

GASB 67/68 Report  
For Use in Financial Statement Reporting

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NILES POLICE  
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 POLICE 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***



# TABLE OF CONTENTS

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<b>ACTUARIAL CERTIFICATION .....</b>	<b>1</b>
<b>PLAN FIDUCIARY NET POSITION .....</b>	<b>2</b>
Statement of Plan Fiduciary Net Position .....	3
Statement of Changes in Plan Fiduciary Net Position .....	4
<b>ACTUARIAL PENSION LIABILITY INFORMATION .....</b>	<b>5</b>
Statement of Total Pension Liability .....	6
Statement of Changes in Total Pension Liability .....	7
Statement of Changes in Net Pension Liability .....	8
Deferred Outflows and Inflows of Resources .....	9
Deferred Outflows and Inflows of Resources – Detail .....	10
Pension Expense Development .....	11
<b>ACTUARIAL ASSUMPTIONS INFORMATION .....</b>	<b>12</b>
Statement of Significant Actuarial Assumptions .....	13
Assumption Changes .....	13
Notes on Actuarial Assumptions .....	15
Postemployment Benefit Changes .....	16
Expected Return on Pension Plan Investments .....	17
Municipal Bond Rate .....	18
Discount Rate .....	18
Sensitivity of the Discount Rate .....	19
<b>PARTICIPANT DATA .....</b>	<b>20</b>
Participant Demographic Data .....	21
Expected Future Working Lifetime .....	21
<b>FUNDING POLICY .....</b>	<b>22</b>
Components of the Actuarially Determined Contribution .....	23
Formal Funding Policy .....	23
Informal Funding Policy .....	23
Funding Policy – Other Considerations .....	25
<b>SCHEDULES OF REQUIRED SUPPLEMENTARY INFORMATION .....</b>	<b>26</b>
Schedule of Changes in the Net Pension Liability .....	27
Schedule of Total Pension Liability and Related Ratio .....	28
Schedule of Contributions .....	29
Notes to Schedule of Contributions .....	29

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# TABLE OF CONTENTS

---

<b>GASB METHODS AND PROCEDURES</b> .....	<b>30</b>
GASB Methods and Procedures .....	31
<b>SUPPLEMENTARY TABLES</b> .....	<b>32</b>
GASB Projections – Summary and Procedure .....	33
GASB Projections – Limitations .....	34
Projection of Contributions – Years 1 to 30 .....	35
Projection of Contributions – Years 31 to 60 .....	36
Projection of Contributions – Years 61 to 80 .....	37
Notes to Projection of Contributions .....	37
Projection of the Pension Plan’s Fiduciary Net Position – Years 1 to 30.....	38
Projection of the Pension Plan’s Fiduciary Net Position – Years 31 to 60.....	39
Projection of the Pension Plan’s Fiduciary Net Position – Years 61 to 80.....	40
Notes to Projection of the Pension Plan’s Fiduciary Net Position.....	40
Actuarial Present Value of Projected Benefit Payments – Years 1 to 30.....	41
Actuarial Present Value of Projected Benefit Payments – Years 31 to 60.....	42
Actuarial Present Value of Projected Benefit Payments – Years 61 to 80.....	43
Notes to the Actuarial Present Value of Projected Benefit Payments.....	43



## 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 Police 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 Police 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 Police 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	\$ 831,707	\$ 821,530
Total cash	<u>831,707</u>	<u>821,530</u>
Receivables:		
Investment Income - Accrued Interest	99,999	90,564
Other	10,119	16,203
Total Receivables	<u>110,117</u>	<u>106,767</u>
Investments:		
Fixed Income	13,609,356	11,896,512
Mutual Funds	17,956,153	21,806,421
Total Investments	<u>31,565,509</u>	<u>33,702,933</u>
Total Assets	<u>32,507,333</u>	<u>34,631,230</u>
<b>Liabilities</b>		
Payables:		
Expenses Due/Unpaid	9,724	5,777
Total Liabilities	<u>9,724</u>	<u>5,777</u>
<b>Plan Fiduciary Net Position</b>	<u>\$ 32,497,609</u>	<u>\$ 34,625,453</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	\$ 3,964,661
Members	<u>544,996</u>
Total Contributions	<u>4,509,657</u>
Investment Income	
Net Appreciation in Fair Value of Investments	870,516
Interest and Dividends	1,427,795
Less Investment Expense	<u>(52,159)</u>
Net Investment Income	<u>2,246,152</u>
Total Additions	<u>6,755,809</u>
<b>Deductions</b>	
Benefit Payments and Refunds of Member Contributions	4,560,491
Administrative Expense	<u>67,474</u>
Total Deductions	<u>4,627,965</u>
Net Increase in Net Position	<u>2,127,844</u>
<b>Plan Fiduciary Net Position</b>	
Beginning of Year	<u>32,497,609</u>
End of Year	<u>\$ 34,625,453</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	\$ 28,302,300	\$ 25,160,564
Inactive Employees		
Terminated Employees - Vested	-	1,185,338
Retired Employees	49,322,583	53,048,095
Disabled Employees	2,433,761	3,847,270
Other Beneficiaries	4,917,223	4,708,276
Total Inactive Employees	<u>56,673,567</u>	<u>62,788,979</u>
Total Pension Liability	<u>\$ 84,975,867</u>	<u>\$ 87,949,543</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	\$ 1,278,797
Interest	5,788,694
Changes of Benefit Terms	-
Differences Between Expected and Actual Experience	1,310,613
Changes in Assumptions	(843,937)
Benefit Payments and Refunds	<u>(4,560,491)</u>
Net Change in Total Pension Liability	2,973,676
Total Pension Liability - Beginning	<u>84,975,867</u>
Total Pension Liability - Ending (a)	<u>\$ 87,949,543</u>
Plan Fiduciary Net Position - Ending (b)	<u>\$ 34,625,453</u>
<b>Employer's Net Pension Liability - Ending (a) - (b)</b>	<u>\$ 53,324,090</u>
Plan Fiduciary Net Position as a Percentage of the Total Pension Liability	39%
Covered-Employee Payroll	\$ 5,391,932
Employer's Net Pension Liability as a Percentage of Employee Payroll	989%

