### GASB 67/68 Report For Use in Financial Statement Reporting



# ALSIP POLICE PENSION FUND

Actuarial Valuation as of May 1, 2019

LAUTERBACH & AMEN, LLP



### Lauterbach & Amen, LLP

CERTIFIED PUBLIC ACCOUNTANTS

#### GASB 67: ALSIP POLICE PENSION FUND

Fiscal Year Ending: April 30, 2020 Actuarial Valuation Date: May 1, 2019 Utilizing Data as of April 30, 2019 Measurement Date: April 30, 2020

### GASB 68: VILLAGE OF ALSIP, ILLINOIS

Fiscal Year Ending: April 30, 2020 Actuarial Valuation Date: May 1, 2019 Utilizing Data as of April 30, 2019 Measurement Date: April 30, 2020

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### 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 the preparation of the required footnote disclosures.

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

The valuation results summarized in this report involve actuarial calculations that require assumptions about future events. The Village of Alsip, Illinois 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 Alsip Police Pension Fund or the Village of Alsip, Illinois and Lauterbach & Amen, LLP that impairs our objectivity.

Respectfully Submitted,

LAUTERBACH & AMEN, LLP

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

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### PLAN FIDUCIARY NET POSITION

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



#### STATEMENT OF PLAN FIDUCIARY NET POSITION

	4/30/2019	4/30/2020
Assets		
Cash and Cash Equivalents	\$ 336,892	\$ 4,264,683
Total Cash	336,892	4,264,683
Receivables:		
Investment Income - Accrued Interest	46,502	33,414
Total Receivables	46,502	33,414
Investments:		
Fixed Income	6,703,853	5,594,429
Certificates of Deposits	3,099,213	2,066,932
Mutual Funds	13,323,517	11,799,177
Total Investments	23,126,583	19,460,538
Total Assets	23,509,977	23,758,635
Liabilities		
Payables:		
Expenses Due/Unpaid	13,282	-
Total Liabilities	13,282	
Plan Fiduciary Net Position	\$ 23,496,695	\$ 23,758,635

The Plan Fiduciary Net Position shown above is intended to be in accordance with GAAP and the Governmental Accounting Standards Board. The Fair Value of Investments have been provided by the reporting entity, and the results are being audited by an independent Auditor. The level of the assets has been reviewed for reasonableness, but we make no representation as to the accuracy of the measurement of the Fair Value of Investments. The Statement of Plan Fiduciary Net Position for 2020 is based on audited financials.



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

		4/30/2020
Additions		_
Contributions		
Employer	\$	3,296,996
Members		424,369
Total Contributions	_	3,721,365
Investment Income		
Net Appreciation in Fair Value of Investments		(406,604)
Interest and Dividends		479,012
Less Investment Expense		(134,648)
Net Investment Income		(62,240)
Total Additions		3,659,125
Deductions		
Benefit Payments and Refunds of Member Contributions		3,391,154
Administrative Expense		6,031
Total Deductions		3,397,185
Net Increase in Net Position	_	261,940
Plan Fiduciary Net Position		
Beginning of Year		23,496,695
End of Year	\$	23,758,635

The changes in Plan Fiduciary Net Position shown above is intended to be in accordance with GAAP and the Governmental Accounting Standards Board. The Plan activity has been provided by the reporting entity, and the results are being audited by an independent Auditor. The cash flows have been reviewed for reasonableness, but we make no representation as to the accuracy of the measurement of the Fair Value of Investments. The Statement of Changes in Plan Fiduciary Net Position for 2020 is based on audited financials.



### **ACTUARIAL PENSION LIABILITY INFORMATION**

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



#### STATEMENT OF TOTAL PENSION LIABILITY

	4/30/2019	4/30/2020
Active Members	\$ 15,939,580	\$ 17,450,108
Inactive Members		
Terminated Members - Vested	925,962	992,215
Retired Members	42,453,297	45,047,799
Disabled Members	3,122,773	3,438,616
Other Beneficiaries	2,603,326	2,558,054
Total Inactive Members	49,105,358	52,036,684
Total Pension Liability	\$ 65,044,938	\$ 69,486,792

The Total Pension Liability ("TPL") shown above is dependent on several factors such as Plan Provisions and actuarial assumptions used in this report. In addition, the calculation of the TPL may be dependent on the Plan Fiduciary Net Position shown in the prior section of this report. Changes in the Plan Fiduciary Net Position due to any factor, including adjustments on final audit, could change the TPL. The dependence of the TPL on the Plan Fiduciary Net Position is due to the role of the Plan Fiduciary Net Position (and the Plan's Projected Fiduciary Net Position) on the determination of the Discount Rate used for the TPL.

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



#### STATEMENT OF CHANGES IN TOTAL PENSION LIABILITY

	4/30/2020
Changes in Total Pension Liability	
Service Cost	\$ 897,793
Interest	4,117,708
Changes of Benefit Terms	429,888
Differences Between Expected and Actual Experience	732,150
Change in Assumptions	1,655,469
Benefit Payments and Refunds	 (3,391,154)
Net Change in Total Pension Liability	4,441,854
Total Pension Liability - Beginning	 65,044,938
Total Pension Liability - Ending (a)	\$ 69,486,792
Plan Fiduciary Net Position - Ending (b)	\$ 23,758,635
Employer's Net Pension Liability - Ending (a) - (b)	\$ 45,728,157
Plan Fiduciary Net Position as a Percentage of the Total Pension Liability	34.19%
Covered-Employee Payroll	\$ 3,204,124
Employer's Net Pension Liability as a Percentage of Covered-Employee Payroll	1,427.17%

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

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

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



#### STATEMENT OF CHANGES IN NET PENSION LIABILITY

The table below illustrates the changes in Net Pension Liability ("NPL") from the prior Measurement Date to the current Measurement Date. Under Statement 68, the difference between the NPL from the prior Measurement Date to the current Measurement Date should be recognized as a component of Pension Expense, unless permitted to be recognized as a Deferred Outflow or Inflow of Resources.

	Increase (Decrease)						
	Total Pension Liability (a)	Plan Fiduciary Net Position (b)	Net Pension Liability (a) - (b)				
Balances Beginning at 05/01/2019	\$ 65,044,938	\$ 23,496,695	\$ 41,548,243				
Changes for the Year:							
Service Cost	897,793	-	897,793				
Interest	4,117,708	-	4,117,708				
Actuarial Experience	732,150	-	732,150				
Change in Assumptions	1,655,469	-	1,655,469				
Changes of Benefit Terms	429,888	-	429,888				
Contributions - Employer	-	3,296,996	(3,296,996)				
Contributions - Members	-	424,369	(424,369)				
Contributions - Other	-	-	-				
Net Investment Income	-	(62,240)	62,240				
Benefit Payments and Refunds	(3,391,154)	(3,391,154)	-				
Administrative Expense	-	(6,031)	6,031				
Net Changes	\$ 4,441,854	\$ 261,940	\$ 4,179,914				
Balances Ending at 04/30/2020	\$ 69,486,792	\$ 23,758,635	\$ 45,728,157				

The changes in Total Pension Liability shown above are described on the prior page. The Plan Fiduciary Net Position was detailed in the prior section of this report. The Employer's Net Pension Liability is the excess of the Total Pension Liability over the Plan Fiduciary Net Position.



