- Employee Payroll	% of Payroll
4/30/2020	\$2,222,713	\$2,211,446	100.51%	\$3,653,778	60.83%
4/30/2019	\$2,340,228	\$2,179,521	107.37%	\$3,538,768	66.13%
4/30/2018	\$1,765,714	\$2,119,572	83.31%	\$3,580,058	49.32%
4/30/2017	\$1,694,818	\$1,964,649	86.27%	\$3,475,471	48.77%
4/30/2016	\$1,541,749	\$1,538,355	100.22%	\$2,971,004	51.89%

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

There is a Formal Funding Policy that exists between the Pension Fund and the Village. See the *Formal Funding Policy* section of this report for further details. For this reason, we have not determined an Informal Funding Policy for GASB 67/68 reporting purposes.

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 current employees as of the Actuarial Valuation Date as well as payment of Unfunded Liability on behalf of the current 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 that a portion of the above total contribution is anticipated to pay contributions for the Normal Cost of future employees, the amount has been netted out. The remaining amount is anticipated to be paid towards the Unfunded Liability existing for current employees.

The Actuarially 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 Plan 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
Notes to Schedule of Contributions



SCHEDULE OF CHANGES IN THE NET PENSION LIABILITY

	4/30/2020	4/30/2019	4/30/2018	4/30/2017	4/30/2016	4/30/2015	4/30/2014	4/30/2013	4/30/2012	4/30/2011
Total Pension Liability										
Service Cost	\$ 849,778	\$ 878,753	\$ 759,133	\$ 709,470	\$ 659,594	\$ 725,003				
Interest	3,346,953	3,235,350	3,137,406	3,075,843	2,882,499	2,763,171				
Changes of Benefit Terms	352,423	-	-	-	-	-				
Differences Between Expected and Actual Experience	475,298	(20,423)	(16,832)	(517,055)	191,044	-				
Change in Assumptions	972,046	-	3,242,788	(331,122)	983,020	-				
Benefit Payments and Refunds	(2,497,504)	(2,255,921)	(2,080,017)	(2,035,303)	(1,872,896)	(1,694,070)				
Net Change in Total Pension Liability	\$ 3,498,994	\$ 1,837,759	\$ 5,042,478	\$ 901,833	\$ 2,843,261	\$ 1,794,104				
Total Pension Liability - Beginning	52,740,336	50,902,577	45,860,099	44,958,266	42,115,005	40,320,901				
Total Pension Liability - Ending (a)	\$ 56,239,330	\$ 52,740,336	\$ 50,902,577	\$ 45,860,099	\$ 44,958,266	\$ 42,115,005				
Plan Fiduciary Net Position										
Contributions - Employer	\$ 2,222,713	\$ 2,340,228	\$ 1,765,714	\$ 1,694,818	\$ 1,541,749	\$ 1,538,881				
Contributions - Members	302,931	310,996	307,846	294,101	313,228	286,786				
Contributions - Other	90,939	-	-	-	-	-				
Net Investment Income	503,547	1,216,647	1,862,812	2,051,133	(93,181)	1,654,617				
Benefit Payments and Refunds	(2,497,504)	(2,255,921)	(2,080,017)	(2,035,303)	(1,872,896)	(1,694,070)				
Administrative Expense	(27,730)	(40,399)	(30,298)	(45,473)	(24,740)	(16,982)				
Prior Period Audit Adjustment	-	-	81,401	-	-	-				
Net Change in Plan Fiduciary Net Position	\$ 594,896	\$ 1,571,551	\$ 1,907,457	\$ 1,959,277	\$ (135,840)	\$ 1,769,232				
Plan Fiduciary Net Position - Beginning	28,668,609	27,097,058	25,189,601	23,230,324	23,366,164	21,596,932				
Plan Fiduciary Net Position - Ending (b)	\$ 29,263,505	\$ 28,668,609	\$ 27,097,058	\$ 25,189,601	\$ 23,230,324	\$ 23,366,164				
Employer's Net Pension Liability - Ending (a) - (b)	\$ 26,975,825	\$ 24,071,727	\$ 23,805,519	\$ 20,670,498	\$ 21,727,942	\$ 18,748,841				

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



SCHEDULE OF TOTAL PENSION LIABILITY AND RELATED RATIOS

	<u>4/30/2020</u>	<u>4/30/2019</u>	<u>4/30/2018</u>	<u>4/30/2017</u>	<u>4/30/2016</u>	<u>4/30/2015</u>	<u>4/30/2014</u>	<u>4/30/2013</u>	<u>4/30/2012</u>	<u>4/30/2011</u>
Total Pension Liability - Ending (a)	<u>\$ 56,239,330</u>	<u>\$ 52,740,336</u>	<u>\$ 50,902,577</u>	<u>\$ 45,860,099</u>	<u>\$ 44,958,266</u>	<u>\$ 42,115,005</u>				
Plan Fiduciary Net Position - Ending (b)	<u>\$ 29,263,505</u>	<u>\$ 28,668,609</u>	<u>\$ 27,097,058</u>	<u>\$ 25,189,601</u>	<u>\$ 23,230,324</u>	<u>\$ 23,366,164</u>				
Employer's Net Pension Liability - Ending (a) - (b)	<u>\$ 26,975,825</u>	<u>\$ 24,071,727</u>	<u>\$ 23,805,519</u>	<u>\$ 20,670,498</u>	<u>\$ 21,727,942</u>	<u>\$ 18,748,841</u>				
Plan Fiduciary Net Position as a Percentage of the										
Total Pension Liability	52.03%	54.36%	53.23%	54.93%	51.67%	55.48%				
Covered-Employee Payroll	\$ 3,653,778	\$ 3,538,768	\$ 3,580,058	\$ 3,475,471	\$ 2,971,004	\$ 3,011,302				
Employer's Net Pension Liability as a Percentage of										
Covered-Employee Payroll	738.30%	680.23%	664.95%	594.75%	731.33%	622.62%				

Covered-Employee Payroll shown above for the current year is estimated based on the prior Covered-Employee Payroll and expected increases for the Plan Members during the Fiscal Year.



