

METROPOLITAN WATER RECLAMATION DISTRICT RETIREMENT FUND

ACTUARIAL VALUATION
AS OF DECEMBER 31, 2020

CONTRIBUTIONS APPLICABLE TO THE
PLAN/FISCAL YEAR ENDING DECEMBER 31, 2021

GASB DISCLOSURE INFORMATION AS OF
DECEMBER 31, 2020



FOSTER & FOSTER
ACTUARIES AND CONSULTANTS

April 22, 2021

Board of Trustees
Metropolitan Water Reclamation District Retirement Fund
111 E. Erie St.
Chicago, IL 60611

Dear Board:

We are pleased to present to the Board this report of the December 31, 2020 actuarial valuation of the Metropolitan Water Reclamation District Retirement Fund.

The valuation was performed as of December 31, 2020 to determine the current funding status and to develop the appropriate funding requirements for the applicable plan year. Successive valuations will be performed every year.

Included are the related results for GASB Statements No. 67 and No. 68. The total pension liability, net pension liability, and certain sensitivity information shown in the GASB results are based on an actuarial valuation performed as of the valuation date. The calculation of the liability for GASB results was performed for the purpose of satisfying the requirements of GASB Statements No. 67 and No. 68. Use of the results for other purposes may not be applicable and produce significantly different results.

Data Sources

In preparing this report, we have relied on personnel, plan design and asset information supplied by the Fund. The actuarial value of assets was determined based on audited financial statements supplied by Legacy Professionals LLP, the auditor for the Fund. In our opinion, the assumptions used in the valuation, as adopted by the Board of Trustees, represent reasonable expectations of anticipated fund experience. While we cannot verify the accuracy of all this information, the supplied information was reviewed for consistency and reasonableness. As a result of this review, we have no reason to doubt the substantial accuracy of the information and believe that it has produced appropriate results. This information, along with any adjustments or modifications, is summarized in various sections of this report.

Experience

The experience of the Fund over the last year is outlined in this report. Overall, the Fund experienced an actuarial gain of \$5,448,697 which consists of a \$10,483,804 gain on the Fund's actuarial value of assets and a \$5,035,107 loss on the Fund's actuarial accrued liability. Based on the actuarial value of assets, the Fund earned 7.98% compared to the assumed 7.25% return. The primary source of liability loss was due to more retirements than expected. These losses were offset somewhat by lower than assumed salary increases and higher than expected mortality experience for surviving spouses.

Changes Since Prior Report

The valuation reflects no changes since the prior report.

Contribution Amounts

The statutory funding objective of the Fund is to attain a funded ratio of at least 90% by the year 2050. However, an additional contribution requirement has been determined based on achieving a funding level of 100%. District contributions equal an amount that will be sufficient to meet the Fund's actuarially determined contribution requirement but shall not exceed an amount equal to the total employee contributions 2 years prior multiplied by 4.19.

Based on the results of this valuation, the actuarially determined contribution applicable for the fiscal year ending December 31, 2021 is \$76,841,344. This contribution is based on a 100% funding target. Based on the pension code, the maximum employer contribution (based on the 4.19 multiplier) is \$88,754,000.

We estimate that a multiplier of 3.63 is required to cover the full actuarially determined contribution requirement for the year 2021.

Illinois Public Act 97-0894 (effective 8/3/2012) provided for changes to member contribution requirements and the required multiplier. The expected member contributions reflect the same rates as the prior year valuation.

Schedules for Annual Financial Report

The report includes information and trend data schedules for use in the Annual Financial Report. The following information and exhibits are included in the body of the report and Supplementary Tables section:

- Recommended Employer Multiple
- Present Value of Future Benefits
- Membership Note Data
- Participant Statistics
- History of Change in Unfunded Accrued Liability
- History of Annuitants and Surviving Spouses Added/Dropped from Rolls
- Summary of Annuitants and Surviving Spouses by Age
- History of Average Annuities at Retirement
- Breakdown of Aggregate Accrued Liabilities

Actuarial Certification

The valuations have been conducted in accordance with generally accepted actuarial principles and practices, including the applicable Actuarial Standards of Practice as issued by the Actuarial Standards Board, and reflects laws and regulations issued to date pursuant to the provisions of Article 13, Illinois Pension Code, as well as applicable federal laws and regulations. Future actuarial measurements may differ significantly from the current measurements presented in this report for a variety of reasons including changes in applicable laws, changes in plan provisions, changes in assumptions, or plan experience differing from expectations. Due to the limited scope of the valuation, we did not perform an analysis of the potential range of such future measurements.

In our opinion, the assumptions and method used to determine the annual required contribution, as adopted by the Board of Trustees, represent reasonable expectations of anticipated plan experience.

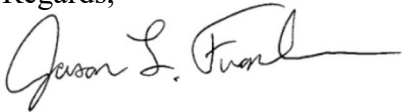
In our opinion, the following valuation results fairly present the financial condition of the Metropolitan Water Reclamation District Retirement Fund as of December 31, 2020.

The undersigned is familiar with the immediate and long-term aspects of pension valuations and meets the Qualification Standards of the American Academy of Actuaries necessary to render the actuarial opinions contained herein. All the sections of this report are considered an integral part of the actuarial opinions.

To our knowledge, no associate of Foster & Foster, Inc. working on this report has any direct financial interest or indirect material interest in the Metropolitan Water Reclamation District, nor does anyone at Foster & Foster, Inc. act as a member of the Board of Trustees of the Metropolitan Water Reclamation District Retirement Fund. Thus, there is no relationship existing that might affect our capacity to prepare and certify this actuarial report.

We look forward to discussing the results with you.

