

GASB 67/68 Report  
For Use in Financial Statement Reporting

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NILES FIREFIGHTERS'  
PENSION FUND

Actuarial Valuation  
as of May 1, 2019

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*LAUTERBACH & AMEN, LLP*

# GASB Statements 67 and 68 Actuarial Disclosures

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Lauterbach & Amen, LLP

CERTIFIED PUBLIC ACCOUNTANTS

## GASB 67: NILES FIREFIGHTERS' PENSION FUND

**Fiscal Year Ended: April 30, 2019**

Actuarial Valuation Date: May 1, 2019

Utilizing Data as of April 30, 2019

Measurement Date: April 30, 2019

## GASB 68: VILLAGE OF NILES, ILLINOIS

**Fiscal Year Ended: April 30, 2019**

Actuarial Valuation Date: May 1, 2019

Utilizing Data as of April 30, 2019

Measurement Date: April 30, 2019

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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 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 their preparation of the required footnote disclosures.

The results in this report are based on the participant data and financial information submitted by the Niles Firefighters' Pension Fund, 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 Niles Firefighters' Pension Fund selected 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 Niles Firefighters' Pension Fund or the Village of Niles, 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

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**STATEMENT OF PLAN FIDUCIARY NET POSITION**

	<u>2018</u>	<u>2019</u>
<b>Assets</b>		
Cash and Cash Equivalents	\$ 693,872	\$ 892,360
Total cash	<u>693,872</u>	<u>892,360</u>
Receivables:		
Investment Income - Accrued Interest	102,419	95,444
Other	<u>10,218</u>	<u>13,993</u>
Total Receivables	<u>112,637</u>	<u>109,437</u>
Investments:		
Fixed Income	13,503,673	12,125,609
Mutual Funds	<u>17,928,229</u>	<u>21,261,730</u>
Total Investments	<u>31,431,902</u>	<u>33,387,339</u>
Total Assets	<u>32,238,411</u>	<u>34,389,136</u>
<b>Liabilities</b>		
Payables:		
Expenses Due/Unpaid	<u>4,698</u>	<u>5,406</u>
Total Liabilities	<u>4,698</u>	<u>5,406</u>
<b>Fiduciary Net Position</b>	<u>\$ 32,233,713</u>	<u>\$ 34,383,730</u>

The Plan Fiduciary Net Position shown above is intended to be in accordance with GAAP and the Governmental Accounting Standards Board. The Fair Market 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 Market Value of Investments. The Statement of Plan Fiduciary Net Position for 2019 is based on audited financials.



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**STATEMENT OF CHANGES IN PLAN FIDUCIARY NET POSITION**

	<u>2019</u>
<b>Additions</b>	
Contributions	
Employer	\$ 3,799,888
Members	509,905
Total Contributions	<u>4,309,793</u>
Investment Income	
Net Appreciation in Fair Value of Investments	727,693
Interest and Dividends	1,422,858
Less Investment Expense	<u>(51,634)</u>
Net Investment Income	<u>2,098,917</u>
Total Additions	<u>6,408,710</u>
<b>Deductions</b>	
Benefit Payments and Refunds of Member Contributions	4,210,269
Administrative Expense	48,424
Total Deductions	<u>4,258,693</u>
Net Increase in Net Position	<u>2,150,017</u>
<b>Fiduciary Net Position</b>	
Beginning of Year	<u>32,233,713</u>
End of Year	<u>\$ 34,383,730</u>

The change 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 Market Value of Investments. The Statement of Changes in Plan Fiduciary Net Position for 2019 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

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**STATEMENT OF TOTAL PENSION LIABILITY**

	<u>2018</u>	<u>2019</u>
Active Employees	\$ 27,976,257	\$ 28,973,735
Inactive Employees		
Terminated Employees - Vested	-	-
Retired Employees	39,015,603	38,980,191
Disabled Employees	10,847,669	10,399,755
Other Beneficiaries	<u>2,497,991</u>	<u>4,092,456</u>
Total Inactive Employees	<u>52,361,263</u>	<u>53,472,402</u>
Total Pension Liability	<u>\$ 80,337,520</u>	<u>\$ 82,446,137</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, may 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 used for the Actuarial Valuation Date as shown in this report. The TPL has been determined as of the Actuarial Valuation Date and based on the assumptions shown in this report, adjusted to the Measurement Date as needed.



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**STATEMENT OF CHANGES IN TOTAL PENSION LIABILITY**

	<u>2019</u>
<b>Changes in Total Pension Liability</b>	
Service Cost	\$ 1,211,374
Interest	5,476,267
Changes of Benefit Terms	-
Differences Between Expected and Actual Experience	349,415
Changes in Assumptions	(718,170)
Benefit Payments and Refunds	<u>(4,210,269)</u>
Net Change in Total Pension Liability	2,108,617
Total Pension Liability - Beginning	<u>80,337,520</u>
Total Pension Liability - Ending (a)	<u>\$ 82,446,137</u>
Plan Fiduciary Net Position - Ending (b)	<u>\$ 34,383,730</u>
<b>Employer's Net Pension Liability - Ending (a) - (b)</b>	<u>\$ 48,062,407</u>
Plan Fiduciary Net Position as a Percentage of the Total Pension Liability	42%
Covered-Employee Payroll	\$ 5,593,927
Employer's Net Pension Liability as a Percentage of Employee Payroll	859%

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

Covered Employee Payroll is based on pensionable payroll for the Fund members during the fiscal year.