SCHEDULE OF CONTRIBUTIONS

	<u>4/30/2020</u>	<u>4/30/2019</u>	<u>4/30/2018</u>	<u>4/30/2017</u>	<u>4/30/2016</u>	<u>4/30/2015</u>	<u>4/30/2014</u>	<u>4/30/2013</u>	<u>4/30/2012</u>	<u>4/30/2011</u>
Actuarially Determined Contribution	\$ 2,211,446	\$ 2,179,521	\$ 2,119,572	\$ 1,964,649	\$ 1,538,355	\$ 1,480,436				
Contributions in Relation to the Actuarially Determined Contribution	<u>2,222,713</u>	<u>2,340,228</u>	<u>1,765,714</u>	<u>1,694,818</u>	<u>1,541,749</u>	<u>1,538,881</u>				
Contribution Deficiency/(Excess)	<u>\$ (11,267)</u>	<u>\$ (160,707)</u>	<u>\$ 353,858</u>	<u>\$ 269,831</u>	<u>\$ (3,394)</u>	<u>\$ (58,445)</u>				
Covered-Employee Payroll	<u>\$ 3,653,778</u>	<u>\$ 3,538,768</u>	<u>\$ 3,580,058</u>	<u>\$ 3,475,471</u>	<u>\$ 2,971,004</u>	<u>\$ 3,011,302</u>				
Contributions as a Percentage of Covered-Employee Payroll	60.83%	66.13%	49.32%	48.77%	51.89%	51.10%				

NOTES TO SCHEDULE OF CONTRIBUTIONS

The Actuarially Determined Contribution shown above for the current year is the Recommended Contribution from the May 1, 2018 Actuarial Valuation completed by Lauterbach & Amen, LLP for the December 2018 tax levy. The methods and assumptions shown below are based on the same Actuarial Valuation. For more detail on the age-based and service-based rates disclosed below, please see the Actuarial Valuation.

Actuarial Cost Method	Entry Age Normal
Amortization Method	Level % Pay
Equivalent Single Amortization Period	20.51 Years (Uses Multiple Amortization Periods)
Asset Valuation Method	5-Year Smoothed Market Value
Inflation (CPI-U)	2.50%
Total Payroll Increases	3.25%
Individual Pay Increases	4.00% - 35.82%
Expected Rate of Return on Investments	6.50%
Mortality Rates	RP-2014 Adjusted for Plan Status, Collar, and Illinois Public Pension Data, as Appropriate
Retirement Rates	100% of L&A 2016 Illinois Firefighters Retirement Rates Capped at Age 65
Termination Rates	100% of L&A 2016 Illinois Firefighters Termination Rates
Disability Rates	100% of L&A 2016 Illinois Firefighters Disability Rates



GASB METHODS AND PROCEDURES

GASB Methods and Procedures



GASB METHODS AND PROCEDURES

	Statement 67	Statement 68
	<u>Pension Plan Financials</u>	<u>Employer Financials</u>
Fiscal Year End for Reporting	April 30, 2020	April 30, 2020
Measurement Date	April 30, 2020	April 30, 2020
Actuarial Valuation Date	May 1, 2019	May 1, 2019
Actuarial Valuation - Data Date	April 30, 2019	April 30, 2019
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 Outflows and Inflows of Resources

Amortization Method	Straight Line	Straight Line
Amortization Period		
Actuarial Experience	7.08 Years	7.08 Years
Change in Assumptions	7.08 Years	7.08 Years
Asset Experience	5.00 Years	5.00 Years