#### **DEFERRED OUTFLOWS AND INFLOWS OF RESOURCES**

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

Deferred Outflows of Resources		Deferred Inflows of Resources			otal Deferred Amounts	
\$	1,681,111	\$	171,165	\$	1,509,946	
	4,659,916		132,778		4,527,138	
	1,328,460		77,007		1,251,453	
	-		-		-	
\$	7,669,487	\$	380,950	\$	7,288,537	
	of	of Resources  \$ 1,681,111 4,659,916  1,328,460 -	of Resources of I  \$ 1,681,111	of Resources         of Resources           \$ 1,681,111         \$ 171,165           4,659,916         132,778           1,328,460         77,007           -         -	of Resources         of Resources           \$ 1,681,111 \$ 171,165 \$ 4,659,916 \$ 132,778           1,328,460 77,007	

<sup>\*</sup>Contributions Subsequent to the Measurement Date may be recognized as a reduction to the Net Pension Liability. The amount is not known as of the date of this report. Subsequent to the Measurement Date, the following amounts will be recognized in Pension Expense in the upcoming years:

Year Ended	
April 30:	
2021	\$ 1,642,765
2022	1,719,768
2023	1,678,201
2024	1,232,408
2025	340,064
Thereafter	675,331



#### 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.

					4/30/2020	4/30/2020
	Date	Initial	Initial	Remaining	Expense	Deferred
Pension Expense Source	Established	Period	Balance	Period	Recognized	Balance
Asset Loss	4/30/2020	5.00	\$ 1,600,061	5.00	\$ 320,013 \$	1,280,048
Change in Assumptions Loss	4/30/2020	8.30	1,655,469	8.30	199,455	1,456,014
Actuarial Loss	4/30/2020	8.30	732,150	8.30	88,211	643,939
Asset Loss	4/30/2019	5.00	65,368	4.00	13,074	39,220
Actuarial Loss	4/30/2019	7.60	173,658	6.60	22,850	127,958
Asset Loss	4/30/2018	5.00	22,986	3.00	4,598	9,192
Change in Assumptions Loss	4/30/2018	7.05	3,964,677	5.05	562,366	2,277,579
Actuarial Loss	4/30/2018	7.05	202,242	5.05	28,687	116,181
Asset Gain	4/30/2017	5.00	(385,035)	2.00	(77,007)	(77,007)
Change in Assumptions Gain	4/30/2017	7.05	(306,922)	4.05	(43,536)	(132,778)
Actuarial Loss	4/30/2017	7.05	1,833,077	4.05	260,011	793,033
Asset Loss	4/30/2016	5.00	1,351,200	1.00	270,240	-
Change in Assumptions Loss	4/30/2016	7.86	2,545,778	3.86	323,891	926,323
Actuarial Gain	4/30/2016	7.86	 (470,405)	3.86	(59,848)	(171,165)
Total			\$ 12,984,304		\$ 1,913,005 \$	7,288,537

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



#### PENSION EXPENSE DEVELOPMENT

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

See below for the Pension Expense development:

		4/30/2020
Pension Expense/(Income) Under GASB 68		
Service Cost	\$	897,793
Interest		4,117,708
Changes of Benefit Terms		429,888
Contributions - Members		(424,369)
Contributions - Other		-
Expected Investment Income		(1,537,821)
Administrative Expense		6,031
Other Changes		-
Initial Pension Expense/(Income)	\$	3,489,230
Recognition of Outflow/(Inflow) of Resources Due to Liabilities	'	1,382,087
Recognition of Outflow/(Inflow) of Resources Due to Assets		530,918
Total Pension Expense/(Income)	\$	5,402,235



### **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



#### STATEMENT OF SIGNIFICANT ACTUARIAL ASSUMPTIONS

#### **Actuarial Assumptions (Economic)**

Discount Rate Used for the Total Pension Liability	6.50%
Expected Rate of Return on Investments	6.50%
High-Quality 20 Year Tax-Exempt G.O. Bond Rate	2.56%
Projected Individual Pay Increases	3.75% - 32.23%
Projected Total Payroll Increases	3.25%
Consumer Price Index (Urban)	2.25%
Inflation Rate	2.25%

#### **Actuarial Assumptions (Demographic)**

Mortality Rates\* Pub-2010 Adjusted for Plan Status, Demographics, and Illinois Public Pension Data, as Described

Retirement Rates 100% of L&A 2020 Illinois Police Retirement Rates Capped at Age 65

Termination Rates 100% of L&A 2020 Illinois Police Termination Rates

Disability Rates 100% of L&A 2020 Illinois Police Disability Rates

Marital Assumptions Active Members: 80%

Retiree & Disabled Members: 80%

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

#### **ASSUMPTION CHANGES**

The assumptions were changed from the prior year.

The High-Quality 20 Year Tax-Exempt General Obligation ("G.O.") Bond Rate assumption was changed from 3.79% to 2.56% for the current year. The underlying index used is The Bond Buyer 20-Bond G.O. Index as discussed in more detail later in this section. The choice of Index is unchanged from the prior year. The rate has been updated to the current Fiscal Year End based on changes in market conditions as

<sup>\*</sup>See the *Notes on Actuarial Assumptions* section of this report for further details on Mortality Rates.



reflected in the Index. The change was made to reflect our understanding of the requirements of GASB under Statement 67 and Statement 68.

The Discount Rate used in the determination of the Total Pension Liability remained constant at 6.50%. The Discount Rate is impacted by a couple of metrics. Any change in the underlying High-Quality 20 Year Tax Exempt G.O. Bond Rate will impact the blended Discount Rate.

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

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

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

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



#### NOTES ON ACTUARIAL ASSUMPTIONS

#### **Projected Individual Pay Increases**

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

Service	Rate	Service	Rate		
0	6.25%	8	3.75%		
1	6.10%	9	3.75%		
2	5.95%	10	3.75%		
3	9.39%	15	3.75%		
4	10.58%	20	3.75%		
5	32.23%	25	3.75%		
6	3.75%	30	3.75%		
7	3.75%	35	3.75%		

#### **Actuarial Assumptions (Demographic)**

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

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

Disabled Mortality follows the Sex Distinct Raw Rates as developed in the PubS-2010 Study for disabled participants. Mortality improvement uses MP-2019 Improvement Rates applied on a fully generational basis.