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## 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 a component of Pension 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)
<b>Balances Beginning at 05/01/18</b>	<u>\$ 80,337,520</u>	<u>\$ 32,233,713</u>	<u>\$ 48,103,807</u>
<b>Changes for the year:</b>			
Service Cost	1,211,374	-	1,211,374
Interest	5,476,267	-	5,476,267
Actuarial Experience	349,415	-	349,415
Assumptions Changes	(718,170)	-	(718,170)
Plan Changes	-	-	-
Contributions - Employer	-	3,799,888	(3,799,888)
Contributions - Employee	-	509,905	(509,905)
Contributions - Other	-	-	-
Net Investment Income	-	2,098,917	(2,098,917)
Benefit payments, including refunds	(4,210,269)	(4,210,269)	-
Administrative Expense	-	(48,424)	48,424
<b>Net Changes</b>	<u>2,108,617</u>	<u>2,150,017</u>	<u>(41,400)</u>
<b>Balances Ending at 04/30/19</b>	<u>\$ 82,446,137</u>	<u>\$ 34,383,730</u>	<u>\$ 48,062,407</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.



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## 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	\$ 1,422,694	\$ -
Changes of Assumptions	2,591,215	682,085
Net Difference Between Projected and Actual		
Earnings on Pension Plan Investments	530,398	310,504
Contributions Subsequent to the Measurement Date*	-	-
Total	<u>\$ 4,544,307</u>	<u>\$ 992,589</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:

<b>Year ended</b>	
<b>April 30:</b>	
2020	\$ 1,486,640
2021	879,781
2022	496,578
2023	446,303
2024	287,225
Thereafter	(44,809)



**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.

<b>Pension Expense Source</b>	<b>Date Established</b>	<b>Initial Period</b>	<b>Initial Balance</b>	<b>Remaining Period</b>	<b>4/30/2019 Expense Recognized</b>	<b>4/30/2019 Deferred Balance</b>
Asset (Gain)/Loss	4/30/2019	5.00	\$ 159,231	5.00	\$ 31,847	\$ 127,384
Actuarial (Gain)/Loss	4/30/2019	6.83	349,415	6.83	51,159	298,256
Asset (Gain)/Loss	4/30/2018	5.00	44,870	4.00	8,974	26,922
Change in Assumptions (Gain)/Loss	4/30/2018	6.77	2,291,699	5.77	338,508	1,614,683
Actuarial (Gain)/Loss	4/30/2018	6.77	708,363	5.77	104,633	499,097
Asset (Gain)/Loss	4/30/2017	5.00	(776,266)	3.00	(155,254)	(310,504)
Change in Assumptions (Gain)/Loss	4/30/2017	6.38	(130,367)	4.38	(20,434)	(69,065)
Actuarial (Gain)/Loss	4/30/2017	6.38	555,319	4.38	87,041	294,196
Asset (Gain)/Loss	4/30/2016	5.00	1,880,460	2.00	376,092	376,092
Change in Assumptions (Gain)/Loss	4/30/2016	5.70	3,274,256	2.70	574,431	976,532
Actuarial (Gain)/Loss	4/30/2016	5.70	1,110,317	2.70	194,793	331,145
<b>Total</b>			<b>\$ 8,749,127</b>		<b>\$ 1,486,640</b>	<b>\$ 3,551,718</b>

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.



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## 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>2019</u>
<b>Pension Expense/(Income) Under GASB 68</b>	
Service Cost	\$ 1,211,374
Interest	5,476,267
Plan Changes	-
Contributions - Employee	(509,905)
Contributions - Other	-
Expected Investment Income	(2,258,148)
Administrative Expense	48,424
Other Changes	-
Initial Pension Expense/(Income)	<u>\$ 3,968,012</u>
Recognition of Outflow/(Inflow) of Resources due to Liabilities	1,224,981
Recognition of Outflow/(Inflow) of Resources due to Assets	261,659
<b>Total Pension Expense/(Income)</b>	<u><u>\$ 5,454,652</u></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

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## STATEMENT OF SIGNIFICANT ACTUARIAL ASSUMPTIONS

### Actuarial Assumptions (Economic)

Discount Rate used for the Total Pension Liability	7.00%
Long-Term Expected Rate of Return on Plan Assets	7.00%
High Quality 20 Year Tax-Exempt G.O. Bond Rate	3.79%
Projected Individual Salary Increases	3.75% - 18.26%
Projected Increase in Total Payroll	3.50%
Consumer Price Index (Urban)	2.50%
Inflation Rate Included	2.50%

### Actuarial Assumptions (Demographic)

Mortality Rates	RP-2014 Adjusted for Plan Status, Collar, and Illinois Public Pension Data, as Appropriate
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
Marital Assumptions	Active Members: 80%
	Retiree and Disabled Members: Actual Spousal Data

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 Summary prepared for the Fund, available upon request.

### ASSUMPTION CHANGES

The assumptions were changed from the prior year.

The assumed rate on High Quality 20 Year Tax-Exempt General Obligation (G.O.) Bonds was changed from 3.97% to 3.79% 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.



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The discount rate used in the determination of the Total Pension Liability remained constant at 7.00%. 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 the current valuation, we have updated the marital assumption for retiree and disabled Members to the actual spousal data.

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



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## 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:

<u>Service</u>	<u>Rate</u>	<u>Service</u>	<u>Rate</u>
0	7.50%	8	4.00%
1	18.26%	9	4.00%
2	7.50%	10	4.00%
3	7.50%	15	4.00%
4	7.50%	20	4.00%
5	4.00%	25	4.00%
6	4.00%	30	4.00%
7	4.00%	35	3.75%

### 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. 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.



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## **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 2018 was 252.4. The average increase in the CPI-U for September 1985 through September 2018 was 2.61% (on a compounded basis).



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## 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 by the investment professionals that work with the Pension Fund. 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.

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 a geometric 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>
Large Cap Domestic Equity	9.30%	2.60%	6.70%	43.75%
Small Cap Domestic Equity	11.10%	2.60%	8.50%	12.50%
International Equity	9.10%	2.60%	6.50%	6.25%
Fixed Income	4.30%	2.60%	1.70%	37.50%

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 2.60% 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.