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 rResources.

	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>\$ 84,975,867</u>	<u>\$ 32,497,609</u>	<u>\$ 52,478,258</u>
<b>Changes for the year:</b>			
Service Cost	1,278,797	-	1,278,797
Interest	5,788,694	-	5,788,694
Actuarial Experience	1,310,613	-	1,310,613
Assumptions Changes	(843,937)	-	(843,937)
Plan Changes	-	-	-
Contributions - Employer	-	3,964,661	(3,964,661)
Contributions - Employee	-	544,996	(544,996)
Contributions - Other	-	-	-
Net Investment Income	-	2,246,152	(2,246,152)
Benefit payments, including refunds	(4,560,491)	(4,560,491)	-
Administrative Expense	-	(67,474)	67,474
<b>Net Changes</b>	<u>2,973,676</u>	<u>2,127,844</u>	<u>845,832</u>
<b>Balances Ending at 04/30/19</b>	<u>\$ 87,949,543</u>	<u>\$ 34,625,453</u>	<u>\$ 53,324,090</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	\$ 2,912,872	\$ -
Changes of Assumptions	2,572,946	1,416,290
Net Difference Between Projected and Actual		
Earnings on Pension Plan Investments	445,125	309,667
Contributions Subsequent to the Measurement Date*	-	-
Total	<u>\$ 5,930,943</u>	<u>\$ 1,725,957</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	\$ 1,496,505
2021	989,950
2022	702,176
2023	793,216
2024	223,139
Thereafter	-



**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	\$ 24,540	5.00	\$ 4,908	\$ 19,632
Change in Assumptions (Gain)/Loss	4/30/2019	5.93	(843,937)	5.93	(142,317)	(701,620)
Actuarial (Gain)/Loss	4/30/2019	5.93	1,310,613	5.93	221,014	1,089,599
Asset (Gain)/Loss	4/30/2018	5.00	60,999	4.00	12,200	36,599
Change in Assumptions (Gain)/Loss	4/30/2018	6.20	2,556,871	5.20	412,399	1,732,073
Actuarial (Gain)/Loss	4/30/2018	6.20	2,091,619	5.20	337,358	1,416,903
Asset (Gain)/Loss	4/30/2017	5.00	(774,172)	3.00	(154,835)	(309,667)
Change in Assumptions (Gain)/Loss	4/30/2017	6.28	(1,368,337)	4.28	(217,889)	(714,670)
Actuarial (Gain)/Loss	4/30/2017	6.28	467,881	4.28	74,504	244,369
Asset (Gain)/Loss	4/30/2016	5.00	1,944,478	2.00	388,896	388,894
Change in Assumptions (Gain)/Loss	4/30/2016	5.79	2,719,929	2.79	469,764	840,873
Actuarial (Gain)/Loss	4/30/2016	5.79	524,021	2.79	90,505	162,001
<b>Total</b>			<b>\$ 8,714,505</b>		<b>\$ 1,496,507</b>	<b>\$ 4,204,986</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	\$ 1,278,797
Interest	5,788,694
Plan Changes	-
Contributions - Employee	(544,996)
Contributions - Other	-
Expected Investment Income	(2,270,692)
Administrative Expense	67,474
Other Changes	-
Initial Pension Expense/(Income)	<u>\$ 4,319,277</u>
Recognition of Outflow/(Inflow) of Resources due to Liabilities	1,245,338
Recognition of Outflow/(Inflow) of Resources due to Assets	251,169
<b>Total Pension Expense/(Income)</b>	<u><b>\$ 5,815,784</b></u>



## ACTUARIAL ASSUMPTIONS INFORMATION

Statement of Significant Actuarial Assumptions  
Assumption Changes  
Notes on Actuarial Assumptions  
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	3.25% - 12.75%
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 Police Retirement Rates Capped at age 65
Disability Rates	L&A 2016 Illinois Police Disability Rates
Termination Rates	L&A 2016 Illinois Police 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	3.75%
1	12.75%	9	6.25%
2	7.50%	10	3.75%
3	7.50%	15	3.75%
4	7.50%	20	3.75%
5	3.75%	25	3.25%
6	3.75%	30	3.25%
7	3.75%	35	3.25%

### 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 Police 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 Police Officers.