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

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



#### POSTEMPLOYMENT BENEFIT CHANGES

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

Eligibility for postemployment benefit increases is determined based on the Illinois Pension Code. Tier 1 Police retirees are provided with an annual increase of 3.00% of the current retirement benefits by statute when eligible. Tier 2 Police retirees are provided postemployment benefit increases based on the lesser of 3.00% of the original retirement benefits or one-half of the Consumer Price Index (Urban) for the prior September.

The CPI-U for September 1985 was 108.3. The CPI-U for September 2019 was 256.8. The average increase in the CPI-U for September 1985 through September 2019 was 2.58% (on a compounded basis).



#### EXPECTED RETURN ON PENSION PLAN INVESTMENTS

The Long-Term Expected Rate of Return is intended to represent the best estimate of future real rates of return and is shown for each of the major asset classes in the investment policy. The Expected Rates of Return shown below have been provided by the State of Illinois Department of Insurance Actuarial Experience Study dated September 26, 2012. The table below illustrates the best estimate of Long-Term Expected Real Rates of Return developed for each of the major asset classes, adjusted for expected inflation.

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

Long-Term Expected Real Rates of Return under GASB are expected to reflect the period of time that begins when a Plan Member begins to provide service to the employer and ends at the point when all benefits to the Plan Member have been paid. The rates provided above are intended to estimate those figures.

The Long-Term Inflation Expectation is 2.50% and is included in the Long-Term Expected Rates of Return. The Long-Term Inflation Expectation is from the same source as the Long-Term Expected Real Rates of Return, and is not necessarily reflective of the inflation measures used for other purposes in the report.

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



#### MUNICIPAL BOND RATE

The Municipal Bond Rate assumption is based on the Bond Buyer 20-Bond G.O. Index. The rate shown earlier in this section of the report is the April 30, 2020 rate. The 20-Bond G.O. Index is based on an average of certain general obligation municipal bonds maturing in 20 years and having an average rating equivalent of Moody's Aa2 and Standard & Poor's AA.

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

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

#### DISCOUNT RATE

The Discount Rate used in the determination of the Total Pension Liability is based on a combination of the Expected Rate of Return on Plan Investments and the Municipal Bond Rate.

Cash flow projections were used to determine the extent to which the Plan's Projected Fiduciary Net Position will be able to cover Projected Benefit Payments. To the extent that Projected Benefit Payments are covered by the Plan's Projected Fiduciary Net Position, the Expected Rate of Return on Plan Investments is used to determine the portion of the Net Pension Liability associated with those payments. To the extent that Projected Benefit Payments are not covered by the Plan's Projected Fiduciary Net Position, the Municipal Bond Rate is used to determine the portion of the Net Pension Liability associated with those payments.

Projected benefit payments are determined during the actuarial process based on the assumptions. More details on the assumptions are earlier in this section of the report. The expected contributions are based on the funding policy of the Plan. The funding policy is discussed in more detail in the *Funding Policy* section of this report.



#### SENSITIVITY OF THE DISCOUNT RATE

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

	1%	Current	1%
	Decrease	<b>Discount Rate</b>	Increase
	(5.50%)	(6.50%)	(7.50%)
Employer's Net Pension Liability	\$56,161,213	\$45,728,157	\$37,331,616

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

- 1. The duration of the Plan's Projected Benefit Payments. Younger Plans with benefit payments further in the future will be more sensitive to changes in the Discount Rate.
- 2. The Percent Funded of the Plan (ratio of the Plan Fiduciary Net Position to the Total Pension Liability). The higher the Percent Funded, the higher the sensitivity to the Discount Rate.



### PARTICIPANT DATA

Participant Demographic Data Expected Future Working Lifetime



#### PARTICIPANT DEMOGRAPHIC DATA

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

	4/30/2018 (FYE 2019)	4/30/2019 (FYE 2020)
Inactive Plan Members or Beneficiaries Currently Receiving Benefits	40	41
Inactive Plan Members Entitled to But Not Yet Receiving Benefits	2	2
Active Plan Members	40	43
Total	82	86
Payroll of Active Plan Members	\$ 3,351,889	\$ 3,590,612

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

#### EXPECTED FUTURE WORKING LIFETIME

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

	4/30/2018	4/30/2019
	(FYE 2019)	(FYE 2020)
Average Future Working Career (In Years)		
Active Plan Members	15.58	16.60
Inactive Plan Members	0.00	0.00
Total	7.60	8.30

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



#### COMPONENTS OF THE ACTUARIALLY DETERMINED CONTRIBUTION

The Actuarially Determined Contribution ("ADC") includes the determination of the Normal Cost Contribution for active Plan Members, as well as a provision for the payment towards Unfunded Liability.

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

Unfunded Liability is the excess of the Actuarial Accrued Liability over the Actuarial Value of Assets. The Actuarially Determined Contribution includes a payment towards Unfunded Liability existing at the Actuarial Valuation Date. The payment towards Unfunded Liability is set up as a level percent of payroll payment that is expected to increase during the payment period. The current Employer Contributions are being compared to the Actuarially Determined Contribution as developed in the May 1, 2018 Actuarial Valuation. The period of repayment as of that valuation is based on a layered amortization with new sources of Unfunded Liability paid off over 15 years.

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

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

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

#### FORMAL FUNDING POLICY

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

#### INFORMAL FUNDING POLICY

In determining the most appropriate Informal Funding Policy, GASB provides the following guidance in the Statement:



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

In our review of Informal Funding Policy, the following factors are considered and described herein:

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

#### Five-Year Contribution History of the Employer

Employer Contributions (under the Informal Funding Policy) should be limited to the average over the most recent five years. In determining the basis for the average, we reviewed three possibilities: (a) the average dollar contribution; (b) the average percent of pensionable pay; and (c) the average percent of the Actuarially Determined Contribution. Please see the table below for a summary of these values:

Fiscal		Most		Covered-	
Year	<b>Employer</b>	<b>Applicable</b>	% of	<b>Employee</b>	% of
End	Contributions	<b>ADC</b>	ADC	Payroll	<b>Payroll</b>
4/30/2020	\$3,296,996	\$3,390,059	97.25%	\$3,204,124	102.90%
4/30/2019	\$3,950,636	\$3,570,367	110.65%	\$3,103,268	127.31%
4/30/2018	\$2,677,597	\$3,299,096	81.16%	\$3,560,945	75.19%
4/30/2017	\$2,572,942	\$2,990,818	86.03%	\$3,724,025	69.09%
4/30/2016	\$2,439,154	\$2,333,349	104.53%	\$3,438,864	70.93%

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 fiveyear 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.

#### <u>Informal Funding Policy – Selected</u>

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

#### FUNDING POLICY – OTHER CONSIDERATIONS

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

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

The Actuarially Determined Contribution is determined annually based on the parameters previously discussed. The funding methods and procedures are assumed to continue into the future. The tax levy in the next December is assumed to be the Actuarially Determined Contribution. Funding is assumed to go into the Plan during the next full Fiscal Year.