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## **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 25, 2019 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 Long-Term 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 future Fiduciary Net Position will be able to cover future benefit payments. To the extent future benefit payments are covered by the Plan's projected Fiduciary Net Position, the Long-Term 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 the *Funding Policy* section of this report.



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### **SENSITIVITY OF THE DISCOUNT RATE**

The 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 Net Pension Liability to the discount rate assumption.

	<b>1% Decrease (6.00%)</b>	<b>Current Discount Rate (7.00%)</b>	<b>1% Increase (8.00%)</b>
Employer Net Pension Liability	\$58,607,705	\$48,062,407	\$39,341,042

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

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## **PARTICIPANT DEMOGRAPHIC DATA**

The chart below summarizes the employee count and payroll as of April 30:

	<u>2018</u>	<u>2019</u>
Inactive Plan Members or Beneficiaries Currently Receiving Benefits	58	59
Inactive Plan Members Entitled to But Not Yet Receiving Benefits	0	0
Active Plan Members	<u>52</u>	<u>53</u>
Total	<u>110</u>	<u>112</u>
 Payroll of Active Plan Members	 <u>\$ 5,320,703</u>	 <u>\$ 5,593,927</u>

Participant 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 rate of salary for active Plan members as of the data collection date for the Actuarial Valuation.

## **EXPECTED FUTURE WORKING LIFETIME**

The chart below summarizes the expected future working lifetime of Fund Members as of April 30:

	<u>2018</u>	<u>2019</u>
Average Future Working Career (In Years)		
Active Plan Members	14.32	14.44
Inactive Plan Members	0.00	0.00
Total	6.77	6.83

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

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## **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 employee over the working career of the employee as a level percent of their 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 year's employer contributions are being compared to the Actuarially Determined Contribution as developed in the May 1, 2017 actuarial valuation. The period of repayment as of that valuation is 20 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 a Formal Funding Policy that exists between the Pension Board and the Village at this time. The Funding Policy states that the Actuarially Determined Contribution will be calculated based on the Funding Policy parameters stated above and the Village will contribute 100% of the Actuarially Determined Contribution.

## **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 Actuarially 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>
4/30/2019	\$3,799,888	\$3,799,026	100.02%	\$5,593,927	67.93%
4/30/2018	\$3,527,447	\$3,527,447	100.00%	\$5,246,010	67.24%
4/30/2017	\$3,130,127	\$3,130,127	100.00%	\$5,068,609	61.76%
4/30/2016	\$2,714,895	\$2,714,895	100.00%	\$4,770,104	56.91%
4/30/2015	\$2,743,112	\$2,743,112	100.00%	\$4,556,064	60.21%

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.



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### 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 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 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 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

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## SCHEDULE OF CHANGES IN THE NET PENSION LIABILITY

	2019	2018	2017	2016	2015	2014	2013	2012	2011	2010
<b>Total Pension Liability</b>										
Service Cost	\$ 1,211,374	\$ 1,132,125	\$ 1,030,414	\$ 923,020	\$ 998,489					
Interest	5,476,267	5,118,544	5,115,741	4,667,411	4,520,839					
Changes of Benefit Terms	-	-	-	-	-					
Differences Between Expected and Actual Experience	349,415	708,363	555,319	1,110,317	-					
Changes in Assumptions	(718,170)	2,291,699	(130,367)	3,274,256	-					
Benefit Payments and Refunds	(4,210,269)	(4,070,538)	(3,951,448)	(3,630,830)	(3,364,479)					
<b>Net Change in Total Pension Liability</b>	<b>2,108,617</b>	<b>5,180,193</b>	<b>2,619,659</b>	<b>6,344,174</b>	<b>2,154,849</b>					
<b>Total Pension Liability - Beginning</b>	<b>80,337,520</b>	<b>75,157,327</b>	<b>72,537,668</b>	<b>66,193,494</b>	<b>64,038,645</b>					
<b>Total Pension Liability - Ending (a)</b>	<b>\$ 82,446,137</b>	<b>\$ 80,337,520</b>	<b>\$ 75,157,327</b>	<b>\$ 72,537,668</b>	<b>\$ 66,193,494</b>					
<b>Plan Fiduciary Net Position</b>										
Contributions - Employer	\$ 3,799,888	\$ 3,527,447	\$ 3,130,127	\$ 2,714,895	\$ 2,743,112					
Contributions - Members	509,905	494,807	460,067	511,802	426,728					
Contributions - Other	-	-	53,314	-	-					
Net Investment Income	2,098,917	2,140,327	2,776,569	139,566	848,261					
Benefit Payments and Refunds	(4,210,269)	(4,070,538)	(3,951,448)	(3,630,830)	(3,364,479)					
Administrative Expense	(48,424)	(46,250)	(50,146)	(60,977)	(41,951)					
<b>Net Change in Plan Fiduciary Net Position</b>	<b>2,150,017</b>	<b>2,045,792</b>	<b>2,418,484</b>	<b>(325,544)</b>	<b>611,670</b>					
<b>Plan Fiduciary Net Position - Beginning</b>	<b>32,233,713</b>	<b>30,187,920</b>	<b>27,769,437</b>	<b>28,094,981</b>	<b>27,483,311</b>					
<b>Plan Fiduciary Net Position - Ending (b)</b>	<b>\$ 34,383,730</b>	<b>\$ 32,233,713</b>	<b>\$ 30,187,920</b>	<b>\$ 27,769,437</b>	<b>\$ 28,094,981</b>					
<b>Employer Net Pension Liability - Ending (a) - (b)</b>	<b>\$ 48,062,407</b>	<b>\$ 48,103,807</b>	<b>\$ 44,969,407</b>	<b>\$ 44,768,231</b>	<b>\$ 38,098,513</b>					