Regards,



Jason L. Franken, FSA, EA, MAAA

Enrollment Number: 20-06888
Foster & Foster, Inc.

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SUMMARY OF RESULTS

The table below contains a summary of key valuation results compared to the prior year values.

	December 31, 2020	December 31, 2019
Total Actuarial Liability	\$ 2,714,192,284	\$ 2,666,221,630
Actuarial Value of Assets	<u>1,556,056,167</u>	<u>1,489,266,144</u>
Unfunded Actuarial Liability	\$ 1,158,136,117	\$ 1,176,955,486
Funded Ratio	57.3%	55.9%
Market Value of Assets	\$ 1,580,890,628	\$ 1,506,834,278
Unfunded Liability (MVA basis)	\$ 1,133,301,656	\$ 1,159,387,352
Funded Ratio (MVA basis)	58.2%	56.5%
Employer Normal Cost as % of Payroll:		
Tier 1 Benefits	6.36%	6.38%
Tier 2 Benefits	2.87%	3.19%
Administrative Expenses	0.85%	0.86%
Total Employer Normal Cost	6.14%	6.38%
Applicable Fiscal Year ¹	2021	2020
Actuarially Determined Contribution	\$ 76,841,344	\$ 77,392,414
Contribution Requirement For Fiscal Year ²	\$ 76,841,344	\$ 77,392,414
Expected Employer Contribution for Fiscal Year	\$ 88,754,000	\$ 88,127,000

¹ The contribution requirements are levied in the applicable fiscal year and deposited into the Fund during the following fiscal year.

² See details of calculation on page 9.

ACTUARIAL LIABILITY AND FUNDED RATIO

Below are details regarding the actuarial liability and funded ratio as of December 31, 2020.

1.	Present Value of Future Benefits	\$	2,978,314,242
2.	Active Members		
	Retirement	\$	632,213,871
	Termination		19,422,959
	Death		22,224,419
	Disability		<u>6,561,245</u>
	Total	\$	680,422,494
3.	Members Receiving Benefits		
	Retirement Annuities	\$	1,781,297,562
	Survivor Annuities/Children		<u>232,466,316</u>
	Total	\$	2,013,763,878
4.	Inactive Members	\$	20,005,912
5.	Total Actuarial Liability (2. + 3. + 4.)	\$	2,714,192,284
6.	Actuarial Value of Assets	\$	1,556,056,167
7.	Unfunded Actuarial Liability	\$	1,158,136,117
8.	Funded Ratio		57.3%

EMPLOYER'S NORMAL COST

Below is a summary of the employer's share of the normal cost for the year beginning January 1, 2021.

Normal Cost	Tier 1		Tier 2		Total	
	Normal Cost	Percent of Total Payroll	Normal Cost	Percent of Total Payroll	Normal Cost	Percent of Total Payroll
Retirement	\$ 20,925,849	16.09%	\$ 4,643,432	8.01%	\$ 25,569,281	13.60%
Termination	1,083,791	0.83%	1,197,748	2.07%	2,281,539	1.21%
Death	1,473,288	1.13%	731,958	1.26%	2,205,246	1.17%
Disability	399,671	0.31%	311,364	0.54%	711,035	0.38%
Total Normal Cost	\$ 23,882,599	18.36%	\$ 6,884,502	11.87%	\$ 30,767,101	16.36%
Expected Member Contributions	\$ 15,609,566	12.00%	\$ 5,219,393	9.00%	\$ 20,828,959	11.07%
Employer's Share of Normal Cost	\$ 8,273,033	6.36%	\$ 1,665,109	2.87%	\$ 9,938,142	5.29%
Expected Administrative Expenses					\$ 1,592,783	0.85%
Employer's Share of Normal Cost, adjusted for expected administrative expenses					\$ 11,530,925	6.14%
Pensionable Payroll	\$ 130,079,718		\$ 57,993,252		\$ 188,072,970	

ACTUARIALLY DETERMINED CONTRIBUTION

The actuarially determined contribution requirement based on the provisions applicable for fiscal years 2013 and later, according to section 13-503 of Article 13 of the Illinois Pension Code, is below.

1. Employer's Share of Normal Cost	\$ 11,530,925
2. Amortization Payment (annual amount to amortize 100% of the unfunded liability by 2050)	
Actuarial Liability	\$ 2,714,192,284
Actuarial Assets	\$ 1,556,056,167
Unfunded Accrued Liability	\$ 1,158,136,117
Amortization Period	30 years
Amortization Payment	\$ 65,310,419
3. Actuarially Determined Contribution for Year Beginning January 1, 2021	\$ 76,841,344
as a percentage of pensionable payroll	40.86%
4. District's Funding Policy (4.19 x Total Member Contributions for two years prior)	\$ 88,754,000
as a percentage of pensionable payroll	47.19%
5. Statutory Employer Contribution (lesser of 3 and 4)	\$ 76,841,344

UNFUNDED ACTUARIAL LIABILITY

1. Unfunded Actuarial Accrued Liability (UAAL) as of December 31, 2019	\$ 1,176,955,486
2. Employer Normal Cost, Developed as of December 31, 2019	12,115,137
3. Expected Interest (7.25%) on 1. and 2.	86,207,620
4. Employer Contributions	107,852,191
5. Expected Interest (7.25%, mid-year) on 4.	3,841,238
6. Expected UAAL as of December 31, 2020 (1)+(2)+(3)-(4)-(5)	1,163,584,814
7. Change in UAAL Due to Actuarial (Gain)/Loss, by component	
Decrease in UAAL due to investment return higher than assumed	(10,483,804)
Decrease in UAAL due to salary increases lower than assumed	(6,558,614)
Increase in UAAL due to decrement experience	18,970,774
Decrease in UAAL due to inactive mortality experience	(1,824,785)
Decrease in UAAL due to other changes	<u>(5,552,268)</u>
Net decrease in UAAL due to actuarial experience	(5,448,697)
8. Change in UAAL Due to Assumption Changes	-
9. Unfunded Actuarial Accrued Liability as of December 31, 2020	\$ 1,158,136,117