## SCHEDULES OF REQUIRED SUPPLEMENTARY INFORMATION

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



### SCHEDULE OF CHANGES IN THE NET PENSION LIABILITY

	4/30/2020	4/30/2019	4/30/2018	4/30/2017	4/30/2016	4/30/2015	4/30/2014	4/30/2013	4/30/2012	4/30/2011
Total Pension Liability										
Service Cost	\$ 897,793	\$ 861,606	\$ 693,529	\$ 648,158	\$ 689,917	\$ 734,284				
Interest	4,117,708	4,003,122	3,917,662	3,714,215	3,471,181	3,368,025				
Changes of Benefit Terms	429,888	-	-	-	-	-				
Differences Between Expected and Actual Experience	732,150	173,658	202,242	1,833,077	(470,405)	-				
Change in Assumptions	1,655,469	-	3,964,677	(306,922)	2,545,778	-				
Benefit Payments and Refunds	(3,391,154)	(3,159,867)	(3,156,598)	(2,807,670)	(2,721,440)	(2,535,879)				
Net Change in Total Pension Liability	\$ 4,441,854	\$ 1,878,519	\$ 5,621,513	\$ 3,080,857	\$ 3,515,031	\$ 1,566,430				
Total Pension Liability - Beginning	65,044,938	63,166,419	57,544,906	54,464,049	50,949,018	49,382,588				
Total Pension Liability - Ending (a)	\$ 69,486,792	\$ 65,044,938	\$ 63,166,419	\$ 57,544,906	\$ 54,464,049	\$ 50,949,018				
Plan Fiduciary Net Position										
Contributions - Employer	\$ 3,296,996	\$ 3,950,636	\$ 2,677,597	\$ 2,572,942	\$ 2,439,154	\$ 2,214,723				
Contributions - Members	424,369	352,823	339,682	352,928	351,042	334,901				
Contributions - Other	-	-	-	49,537	-	77,450				
Net Investment Income	(62,240)	1,338,130	1,270,037	1,669,246	(68,814)	1,196,897				
Benefit Payments and Refunds	(3,391,154)	(3,159,867)	(3,156,598)	(2,807,670)	(2,721,440)	(2,535,879)				
Administrative Expense	(6,031)	(11,003)	(24,529)	(37,965)	(8,720)	(21,288)				
Prior Period Audit Adjustment			(109,595)	(50,630)						
Net Change in Plan Fiduciary Net Position	\$ 261,940	\$ 2,470,719	\$ 996,594	\$ 1,748,389	\$ (8,778)	\$ 1,266,804				
Plan Fiduciary Net Position - Beginning	23,496,695	21,025,976	20,029,382	18,280,993	18,289,771	17,022,967				
Plan Fiduciary Net Position - Ending (b)	\$ 23,758,635	\$ 23,496,695	\$ 21,025,976	\$ 20,029,382	\$ 18,280,993	\$ 18,289,771				
Employer's Net Pension Liability - Ending (a) - (b)	\$ 45,728,157	\$ 41,548,243	\$ 42,140,443	\$ 37,515,524	\$ 36,183,056	\$ 32,659,247				

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



#### SCHEDULE OF TOTAL PENSION LIABILITY AND RELATED RATIOS

	 4/30/2020	4/30/2019	 4/30/2018	 4/30/2017	 4/30/2016	4/30/2015	4/30/2014	4/30/2013	4/30/2012	4/30/2011
Total Pension Liability - Ending (a)	\$ 69,486,792	\$ 65,044,938	\$ 63,166,419	\$ 57,544,906	\$ 54,464,049	\$ 50,949,018				
Plan Fiduciary Net Position - Ending (b)	\$ 23,758,635	\$ 23,496,695	\$ 21,025,976	\$ 20,029,382	\$ 18,280,993	\$ 18,289,771				
Employer's Net Pension Liability - Ending (a) - (b)	\$ 45,728,157	\$ 41,548,243	\$ 42,140,443	\$ 37,515,524	\$ 36,183,056	\$ 32,659,247				
Plan Fiduciary Net Position as a Percentage of the Total Pension Liability Covered-Employee Payroll Employer's Net Pension Liability as a Percentage of Covered-Employee Payroll	\$ 34.19% 3,204,124 1,427.17%	\$ 36.12% 3,103,268 1,338.85%	\$ 33.29% 3,560,945 1,183.41%	\$ 34.81% 3,724,025 1,007.39%	\$ 33.57% 3,438,864 1,052.18%	35.90% \$ 3,376,153 967.35%				

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



#### SCHEDULE OF CONTRIBUTIONS

	4/30/2020	4/30/2019	4/30/2018	4/30/2017	4/30/2016	4/30/2015	4/30/2014	4/30/2013	4/30/2012	4/30/2011
Actuarially Determined Contribution	\$ 3,390,059	\$ 3,570,367	\$ 3,299,096	\$ 2,990,818	\$ 2,333,349	\$ 2,148,485				
Contributions in Relation to the Actuarially										
Determined Contribution	3,296,996	3,950,636	2,677,597	2,572,942	2,439,154	2,214,723				
Contribution Deficiency/(Excess)	\$ 93,063	\$ (380,269)	\$ 621,499	\$ 417,876	\$ (105,805)	\$ (66,238)				
Covered-Employee Payroll	\$ 3,204,124	\$ 3,103,268	\$ 3,560,945	\$ 3,724,025	\$ 3,438,864	\$ 3,376,153				
Contributions as a Percentage of Covered-Employee Payroll	102.90%	127.31%	75.19%	69.09%	70.93%	65.60%				

#### NOTES TO SCHEDULE OF CONTRIBUTIONS

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

Actuarial Cost Method Entry Age Normal
Amortization Method Level % Pay (Closed)

Equivalent Single Amortization Period 20.75 Years (Uses Multiple Amortization Periods)

Asset Valuation Method 5-Year Smoothed Market Value

Inflation (CPI-U) 2.50% Total Payroll Increases 3.25%

Individual Pay Increases 4.00% - 32.48%

Expected Rate of Return on Investments 6.50%

Mortality Rates RP-2014 Adjusted for Plan Status, Collar, and Illinois Public Pension Data, as Appropriate

Retirement Rates 100% of L&A 2016 Illinois Police Retirement Rates Capped at Age 65

Termination Rates 100% of L&A 2016 Illinois Police Termination Rates Disability Rates 100% of L&A 2016 Illinois Police Disability Rates



### GASB METHODS AND PROCEDURES

GASB Methods and Procedures



#### GASB METHODS AND PROCEDURES

	Statement 67 Pension Plan Financials	Statement 68 Employer Financials
Fiscal Year End for Reporting	April 30, 2020	April 30, 2020
Measurement Date	April 30, 2020	April 30, 2020
Actuarial Valuation Date	May 1, 2019	May 1, 2019
Actuarial Valuation - Data Date	April 30, 2019	April 30, 2019
Asset Valuation Method	Market Value	Market Value
Actuarial Cost Method	Entry Age Normal (Level %)	Entry Age Normal (Level %)