SUPPLEMENTARY TABLES

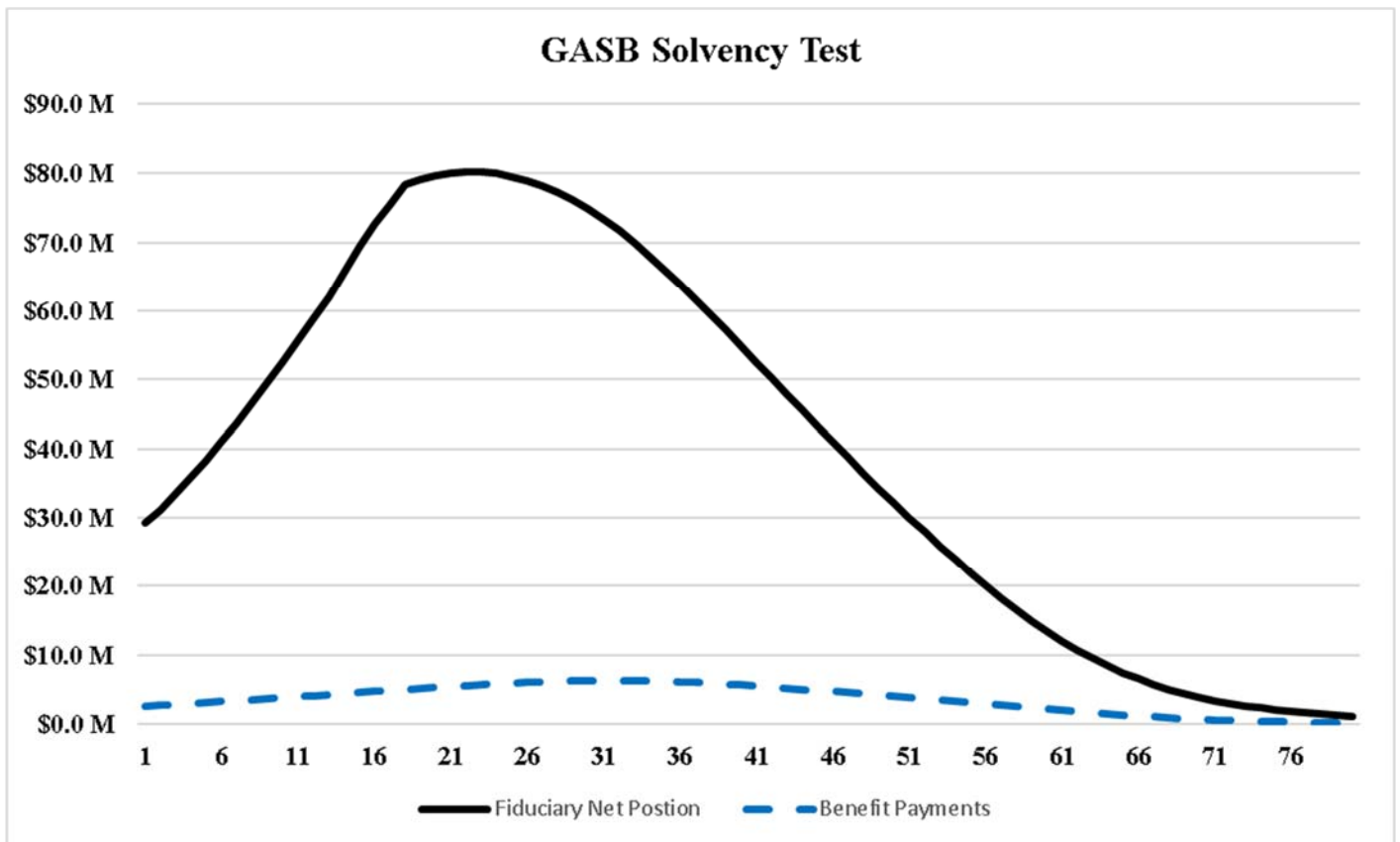
GASB Projections – Summary and Procedure
GASB Projections – Limitations
Projection of Contributions
Notes to Projection of Contributions
Projection of the Pension Plan's Fiduciary Net Position
Notes to Projection of the Pension Plan's Fiduciary Net Position
Actuarial Present Value of Projected Benefit Payments
Notes to 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 Plan Fiduciary Net Position is projected forward. To the extent that the Plan Fiduciary Net Position is anticipated to be greater than \$0, Projected Benefit Payments are discounted based on the Expected Rate of Return on Plan Investments.

If the Plan Fiduciary Net Position is anticipated to reach \$0 prior to the payment of Projected Benefit Payments for employees who are in the Plan as of the Actuarial Valuation Date, then the remaining Projected Benefit Payments are discounted using the High-Quality Municipal Bond Rate, as described in the *Actuarial Assumptions Information* section of this report. The chart below is a high-level summary of the projections:



The Plan's Projected Fiduciary Net Position is anticipated to cover Projected Benefit Payments in full for the current employees.



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 Plan, but rather a subset of cash flows specific to employees who are in the Plan as of the Actuarial Valuation Date. While the likely expectation may be that future employees are hired to replace the current employees, cash flows attributable to their benefits are not considered. Under GASB, when the Plan Fiduciary Net Position reaches \$0, that represents the Plan Fiduciary Net Position for the assets attributable to the current employees.

Also, GASB mandates certain assumptions that are made in the projection process. Most notably, Projected Contributions under an Informal Funding Policy. In proposing an Informal Funding Policy, GASB suggests a focus be placed on the average contributions over the past 5 years. Projected Contributions in this section may be based on the five-year average, unless a Formal Funding Policy is in place.

Contributions reflecting an Informal Funding Policy are applied under GASB, whether or not the projected 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.

Projections further into the future are more sensitive to assumption changes. For projections that run out close to 80 years, a small change in an assumption may have a dramatic impact on the projections. If the solvency of the Plan as determined by GASB remains constant, then dramatic changes in the projection results may not necessarily lead to big changes in the determination of the Total Pension Liability.

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

The following pages provide the detail behind the chart shown on the prior page.