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## **POSTEMPLOYMENT BENEFIT CHANGES**

Eligibility for postemployment benefit increases is determined based on the Illinois Pension code. Tier 1 Police retirees are provided with an annual 3.0% increase in retirement benefits by statute when eligible. Tier 2 Police 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 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 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 earlier 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	\$65,146,673	\$53,324,090	\$43,642,808

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 Fiduciary 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	61	63
Inactive Plan Members Entitled to But Not Yet Receiving Benefits	0	1
Active Plan Members	<u>55</u>	<u>51</u>
Total	<u>116</u>	<u>115</u>
Payroll of Active Plan Members	<u>\$ 5,748,602</u>	<u>\$ 5,391,932</u>

\*Payroll of Active Plan Members for the prior year includes assumed 2.50% COLA increases for all active members, in anticipation of retroactive pay increases upon contract settlement.

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	13.08	13.38
Inactive Plan Members	0.00	0.00
Total	6.20	5.93

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 Contribution  
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	\$3,964,661	\$3,963,779	100.02%	\$5,391,932	73.53%
4/30/2018	\$3,674,756	\$3,674,104	100.02%	\$5,908,704	62.19%
4/30/2017	\$3,194,848	\$3,194,848	100.00%	\$5,708,893	55.96%
4/30/2016	\$3,256,499	\$3,256,499	100.00%	\$5,343,321	60.95%
4/30/2015	\$3,185,626	\$3,185,626	100.00%	\$5,085,118	62.65%

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	\$ 1,278,797	\$ 1,195,137	\$ 1,056,279	\$ 887,283	\$ 910,745					
Interest	5,788,694	5,317,721	5,406,770	5,035,262	4,897,504					
Changes of Benefit Terms	-	-	-	-	-					
Differences Between Expected and Actual Experience	1,310,613	2,091,619	467,881	524,021	-					
Changes in Assumptions	(843,937)	2,556,871	(1,368,337)	2,719,929	-					
Benefit Payments and Refunds	(4,560,491)	(4,305,856)	(4,036,707)	(4,047,778)	(3,768,508)					
<b>Net Change in Total Pension Liability</b>	<u>2,973,676</u>	<u>6,855,492</u>	<u>1,525,885</u>	<u>5,118,717</u>	<u>2,039,741</u>					
<b>Total Pension Liability - Beginning</b>	<u>84,975,867</u>	<u>78,120,375</u>	<u>76,594,490</u>	<u>71,475,773</u>	<u>69,436,032</u>					
<b>Total Pension Liability - Ending (a)</b>	<u>\$ 87,949,543</u>	<u>\$ 84,975,867</u>	<u>\$ 78,120,375</u>	<u>\$ 76,594,490</u>	<u>\$ 71,475,773</u>					
<b>Plan Fiduciary Net Position</b>										
Contributions - Employer	\$ 3,964,661	\$ 3,674,756	\$ 3,194,848	\$ 3,256,499	\$ 3,185,626					
Contributions - Members	544,996	546,220	552,883	593,810	508,890					
Net Investment Income	2,246,152	2,145,866	2,797,471	94,186	954,092					
Benefit Payments and Refunds	(4,560,491)	(4,305,856)	(4,036,707)	(4,047,778)	(3,768,508)					
Administrative Expense	(67,474)	(90,667)	(66,545)	(59,227)	(40,798)					
<b>Net Change in Plan Fiduciary Net Position</b>	<u>2,127,844</u>	<u>1,970,318</u>	<u>2,441,950</u>	<u>(162,511)</u>	<u>839,302</u>					
<b>Plan Fiduciary Net Position - Beginning</b>	<u>32,497,609</u>	<u>30,527,291</u>	<u>28,085,341</u>	<u>28,247,851</u>	<u>27,408,550</u>					
<b>Plan Fiduciary Net Position - Ending (b)</b>	<u>\$ 34,625,453</u>	<u>\$ 32,497,609</u>	<u>\$ 30,527,291</u>	<u>\$ 28,085,341</u>	<u>\$ 28,247,851</u>					
<b>Employer Net Pension Liability - Ending (a) - (b)</b>	<u>\$ 53,324,090</u>	<u>\$ 52,478,258</u>	<u>\$ 47,593,084</u>	<u>\$ 48,509,149</u>	<u>\$ 43,227,922</u>					

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>\$ 87,949,543</u>	<u>\$ 84,975,867</u>	<u>\$ 78,120,375</u>	<u>\$ 76,594,490</u>	<u>\$ 71,475,773</u>					
<b>Plan Fiduciary Net Position - Ending (b)</b>	<u>\$ 34,625,453</u>	<u>\$ 32,497,609</u>	<u>\$ 30,527,291</u>	<u>\$ 28,085,341</u>	<u>\$ 28,247,851</u>					
<b>Employer Net Pension Liability - Ending (a) - (b)</b>	<u>\$ 53,324,090</u>	<u>\$ 52,478,258</u>	<u>\$ 47,593,084</u>	<u>\$ 48,509,149</u>	<u>\$ 43,227,922</u>					
<b>Plan Fiduciary Net Position as a Percentage of the Total Pension Liability</b>	39.37%	38.24%	39.08%	36.67%	39.52%					
<b>Covered-Employee Payroll</b>	\$ 5,391,932	\$ 5,908,704	\$ 5,708,893	\$ 5,343,321	\$ 5,085,118					
<b>Employer Net Pension Liability as a Percentage of Covered-Employee Payroll</b>	988.96%	888.15%	833.67%	907.85%	850.09%					