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



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## SCHEDULE OF TOTAL PENSION LIABILITY AND RELATED RATIO

	<u>2019</u>	<u>2018</u>	<u>2017</u>	<u>2016</u>	<u>2015</u>	<u>2014</u>	<u>2013</u>	<u>2012</u>	<u>2011</u>	<u>2010</u>
<b>Total Pension Liability - Ending (a)</b>	<u>\$ 82,446,137</u>	<u>\$ 80,337,520</u>	<u>\$ 75,157,327</u>	<u>\$ 72,537,668</u>	<u>\$ 66,193,494</u>					
<b>Plan Fiduciary Net Position - Ending (b)</b>	<u>\$ 34,383,730</u>	<u>\$ 32,233,713</u>	<u>\$ 30,187,920</u>	<u>\$ 27,769,437</u>	<u>\$ 28,094,981</u>					
<b>Employer Net Pension Liability - Ending (a) - (b)</b>	<u>\$ 48,062,407</u>	<u>\$ 48,103,807</u>	<u>\$ 44,969,407</u>	<u>\$ 44,768,231</u>	<u>\$ 38,098,513</u>					
<b>Plan Fiduciary Net Position as a Percentage of the Total Pension Liability</b>	41.70%	40.12%	40.17%	38.28%	42.44%					
<b>Covered-Employee Payroll</b>	\$ 5,593,927	\$ 5,246,010	\$ 5,068,609	\$ 4,770,104	\$ 4,556,064					
<b>Employer Net Pension Liability as a Percentage of Covered-Employee Payroll</b>	859.19%	916.96%	887.21%	938.52%	836.22%					

Covered Employee Payroll shown for the current year is based on pensionable payroll for the Fund members during the fiscal year.





## SCHEDULE OF CONTRIBUTIONS

	2019	2018	2017	2016	2015	2014	2013	2012	2011	2010
Actuarially Determined Contribution	\$ 3,799,026	\$ 3,527,447	\$ 3,130,127	\$ 2,714,895	\$ 2,743,112					
Contributions in Relation to the Actuarially Determined Contribution	3,799,888	3,527,447	3,130,127	2,714,895	2,743,112					
Contribution Deficiency (excess)	<u>\$ (862)</u>	<u>\$ -</u>	<u>\$ -</u>	<u>\$ -</u>	<u>\$ -</u>					
Covered-Employee Payroll	\$ 5,593,927	\$ 5,246,010	\$ 5,068,609	\$ 4,770,104	\$ 4,556,064					
Contributions as a Percentage of Covered-Employee Payroll	67.9%	67.2%	61.8%	56.9%	60.2%					

## NOTES TO SCHEDULE OF CONTRIBUTIONS

The Actuarially Determined Contribution shown for the current year is from the May 1, 2017 Actuarial Report completed by Lauterbach & Amen, LLP for the tax levy recommendation for the December 2017 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 (Closed)
Remaining Amortization Period	20 Years
Asset Valuation Method	5-Year Smoothed Market Value
Inflation	2.50%
Payroll Increases	3.50%
Individual Pay Increases	2.50% - 18.26%
Investment Rate of Return	7.25%
Mortality Rates	RP-2014 Adjusted for Plan Status, Collar, and Illinois Public Pension Data, as Appropriate
Retirement Rates	L&A 2016 Illinois Firefighters Retirement Rates Capped at age 65
Termination Rates	L&A 2016 Illinois Firefighters Termination Rates
Disability Rates	L&A 2016 Illinois Firefighters Disability Rates



# GASB METHODS AND PROCEDURES

GASB Methods and Procedures  
Methodology for Deferred Outflows and Inflows

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**GASB METHODS AND PROCEDURES**

	<b>Statement 67</b>	<b>Statement 68</b>
	<b><u>Pension Fund Financials</u></b>	<b><u>Employer Financials</u></b>
Fiscal Year End for Reporting	<b>April 30, 2019</b>	<b>April 30, 2019</b>
Measurement Date	April 30, 2019	April 30, 2019
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 Inflows and Outflows of Resources**

Amortization Method	Straight Line	Straight Line
Amortization Period		
Actuarial Experience	6.83 Years	6.83 Years
Changes in Assumptions	6.83 Years	6.83 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