PROJECTION OF CONTRIBUTIONS – YEARS 1 TO 30

Year	Projected Pensionable Payroll			Projected Contributions			
	Payroll for Current Employees (a)	Payroll for Future Employees (b)	Total Employee Payroll (c) = (a) + (b)	Contributions from Current Employees (d) - Notes	Employer Contributions for Current Employees (e) - Notes	Contributions Related to Payroll of Future Employees (f) - Notes	Total Contributions (g) = (d) + (e) + (f)
1	\$ 3,033,287	\$ 91,043	\$ 3,124,330	\$ 286,797	\$ 2,334,003	\$ -	\$ 2,620,801
2	3,035,659	190,211	3,225,870	287,022	2,734,790	-	3,021,812
3	3,062,250	268,461	3,330,711	289,536	2,803,744	-	3,093,280
4	3,076,615	362,344	3,438,959	290,894	2,883,647	-	3,174,541
5	3,087,214	463,511	3,550,725	291,896	2,958,788	-	3,250,684
6	3,141,924	524,200	3,666,124	297,069	3,039,475	-	3,336,543
7	3,086,662	698,611	3,785,273	291,844	3,130,350	-	3,422,194
8	3,038,833	869,461	3,908,294	287,322	3,197,459	-	3,484,780
9	2,983,728	1,051,586	4,035,314	282,111	3,269,080	-	3,551,191
10	2,912,575	1,253,887	4,166,462	275,384	3,342,113	-	3,617,497
11	2,839,818	1,462,054	4,301,872	268,505	3,414,900	-	3,683,405
12	2,789,118	1,652,564	4,441,682	263,711	3,490,090	-	3,753,802
13	2,751,412	1,834,625	4,586,037	260,146	3,573,615	-	3,833,761
14	2,691,146	2,043,937	4,735,083	254,448	3,663,537	-	3,917,985
15	2,629,253	2,259,720	4,888,973	248,596	3,242,170	-	3,490,766
16	2,574,142	2,473,723	5,047,865	243,385	2,751,501	-	2,994,886
17	2,474,045	2,737,876	5,211,921	233,921	2,789,582	-	3,023,502
18	2,377,478	3,003,830	5,381,308	224,791	554,060	-	778,851
19	2,276,225	3,279,976	5,556,201	215,217	532,652	-	747,869
20	2,121,996	3,614,781	5,736,777	200,635	510,291	-	710,926
21	1,958,017	3,965,205	5,923,222	185,131	472,331	-	657,462
22	1,823,517	4,292,210	6,115,727	172,414	432,569	-	604,983
23	1,688,678	4,625,810	6,314,488	159,665	400,133	-	559,798
24	1,526,578	4,993,131	6,519,709	144,338	370,733	-	515,071
25	1,402,245	5,329,355	6,731,600	132,582	333,099	-	465,681
26	1,249,414	5,700,963	6,950,377	118,132	303,843	-	421,975
27	1,149,955	6,026,309	7,176,264	108,728	265,409	-	374,137
28	1,019,327	6,390,165	7,409,492	96,377	240,978	-	337,355
29	851,688	6,798,613	7,650,301	80,527	210,162	-	290,689
30	677,312	7,221,624	7,898,936	64,040	168,678	-	232,718

Column d – Contributions from current employees to the Plan (employees in the Plan as of the Actuarial Valuation Date).

Column e – Employer Contributions to the Plan excluding contributions for employees hired after the Actuarial Valuation Date.

Column f – Contributions from future employees to the extent that contributions are assumed to be greater than their Normal Cost.



PROJECTION OF CONTRIBUTIONS – YEARS 31 TO 60

Year	Projected Pensionable Payroll			Projected Contributions			
	Payroll for Current Employees (a)	Payroll for Future Employees (b)	Total Employee Payroll (c) = (a) + (b)	Contributions from Current Employees (d) - Notes	Employer Contributions for Current Employees (e) - Notes	Contributions Related to Payroll of Future Employees (f) - Notes	Total Contributions (g) = (d) + (e) + (f)
31	\$ 558,515	\$ 7,597,136	\$ 8,155,651	\$ 52,808	\$ 132,216	\$ -	\$ 185,024
32	457,952	7,962,758	8,420,710	43,299	107,259	-	150,558
33	342,236	8,352,147	8,694,383	32,358	87,280	-	119,638
34	274,216	8,702,734	8,976,950	25,927	62,999	-	88,926
35	205,167	9,063,534	9,268,701	19,399	50,171	-	69,570
36	161,102	9,408,832	9,569,934	15,232	35,794	-	51,026
37	110,193	9,770,764	9,880,957	10,419	27,826	-	38,245
38	60,361	10,141,727	10,202,088	5,707	18,381	-	24,088
39	23,548	10,510,108	10,533,656	2,226	8,687	-	10,913
40	17,546	10,858,454	10,876,000	1,659	2,720	-	4,379
41	13,123	11,216,347	11,229,470	1,241	2,027	-	3,268
42	-	11,594,427	11,594,427	-	1,516	-	1,516
43	-	11,971,246	11,971,246	-	-	-	-
44	-	12,360,312	12,360,312	-	-	-	-
45	-	12,762,022	12,762,022	-	-	-	-
46	-	13,176,788	13,176,788	-	-	-	-
47	-	13,605,033	13,605,033	-	-	-	-
48	-	14,047,197	14,047,197	-	-	-	-
49	-	14,503,731	14,503,731	-	-	-	-
50	-	14,975,102	14,975,102	-	-	-	-
51	-	15,461,793	15,461,793	-	-	-	-
52	-	15,964,301	15,964,301	-	-	-	-
53	-	16,483,141	16,483,141	-	-	-	-
54	-	17,018,843	17,018,843	-	-	-	-
55	-	17,571,955	17,571,955	-	-	-	-
56	-	18,143,044	18,143,044	-	-	-	-
57	-	18,732,693	18,732,693	-	-	-	-
58	-	19,341,505	19,341,505	-	-	-	-
59	-	19,970,104	19,970,104	-	-	-	-
60	-	20,619,133	20,619,133	-	-	-	-

Column d – Contributions from current employees to the Plan (employees in the Plan as of the Actuarial Valuation Date).
 Column e – Employer Contributions to the Plan excluding contributions for employees hired after the Actuarial Valuation Date.
 Column f – Contributions from future employees to the extent that contributions are assumed to be greater than their Normal Cost.