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	\$ 3,963,779	\$ 3,674,104	\$ 3,194,848	\$ 3,256,499	\$ 3,185,626					
Contributions in Relation to the Actuarially Determined Contribution	<u>3,964,661</u>	<u>3,674,756</u>	<u>3,194,848</u>	<u>3,256,499</u>	<u>3,185,626</u>					
Contribution Deficiency (excess)	<u>\$ (882)</u>	<u>\$ (652)</u>	<u>\$ -</u>	<u>\$ -</u>	<u>\$ -</u>					
Covered-Employee Payroll	\$ 5,391,932	\$ 5,908,704	\$ 5,708,893	\$ 5,343,321	\$ 5,085,118					
Contributions as a Percentage of Covered-Employee Payroll	73.5%	62.2%	56.0%	60.9%	62.6%					

## 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	3.25% - 7.50%
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 Police Retirement Rates Capped at age 65
Termination Rates	L&A 2016 Illinois Police Termination Rates
Disability Rates	L&A 2016 Illinois Police Disability Rates



# GASB METHODS AND PROCEDURES

GASB Methods and Procedures  
Methodology for Deferred Outflows and Inflows

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**GASB METHODS AND PROCEDURES**

	<u>Statement 67</u> <u>Pension Fund Financials</u>	<u>Statement 68</u> <u>Employer Financials</u>
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	5.93 Years	5.93 Years
Changes in Assumptions	5.93 Years	5.93 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

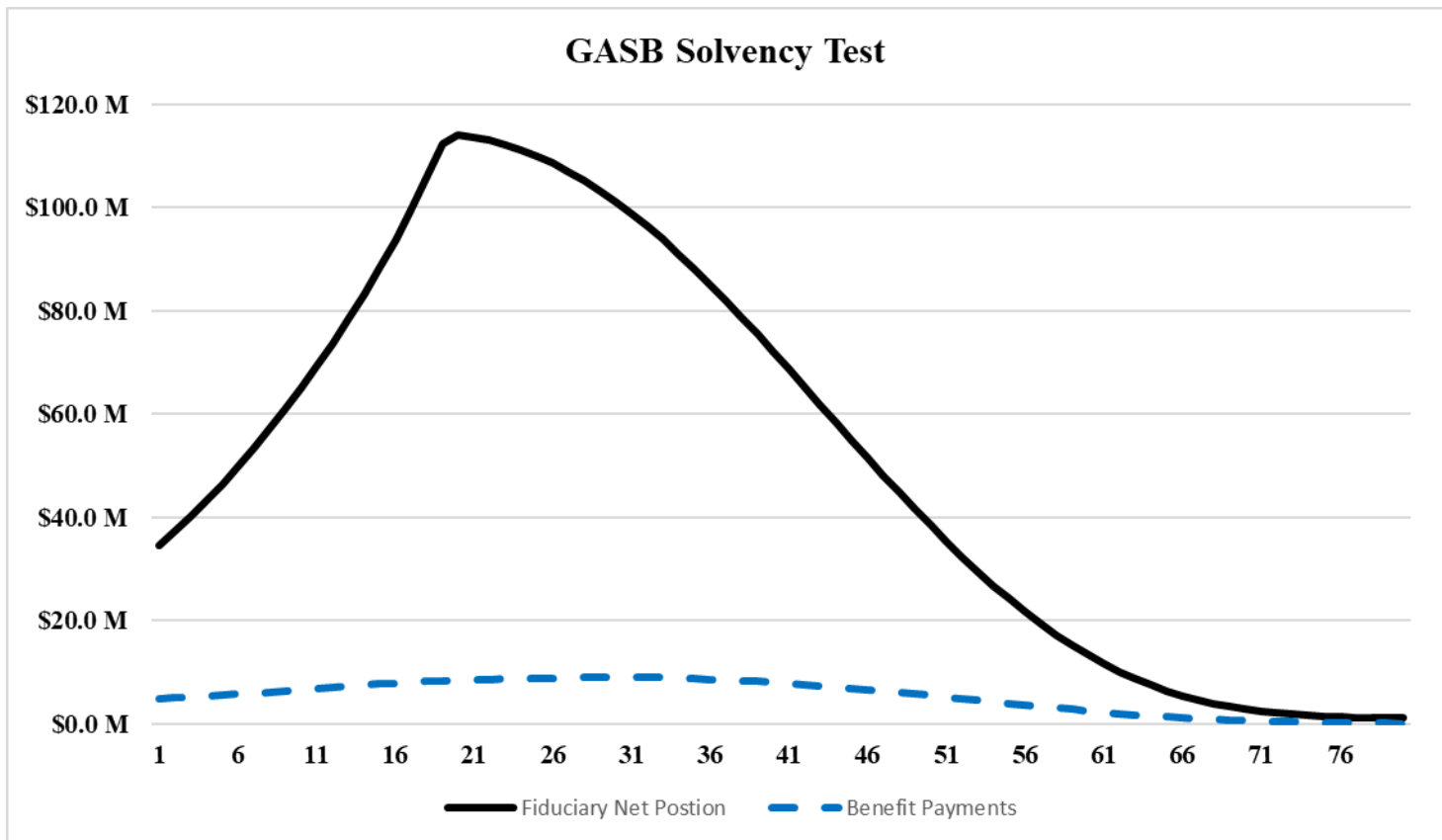
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## GASB PROJECTIONS – SUMMARY AND PROCEDURE