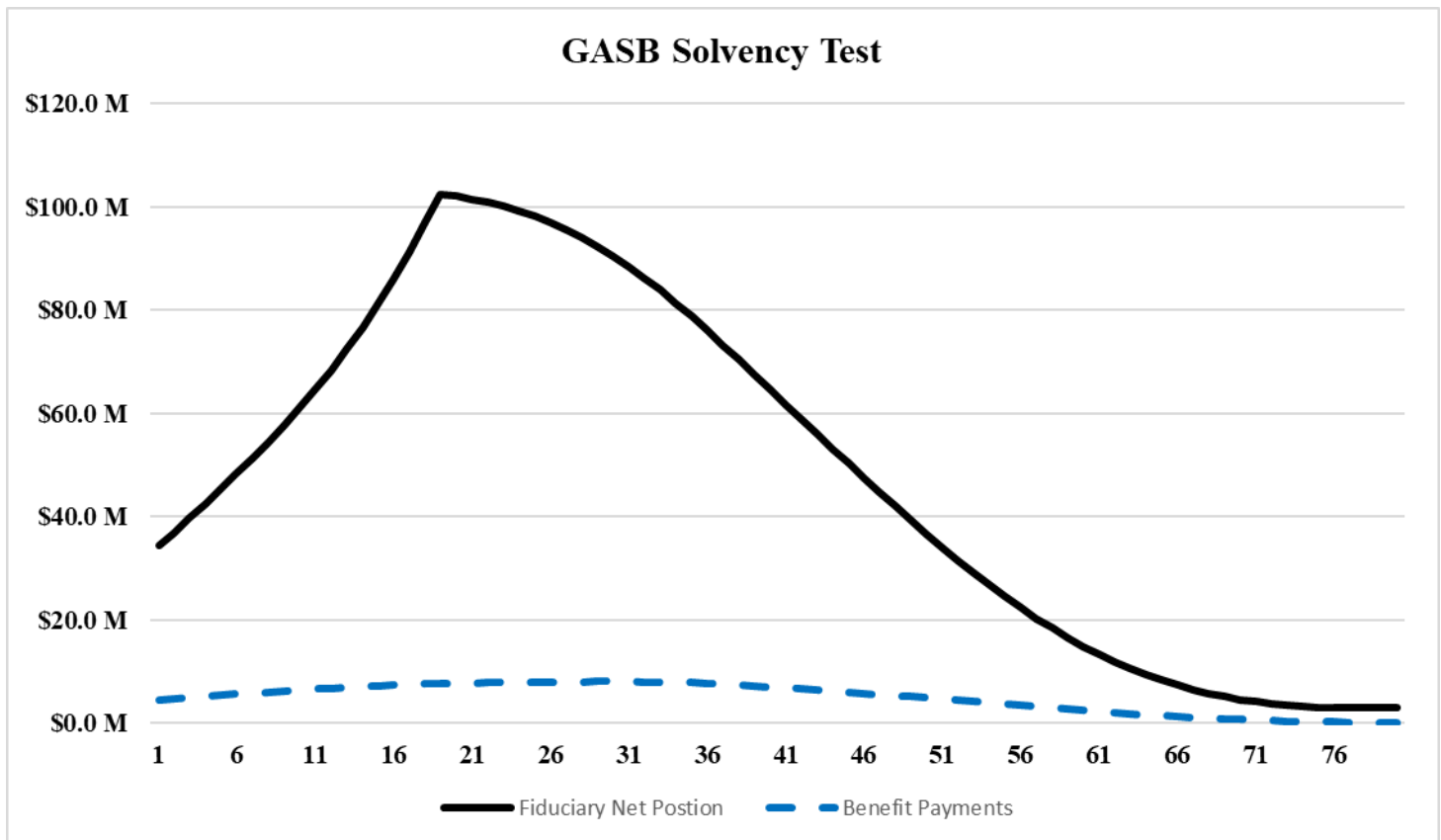
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## GASB PROJECTIONS – SUMMARY AND PROCEDURE

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 current Long-Term Expected Rate of Return on Plan Assets assumption.

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 assumption, 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.



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## **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 Members 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 Plan Members.

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 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	\$ 5,593,917	\$ -	\$ 5,593,917	\$ 528,905	\$ 4,209,205	\$ -	\$ 4,738,110
2	5,526,359	263,345	5,789,704	522,517	4,407,408	-	4,929,925
3	5,440,003	552,341	5,992,344	514,352	4,521,664	-	5,036,016
4	5,333,985	868,091	6,202,076	504,328	4,640,882	-	5,145,210
5	5,202,444	1,216,704	6,419,148	491,891	4,761,074	-	5,252,965
6	5,021,718	1,622,101	6,643,819	474,803	4,884,418	-	5,359,222
7	4,872,549	2,003,803	6,876,352	460,700	5,007,398	-	5,468,097
8	4,749,374	2,367,651	7,117,025	449,053	5,141,454	-	5,590,507
9	4,568,934	2,797,186	7,366,120	431,993	5,282,551	-	5,714,544
10	4,369,731	3,254,204	7,623,935	413,158	5,421,165	-	5,834,323
11	4,215,787	3,674,985	7,890,772	398,603	5,558,378	-	5,956,980
12	4,043,741	4,123,208	8,166,949	382,336	5,706,500	-	6,088,835
13	3,898,914	4,553,879	8,452,793	368,642	5,856,399	-	6,225,041
14	3,706,990	5,041,650	8,748,640	350,496	6,018,537	-	6,369,033
15	3,532,573	5,522,270	9,054,843	334,005	6,178,767	-	6,512,771
16	3,360,831	6,010,931	9,371,762	317,767	6,348,417	-	6,666,184
17	3,187,163	6,512,611	9,699,774	301,346	6,526,036	-	6,827,382
18	3,012,106	7,027,160	10,039,266	284,795	6,131,384	-	6,416,179
19	2,825,224	7,565,416	10,390,640	267,125	242,267	-	509,392
20	2,677,484	8,076,829	10,754,313	253,156	206,407	-	459,563
21	2,523,365	8,607,349	11,130,714	238,584	181,073	-	419,657
22	2,398,934	9,121,355	11,520,289	226,819	153,626	-	380,445
23	2,247,065	9,676,434	11,923,499	212,460	132,548	-	345,008
24	2,089,304	10,251,517	12,340,821	197,544	110,380	-	307,924
25	1,937,891	10,834,859	12,772,750	183,228	92,245	-	275,473
26	1,763,355	11,456,441	13,219,796	166,725	76,744	-	243,469
27	1,613,083	12,069,406	13,682,489	152,517	59,047	-	211,564
28	1,426,677	12,734,699	14,161,376	134,892	46,783	-	181,675
29	1,249,167	13,407,857	14,657,024	118,109	33,612	-	151,721
30	1,059,587	14,110,433	15,170,020	100,184	25,927	-	126,111