PROJECTION OF CONTRIBUTIONS – YEARS 61 TO 80

Year	Projected Pensionable Payroll			Projected Contributions			
	Payroll for Current Employees (a)	Payroll for Future Employees (b)	Total Employee Payroll (c) = (a) + (b)	Contributions from Current Employees (d) - Notes	Employer Contributions for Current Employees (e) - Notes	Contributions Related to Payroll of Future Employees (f) - Notes	Total Contributions (g) = (d) + (e) + (f)
61	\$ -	\$ 21,289,254	\$ 21,289,254	\$ -	\$ -	\$ -	\$ -
62	-	21,981,155	21,981,155	-	-	-	-
63	-	22,695,543	22,695,543	-	-	-	-
64	-	23,433,148	23,433,148	-	-	-	-
65	-	24,194,725	24,194,725	-	-	-	-
66	-	24,981,054	24,981,054	-	-	-	-
67	-	25,792,938	25,792,938	-	-	-	-
68	-	26,631,208	26,631,208	-	-	-	-
69	-	27,496,723	27,496,723	-	-	-	-
70	-	28,390,366	28,390,366	-	-	-	-
71	-	29,313,053	29,313,053	-	-	-	-
72	-	30,265,727	30,265,727	-	-	-	-
73	-	31,249,363	31,249,363	-	-	-	-
74	-	32,264,968	32,264,968	-	-	-	-
75	-	33,313,579	33,313,579	-	-	-	-
76	-	34,396,271	34,396,271	-	-	-	-
77	-	35,514,149	35,514,149	-	-	-	-
78	-	36,668,359	36,668,359	-	-	-	-
79	-	37,860,081	37,860,081	-	-	-	-
80	-	39,090,533	39,090,533	-	-	-	-

NOTES TO PROJECTION OF CONTRIBUTIONS

Total Employee Payroll is projected to increase annually at the Projected Total Payroll Increases rate shown in the *Actuarial Assumptions Information* section of this report. Payroll for current employees (employees in the Plan as of the Actuarial Valuation Date) are projected on an employee by employee basis, using the Projected Individual Pay Increases and probability of remaining an employee in the future.

Employer Contributions are related to current employees in the Plan as of the Actuarial Valuation Date. To the extent that Projected Contributions under the Funding Policy are made to cover the Normal Cost of benefit payments for future employees, those contributions are excluded for purposes of these projections and this report.

Contributions are based on the Funding Policy as described in the *Funding Policy* section of this report. The contributions do not factor in changes in the Funding Policy based on an assumed Employer decision; if, the projections were to play out in this fashion. The only future events that are considered were outlined in the *Funding Policy* section of this 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 Plan. In addition, Employer Contributions on behalf of 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 Expense (d)	Projected Investment Earnings (e)	Projected Ending Fiduciary Net Position (f) = (a)+(b)-(c)-(d)+(e)
1	\$ 29,263,505	\$ 2,620,801	\$ 2,606,645	\$ 34,487	\$ 1,901,467	\$ 31,144,641
2	31,144,641	3,021,812	2,713,277	35,134	2,033,287	33,451,328
3	33,451,328	3,093,280	2,828,402	35,925	2,181,777	35,862,059
4	35,862,059	3,174,541	2,955,844	36,733	2,336,948	38,380,969
5	38,380,969	3,250,684	3,109,276	37,560	2,498,138	40,982,956
6	40,982,956	3,336,543	3,249,669	38,405	2,665,467	43,696,893
7	43,696,893	3,422,194	3,387,136	39,269	2,840,161	46,532,843
8	46,532,843	3,484,780	3,553,070	40,153	3,021,110	49,445,511
9	49,445,511	3,551,191	3,713,372	41,056	3,207,353	52,449,628
10	52,449,628	3,617,497	3,876,714	41,980	3,399,437	55,547,868
11	55,547,868	3,683,405	4,022,137	42,924	3,598,208	58,764,419
12	58,764,419	3,753,802	4,156,744	43,890	3,805,165	62,122,752
13	62,122,752	3,833,761	4,301,962	44,878	4,021,304	65,630,977
14	65,630,977	3,917,985	4,446,330	45,887	4,247,351	69,304,095
15	69,304,095	3,490,766	4,578,082	46,920	4,467,903	72,637,762
16	72,637,762	2,994,886	4,725,926	47,975	4,663,637	75,522,384
17	75,522,384	3,023,502	4,866,881	49,055	4,847,451	78,477,401
18	78,477,401	778,851	5,011,369	50,159	4,961,844	79,156,568
19	79,156,568	747,869	5,176,376	51,287	4,999,584	79,676,357
20	79,676,357	710,926	5,336,559	52,441	5,026,926	80,025,209
21	80,025,209	657,462	5,483,077	53,621	5,043,063	80,189,035
22	80,189,035	604,983	5,605,861	54,828	5,047,977	80,181,306
23	80,181,306	559,798	5,747,109	56,061	5,041,375	79,979,309
24	79,979,309	515,071	5,864,747	57,323	5,022,928	79,595,238
25	79,595,238	465,681	5,994,422	58,612	4,992,101	78,999,986
26	78,999,986	421,975	6,059,459	59,931	4,949,833	78,252,404
27	78,252,404	374,137	6,137,537	61,280	4,897,104	77,324,829
28	77,324,829	337,355	6,236,368	62,658	4,832,360	76,195,517
29	76,195,517	290,689	6,308,067	64,068	4,755,062	74,869,133
30	74,869,133	232,718	6,336,976	65,510	4,665,976	73,365,341