CHANGE IN FUNDED RATIO

1. Funded ratio as of December 31, 2019	55.9%
2. Expected funded ratio as of December 31, 2020	57.0%
3. Change in funded ratio Due to Actuarial (Gain)/Loss, by component	
Increase in funded ratio due to investment return higher than assumed	0.4%
Increase in funded ratio due to salary increases lower than assumed	0.2%
Decrease in funded ratio due to decrement experience	-0.4%
Increase in funded ratio due to inactive mortality experience	0.0%
Increase in funded ratio due to other changes	<u>0.1%</u>
Net increase in funded ratio due to actuarial experience	0.3%
4. Change in UAAL Due to Assumption Changes	-
5. Funded Ratio as of December 31, 2020	57.3%

DEVELOPMENT OF ASSETS

Development of Actuarial Value of Assets

Market Value of Assets, 12/31/2020	\$ 1,580,890,628
Less: Unrecognized Amounts as of 12/31/2020	24,834,461
Actuarial Value of Assets, 12/31/2020	<u>\$ 1,556,056,167</u>
Limited Actuarial Value of Assets, 12/31/2020	\$ 1,556,056,167

Development of Investment Gain/(Loss)

Market Value of Assets, 12/31/2019	\$ 1,506,834,278
Contributions & Other Additions Less Benefit Payments & Admin Expenses	(50,043,109)
Expected Investment Earnings for 2020	107,463,162
Expected Market Value of Assets, 12/31/2020	<u>\$ 1,564,254,331</u>
Actual Net Investment Income/(Loss) for 2020	\$ 124,099,459
2020 Investment Gain/(Loss), (Actual less Expected)	\$ 16,636,297

Plan Year Ending	Gain/(Loss)	Gains/(Losses) Not Yet Recognized by Valuation Year			
		2020	2021	2022	2023
12/31/2016	18,841,099	0	0	0	0
12/31/2017	95,056,619	19,011,324	0	0	0
12/31/2018	(213,622,995)	(85,449,198)	(42,724,599)	0	0
12/31/2019	129,938,829	77,963,297	51,975,532	25,987,766	0
12/31/2020	16,636,297	<u>13,309,038</u>	<u>9,981,778</u>	<u>6,654,519</u>	<u>3,327,259</u>
Total		24,834,461	19,232,711	32,642,285	3,327,259

Calculation of Rates of Return

Rates of return calculated below are based on a formula defined by the IRS. Therefore, the returns may differ from investment returns calculated for other purposes. The formula is defined as $(2 * I)$ divided by $(A + B - I)$ where A, B and I are as follows:

(A) 12/31/2019 Actuarial Assets:	\$ 1,489,266,144
(I) Net Investment Income:	
1. Interest, Dividends, Net Gross Securities Lending Income and Other Income	25,516,960
2. Change in Actuarial Value	95,990,431
3. Investment Expenses	(4,671,521)
Total	<u>\$ 116,835,870</u>
(B) 12/31/2020 Actuarial Assets:	\$ 1,556,056,167
Actuarial Asset Rate of Return = $2I/(A+B-I)$:	7.98%
Market Value of Assets Rate of Return (IRS formula):	8.37%

STATEMENT OF FIDUCIARY NET POSITION
December 31, 2020

<u>ASSETS</u>	MARKET VALUE
Cash	306,082
Total Cash and Equivalents	306,082
Receivables:	
District Contributions	88,127,000
Due From Broker	40,175,815
Accounts Receivable	106,664
Accrued Income	3,123,574
Total Receivables	131,533,053
Investments:	
Equities	389,988,687
U.S. Government and government agency obligations	93,678,203
Corporate and foreign government obligations	132,056,474
Mutual and Exchange Traded Funds	97,691,014
Pooled Funds - Equity	460,933,943
Pooled Funds - Fixed Income	164,604,327
Limited Partnership - Real Estate	62,992,834
Real estate investment trust	68,176,270
Short-Term Investment Funds	28,783,361
Securities Lending Collateral	6,841,775
Total Investments	1,505,746,888
Total Assets	1,637,586,023
<u>LIABILITIES</u>	
Liabilities:	
Payable:	
Securities Lending Collateral	6,841,775
Due to Broker	48,822,915
Accounts Payable	1,030,705
Total Liabilities	56,695,395
Net Assets:	
Active and Retired Members' Equity	1,580,890,628
Net Assets	
Active and Retired Members' Equity	1,580,890,628
NET POSITION RESTRICTED FOR PENSIONS	1,580,890,628
TOTAL LIABILITIES AND NET ASSETS	1,637,586,023

STATEMENT OF CHANGES IN FIDUCIARY NET POSITION
FOR THE YEAR ENDED December 31, 2020
Market Value Basis

ADDITIONS

Contributions:

Member	20,982,056
District	107,852,191

Total Contributions	128,834,247
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Investment Income:

Interest & Dividends	22,191,464
Net Increase in Fair Value of Investments	106,380,332
Net Securities Lending Income	199,184
Less Investment Expense ¹	(4,671,521)

Net Investment Income	124,099,459
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Other Income	2,738
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Total Additions	252,936,444
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DEDUCTIONS

Distributions to Members:

Benefit Payments	174,996,453
Refunds of Employee Contributions	2,290,858

Total Distributions	177,287,311
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Administrative Expenses	1,592,783
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Other Deductions	0
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Total Deductions	178,880,094
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Net Increase in Net Position	74,056,350
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NET POSITION RESTRICTED FOR PENSIONS

Beginning of the Year	1,506,834,278
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End of the Year	1,580,890,628
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¹ Investment related expenses include investment management, investment consulting and custodial fees.