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 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	\$ 891,631	\$ 14,809,340	\$ 15,700,971	\$ 84,304	\$ 16,530	\$ -	\$ 100,834
32	706,246	15,544,259	16,250,505	66,776	12,592	-	79,368
33	546,543	16,272,730	16,819,273	51,676	8,434	-	60,110
34	422,658	16,985,289	17,407,947	39,962	6,004	-	45,966
35	310,531	17,706,694	18,017,225	29,361	3,820	-	33,181
36	226,826	18,421,002	18,647,828	21,446	1,676	-	23,122
37	141,090	19,159,412	19,300,502	13,340	1,142	-	14,482
38	86,971	19,889,049	19,976,020	8,223	387	-	8,610
39	47,892	20,627,289	20,675,181	4,528	-	-	4,296
40	19,894	21,378,918	21,398,812	1,881	-	-	1,809
41	-	22,147,770	22,147,770	-	-	-	-
42	-	22,922,942	22,922,942	-	-	-	-
43	-	23,725,245	23,725,245	-	-	-	-
44	-	24,555,629	24,555,629	-	-	-	-
45	-	25,415,076	25,415,076	-	-	-	-
46	-	26,304,603	26,304,603	-	-	-	-
47	-	27,225,265	27,225,265	-	-	-	-
48	-	28,178,149	28,178,149	-	-	-	-
49	-	29,164,384	29,164,384	-	-	-	-
50	-	30,185,137	30,185,137	-	-	-	-
51	-	31,241,617	31,241,617	-	-	-	-
52	-	32,335,074	32,335,074	-	-	-	-
53	-	33,466,801	33,466,801	-	-	-	-
54	-	34,638,140	34,638,140	-	-	-	-
55	-	35,850,474	35,850,474	-	-	-	-
56	-	37,105,241	37,105,241	-	-	-	-
57	-	38,403,924	38,403,924	-	-	-	-
58	-	39,748,062	39,748,062	-	-	-	-
59	-	41,139,244	41,139,244	-	-	-	-
60	-	42,579,118	42,579,118	-	-	-	-

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 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	\$ -	\$ 44,069,387	\$ 44,069,387	\$ -	\$ -	\$ -	\$ -
62	-	45,611,815	45,611,815	-	-	-	-
63	-	47,208,229	47,208,229	-	-	-	-
64	-	48,860,517	48,860,517	-	-	-	-
65	-	50,570,635	50,570,635	-	-	-	-
66	-	52,340,607	52,340,607	-	-	-	-
67	-	54,172,528	54,172,528	-	-	-	-
68	-	56,068,567	56,068,567	-	-	-	-
69	-	58,030,967	58,030,967	-	-	-	-
70	-	60,062,050	60,062,050	-	-	-	-
71	-	62,164,222	62,164,222	-	-	-	-
72	-	64,339,970	64,339,970	-	-	-	-
73	-	66,591,869	66,591,869	-	-	-	-
74	-	68,922,584	68,922,584	-	-	-	-
75	-	71,334,875	71,334,875	-	-	-	-
76	-	73,831,595	73,831,595	-	-	-	-
77	-	76,415,701	76,415,701	-	-	-	-
78	-	79,090,251	79,090,251	-	-	-	-
79	-	81,858,409	81,858,409	-	-	-	-
80	-	84,723,454	84,723,454	-	-	-	-

### NOTES TO PROJECTION OF CONTRIBUTIONS

Total Employee Payroll is projected to increase annually at the Projected Increase in Total Payroll 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 Expenses (d)	Projected Investment Earnings (e)	Projected Ending Fiduciary Net Position (a)+(b)-(c)-(d)+(e)
1	\$ 34,383,730	\$ 4,738,110	\$ 4,458,072	\$ 46,817	\$ 2,415,024	\$ 37,031,974
2	37,031,974	4,929,925	4,720,108	47,988	2,597,902	39,791,706
3	39,791,706	5,036,016	4,957,024	49,188	2,786,463	42,607,973
4	42,607,973	5,145,210	5,221,039	50,417	2,978,139	45,459,866
5	45,459,866	5,252,965	5,484,251	51,678	3,172,287	48,349,189
6	48,349,189	5,359,222	5,693,456	52,970	3,370,891	51,332,877
7	51,332,877	5,468,097	5,866,835	54,294	3,577,445	54,457,290
8	54,457,290	5,590,507	6,067,805	55,651	3,793,357	57,717,698
9	57,717,698	5,714,544	6,292,546	57,043	4,018,012	61,100,666
10	61,100,666	5,834,323	6,474,473	58,469	4,252,595	64,654,642
11	64,654,642	5,956,980	6,637,010	59,930	4,499,926	68,414,608
12	68,414,608	6,088,835	6,773,288	61,429	4,762,917	72,431,644
13	72,431,644	6,225,041	6,938,488	62,964	5,043,041	76,698,273
14	76,698,273	6,369,033	7,112,504	64,538	5,340,599	81,230,863
15	81,230,863	6,512,771	7,244,319	66,152	5,658,241	86,091,404
16	86,091,404	6,666,184	7,374,559	67,806	5,999,232	91,314,455
17	91,314,455	6,827,382	7,494,399	69,501	6,366,234	96,944,171
18	96,944,171	6,416,179	7,619,247	71,238	6,741,491	102,411,356
19	102,411,356	509,392	7,696,601	73,019	6,914,687	102,065,814
20	102,065,814	459,563	7,777,680	74,845	6,885,853	101,558,706
21	101,558,706	419,657	7,827,167	76,716	6,847,162	100,921,642
22	100,921,642	380,445	7,880,426	78,634	6,799,263	100,142,291
23	100,142,291	345,008	7,933,776	80,600	6,741,532	99,214,456
24	99,214,456	307,924	7,968,370	82,615	6,674,005	98,145,400
25	98,145,400	275,473	8,014,609	84,680	6,596,344	96,917,928
26	96,917,928	243,469	8,021,854	86,797	6,508,974	95,561,719
27	95,561,719	211,564	8,058,840	88,967	6,411,552	94,037,028
28	94,037,028	181,675	8,086,252	91,191	6,302,740	92,344,001
29	92,344,001	151,721	8,104,027	93,471	6,182,478	90,480,701
30	90,480,701	126,111	8,102,683	95,808	6,051,116	88,459,438

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

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

Column e – Based on the current Long-Term Expected Rate of Return on Plan Assets assumption, and does not factor in allocation changes.