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

Amortization Method	Straight Line	Straight Line
Amortization Period		
Actuarial Experience	8.30 Years	8.30 Years
Change in Assumptions	8.30 Years	8.30 Years
Asset Experience	5.00 Years	5.00 Years



### SUPPLEMENTARY TABLES

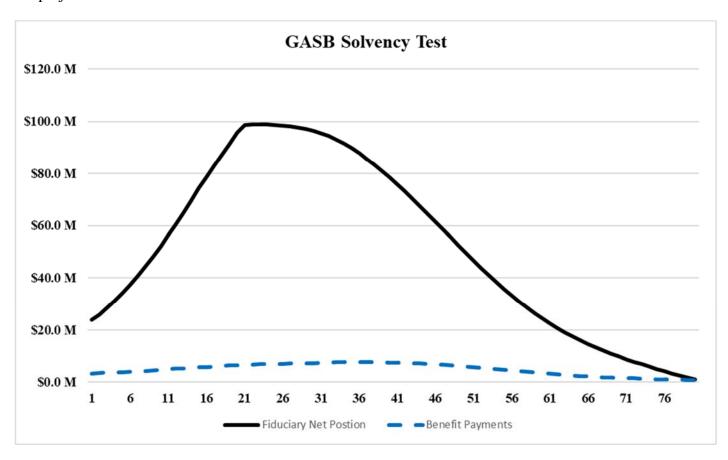
GASB Projections – Summary and Procedure
GASB Projections – Limitations
Projection of Contributions
Notes to Projection of Contributions
Projection of the Pension Plan's Fiduciary Net Position
Notes to Projection of the Pension Plan's Fiduciary Net Position
Actuarial Present Value of Projected Benefit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



#### GASB PROJECTIONS - SUMMARY AND PROCEDURE

GASB requires a solvency test to use in the determination of the Discount Rate each year. The Plan Fiduciary Net Position is projected forward. To the extent that the Plan Fiduciary Net Position is anticipated to be greater than \$0, Projected Benefit Payments are discounted based on the Expected Rate of Return on Plan Investments.

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



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



#### **GASB PROJECTIONS – LIMITATIONS**

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

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

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

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

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

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

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



## PROJECTION OF CONTRIBUTIONS - YEARS 1 TO 30

	Projected Pensionable Payroll			Projected Contributions					
Year	Payroll for Current Employees (a)	Payroll for Future Employees (b)	Total Employee Payroll $(c) = (a) + (b)$	Contributions from Current Employees (d) - Notes	Employer Contributions for Current Employees (e) - Notes	Contributions Related to Payroll of Future Employees (f) - Notes	Total Contributions $(g) = (d) + (e) + (f)$		
1	\$ 3,677,254	\$ 30,053	\$ 3,707,307	\$ 364,416	\$ 3,532,471	\$ -	\$ 3,896,887		
2	3,753,982	73,812	3,827,794	372,020	3,977,960	_	4,349,979		
3	3,848,221	103,977	3,952,198	381,359	4,100,104	-	4,481,462		
4	3,938,889	141,755	4,080,644	390,344	4,227,029	-	4,617,373		
5	4,063,069	150,196	4,213,265	402,650	4,354,489	-	4,757,140		
6	4,132,329	217,867	4,350,196	409,514	4,490,195	-	4,899,709		
7	4,133,413	358,165	4,491,578	409,621	4,624,581	-	5,034,202		
8	4,113,443	524,111	4,637,554	407,642	4,751,865	-	5,159,507		
9	4,000,460	787,814	4,788,274	396,446	4,878,748	-	5,275,194		
10	3,885,371	1,058,522	4,943,893	385,040	4,988,619	-	5,373,659		
11	3,725,524	1,379,046	5,104,570	369,199	5,102,851	-	5,472,050		
12	3,579,364	1,691,104	5,270,468	354,715	5,212,861	-	5,567,575		
13	3,434,863	2,006,895	5,441,758	340,395	5,330,372	-	5,670,767		
14	3,293,282	2,325,334	5,618,616	326,364	5,452,883	-	5,779,247		
15	3,165,353	2,635,868	5,801,221	313,686	4,823,786	-	5,137,473		
16	3,052,721	2,937,039	5,989,760	302,525	4,872,206	-	5,174,730		
17	2,943,972	3,240,456	6,184,428	291,748	4,468,582	-	4,760,330		
18	2,763,751	3,621,670	6,385,421	273,888	4,573,764	-	4,847,652		
19	2,649,181	3,943,767	6,592,948	262,534	4,667,878	-	4,930,412		
20	2,502,766	4,304,452	6,807,218	248,024	3,110,885	-	3,358,910		
21	2,395,601	4,632,852	7,028,453	237,404	351,498	-	588,902		
22	2,289,223	4,967,655	7,256,878	226,862	330,569	-	557,431		
23	2,160,856	5,331,870	7,492,726	214,141	309,204	-	523,345		
24	2,096,403	5,639,837	7,736,240	207,754	283,877	-	491,631		
25	1,967,729	6,019,939	7,987,668	195,002	271,345	-	466,347		
26	1,915,792	6,331,475	8,247,267	189,855	248,610	-	438,465		
27	1,824,696	6,690,607	8,515,303	180,827	240,320	-	421,147		
28	1,679,380	7,112,670	8,792,050	166,427	224,201	-	390,628		
29	1,548,277	7,529,515	9,077,792	153,434	203,837	-	357,271		
30	1,407,624	7,965,196	9,372,820	139,496	186,525	-	326,021		

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

	Proje	cted Pensionable P	ayroll	Projected Contributions				
Year	Payroll for Current Employees (a)	Payroll for Future Employees (b)	Total Employee Payroll $(c) = (a) + (b)$	Contributions from Current Employees (d) - Notes	Employer Contributions for Current Employees (e) - Notes	Contributions Related to Payroll of Future Employees (f) - Notes	Total Contributions $(g) = (d) + (e) + (f)$	
31	\$ 1,188,689	\$ 8,488,748	\$ 9,677,437	\$ 117,799	\$ 168,077	\$ -	\$ 285,876	
32	974,779	9,017,175	9,991,954	96,601	140,601	Ψ -	237,202	
33	822,625	9,494,067	10,316,692	81,522	113,565	_	195,087	
34	649,215	10,002,770	10,651,985	64,337	95,788	_	160,125	
35	540,993	10,457,181	10,998,174	53,612	75,820	_	129,432	
36	428,993	10,926,622	11,355,615	42,513	63,096	-	105,609	
37	273,781	11,450,891	11,724,672	27,132	48,408	-	75,540	
38	183,291	11,922,433	12,105,724	18,164	31,358	-	49,522	
39	147,266	12,351,894	12,499,160	14,594	19,934	-	34,528	
40	-	12,905,383	12,905,383	_	16,016	-	16,016	
41	-	13,324,808	13,324,808	_	-	-	-	
42	-	13,757,864	13,757,864	-	-	-	-	
43	-	14,204,995	14,204,995	-	-	-	-	
44	-	14,666,657	14,666,657	-	-	-	-	
45	-	15,143,323	15,143,323	-	-	-	-	
46	-	15,635,481	15,635,481	-	-	-	-	
47	-	16,143,634	16,143,634	-	-	-	-	
48	-	16,668,303	16,668,303	-	-	-	-	
49	-	17,210,022	17,210,022	-	-	-	-	
50	-	17,769,348	17,769,348	-	-	-	-	
51	-	18,346,852	18,346,852	-	-	-	-	
52	-	18,943,125	18,943,125	-	-	-	-	
53	-	19,558,776	19,558,776	-	-	-	-	
54	-	20,194,436	20,194,436	-	-	-	-	
55	-	20,850,756	20,850,756	-	-	-	-	
56	-	21,528,405	21,528,405	-	-	-	-	
57	-	22,228,078	22,228,078	-	-	-	-	
58	-	22,950,491	22,950,491	-	-	-	-	
59	-	23,696,382	23,696,382	-	-	-	-	
60	-	24,466,514	24,466,514	-	-	-	-	