PARTICIPANT DATA

Participant Information	December 31, 2020	December 31, 2019	Change
Number Active Members - Total	1,769	1,817	-2.6%
Number Active Members - Fully Vested	1,095	1,174	-6.7%
Number Receiving Benefits			
Retirement Annuities	1,917	1,883	1.8%
Surviving Spouse Annuities	546	561	-2.7%
Children's Annuities	20	21	-4.8%
Number Inactive Members - Total	132	131	0.8%
Number Inactive Members - Vested	37	38	-2.6%
Total Members	4,384	4,413	-0.7%
Total Pensionable Salary	\$ 188,072,970	\$ 189,961,010	-1.0%
Active Statistics – Tier 1			
Number	1,124	1,225	-8.2%
Average Age	53.44	53.20	0.4%
Average Service	17.96	17.68	1.6%
Total Pensionable Salary	\$ 130,079,718	\$ 138,352,537	-6.0%
Average Salary	\$ 115,729	\$ 112,941	2.5%
Active Statistics – Tier 2			
Number	645	592	9.0%
Average Age	43.31	42.95	0.8%
Average Service	4.39	3.80	15.6%
Total Salary	\$ 58,463,131	\$ 51,942,396	12.6%
Average Salary	\$ 90,641	\$ 87,741	3.3%
Pensionable Salary	\$ 57,993,252	\$ 51,608,473	12.4%
Average Pensionable Salary	\$ 89,912	\$ 87,176	3.1%
Annual Benefit Payments for Members Receiving Benefits			
Retirement Annuities	\$ 149,537,047	\$ 142,324,135	5.1%
Surviving Spouse Annuities	\$ 27,722,263	\$ 27,127,117	2.2%
Children's Annuities	\$ 120,000	\$ 126,000	-4.8%

Participant Reconciliation

	Active	Inactive Vested	Inactive Not Vested	Employee Annuitants	Survivor Annuitants	Child	Total Count
<i>As of 12/31/2019</i>	<i>1,817</i>	<i>38</i>	<i>93</i>	<i>1,883</i>	<i>561</i>	<i>21</i>	<i>4,413</i>
Terminations							
Vested	(13)	13					0
Not Vested	(15)		15				0
Retirements	(91)	(10)	(3)	104			0
Deaths							
w/o Beneficiary	(4)		(1)	(38)	(48)		(91)
w/ Beneficiary	(2)	(1)		(31)	34		0
w/ Child Beneficiary							0
w/ Rev. Annuitant							
New Member	79						79
Return to Work	6	(2)	(4)				0
Benefit expired				(1)	(1)	(1)	(3)
Refunds	(8)	(1)	(5)				(14)
Repaid Refunds							
Adjustments	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
Net Change	(48)	(1)	2	34	(15)	(1)	(29)
<i>As of 12/31/2020</i>	<i>1,769</i>	<i>37</i>	<i>95</i>	<i>1,917</i>	<i>546</i>	<i>20</i>	<i>4,384</i>

Active Member Statistics by Tier

					Pensionable Salary ¹		Total Salary	
Tier	Sex	Count	Avg Age	Avg Svc	Total	Average	Total	Average
1	M	821	53.7	18.1	97,128,464	118,305	97,128,464	118,305
	F	<u>303</u>	52.8	17.5	<u>32,951,253</u>	108,750	<u>32,951,253</u>	108,750
	Total	1,124	53.4	18.0	130,079,718	115,729	130,079,718	115,729
2	M	484	44.1	4.5	45,259,234	93,511	45,542,957	94,097
	F	<u>161</u>	41.0	4.1	<u>12,734,018</u>	79,093	<u>12,920,174</u>	80,250
	Total	645	43.3	4.4	57,993,252	89,912	58,463,131	90,641
Total	M	1,305	50.1	13.1	142,387,699	109,109	142,671,421	109,327
	F	<u>464</u>	48.7	12.8	<u>45,685,271</u>	98,460	<u>45,871,427</u>	98,861
	Total	1,769	49.7	13.0	188,072,970	106,316	188,542,848	106,582

¹ Pensionable Salary reflects the salary limitations established in the Illinois Pension Code for members hired on or after January 1, 2011. The statutory salary limitation is \$115,928.92 for calendar year 2020.