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**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	\$ 88,459,438	\$ 100,834	\$ 8,099,968	\$ 98,203	\$ 5,908,754	\$ 86,270,854
32	86,270,854	79,368	8,087,849	100,658	5,755,140	83,916,855
33	83,916,855	60,110	8,032,335	103,174	5,591,541	81,432,996
34	81,432,996	45,966	7,963,307	105,754	5,419,501	78,829,403
35	78,829,403	33,181	7,866,676	108,398	5,240,092	76,127,602
36	76,127,602	23,122	7,765,768	108,641	5,054,137	73,330,453
37	73,330,453	14,482	7,618,882	104,786	4,863,310	70,484,577
38	70,484,577	8,610	7,455,675	100,829	4,669,744	67,606,427
39	67,606,427	4,296	7,280,053	96,816	4,474,410	64,708,263
40	64,708,263	1,809	7,094,918	92,767	4,278,073	61,800,461
41	61,800,461	-	6,891,736	88,696	4,081,714	58,901,651
42	58,901,651	-	6,684,967	84,625	3,886,180	56,018,238
43	56,018,238	-	6,475,286	80,571	3,691,822	53,154,203
44	53,154,203	-	6,262,507	76,541	3,498,928	50,314,082
45	50,314,082	-	6,046,719	72,542	3,307,812	47,502,633
46	47,502,633	-	5,827,380	68,580	3,118,826	44,725,499
47	44,725,499	-	5,604,528	64,662	2,932,363	41,988,672
48	41,988,672	-	5,378,209	60,796	2,748,842	39,298,509
49	39,298,509	-	5,148,427	56,991	2,568,706	36,661,798
50	36,661,798	-	4,915,075	53,256	2,392,434	34,085,901
51	34,085,901	-	4,677,977	49,602	2,220,548	31,578,870
52	31,578,870	-	4,437,700	46,038	2,053,590	29,148,722
53	29,148,722	-	4,194,420	42,576	1,892,116	26,803,841
54	26,803,841	-	3,949,029	39,229	1,736,680	24,552,264
55	24,552,264	-	3,702,388	36,006	1,587,815	22,401,684
56	22,401,684	-	3,455,841	32,920	1,446,011	20,358,935
57	20,358,935	-	3,210,789	29,980	1,311,699	18,429,865
58	18,429,865	-	2,968,740	27,195	1,185,233	16,619,162
59	16,619,162	-	2,731,180	24,573	1,066,890	14,930,299
60	14,930,299	-	2,499,511	22,119	956,864	13,365,533

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

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

Column e – Based on the current Long-Term Expected Rate of Return on Plan Assets assumption, and does not factor in allocation changes.



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## 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	\$ 13,365,533	\$ -	\$ 2,275,189	\$ 19,838	\$ 855,261	\$ 11,925,767
62	11,925,767	-	2,059,272	17,732	762,109	10,610,871
63	10,610,871	-	1,853,041	15,801	677,352	9,419,381
64	9,419,381	-	1,657,585	14,043	600,850	8,348,603
65	8,348,603	-	1,473,637	12,457	532,389	7,394,897
66	7,394,897	-	1,302,041	11,038	471,685	6,553,504
67	6,553,504	-	1,143,139	9,779	418,393	5,818,978
68	5,818,978	-	997,102	8,674	372,126	5,185,328
69	5,185,328	-	863,851	7,715	332,468	4,646,230
70	4,646,230	-	743,023	6,893	298,989	4,195,303
71	4,195,303	-	634,192	6,199	271,258	3,826,170
72	3,826,170	-	536,618	5,624	248,853	3,532,782
73	3,532,782	-	449,708	5,159	231,374	3,309,289
74	3,309,289	-	372,836	4,797	218,433	3,150,089
75	3,150,089	-	305,382	4,529	209,659	3,049,837
76	3,049,837	-	246,753	4,347	204,700	3,003,437
77	3,003,437	-	196,414	4,244	203,218	3,005,997
78	3,005,997	-	153,788	4,213	204,890	3,052,886
79	3,052,886	-	118,256	4,248	209,414	3,139,796
80	3,139,796	-	89,197	4,342	216,512	3,262,769

### 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 current Long-Term Expected Rate of Return on Plan Assets assumption. Administrative Expenses are typically not charged on a per employee basis. Administrative Expenses shown are not projected to distinguish between current and future employees.

The Projected 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		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 (3.79%)	PV of Total Projected Payments Using the Single Discount Rate (7.00%)
1	\$ 34,383,730	\$ 4,458,072	\$ 4,458,072	\$ -	\$ 4,309,781	\$ -	\$ 4,309,781
2	37,031,974	4,720,108	4,720,108	-	4,264,580	-	4,264,580
3	39,791,706	4,957,024	4,957,024	-	4,185,637	-	4,185,637
4	42,607,973	5,221,039	5,221,039	-	4,120,157	-	4,120,157
5	45,459,866	5,484,251	5,484,251	-	4,044,737	-	4,044,737
6	48,349,189	5,693,456	5,693,456	-	3,924,327	-	3,924,327
7	51,332,877	5,866,835	5,866,835	-	3,779,282	-	3,779,282
8	54,457,290	6,067,805	6,067,805	-	3,653,030	-	3,653,030
9	57,717,698	6,292,546	6,292,546	-	3,540,497	-	3,540,497
10	61,100,666	6,474,473	6,474,473	-	3,404,541	-	3,404,541
11	64,654,642	6,637,010	6,637,010	-	3,261,691	-	3,261,691
12	68,414,608	6,773,288	6,773,288	-	3,110,900	-	3,110,900
13	72,431,644	6,938,488	6,938,488	-	2,978,294	-	2,978,294
14	76,698,273	7,112,504	7,112,504	-	2,853,261	-	2,853,261
15	81,230,863	7,244,319	7,244,319	-	2,716,019	-	2,716,019
16	86,091,404	7,374,559	7,374,559	-	2,583,970	-	2,583,970
17	91,314,455	7,494,399	7,494,399	-	2,454,169	-	2,454,169
18	96,944,171	7,619,247	7,619,247	-	2,331,825	-	2,331,825
19	102,411,356	7,696,601	7,696,601	-	2,201,401	-	2,201,401
20	102,065,814	7,777,680	7,777,680	-	2,079,057	-	2,079,057
21	101,558,706	7,827,167	7,827,167	-	1,955,407	-	1,955,407
22	100,921,642	7,880,426	7,880,426	-	1,839,918	-	1,839,918
23	100,142,291	7,933,776	7,933,776	-	1,731,191	-	1,731,191
24	99,214,456	7,968,370	7,968,370	-	1,624,990	-	1,624,990
25	98,145,400	8,014,609	8,014,609	-	1,527,495	-	1,527,495
26	96,917,928	8,021,854	8,021,854	-	1,428,856	-	1,428,856
27	95,561,719	8,058,840	8,058,840	-	1,341,536	-	1,341,536
28	94,037,028	8,086,252	8,086,252	-	1,258,037	-	1,258,037
29	92,344,001	8,104,027	8,104,027	-	1,178,320	-	1,178,320
30	90,480,701	8,102,683	8,102,683	-	1,101,051	-	1,101,051