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	\$ 5,390,789	\$ -	\$ 5,390,789	\$ 534,227	\$ 4,523,055	\$ -	\$ 5,057,282
2	5,392,345	187,122	5,579,467	534,381	4,775,933	-	5,310,315
3	5,372,148	402,600	5,774,748	532,380	4,917,343	-	5,449,723
4	5,337,322	639,542	5,976,864	528,929	5,060,533	-	5,589,462
5	5,284,433	901,621	6,186,054	523,687	5,207,721	-	5,731,409
6	5,142,594	1,259,972	6,402,566	509,631	5,357,546	-	5,867,177
7	4,975,720	1,650,936	6,626,656	493,094	5,498,140	-	5,991,234
8	4,800,942	2,057,647	6,858,589	475,773	5,640,386	-	6,116,159
9	4,575,450	2,523,190	7,098,640	453,427	5,788,382	-	6,241,809
10	4,353,973	2,993,119	7,347,092	431,479	5,934,910	-	6,366,389
11	4,106,738	3,497,502	7,604,240	406,978	6,091,056	-	6,498,033
12	3,868,225	4,002,164	7,870,389	383,341	6,250,449	-	6,633,790
13	3,592,178	4,553,674	8,145,852	355,985	6,418,745	-	6,774,730
14	3,319,172	5,111,785	8,430,957	328,930	6,586,796	-	6,915,726
15	3,077,129	5,648,912	8,726,041	304,943	6,764,140	-	7,069,084
16	2,822,115	6,209,337	9,031,452	279,672	6,953,087	-	7,232,759
17	2,584,766	6,762,787	9,347,553	256,150	7,147,966	-	7,404,117
18	2,364,195	7,310,522	9,674,717	234,292	7,355,529	-	7,589,821
19	2,163,607	7,849,725	10,013,332	214,413	2,176,871	-	2,391,284
20	1,990,107	8,373,692	10,363,799	197,220	153,311	-	350,531
21	1,823,933	8,902,599	10,726,532	180,752	129,955	-	310,707
22	1,656,793	9,445,168	11,101,961	164,188	107,155	-	271,343
23	1,496,623	9,993,906	11,490,529	148,315	84,692	-	233,007
24	1,358,832	10,533,866	11,892,698	134,660	67,024	-	201,684
25	1,197,674	11,111,268	12,308,942	118,689	52,156	-	170,845
26	1,064,737	11,675,018	12,739,755	105,515	39,347	-	144,862
27	934,005	12,251,641	13,185,646	92,560	29,493	-	122,053
28	796,657	12,850,487	13,647,144	78,949	20,050	-	98,999
29	688,427	13,436,367	14,124,794	68,223	12,645	-	80,868
30	575,232	14,043,930	14,619,162	57,005	9,300	-	66,305

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	\$ 464,003	\$ 14,666,830	\$ 15,130,833	\$ 45,983	\$ 5,476	\$ -	\$ 51,459
32	365,141	15,295,271	15,660,412	36,185	2,213	-	38,398
33	281,891	15,926,635	16,208,526	27,935	1,105	-	29,040
34	202,541	16,573,284	16,775,825	20,072	205	-	20,277
35	154,362	17,208,616	17,362,978	15,297	114	-	15,411
36	109,834	17,860,849	17,970,683	10,885	56	-	10,941
37	71,243	18,528,414	18,599,657	7,060	117	-	7,177
38	47,386	19,203,259	19,250,645	4,696	-	-	4,613
39	29,295	19,895,122	19,924,417	2,903	-	-	2,860
40	15,654	20,606,118	20,621,772	1,551	-	-	1,463
41	6,214	21,337,320	21,343,534	616	-	-	598
42	-	22,090,557	22,090,557	-	-	-	-
43	-	22,863,727	22,863,727	-	-	-	-
44	-	23,663,957	23,663,957	-	-	-	-
45	-	24,492,196	24,492,196	-	-	-	-
46	-	25,349,423	25,349,423	-	-	-	-
47	-	26,236,653	26,236,653	-	-	-	-
48	-	27,154,935	27,154,935	-	-	-	-
49	-	28,105,358	28,105,358	-	-	-	-
50	-	29,089,046	29,089,046	-	-	-	-
51	-	30,107,162	30,107,162	-	-	-	-
52	-	31,160,913	31,160,913	-	-	-	-
53	-	32,251,545	32,251,545	-	-	-	-
54	-	33,380,349	33,380,349	-	-	-	-
55	-	34,548,661	34,548,661	-	-	-	-
56	-	35,757,864	35,757,864	-	-	-	-
57	-	37,009,390	37,009,390	-	-	-	-
58	-	38,304,718	38,304,718	-	-	-	-
59	-	39,645,383	39,645,383	-	-	-	-
60	-	41,032,972	41,032,972	-	-	-	-