Active Age Service Grid - Total

Total Active Member Count and Pensionable Salary by Age and Service

Age	Years of Service									Total
	<1	1-4	5-9	10-14	15-19	20-24	25-29	30-34	35+	
<25	4	10	3							17
	\$74,657	\$63,405	\$78,749							\$68,760
25-29	7	34	3							44
	\$74,963	\$73,570	\$106,935							\$76,067
30-34	9	62	48	10						129
	\$64,784	\$80,630	\$93,718	\$111,899						\$86,818
35-39	4	55	53	48	12					172
	\$60,046	\$86,954	\$93,159	\$119,888	\$121,561					\$99,845
40-44	7	69	45	59	37	19				236
	\$65,437	\$94,718	\$104,437	\$109,722	\$118,476	\$118,114				\$105,062
45-49	1	46	54	54	40	60	6			261
	\$103,334	\$90,976	\$101,032	\$109,573	\$125,604	\$132,669	\$203,955			\$114,440
50-54	4	39	49	45	38	74	28	9		286
	\$81,541	\$93,183	\$98,362	\$103,693	\$110,766	\$124,064	\$121,191	\$108,336		\$109,107
55-59	3	37	38	46	34	68	48	15	1	290
	\$57,249	\$92,561	\$100,790	\$103,203	\$113,304	\$122,334	\$135,094	\$125,835	\$105,906	\$113,182
60-64	2	17	37	30	34	50	16	18	2	206
	\$55,806	\$90,952	\$103,725	\$95,397	\$109,140	\$128,657	\$122,600	\$113,086	\$127,735	\$110,455
65-69		8	6	17	11	29	14	9	3	97
		\$86,750	\$90,473	\$93,344	\$107,294	\$119,326	\$122,057	\$105,294	\$152,265	\$109,047
70+		1	3	4	5	10	2	3	3	31
		\$103,334	\$83,307	\$99,830	\$98,480	\$102,609	\$114,115	\$111,810	\$109,061	\$101,997
Total	41	378	339	313	211	310	114	54	9	1,769
	\$68,720	\$87,407	\$98,610	\$107,111	\$115,220	\$124,591	\$131,581	\$114,466	\$127,262	\$106,316

Active Age Service Grid – Male Members
Male Active Member Count and Pensionable Salary by Age and Service

Age	Years of Service									Total
	<1	1-4	5-9	10-14	15-19	20-24	25-29	30-34	35+	
<25	3	7	2							12
	\$68,973	\$63,811	\$76,128							\$67,155
25-29	6	19	2							27
	\$77,695	\$75,828	\$111,245							\$78,866
30-34	7	40	29	7						83
	\$65,208	\$85,657	\$95,268	\$114,937						\$89,760
35-39	1	42	36	37	6					122
	\$53,040	\$90,577	\$97,256	\$121,365	\$125,809					\$103,310
40-44	4	55	42	40	26	12				179
	\$70,585	\$98,260	\$104,688	\$110,560	\$123,053	\$131,004				\$107,695
45-49	1	34	41	42	33	41	6			198
	\$103,334	\$95,802	\$101,411	\$108,388	\$126,040	\$136,694	\$203,955			\$116,456
50-54	2	34	39	37	28	48	23	7		218
	\$82,784	\$95,544	\$98,818	\$107,479	\$113,270	\$124,695	\$121,430	\$110,913		\$109,958
55-59	3	23	27	32	25	51	41	10		212
	\$57,249	\$103,906	\$100,749	\$104,400	\$112,434	\$120,507	\$139,453	\$143,152		\$116,643
60-64		14	32	18	27	39	11	14	2	157
		\$96,177	\$107,131	\$101,056	\$109,181	\$130,056	\$124,599	\$117,182	\$127,735	\$113,888
65-69		8	5	13	10	18	12	8	2	76
		\$86,750	\$95,168	\$98,516	\$108,380	\$121,528	\$109,722	\$110,591	\$147,680	\$108,140
70+		1	1	3	4	7	1	2	2	21
		\$103,334	\$66,997	\$108,451	\$104,609	\$104,760	\$122,325	\$130,215	\$117,229	\$107,841
Total	27	277	256	229	159	216	94	41	6	1,305
	\$70,577	\$92,280	\$100,542	\$109,224	\$116,642	\$126,392	\$133,444	\$121,795	\$130,881	\$109,109

Active Age Service Grid – Female Members

Female Active Member Count and Pensionable Salary by Age and Service

Years of Service										
Age	<1	1-4	5-9	10-14	15-19	20-24	25-29	30-34	35+	Total
<25	1	3	1							5
	\$91,710	\$62,455	\$83,990							\$72,613
25-29	1	15	1							17
	\$58,573	\$70,710	\$98,316							\$71,620
30-34	2	22	19	3						46
	\$63,302	\$71,489	\$91,351	\$104,811						\$81,510
35-39	3	13	17	11	6					50
	\$62,381	\$75,247	\$84,483	\$114,917	\$117,314					\$91,391
40-44	3	14	3	19	11	7				57
	\$58,573	\$80,803	\$100,927	\$107,957	\$107,658	\$96,017				\$96,794
45-49		12	13	12	7	19				63
		\$77,305	\$99,838	\$113,718	\$123,549	\$123,983				\$108,106
50-54	2	5	10	8	10	26	5	2		68
	\$80,298	\$77,127	\$96,584	\$86,185	\$103,754	\$122,900	\$120,092	\$99,316		\$106,376
55-59		14	11	14	9	17	7	5	1	78
		\$73,924	\$100,891	\$100,467	\$115,721	\$127,815	\$109,561	\$91,202	\$105,906	\$103,775
60-64	2	3	5	12	7	11	5	4		49
	\$55,806	\$66,572	\$81,926	\$86,909	\$108,984	\$123,696	\$118,202	\$98,751		\$99,458
65-69			1	4	1	11	2	1	1	21
			\$66,994	\$76,535	\$96,429	\$115,723	\$196,063	\$62,917	\$161,434	\$112,333
70+			2	1	1	3	1	1	1	10
			\$91,462	\$73,965	\$73,965	\$97,588	\$105,906	\$75,002	\$92,726	\$89,725
Total	14	101	83	84	52	94	20	13	3	464
	\$65,140	\$74,041	\$92,651	\$101,350	\$110,870	\$120,451	\$122,822	\$91,351	\$120,022	\$98,460

Inactive Age Service Grid

Inactive Member Count and Final Pensionable Salary by Age and Service at Termination