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

	Proje	ected Pensionable P	ayroll	Projected Contributions					
Year	Payroll for Current Employees (a)	Payroll for Future Employees (b)	Total Employee Payroll $(c) = (a) + (b)$	Contributions from Current Employees (d) - Notes	Employer Contributions for Current Employees (e) - Notes	Contributions Related to Payroll of Future Employees (f) - Notes	Total Contributions $(g) = (d) + (e) + (f)$		
61	\$ -	\$ 25,261,676	\$ 25,261,676	\$ -	\$ -	\$ -	\$ -		
62	-	26,082,680	26,082,680	-	-	-	-		
63	-	26,930,367	26,930,367	-	-	-	-		
64	-	27,805,604	27,805,604	-	-	-	-		
65	-	28,709,287	28,709,287	-	-	-	-		
66	-	29,642,338	29,642,338	-	-	-	-		
67	-	30,605,714	30,605,714	-	-	-	-		
68	-	31,600,400	31,600,400	-	-	-	-		
69	-	32,627,413	32,627,413	-	-	-	-		
70	-	33,687,804	33,687,804	-	-	-	-		
71	-	34,782,658	34,782,658	-	-	-	-		
72	-	35,913,094	35,913,094	-	-	-	-		
73	-	37,080,270	37,080,270	-	-	-	-		
74	-	38,285,378	38,285,378	-	-	-	-		
75	-	39,529,653	39,529,653	-	-	-	-		
76	-	40,814,367	40,814,367	-	-	-	-		
77	-	42,140,834	42,140,834	-	-	-	-		
78	-	43,510,411	43,510,411	-	-	-	-		
79	-	44,924,499	44,924,499	-	-	-	-		
80	-	46,384,545	46,384,545	-	-	-	-		

#### NOTES TO PROJECTION OF CONTRIBUTIONS

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

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

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



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

	Projected					Projected
	Beginning	Projected	Projected	Projected	Projected	Ending
	Fiduciary Net	Total	Benefit	Administrative	Investment	Fiduciary Net
	Position	Contributions	Payments	Expense	Earnings	Position
Year	(a)	(b)	(c)	(d)	(e)	(f) = (a)+(b)-(c)-(d)+(e)
1	¢ 22.759.625	¢ 2.007.007	¢ 2.229.202	ф 10.04 <b>7</b> .	¢ 1.562.207	ф 25.071.400
1	\$ 23,758,635	\$ 3,896,887	\$ 3,328,202	\$ 18,047	\$ 1,562,207	\$ 25,871,480
2	25,871,480	4,349,979	3,479,493	18,333	1,709,341	28,432,975
3	28,432,975	4,481,462	3,597,021	18,745	1,876,278	31,174,949
4	31,174,949	4,617,373	3,700,001	19,167	2,055,563	34,128,717
5	34,128,717	4,757,140	3,809,257	19,598	2,248,536	37,305,537
6	37,305,537	4,899,709	3,921,913	20,039	2,455,987	40,719,281
7	40,719,281	5,034,202	4,073,147	20,490	2,677,322	44,337,167
8	44,337,167	5,159,507	4,261,364	20,951	2,910,425	48,124,784
9	48,124,784	5,275,194	4,443,987	21,423	3,154,429	52,088,997
10	52,088,997	5,373,659	4,658,867	21,905	3,408,304	56,190,188
11	56,190,188	5,472,050	4,859,884	22,398	3,671,530	60,451,487
12	60,451,487	5,567,575	5,057,801	22,902	3,945,170	64,883,529
13	64,883,529	5,670,767	5,283,502	23,417	4,229,254	69,476,632
14	69,476,632	5,779,247	5,458,181	23,944	4,525,638	74,299,392
15	74,299,392	5,137,473	5,636,444	24,482	4,812,448	78,588,386
16	78,588,386	5,174,730	5,787,896	25,033	5,087,504	83,037,691
17	83,037,691	4,760,330	5,990,272	25,597	5,356,645	87,138,798
18	87,138,798	4,847,652	6,202,596	26,172	5,619,136	91,376,817
19	91,376,817	4,930,412	6,356,849	26,761	5,892,264	95,815,882
20	95,815,882	3,358,910	6,496,850	27,363	6,125,160	98,775,738
21	98,775,738	588,902	6,594,326	27,979	6,224,337	98,966,672
22	98,966,672	557,431	6,716,051	28,609	6,231,749	99,011,193
23	99,011,193	523,345	6,782,213	29,252	6,231,364	98,954,436
24	98,954,436	491,631	6,864,652	29,911	6,223,943	98,775,447
25	98,775,447	466,347	6,893,764	30,584	6,210,519	98,527,965
26	98,527,965	438,465	6,942,659	31,272	6,191,915	98,184,415
27	98,184,415	421,147	7,035,339	31,975	6,165,987	97,704,234
28	97,704,234	390,628	7,076,831	32,695	6,132,411	97,117,747
29	97,117,747	357,271	7,148,856	33,430	6,090,841	96,383,573
30	96,383,573	326,021	7,238,020	34,183	6,039,181	95,476,572

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

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

Column e – Based on the Expected Rate of Return on Plan Investments, and does not factor in allocation changes.