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		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 (3.79%)	PV of Total Projected Payments Using the Single Discount Rate (7.00%)
31	\$ 88,459,438	\$ 8,099,968	\$ 8,099,968	\$ -	\$ 1,028,675	\$ -	\$ 1,028,675
32	86,270,854	8,087,849	8,087,849	-	959,940	-	959,940
33	83,916,855	8,032,335	8,032,335	-	890,982	-	890,982
34	81,432,996	7,963,307	7,963,307	-	825,538	-	825,538
35	78,829,403	7,866,676	7,866,676	-	762,168	-	762,168
36	76,127,602	7,765,768	7,765,768	-	703,170	-	703,170
37	73,330,453	7,618,882	7,618,882	-	644,738	-	644,738
38	70,484,577	7,455,675	7,455,675	-	589,651	-	589,651
39	67,606,427	7,280,053	7,280,053	-	538,095	-	538,095
40	64,708,263	7,094,918	7,094,918	-	490,104	-	490,104
41	61,800,461	6,891,736	6,891,736	-	444,924	-	444,924
42	58,901,651	6,684,967	6,684,967	-	403,341	-	403,341
43	56,018,238	6,475,286	6,475,286	-	365,131	-	365,131
44	53,154,203	6,262,507	6,262,507	-	330,030	-	330,030
45	50,314,082	6,046,719	6,046,719	-	297,812	-	297,812
46	47,502,633	5,827,380	5,827,380	-	268,233	-	268,233
47	44,725,499	5,604,528	5,604,528	-	241,098	-	241,098
48	41,988,672	5,378,209	5,378,209	-	216,226	-	216,226
49	39,298,509	5,148,427	5,148,427	-	193,447	-	193,447
50	36,661,798	4,915,075	4,915,075	-	172,597	-	172,597
51	34,085,901	4,677,977	4,677,977	-	153,524	-	153,524
52	31,578,870	4,437,700	4,437,700	-	136,111	-	136,111
53	29,148,722	4,194,420	4,194,420	-	120,233	-	120,233
54	26,803,841	3,949,029	3,949,029	-	105,793	-	105,793
55	24,552,264	3,702,388	3,702,388	-	92,697	-	92,697
56	22,401,684	3,455,841	3,455,841	-	80,864	-	80,864
57	20,358,935	3,210,789	3,210,789	-	70,215	-	70,215
58	18,429,865	2,968,740	2,968,740	-	60,674	-	60,674
59	16,619,162	2,731,180	2,731,180	-	52,167	-	52,167
60	14,930,299	2,499,511	2,499,511	-	44,619	-	44,619

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 Benefit Payments		Present Value (PV) of Projected Benefit Payments				
	Projected Beginning Fiduciary Net Position	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 (3.79%)	PV of Total Projected Payments Using the Single Discount Rate (7.00%)
61	\$ 13,365,533	\$ 2,275,189	\$ 2,275,189	\$ -	\$ 37,958	\$ -	\$ 37,958
62	11,925,767	2,059,272	2,059,272	-	32,108	-	32,108
63	10,610,871	1,853,041	1,853,041	-	27,002	-	27,002
64	9,419,381	1,657,585	1,657,585	-	22,574	-	22,574
65	8,348,603	1,473,637	1,473,637	-	18,756	-	18,756
66	7,394,897	1,302,041	1,302,041	-	15,488	-	15,488
67	6,553,504	1,143,139	1,143,139	-	12,708	-	12,708
68	5,818,978	997,102	997,102	-	10,359	-	10,359
69	5,185,328	863,851	863,851	-	8,388	-	8,388
70	4,646,230	743,023	743,023	-	6,743	-	6,743
71	4,195,303	634,192	634,192	-	5,379	-	5,379
72	3,826,170	536,618	536,618	-	4,253	-	4,253
73	3,532,782	449,708	449,708	-	3,331	-	3,331
74	3,309,289	372,836	372,836	-	2,581	-	2,581
75	3,150,089	305,382	305,382	-	1,976	-	1,976
76	3,049,837	246,753	246,753	-	1,492	-	1,492
77	3,003,437	196,414	196,414	-	1,110	-	1,110
78	3,005,997	153,788	153,788	-	812	-	812
79	3,052,886	118,256	118,256	-	584	-	584
80	3,139,796	89,197	89,197	-	411	-	411

### 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 Plan Members).

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 current Long-Term Expected Rate of Return on Plan Assets assumption. The PV of the Unfunded Portion of Benefit Payments are determined using the High-Quality Municipal Bond Rate assumption 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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