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

Column d – Based on the average Administrative Expense in recent years, and projected to increase in the future.

Column e – Based on the Expected Rate of Return on Plan Investments, and 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 Expense (d)	Projected Investment Earnings (e)	Projected Ending Fiduciary Net Position (f) = (a)+(b)-(c)-(d)+(e)
31	\$ 73,365,341	\$ 185,024	\$ 6,331,494	\$ 66,984	\$ 4,566,810	\$ 71,718,697
32	71,718,697	150,558	6,337,183	68,491	4,458,424	69,922,006
33	69,922,006	119,638	6,307,883	70,032	4,341,536	68,005,265
34	68,005,265	88,926	6,273,341	71,608	4,217,022	65,966,264
35	65,966,264	69,570	6,189,311	73,219	4,086,536	63,859,840
36	63,859,840	51,026	6,102,126	74,866	3,951,796	61,685,670
37	61,685,670	38,245	6,019,054	73,019	3,812,819	59,444,660
38	59,444,660	24,088	5,910,125	70,452	3,670,317	57,158,489
39	57,158,489	10,913	5,773,795	67,818	3,525,804	54,853,593
40	54,853,593	4,379	5,632,275	65,148	3,380,460	52,541,008
41	52,541,008	3,268	5,494,311	62,463	3,234,677	50,222,179
42	50,222,179	1,516	5,344,279	59,769	3,088,859	47,908,507
43	47,908,507	-	5,191,829	57,075	2,943,464	45,603,067
44	45,603,067	-	5,037,265	54,388	2,798,721	43,310,134
45	43,310,134	-	4,880,584	51,713	2,654,859	41,032,696
46	41,032,696	-	4,721,636	49,055	2,512,078	38,774,082
47	38,774,082	-	4,560,196	46,417	2,370,600	36,538,070
48	36,538,070	-	4,395,998	43,803	2,230,681	34,328,950
49	34,328,950	-	4,228,790	41,218	2,092,606	32,151,549
50	32,151,549	-	4,058,533	38,666	1,956,692	30,011,041
51	30,011,041	-	3,884,908	36,155	1,823,283	27,913,262
52	27,913,262	-	3,707,845	33,690	1,692,762	25,864,489
53	25,864,489	-	3,527,197	31,278	1,565,541	23,871,555
54	23,871,555	-	3,343,198	28,927	1,442,057	21,941,487
55	21,941,487	-	3,155,963	26,646	1,322,762	20,081,640
56	20,081,640	-	2,966,055	24,441	1,208,115	18,299,259
57	18,299,259	-	2,774,235	22,323	1,098,564	16,601,265
58	16,601,265	-	2,581,536	20,299	994,523	14,993,953
59	14,993,953	-	2,389,533	18,376	896,350	13,482,393
60	13,482,393	-	2,199,356	16,562	804,338	12,070,813

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

Column d – Based on the average Administrative Expense in recent years, and projected to increase in the future.

Column e – Based on the Expected Rate of Return on Plan Investments, and 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 Expense (d)	Projected Investment Earnings (e)	Projected Ending Fiduciary Net Position (f) = (a)+(b)-(c)-(d)+(e)
61	\$ 12,070,813	\$ -	\$ 2,012,478	\$ 14,862	\$ 718,714	\$ 10,762,187
62	10,762,187	-	1,830,174	13,280	639,630	9,558,363
63	9,558,363	-	1,654,180	11,819	567,149	8,459,513
64	8,459,513	-	1,486,024	10,480	501,232	7,464,241
65	7,464,241	-	1,327,069	9,262	441,745	6,569,656
66	6,569,656	-	1,178,612	8,162	388,457	5,771,339
67	5,771,339	-	1,041,531	7,178	341,054	5,063,684
68	5,063,684	-	916,446	6,302	299,150	4,440,086
69	4,440,086	-	803,553	5,528	262,310	3,893,316
70	3,893,316	-	702,569	4,847	230,075	3,415,975
71	3,415,975	-	613,058	4,251	201,976	3,000,641
72	3,000,641	-	534,560	3,732	177,547	2,639,897
73	2,639,897	-	466,379	3,281	156,329	2,326,566
74	2,326,566	-	407,718	2,889	137,882	2,053,842
75	2,053,842	-	357,995	2,548	121,782	1,815,081
76	1,815,081	-	315,745	2,250	107,645	1,604,731
77	1,604,731	-	279,792	1,989	95,150	1,418,100
78	1,418,100	-	249,855	1,758	83,999	1,250,486
79	1,250,486	-	223,747	1,552	73,959	1,099,146
80	1,099,146	-	199,627	1,367	64,912	963,065

NOTES TO PROJECTION OF THE PENSION PLAN’S FIDUCIARY NET POSITION

Projected Total Contributions are Employee and Employer Contributions projected to be made under the Funding Policy on behalf of current employees in the Plan as of the Actuarial Valuation Date. The amounts shown are detailed earlier in this section.