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	\$ -	\$ 42,469,126	\$ 42,469,126	\$ -	\$ -	\$ -	\$ -
62	-	43,955,545	43,955,545	-	-	-	-
63	-	45,493,989	45,493,989	-	-	-	-
64	-	47,086,279	47,086,279	-	-	-	-
65	-	48,734,299	48,734,299	-	-	-	-
66	-	50,439,999	50,439,999	-	-	-	-
67	-	52,205,399	52,205,399	-	-	-	-
68	-	54,032,588	54,032,588	-	-	-	-
69	-	55,923,729	55,923,729	-	-	-	-
70	-	57,881,059	57,881,059	-	-	-	-
71	-	59,906,896	59,906,896	-	-	-	-
72	-	62,003,638	62,003,638	-	-	-	-
73	-	64,173,765	64,173,765	-	-	-	-
74	-	66,419,847	66,419,847	-	-	-	-
75	-	68,744,541	68,744,541	-	-	-	-
76	-	71,150,600	71,150,600	-	-	-	-
77	-	73,640,871	73,640,871	-	-	-	-
78	-	76,218,302	76,218,302	-	-	-	-
79	-	78,885,942	78,885,942	-	-	-	-
80	-	81,646,950	81,646,950	-	-	-	-

**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.



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## 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	\$ 34,625,453	\$ 5,057,282	\$ 4,842,310	\$ 62,520	\$ 2,429,118	\$ 37,207,022
2	37,207,022	5,310,315	4,983,859	64,083	2,613,675	40,083,069
3	40,083,069	5,449,723	5,121,368	65,685	2,815,008	43,160,747
4	43,160,747	5,589,462	5,285,447	67,327	3,029,536	46,426,971
5	46,426,971	5,731,409	5,561,409	69,011	3,253,423	49,781,383
6	49,781,383	5,867,177	5,753,132	70,736	3,486,213	53,310,904
7	53,310,904	5,991,234	5,944,350	72,504	3,730,867	57,016,151
8	57,016,151	6,116,159	6,156,656	74,317	3,987,112	60,888,449
9	60,888,449	6,241,809	6,359,296	76,175	4,255,413	64,950,201
10	64,950,201	6,366,389	6,602,169	78,079	4,535,529	69,171,870
11	69,171,870	6,498,033	6,828,990	80,031	4,827,646	73,588,529
12	73,588,529	6,633,790	7,059,549	82,032	5,133,424	78,214,162
13	78,214,162	6,774,730	7,283,030	84,083	5,454,258	83,076,037
14	83,076,037	6,915,726	7,479,045	86,185	5,792,590	88,219,122
15	88,219,122	7,069,084	7,675,134	88,340	6,151,035	93,675,768
16	93,675,768	7,232,759	7,853,873	90,548	6,532,396	99,496,501
17	99,496,501	7,404,117	8,025,274	92,812	6,939,766	105,722,299
18	105,722,299	7,589,821	8,179,287	95,132	7,376,600	112,414,301
19	112,414,301	2,391,284	8,300,387	97,510	7,658,770	114,066,457
20	114,066,457	350,531	8,418,093	99,948	7,698,789	113,597,736
21	113,597,736	310,707	8,518,121	102,447	7,660,996	112,948,871
22	112,948,871	271,343	8,614,622	105,008	7,610,731	112,111,316
23	112,111,316	233,007	8,699,976	107,633	7,547,681	111,084,395
24	111,084,395	201,684	8,758,335	110,324	7,472,564	109,889,984
25	109,889,984	170,845	8,819,891	113,082	7,385,624	108,513,480
26	108,513,480	144,862	8,885,103	115,909	7,285,978	106,943,309
27	106,943,309	122,053	8,933,628	118,807	7,173,468	105,186,396
28	105,186,396	98,999	8,953,771	121,777	7,048,868	103,258,715
29	103,258,715	80,868	8,994,297	124,821	6,911,771	101,132,236
30	101,132,236	66,305	8,981,883	127,942	6,762,733	98,851,450