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

	Projected					Projected
	Beginning	Projected	Projected	Projected	Projected	Ending
	Fiduciary Net	Total	Benefit	Administrative	Investment	Fiduciary Net
	Position	Contributions	Payments	Expense	Earnings	Position
Year	(a)	(b)	(c)	(d)	(e)	(f) = (a)+(b)-(c)-(d)+(e)
21	¢ 05 476 572	¢ 295.976	¢ 7.220.010	¢ 24.052	ф 5.075.001	Φ 04.272.567
31	\$ 95,476,572	\$ 285,876	\$ 7,330,810	\$ 34,952	\$ 5,975,881	\$ 94,372,567
32	94,372,567	237,202	7,439,421	35,738	5,898,983	93,033,593
33	93,033,593	195,087	7,522,316	36,542	5,807,861	91,477,683
34	91,477,683	160,125	7,519,592	37,364	5,705,652	89,786,504
35	89,786,504	129,432	7,626,916	38,205	5,591,213	87,842,028
36	87,842,028	105,609	7,659,833	39,065	5,462,950	85,711,690 82,428,531
37	85,711,690 83,428,531	75,540 49,522	7,642,781 7,581,276	39,944 40,842	5,324,026 5,176,745	83,428,531
38 39		34,528	7,596,445	40,842		81,032,680
	81,032,680	16,016		42,701	5,020,005	78,449,007
40 41	78,449,007 75,777,095	10,010	7,499,802 7,394,509	43,662	4,854,575 4,683,771	75,777,095 73,022,694
42	73,022,694	-	7,394,309	43,662 44,644	4,508,384	70,205,213
43	70,205,213	_	7,281,222	45,649	4,329,220	67,330,787
44	67,330,787	_	7,023,383	46,676	4,146,724	64,407,452
45	64,407,452	_	6,875,721	47,726	3,961,472	61,445,478
46	61,445,478	_	6,713,780	46,489	3,774,247	58,459,456
47	58,459,456	_	6,536,708	44,292	3,585,982	55,464,438
48	55,464,438	_	6,344,269	42,082	3,397,632	52,475,719
49	52,475,719	_	6,136,717	39,872	3,210,183	49,509,313
50	49,509,313	_	5,913,858	37,672	3,024,681	46,582,463
51	46,582,463	_	5,677,626	35,495	2,842,184	43,711,525
52	43,711,525	_	5,429,236	33,354	2,663,715	40,912,650
53	40,912,650	_	5,171,565	31,259	2,490,230	38,200,056
54	38,200,056	_	4,907,500	29,223	2,322,560	35,585,893
55	35,585,893	_	4,639,570	27,256	2,161,411	33,080,478
56	33,080,478	_	4,370,951	25,365	2,007,351	30,691,514
57	30,691,514	_	4,104,902	23,557	1,860,773	28,423,828
58	28,423,828	_	3,844,322	21,837	1,721,899	26,279,568
59	26,279,568	_	3,591,540	20,207	1,590,790	24,258,611
60	24,258,611	-	3,348,761	18,668	1,467,368	22,358,550

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

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

Column e – Based on the Expected Rate of Return on Plan Investments, and does not factor in allocation changes.



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

Year	Projected Beginning Fiduciary Net Position (a)	Projected Total Contributions (b)	Projected Benefit Payments (c)	Projected Administrative Expense (d)	Projected Investment Earnings (e)	Projected Ending Fiduciary Net Position $(f) = (a)+(b)-(c)-(d)+(e)$
61	\$ 22,358,550	\$ -	\$ 3,117,818	\$ 17,220	\$ 1,351,417	\$ 20,574,930
62	20,574,930	-	2,899,714	15,859	1,242,614	18,901,971
63	18,901,971	-	2,694,675	14,582	1,140,577	17,333,290
64	17,333,290	-	2,502,726	13,385	1,044,890	15,862,070
65	15,862,070	-	2,323,540	12,262	955,121	14,481,389
66	14,481,389	-	2,156,591	11,209	870,837	13,184,426
67	13,184,426	-	2,001,458	10,219	791,608	11,964,356
68	11,964,356	-	1,857,746	9,290	717,005	10,814,325
69	10,814,325	-	1,724,602	8,414	646,608	9,727,917
70	9,727,917	-	1,602,019	7,588	580,002	8,698,312
71	8,698,312	-	1,489,900	6,806	516,747	7,718,353
72	7,718,353	-	1,387,790	6,064	456,393	6,780,892
73	6,780,892	-	1,296,066	5,356	398,462	5,877,932
74	5,877,932	-	1,214,855	4,676	342,431	5,000,831
75	5,000,831	-	1,123,887	4,019	288,397	4,161,323
76	4,161,323	-	1,063,873	3,384	235,800	3,329,866
77	3,329,866	-	981,129	2,767	184,465	2,530,434
78	2,530,434	-	925,236	2,165	134,338	1,737,371
79	1,737,371	-	847,053	1,576	85,349	974,090
80	974,090	-	719,588	1,002	39,897	293,397

#### NOTES TO PROJECTION OF THE PENSION PLAN'S FIDUCIARY NET POSITION

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

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

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

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



# ACTUARIAL PRESENT VALUE OF PROJECTED BENEFIT PAYMENTS - YEARS 1 TO 30

			Projected Benefit Payments		Actuarial Present Values of Projected Benefit Payments			
Year	Projected Beginning Fiduciary Net Position	Projected Benefit Payments	"Funded" Portion of Benefit Payments	"Unfunded" Portion of Benefit Payments	Present Value of 'Funded' Benefit Payments (6.50%)	Present Value of "Unfunded" Benefit Payments (2.56%)	Present Value of Benefit Payments Using the Single Discount Rate (6.50%)	
1	\$ 23,758,635	\$ 3,328,202	\$ 3,328,202	\$ -	\$ 3,225,038	\$ -	\$ 3,225,038	
2	25,871,480	3,479,493	3,479,493	Ψ -	3,165,859	Ψ -	3,165,859	
3	28,432,975	3,597,021	3,597,021	_	3,073,045	_	3,073,045	
4	31,174,949	3,700,001	3,700,001	_	2,968,098	_	2,968,098	
5	34,128,717	3,809,257	3,809,257	_	2,869,241	_	2,869,241	
6	37,305,537	3,921,913	3,921,913	_	2,773,800	_	2,773,800	
7	40,719,281	4,073,147	4,073,147	_	2,704,940	-	2,704,940	
8	44,337,167	4,261,364	4,261,364	_	2,657,214	_	2,657,214	
9	48,124,784	4,443,987	4,443,987	_	2,601,963	-	2,601,963	
10	52,088,997	4,658,867	4,658,867	_	2,561,292	-	2,561,292	
11	56,190,188	4,859,884	4,859,884	_	2,508,736	-	2,508,736	
12	60,451,487	5,057,801	5,057,801	_	2,451,553	-	2,451,553	
13	64,883,529	5,283,502	5,283,502	_	2,404,649	_	2,404,649	
14	69,476,632	5,458,181	5,458,181	-	2,332,535	-	2,332,535	
15	74,299,392	5,636,444	5,636,444	_	2,261,705	-	2,261,705	
16	78,588,386	5,787,896	5,787,896	-	2,180,729	-	2,180,729	
17	83,037,691	5,990,272	5,990,272	-	2,119,230	-	2,119,230	
18	87,138,798	6,202,596	6,202,596	-	2,060,418	-	2,060,418	
19	91,376,817	6,356,849	6,356,849	-	1,982,778	-	1,982,778	
20	95,815,882	6,496,850	6,496,850	-	1,902,766	-	1,902,766	
21	98,775,738	6,594,326	6,594,326	-	1,813,441	-	1,813,441	
22	98,966,672	6,716,051	6,716,051	-	1,734,193	-	1,734,193	
23	99,011,193	6,782,213	6,782,213	-	1,644,392	-	1,644,392	
24	98,954,436	6,864,652	6,864,652	-	1,562,798	-	1,562,798	
25	98,775,447	6,893,764	6,893,764	-	1,473,639	-	1,473,639	
26	98,527,965	6,942,659	6,942,659	-	1,393,512	-	1,393,512	
27	98,184,415	7,035,339	7,035,339	-	1,325,929	-	1,325,929	
28	97,704,234	7,076,831	7,076,831	-	1,252,347	-	1,252,347	
29	97,117,747	7,148,856	7,148,856	-	1,187,880	-	1,187,880	
30	96,383,573	7,238,020	7,238,020	-	1,129,292	-	1,129,292	