Projected Benefit Payments shown represents current employees as of the Actuarial Valuation Date. The Plan will pay benefits in the future on behalf of employees hired after the Actuarial Valuation Date, but those benefit payments are not projected for this purpose.

Projected Investment Earnings are based on the Expected Rate of Return on Plan Investments. Administrative Expense are typically not charged on a per employee basis. Administrative Expenses shown are not projected to distinguish between current and future employees.

The Projected Fiduciary Net Position represents assets held or projected to be held on behalf of current employees in the Plan as of the Actuarial Valuation Date. The Plan will hold assets in the future on behalf of employees hired after the Actuarial Valuation Date, but those assets are not projected for this purpose.



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

Year	Projected Beginning Fiduciary Net Position	Projected Benefit Payments	Projected Benefit Payments		Actuarial Present Values of Projected Benefit Payments		
			"Funded" Portion of Benefit Payments	"Unfunded" Portion of Benefit Payments	Present Value of "Funded" Benefit Payments (6.50%)	Present Value of "Unfunded" Benefit Payments (2.56%)	Present Value of Benefit Payments Using the Single Discount Rate (6.50%)
1	\$ 29,263,505	\$ 2,606,645	\$ 2,606,645	\$ -	\$ 2,525,847	\$ -	\$ 2,525,847
2	31,144,641	2,713,277	2,713,277	-	2,468,708	-	2,468,708
3	33,451,328	2,828,402	2,828,402	-	2,416,390	-	2,416,390
4	35,862,059	2,955,844	2,955,844	-	2,371,144	-	2,371,144
5	38,380,969	3,109,276	3,109,276	-	2,341,995	-	2,341,995
6	40,982,956	3,249,669	3,249,669	-	2,298,351	-	2,298,351
7	43,696,893	3,387,136	3,387,136	-	2,249,366	-	2,249,366
8	46,532,843	3,553,070	3,553,070	-	2,215,551	-	2,215,551
9	49,445,511	3,713,372	3,713,372	-	2,174,186	-	2,174,186
10	52,449,628	3,876,714	3,876,714	-	2,131,290	-	2,131,290
11	55,547,868	4,022,137	4,022,137	-	2,076,280	-	2,076,280
12	58,764,419	4,156,744	4,156,744	-	2,014,804	-	2,014,804
13	62,122,752	4,301,962	4,301,962	-	1,957,927	-	1,957,927
14	65,630,977	4,446,330	4,446,330	-	1,900,124	-	1,900,124
15	69,304,095	4,578,082	4,578,082	-	1,837,022	-	1,837,022
16	72,637,762	4,725,926	4,725,926	-	1,780,607	-	1,780,607
17	75,522,384	4,866,881	4,866,881	-	1,721,798	-	1,721,798
18	78,477,401	5,011,369	5,011,369	-	1,664,709	-	1,664,709
19	79,156,568	5,176,376	5,176,376	-	1,614,574	-	1,614,574
20	79,676,357	5,336,559	5,336,559	-	1,562,946	-	1,562,946
21	80,025,209	5,483,077	5,483,077	-	1,507,847	-	1,507,847
22	80,189,035	5,605,861	5,605,861	-	1,447,524	-	1,447,524
23	80,181,306	5,747,109	5,747,109	-	1,393,424	-	1,393,424
24	79,979,309	5,864,747	5,864,747	-	1,335,161	-	1,335,161
25	79,595,238	5,994,422	5,994,422	-	1,281,392	-	1,281,392
26	78,999,986	6,059,459	6,059,459	-	1,216,239	-	1,216,239
27	78,252,404	6,137,537	6,137,537	-	1,156,723	-	1,156,723
28	77,324,829	6,236,368	6,236,368	-	1,103,615	-	1,103,615
29	76,195,517	6,308,067	6,308,067	-	1,048,172	-	1,048,172
30	74,869,133	6,336,976	6,336,976	-	988,709	-	988,709

The Projected Fiduciary Net Position and Benefit Payments are based on current employees in the Plan as of the Actuarial Valuation Date. The development of the Projected Fiduciary Net Position is shown in more detail earlier in this section.