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	\$ 98,851,450	\$ 51,459	\$ 8,971,098	\$ 131,141	\$ 6,602,824	\$ 96,403,494
32	96,403,494	38,398	8,948,727	134,419	6,431,678	93,790,425
33	93,790,425	29,040	8,906,114	137,779	6,249,810	91,025,382
34	91,025,382	20,277	8,831,948	141,224	6,058,425	88,130,912
35	88,130,912	15,411	8,746,897	144,755	5,858,495	85,113,167
36	85,113,167	10,941	8,647,609	148,373	5,650,445	81,978,570
37	81,978,570	7,177	8,527,445	152,083	5,434,968	78,741,187
38	78,741,187	4,613	8,376,520	149,644	5,213,629	75,433,265
39	75,433,265	2,860	8,209,718	143,550	4,988,064	72,070,921
40	72,070,921	1,463	8,027,031	137,339	4,759,263	68,667,277
41	68,667,277	598	7,829,089	131,040	4,528,126	65,235,872
42	65,235,872	-	7,613,988	124,676	4,295,657	61,792,839
43	61,792,839	-	7,386,558	118,275	4,062,830	58,350,836
44	58,350,836	-	7,147,642	111,864	3,830,476	54,921,805
45	54,921,805	-	6,897,770	105,467	3,599,413	51,517,981
46	51,517,981	-	6,637,247	99,105	3,370,486	48,152,116
47	48,152,116	-	6,366,573	92,802	3,144,570	44,837,312
48	44,837,312	-	6,086,400	86,581	2,922,557	41,586,888
49	41,586,888	-	5,797,820	80,468	2,705,342	38,413,941
50	38,413,941	-	5,501,922	74,488	2,493,802	35,331,333
51	35,331,333	-	5,200,213	68,663	2,288,783	32,351,240
52	32,351,240	-	4,894,359	63,018	2,091,079	29,484,941
53	29,484,941	-	4,585,905	57,575	1,901,424	26,742,885
54	26,742,885	-	4,276,610	52,353	1,720,488	24,134,410
55	24,134,410	-	3,968,379	47,371	1,548,857	21,667,517
56	21,667,517	-	3,662,958	42,646	1,387,030	19,348,944
57	19,348,944	-	3,362,237	38,190	1,235,411	17,183,928
58	17,183,928	-	3,068,326	34,015	1,094,293	15,175,880
59	15,175,880	-	2,782,803	30,130	963,859	13,326,806
60	13,326,806	-	2,507,424	26,538	844,188	11,637,031

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.



**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	\$ 11,637,031	\$ -	\$ 2,244,419	\$ 23,244	\$ 735,224	\$ 10,104,593
62	10,104,593	-	1,994,936	20,243	636,790	8,726,204
63	8,726,204	-	1,760,195	17,533	548,614	7,497,089
64	7,497,089	-	1,541,521	15,105	470,314	6,410,777
65	6,410,777	-	1,339,420	12,949	401,421	5,459,829
66	5,459,829	-	1,154,401	11,053	341,397	4,635,773
67	4,635,773	-	986,886	9,400	289,634	3,929,121
68	3,929,121	-	836,637	7,975	245,477	3,329,987
69	3,329,987	-	703,214	6,759	208,250	2,828,264
70	2,828,264	-	586,050	5,734	177,266	2,413,746
71	2,413,746	-	484,220	4,881	151,844	2,076,489
72	2,076,489	-	396,527	4,181	131,329	1,807,111
73	1,807,111	-	321,751	3,616	115,110	1,596,854
74	1,596,854	-	258,544	3,169	102,620	1,437,760
75	1,437,760	-	205,577	2,825	93,349	1,322,707
76	1,322,707	-	161,623	2,570	86,843	1,245,356
77	1,245,356	-	125,511	2,391	82,698	1,200,152
78	1,200,152	-	96,171	2,277	80,565	1,182,269
79	1,182,269	-	72,620	2,218	80,140	1,187,571
80	1,187,571	-	53,959	2,207	81,164	1,212,569

**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 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%)
1	\$ 34,625,453	\$ 4,842,310	\$ 4,842,310	\$ -	\$ 4,681,238	\$ -	\$ 4,681,238
2	37,207,022	4,983,859	4,983,859	-	4,502,877	-	4,502,877
3	40,083,069	5,121,368	5,121,368	-	4,324,407	-	4,324,407
4	43,160,747	5,285,447	5,285,447	-	4,170,984	-	4,170,984
5	46,426,971	5,561,409	5,561,409	-	4,101,643	-	4,101,643
6	49,781,383	5,753,132	5,753,132	-	3,965,460	-	3,965,460
7	53,310,904	5,944,350	5,944,350	-	3,829,216	-	3,829,216
8	57,016,151	6,156,656	6,156,656	-	3,706,522	-	3,706,522
9	60,888,449	6,359,296	6,359,296	-	3,578,054	-	3,578,054
10	64,950,201	6,602,169	6,602,169	-	3,471,688	-	3,471,688
11	69,171,870	6,828,990	6,828,990	-	3,356,038	-	3,356,038
12	73,588,529	7,059,549	7,059,549	-	3,242,377	-	3,242,377
13	78,214,162	7,283,030	7,283,030	-	3,126,186	-	3,126,186
14	83,076,037	7,479,045	7,479,045	-	3,000,303	-	3,000,303
15	88,219,122	7,675,134	7,675,134	-	2,877,539	-	2,877,539
16	93,675,768	7,853,873	7,853,873	-	2,751,917	-	2,751,917
17	99,496,501	8,025,274	8,025,274	-	2,628,013	-	2,628,013
18	105,722,299	8,179,287	8,179,287	-	2,503,222	-	2,503,222
19	112,414,301	8,300,387	8,300,387	-	2,374,097	-	2,374,097
20	114,066,457	8,418,093	8,418,093	-	2,250,246	-	2,250,246
21	113,597,736	8,518,121	8,518,121	-	2,128,023	-	2,128,023
22	112,948,871	8,614,622	8,614,622	-	2,011,338	-	2,011,338
23	112,111,316	8,699,976	8,699,976	-	1,898,380	-	1,898,380
24	111,084,395	8,758,335	8,758,335	-	1,786,088	-	1,786,088
25	109,889,984	8,819,891	8,819,891	-	1,680,973	-	1,680,973
26	108,513,480	8,885,103	8,885,103	-	1,582,618	-	1,582,618
27	106,943,309	8,933,628	8,933,628	-	1,487,160	-	1,487,160
28	105,186,396	8,953,771	8,953,771	-	1,393,003	-	1,393,003
29	103,258,715	8,994,297	8,994,297	-	1,307,765	-	1,307,765
30	101,132,236	8,981,883	8,981,883	-	1,220,523	-	1,220,523