Years of Service										
Age	<1	1-4	5-9	10-14	15-19	20-24	25-29	30-34	35+	Total
<25										
25-29	1 \$82,245	8 \$67,375								9 \$69,027
30-34	3 \$40,404	7 \$65,360	2 \$96,637							12 \$64,334
35-39	2 \$28,767	6 \$78,966	3 \$76,556	2 \$92,573						13 \$72,780
40-44	2 \$41,600	4 \$37,883	6 \$93,729	4 \$73,025	2 \$118,493					18 \$73,678
45-49	2 \$29,909	7 \$65,059	3 \$90,566	1 \$103,490	1 \$69,160	1 \$127,795				15 \$72,491
50-54	2 \$1,742	9 \$60,926	3 \$50,601	6 \$70,738	4 \$103,667			1 \$120,313		25 \$66,521
55-59	3 \$35,216	6 \$58,784	2 \$49,856	3 \$71,720	4 \$100,377			1 \$114,240		19 \$67,841
60-64	3 \$54,201	3 \$41,786	2 \$76,452		1 \$98,538			2 \$194,808		11 \$84,456
65-69	1 \$43,645	5 \$41,183			1 \$167,413	1 \$79,624				8 \$62,075
70+						1 \$73,803			1 \$123,799	2 \$98,801
Total	19 \$37,863	55 \$60,174	21 \$79,116	16 \$76,271	13 \$106,790	3 \$93,741		4 \$156,042	1 \$123,799	132 \$70,668

Annuitant Statistics by Tier and Gender

Retirement Annuities

Tier	Sex	Count	Avg Age	Total Annuity	Average Annuity
1	M	1,452	73.0	120,340,643	82,879
	F	<u>465</u>	70.6	<u>29,196,404</u>	62,788
	Total	1,917	72.4	149,537,047	78,006
2	M	0	0.0	0	0
	F	<u>0</u>	0.0	<u>0</u>	0
	Total	0	0.0	0	0
Total	M	1,452	73.0	120,340,643	82,879
	F	<u>465</u>	70.6	<u>29,196,404</u>	62,788
	Total	1,917	72.4	149,537,047	78,006

Surviving Spouse Annuities

Tier	Sex	Count	Avg Age	Total	Average
1	M	24	74.9	1,023,734	42,656
	F	<u>522</u>	79.9	<u>26,698,529</u>	51,147
	Total	546	79.7	27,722,263	50,773
2	M	0	0.0	0	0
	F	<u>0</u>	0.0	<u>0</u>	0
	Total	0	0.0	0	0
Total	M	24	74.9	1,023,734	42,656
	F	<u>522</u>	79.9	<u>26,698,529</u>	51,147
	Total	546	79.7	27,722,263	50,773

Distribution of Retirement Annuities by Age and Gender

	Male			Female			Total		
	Count	Total Annuities	Average Annuities	Count	Total Annuities	Average Annuities	Count	Total Annuities	Average Annuities
x < 45	0	0	0	0	0	0	0	0	0
45 <= x < 50	0	0	0	0	0	0	0	0	0
50 <= x < 55	25	2,300,601	92,024	11	712,080	64,735	36	3,012,681	83,686
55 <= x < 60	82	6,547,477	79,847	55	4,010,444	72,917	137	10,557,921	77,065
60 <= x < 65	200	15,808,836	79,044	74	5,631,168	76,097	274	21,440,004	78,248
65 <= x < 70	242	18,709,017	77,310	79	5,112,518	64,715	321	23,821,535	74,210
70 <= x < 75	320	28,682,699	89,633	113	6,948,109	61,488	433	35,630,808	82,288
75 <= x < 80	268	22,264,496	83,076	58	3,296,752	56,841	326	25,561,248	78,409
80 <= x < 85	153	13,096,478	85,598	39	1,794,982	46,025	192	14,891,460	77,560
85 <= x < 90	104	8,469,026	81,433	27	1,388,248	51,417	131	9,857,274	75,246
90 <= x	58	4,462,013	76,931	9	302,102	33,567	67	4,764,115	71,106
Total	1,452	120,340,643	82,879	465	29,196,404	62,788	1,917	149,537,047	78,006

Distribution of Surviving Spouse Annuities by Age and Gender

	Male			Female			Total		
	Count	Total Annuities	Average Annuities	Count	Total Annuities	Average Annuities	Count	Total Annuities	Average Annuities
x < 45	0	0	0	1	52,525	52,525	1	52,525	52,525
45 <= x < 50	0	0	0	2	82,511	41,255	2	82,511	41,255
50 <= x < 55	2	14,848	7,424	10	420,769	42,077	12	435,617	36,301
55 <= x < 60	1	4,501	4,501	13	577,332	44,410	14	581,834	41,560
60 <= x < 65	0	0	0	24	1,169,155	48,715	24	1,169,155	48,715
65 <= x < 70	2	177,158	88,579	38	2,300,233	60,532	40	2,477,390	61,935
70 <= x < 75	4	265,083	66,271	64	3,898,285	60,911	68	4,163,368	61,226
75 <= x < 80	7	285,132	40,733	90	5,022,259	55,803	97	5,307,392	54,715
80 <= x < 85	7	211,577	30,225	99	5,837,752	58,967	106	6,049,328	57,069
85 <= x < 90	0	0	0	85	4,017,186	47,261	85	4,017,186	47,261
90 <= x	1	65,435	65,435	96	3,320,522	34,589	97	3,385,957	34,907
Total	24	1,023,734	42,656	522	26,698,529	51,147	546	27,722,263	50,773

ACTUARIAL ASSUMPTIONS AND METHODS

Below is a summary of the actuarial assumptions for the December 31, 2020 valuation. An experience study was performed in September of 2018 based on data for the period December 31, 2012 through December 31, 2017. The assumptions below are based on the experience study and were adopted effective December 31, 2018.