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

Year	Projected Beginning Fiduciary Net Position	Projected Benefit Payments	Projected Benefit Payments		Actuarial Present Values of Projected Benefit Payments		
			"Funded" Portion of Benefit Payments	"Unfunded" Portion of Benefit Payments	Present Value of "Funded" Benefit Payments (6.50%)	Present Value of "Unfunded" Benefit Payments (2.56%)	Present Value of Benefit Payments Using the Single Discount Rate (6.50%)
31	\$ 73,365,341	\$ 6,331,494	\$ 6,331,494	\$ -	\$ 927,562	\$ -	\$ 927,562
32	71,718,697	6,337,183	6,337,183	-	871,733	-	871,733
33	69,922,006	6,307,883	6,307,883	-	814,744	-	814,744
34	68,005,265	6,273,341	6,273,341	-	760,829	-	760,829
35	65,966,264	6,189,311	6,189,311	-	704,824	-	704,824
36	63,859,840	6,102,126	6,102,126	-	652,484	-	652,484
37	61,685,670	6,019,054	6,019,054	-	604,321	-	604,321
38	59,444,660	5,910,125	5,910,125	-	557,168	-	557,168
39	57,158,489	5,773,795	5,773,795	-	511,095	-	511,095
40	54,853,593	5,632,275	5,632,275	-	468,138	-	468,138
41	52,541,008	5,494,311	5,494,311	-	428,799	-	428,799
42	50,222,179	5,344,279	5,344,279	-	391,634	-	391,634
43	47,908,507	5,191,829	5,191,829	-	357,242	-	357,242
44	45,603,067	5,037,265	5,037,265	-	325,452	-	325,452
45	43,310,134	4,880,584	4,880,584	-	296,084	-	296,084
46	41,032,696	4,721,636	4,721,636	-	268,959	-	268,959
47	38,774,082	4,560,196	4,560,196	-	243,908	-	243,908
48	36,538,070	4,395,998	4,395,998	-	220,776	-	220,776
49	34,328,950	4,228,790	4,228,790	-	199,416	-	199,416
50	32,151,549	4,058,533	4,058,533	-	179,706	-	179,706
51	30,011,041	3,884,908	3,884,908	-	161,520	-	161,520
52	27,913,262	3,707,845	3,707,845	-	144,749	-	144,749
53	25,864,489	3,527,197	3,527,197	-	129,293	-	129,293
54	23,871,555	3,343,198	3,343,198	-	115,069	-	115,069
55	21,941,487	3,155,963	3,155,963	-	101,995	-	101,995
56	20,081,640	2,966,055	2,966,055	-	90,007	-	90,007
57	18,299,259	2,774,235	2,774,235	-	79,048	-	79,048
58	16,601,265	2,581,536	2,581,536	-	69,068	-	69,068
59	14,993,953	2,389,533	2,389,533	-	60,029	-	60,029
60	13,482,393	2,199,356	2,199,356	-	51,879	-	51,879

The Projected Fiduciary Net Position and Benefit Payments are based on current employees in the Plan as of the Actuarial Valuation Date. The development of the Projected Fiduciary Net Position is shown in more detail earlier in this section.



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

Year	Projected Beginning Fiduciary Net Position	Projected Benefit Payments	Projected Benefit Payments		Actuarial Present Values of Projected Benefit Payments		
			"Funded" Portion of Benefit Payments	"Unfunded" Portion of Benefit Payments	Present Value of "Funded" Benefit Payments (6.50%)	Present Value of "Unfunded" Benefit Payments (2.56%)	Present Value of Benefit Payments Using the Single Discount Rate (6.50%)
61	\$ 12,070,813	\$ 2,012,478	\$ 2,012,478	\$ -	\$ 44,574	\$ -	\$ 44,574
62	10,762,187	1,830,174	1,830,174	-	38,062	-	38,062
63	9,558,363	1,654,180	1,654,180	-	32,302	-	32,302
64	8,459,513	1,486,024	1,486,024	-	27,247	-	27,247
65	7,464,241	1,327,069	1,327,069	-	22,848	-	22,848
66	6,569,656	1,178,612	1,178,612	-	19,053	-	19,053
67	5,771,339	1,041,531	1,041,531	-	15,810	-	15,810
68	5,063,684	916,446	916,446	-	13,062	-	13,062
69	4,440,086	803,553	803,553	-	10,754	-	10,754
70	3,893,316	702,569	702,569	-	8,829	-	8,829
71	3,415,975	613,058	613,058	-	7,234	-	7,234
72	3,000,641	534,560	534,560	-	5,922	-	5,922
73	2,639,897	466,379	466,379	-	4,852	-	4,852
74	2,326,566	407,718	407,718	-	3,983	-	3,983
75	2,053,842	357,995	357,995	-	3,283	-	3,283
76	1,815,081	315,745	315,745	-	2,719	-	2,719
77	1,604,731	279,792	279,792	-	2,263	-	2,263
78	1,418,100	249,855	249,855	-	1,897	-	1,897
79	1,250,486	223,747	223,747	-	1,595	-	1,595
80	1,099,146	199,627	199,627	-	1,336	-	1,336

NOTES TO THE ACTUARIAL PRESENT VALUE OF PROJECTED BENEFIT PAYMENTS

The Projected Fiduciary Net Position and Benefit Payments are based on current employees in the Plan as of the Actuarial Valuation Date. The development of the Projected Fiduciary Net Position is shown in more detail earlier in this section.

The Funded and Unfunded Portion of Benefit Payments are split based on the time that the Projected Fiduciary Net Position is to reach \$0 (based on assets for current employees).

The Present Value ("PV") of the Funded and Unfunded Portion of Benefit Payments are determined separately. The PV of the Funded Portion of Benefit Payments uses the Expected Rate of Return on Plan Investments. The PV of the Unfunded Portion of Benefit Payments are determined using the High-Quality Municipal Bond Rate as of the Measurement Date, as described in the *Actuarial Assumptions Information* section of this report.

The Discount Rate used for GASB purposes is the rate such that 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 Portion of Benefit Payments. The Discount Rate is rounded to four decimal places; therefore, the resulting Present Value comparisons may show a slight difference due to rounding.



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