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 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%)
31	\$ 98,851,450	\$ 8,971,098	\$ 8,971,098	\$ -	\$ 1,139,306	\$ -	\$ 1,139,306
32	96,403,494	8,948,727	8,948,727	-	1,062,117	-	1,062,117
33	93,790,425	8,906,114	8,906,114	-	987,906	-	987,906
34	91,025,382	8,831,948	8,831,948	-	915,588	-	915,588
35	88,130,912	8,746,897	8,746,897	-	847,449	-	847,449
36	85,113,167	8,647,609	8,647,609	-	783,018	-	783,018
37	81,978,570	8,527,445	8,527,445	-	721,624	-	721,624
38	78,741,187	8,376,520	8,376,520	-	662,479	-	662,479
39	75,433,265	8,209,718	8,209,718	-	606,810	-	606,810
40	72,070,921	8,027,031	8,027,031	-	554,493	-	554,493
41	68,667,277	7,829,089	7,829,089	-	505,438	-	505,438
42	65,235,872	7,613,988	7,613,988	-	459,394	-	459,394
43	61,792,839	7,386,558	7,386,558	-	416,516	-	416,516
44	58,350,836	7,147,642	7,147,642	-	376,676	-	376,676
45	54,921,805	6,897,770	6,897,770	-	339,727	-	339,727
46	51,517,981	6,637,247	6,637,247	-	305,510	-	305,510
47	48,152,116	6,366,573	6,366,573	-	273,880	-	273,880
48	44,837,312	6,086,400	6,086,400	-	244,698	-	244,698
49	41,586,888	5,797,820	5,797,820	-	217,847	-	217,847
50	38,413,941	5,501,922	5,501,922	-	193,205	-	193,205
51	35,331,333	5,200,213	5,200,213	-	170,663	-	170,663
52	32,351,240	4,894,359	4,894,359	-	150,117	-	150,117
53	29,484,941	4,585,905	4,585,905	-	131,455	-	131,455
54	26,742,885	4,276,610	4,276,610	-	114,569	-	114,569
55	24,134,410	3,968,379	3,968,379	-	99,357	-	99,357
56	21,667,517	3,662,958	3,662,958	-	85,710	-	85,710
57	19,348,944	3,362,237	3,362,237	-	73,527	-	73,527
58	17,183,928	3,068,326	3,068,326	-	62,710	-	62,710
59	15,175,880	2,782,803	2,782,803	-	53,153	-	53,153
60	13,326,806	2,507,424	2,507,424	-	44,760	-	44,760

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	\$ 11,637,031	\$ 2,244,419	\$ 2,244,419	\$ -	\$ 37,444	\$ -	\$ 37,444
62	10,104,593	1,994,936	1,994,936	-	31,105	-	31,105
63	8,726,204	1,760,195	1,760,195	-	25,649	-	25,649
64	7,497,089	1,541,521	1,541,521	-	20,993	-	20,993
65	6,410,777	1,339,420	1,339,420	-	17,048	-	17,048
66	5,459,829	1,154,401	1,154,401	-	13,732	-	13,732
67	4,635,773	986,886	986,886	-	10,971	-	10,971
68	3,929,121	836,637	836,637	-	8,692	-	8,692
69	3,329,987	703,214	703,214	-	6,828	-	6,828
70	2,828,264	586,050	586,050	-	5,318	-	5,318
71	2,413,746	484,220	484,220	-	4,107	-	4,107
72	2,076,489	396,527	396,527	-	3,143	-	3,143
73	1,807,111	321,751	321,751	-	2,383	-	2,383
74	1,596,854	258,544	258,544	-	1,790	-	1,790
75	1,437,760	205,577	205,577	-	1,330	-	1,330
76	1,322,707	161,623	161,623	-	977	-	977
77	1,245,356	125,511	125,511	-	709	-	709
78	1,200,152	96,171	96,171	-	508	-	508
79	1,182,269	72,620	72,620	-	358	-	358
80	1,187,571	53,959	53,959	-	249	-	249

**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.



# Lauterbach & Amen, LLP

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