Interest Rate	7.25%
Mortality Rates – Healthy and Disabled Lives	RP-2000 Combined Healthy Mortality Table with Generational Mortality Improvements (Scale AA). Female rates are adjusted by a factor of 1.04 and male rates are unadjusted.
Cost-of-Living Adjustment - Annuitants	
Members Hired On Or After January 1, 2011	1.25%
Members Hired Before January 1, 2011	3.00%
Inflation	2.50%
Salary Increases	See Table 1
Retirement Rates	See Table 2
Termination Rates	See Table 3
Disability Rates	See Table 4
Load for Reciprocal Benefits	1.5% of active member costs and liabilities.
Percent Married	76%
Spousal Age Difference	Spouse of male member assumed to be 4 years younger than member; Spouse of female member assumed to be 4 years older than member.

Actuarial Cost Method	Entry Age Normal, with costs allocated on basis of earnings. Actuarial gains and losses are reflected in the unfunded actuarial liability.
Actuarially Determined Contribution Requirement	<p>Section 13-503. Employer's normal cost plus the annual amount needed to amortize the unfunded liability by the year 2050 as a level percent of payroll.</p> <p>The funding goal is to attain a funded ratio of at least 100% by the year 2050.</p>
Actuarial Asset Method	Market value of assets adjusted by the unrecognized investment gains and losses for each of the five years prior to the valuation date. Gains and losses are recognized at a rate of 20% per year. Actuarial Assets shall not be less than 80% nor greater than 120% of Market Value of Assets.
Payroll Growth	3.00%
Assumed Administrative Expenses	Administrative expenses paid from the trust during the prior year.
Source of Data	Data and audited financial information is provided by the Fund.
Valuation Date	December 31, 2020.

Changes in Funding Assumptions/Methods Since the Prior Valuation

The valuation reflects no assumption or method changes since the prior year.

Table 1 – Salary Increase Rates

Service	Salary Increase Rate
0	7.00%
1	6.50%
2	5.75%
3	5.50%
4	5.25%
5	6.00%
6	5.00%
7	4.75%
8	4.50%
9	4.25%
10	5.00%
11 - 14	4.00%
15	5.00%
16 - 19	4.00%
20	5.00%
21+	3.50%

Table 2 – Retirement Rates

Age	Retirement Rate
50 - 59	7%
60	20%
61 - 64	10%
65	15%
66	18%
67	25%
68	15%
69	30%
70	35%
71 - 74	20%
75	100%

Table 3 – Termination Rates

Service	Male Rate	Female Rate
0	5.00%	7.75%
1	3.50%	6.75%
2	3.50%	5.75%
3	2.60%	4.75%
4	2.24%	4.52%
5	2.15%	4.49%
6	1.75%	4.19%
7	1.70%	3.94%
8	1.65%	3.74%
9	1.55%	3.54%
10	1.55%	3.34%
11	1.55%	3.14%
12	1.45%	2.94%
13	1.40%	2.85%
14	1.35%	2.52%
15	1.20%	2.52%
16+	1.00%	2.52%

Table 4 – Disability Rates (Sample Rates)

Age	Disability Rate
20	0.002%
25	0.003%
30	0.006%
35	0.014%
40	0.033%
45	0.065%
50	0.120%
55	0.225%
60	0.490%
65	0.000%

GLOSSARY

Total Annual Payroll is the annual pensionable salary as of the valuation date.

Present Value of Benefits is the single sum value on the valuation date of all future benefits to be paid to current Members, Retirees, Beneficiaries, Disability Retirees and Vested Terminations.

Normal (Current Year's) Cost is the current year's cost for benefits yet to be funded.

Unfunded Accrued Liability is a liability which arises when a pension plan is initially established or improved and such establishment or improvement is applicable to all years of past service.

Total Recommended Contribution is equal to the Normal Cost plus an amount sufficient to amortize 100% of the Unfunded Accrued Liability over a period ending in 2050.

Entry Age Normal Cost Method - Under this method, the normal cost is the sum of the individual normal costs for all active participants. For an active participant, the normal cost is the participant's normal cost accrual rate, multiplied by the participant's current compensation.

- (a) The normal cost accrual rate equals:
 - (i) the present value of future benefits for the participant, determined as of the participant's entry age, divided by
 - (ii) the present value of the compensation expected to be paid to the participant for each year of the participant's anticipated future service, determined as of the participant's entry age.
- (b) In calculating the present value of future compensation, the salary scale is applied both retrospectively and prospectively to estimate compensation in years prior to and subsequent to the valuation year based on the compensation used for the valuation.
- (c) The accrued liability is the sum of the individual accrued liabilities for all participants and beneficiaries. A participant's accrued liability equals the present value, at the participant's attained age, of future benefits less the present value at the participant's attained age of the individual normal costs payable in the future. A beneficiary's accrued liability equals the present value, at the beneficiary's attained age, of future benefits. The unfunded accrued liability equals the total accrued liability less the actuarial value of assets.
- (d) Under this method, the entry age used for each active participant is the participant's age at the time he or she would have commenced participation if the plan had always been in existence under current terms, or the age as of which he or she first earns service credits for purposes of benefit accrual under the current terms of the plan.

DISCUSSION OF RISK

ASOP No. 51, Assessment and Disclosure of Risk Associated with Measuring Pension Obligations and Determining Pension Plan Contributions, states that the actuary should identify risks that, in the actuary's professional judgment, may reasonably be anticipated to significantly affect the plan's future financial condition.

Throughout this report, actuarial results are determined under various assumption scenarios. These results are based on the premise that all future plan experience will align with the plan's actuarial assumptions; however, there is no guarantee that actual plan experience will align with the plan's assumptions. It is possible that actual plan experience will differ from anticipated experience in an unfavorable manner that will negatively impact the plan's funded position.