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

			Projected Benefit Payments		Actuarial Present Values of Projected Benefit Payments			
Year	Projected Beginning Fiduciary Net Position	Projected Benefit Payments	"Funded" Portion of Benefit Payments	"Unfunded" Portion of Benefit Payments	Present Value of "Funded" Benefit Payments (6.50%)	Present Value of "Unfunded" Benefit Payments (2.56%)	Present Value of Benefit Payments Using the Single Discount Rate (6.50%)	
31	\$ 95,476,572	\$ 7,330,810	\$ 7,330,810	\$ -	\$ 1,073,962	\$ -	\$ 1,073,962	
32	94,372,567	7,439,421	7,439,421	Ψ -	1,023,355	Ψ -	1,023,355	
33	93,033,593	7,522,316	7,522,316	_	971,604	_	971,604	
34	91,477,683	7,519,592	7,519,592	_	911,974	-	911,974	
35	89,786,504	7,626,916	7,626,916	_	868,535	_	868,535	
36	87,842,028	7,659,833	7,659,833	_	819,046	_	819,046	
37	85,711,690	7,642,781	7,642,781	_	767,345	-	767,345	
38	83,428,531	7,581,276	7,581,276	_	714,714	-	714,714	
39	81,032,680	7,596,445	7,596,445	_	672,435	_	672,435	
40	78,449,007	7,499,802	7,499,802	_	623,362	-	623,362	
41	75,777,095	7,394,509	7,394,509	_	577,099	_	577,099	
42	73,022,694	7,281,222	7,281,222	_	533,575	-	533,575	
43	70,205,213	7,157,998	7,157,998	-	492,531	_	492,531	
44	67,330,787	7,023,383	7,023,383	-	453,773	_	453,773	
45	64,407,452	6,875,721	6,875,721	-	417,120	-	417,120	
46	61,445,478	6,713,780	6,713,780	-	382,437	-	382,437	
47	58,459,456	6,536,708	6,536,708	-	349,625	-	349,625	
48	55,464,438	6,344,269	6,344,269	-	318,622	-	318,622	
49	52,475,719	6,136,717	6,136,717	-	289,388	-	289,388	
50	49,509,313	5,913,858	5,913,858	-	261,858	-	261,858	
51	46,582,463	5,677,626	5,677,626	-	236,054	-	236,054	
52	43,711,525	5,429,236	5,429,236	-	211,950	-	211,950	
53	40,912,650	5,171,565	5,171,565	-	189,569	-	189,569	
54	38,200,056	4,907,500	4,907,500	-	168,910	-	168,910	
55	35,585,893	4,639,570	4,639,570	-	149,942	-	149,942	
56	33,080,478	4,370,951	4,370,951	-	132,639	-	132,639	
57	30,691,514	4,104,902	4,104,902	-	116,963	-	116,963	
58	28,423,828	3,844,322	3,844,322	-	102,853	-	102,853	
59	26,279,568	3,591,540	3,591,540	-	90,225	-	90,225	
60	24,258,611	3,348,761	3,348,761	-	78,992	-	78,992	

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

			Projected Benefit Payments		Actuarial Present Values of Projected Benefit Payments			
Year	Projected Beginning Fiduciary Net Position	Projected Benefit Payments	"Funded" Portion of Benefit Payments	"Unfunded" Portion of Benefit Payments	Present Value of "Funded" Benefit Payments (6.50%)	Present Value of "Unfunded" Benefit Payments (2.56%)	Present Value of Benefit Payments Using the Single Discount Rate (6.50%)	
61	\$ 22,358,550	\$ 3,117,818	\$ 3,117,818	\$ -	\$ 69,056	\$ -	\$ 69,056	
62	20,574,930	2,899,714	2,899,714	-	60,305	-	60,305	
63	18,901,971	2,694,675	2,694,675	-	52,621	-	52,621	
64	17,333,290	2,502,726	2,502,726	-	45,889	-	45,889	
65	15,862,070	2,323,540	2,323,540	-	40,004	-	40,004	
66	14,481,389	2,156,591	2,156,591	-	34,863	-	34,863	
67	13,184,426	2,001,458	2,001,458	-	30,381	-	30,381	
68	11,964,356	1,857,746	1,857,746	-	26,478	-	26,478	
69	10,814,325	1,724,602	1,724,602	-	23,080	-	23,080	
70	9,727,917	1,602,019	1,602,019	-	20,131	-	20,131	
71	8,698,312	1,489,900	1,489,900	-	17,580	-	17,580	
72	7,718,353	1,387,790	1,387,790	-	15,375	-	15,375	
73	6,780,892	1,296,066	1,296,066	-	13,483	-	13,483	
74	5,877,932	1,214,855	1,214,855	-	11,867	-	11,867	
75	5,000,831	1,123,887	1,123,887	-	10,308	-	10,308	
76	4,161,323	1,063,873	1,063,873	-	9,162	-	9,162	
77	3,329,866	981,129	981,129	-	7,934	-	7,934	
78	2,530,434	925,236	925,236	-	7,025	-	7,025	
79	1,737,371	847,053	847,053	-	6,039	-	6,039	
80	974,090	719,588	719,588	-	4,817	-	4,817	

# NOTES TO THE ACTUARIAL PRESENT VALUE OF PROJECTED BENEFIT PAYMENTS

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

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

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

The Discount Rate used for GASB purposes is the rate such that when applied to the Total Projected Benefit Payments results in a Present Value that equals the sum of the Present Value of the Funded and Unfunded Portion of Benefit Payments. The Discount Rate is rounded to four decimal places; therefore, the resulting Present Value comparisons may show a slight difference due to rounding.



# Lauterbach & Amen, LLP

CERTIFIED PUBLIC ACCOUNTANTS