Below are examples of ways in which plan experience can deviate from assumptions and the potential impact of that deviation. Typically, this results in an actuarial gain or loss representing the current-year financial impact on the plan's unfunded liability of the experience differing from assumptions; this gain or loss is amortized over a period of time determined by the plan's amortization method. When assumptions are selected that adequately reflect plan experience, gains and losses typically offset one another in the long term, resulting in a relatively low impact on the plan's contribution requirements associated with plan experience. When assumptions are too optimistic, losses can accumulate over time and the plan's amortization payment could potentially grow to an unmanageable level.

- Investment Return: When the rate of return on the Actuarial Value of Assets falls short of the assumption, this produces a loss representing assumed investment earnings that were not realized. Further, it is unlikely that the plan will experience a scenario that matches the assumed return in each year as capital markets can be volatile from year to year. Therefore, contribution amounts can vary in the future.
- Salary Increases: When a plan participant experiences a salary increase that was greater than assumed, this produces a loss representing the cost of an increase in anticipated plan benefits for the participant as compared to the previous year. The total gain or loss associated with salary increases for the plan is the sum of salary gains and losses for all active participants.
- Payroll Growth: The plan's payroll growth assumption, if one is used, causes a predictable annual increase in the plan's amortization payment in order to produce an amortization payment that remains constant as a percentage of payroll if all assumptions are realized. If payroll does not increase according to the plan's payroll growth assumption, the plan's amortization payment can increase significantly as a percentage of payroll even if all assumptions other than the payroll growth assumption are realized.
- Demographic Assumptions: Actuarial results take into account various potential events that could happen to a plan participant, such as retirement, termination, disability, and death. Each of these potential events is assigned a liability based on the likelihood of the event and the financial consequence of the event for the plan. Accordingly, actuarial liabilities reflect a blend of financial consequences associated with various possible outcomes (such as retirement at one of various possible ages). Once the outcome is known (e.g. the participant retires) the liability is adjusted to reflect the known outcome. This adjustment produces a gain or loss depending on whether the outcome was more or less favorable than other outcomes that could

have occurred.

- **Contribution Risk:** This risk results from the potential that actual employer contributions may deviate from actuarially determined contributions, which are determined in accordance with the Board's funding policy. The funding policy is intended to result in contribution requirements that if paid when due, will result in a reasonable expectation that assets will accumulate to be sufficient to pay plan benefits when due. Contribution deficits, particularly large deficits and those that occur repeatedly, increase future contribution requirements and put the plan at risk for not being able to pay plan benefits when due.

Impact of Plan Maturity on Risk

For newer pension plans, most of the participants and associated liabilities are related to active members who have not yet reached retirement age. As pension plans continue in operation and active members reach retirement ages, liabilities begin to shift from being primarily related to active members to being shared amongst active and retired members. Plan maturity is a measure of the extent to which this shift has occurred. It is important to understand that plan maturity can have an impact on risk tolerance and the overall risk characteristics of the plan. For example, plans with a large amount of retired liability do not have as long of a time horizon to recover from losses (such as losses on investments due to lower than expected investment returns) as plans where the majority of the liability is attributable to active members. For this reason, less tolerance for investment risk may be warranted for highly mature plans with a substantial inactive liability. Similarly, mature plans paying substantial retirement benefits resulting in a small positive or net negative cash flow can be more sensitive to near term investment volatility, particularly if the size of the fund is shrinking, which can result in less assets being available for investment in the market.

To assist with determining the maturity of the Fund, we have provided some relevant metrics in the table following titled "Fund Maturity Measures and Other Risk Metrics". Highlights of this information are discussed below:

- The Support Ratio, determined as the ratio of active to inactive members, has decreased from 72.2% on December 31, 2017 to 67.6% on December 31, 2020, indicating that the plan has been rapidly maturing.
- The Accrued Liability Ratio, determined as the ratio of the Inactive Accrued Liability, which is the liability associated with members who are no longer employed but are due a benefit from the Fund, to the Total Accrued Liability, is 74.9%. With a plan of this maturity, losses due to lower than expected investment returns or demographic factors will need to be made up for over a shorter time horizon than would be needed for a less mature plan.
- The Funded Ratio, determined as the ratio of the Actuarial Value of Assets to the Total Accrued Liability, has stayed approximately the same from December 31, 2017 to December 31, 2020.
- The Net Cash Flow Ratio, determined as the ratio of the Net Cash Flow (contributions minus benefit payments and administrative expenses) to the Market Value of Assets, stayed approximately the same from December 31, 2017 to December 31, 2020. The current Net Cash Flow Ratio of -3.2% indicates that contributions are not currently covering the plan's benefit payments and administrative expenses..

It is important to note that the actuary has identified the risks above as the most significant risks based on the characteristics of the Fund and the nature of the project, however, it is not an exhaustive list of potential risks that could be considered. Additional advanced modeling, as well as the identification of additional risks, can be provided at the request of the audience addressed in the cover letter of this report.

Fund Maturity Measures and Other Risk Metrics

	12/31/2020	12/31/2019	12/31/2018	12/31/2017
<u>Support Ratio</u>				
Total Actives	1,769	1,817	1,832	1,835
Total Inactives	2,615	2,596	2,570	2,543
Actives / Inactives	67.6%	70.0%	71.3%	72.2%
<u>Asset Volatility Ratio</u>				
Market Value of Assets (MVA)	1,580,890,628	1,506,834,278	1,343,994,268	1,501,793,976
Total Annual Payroll	188,542,848	190,294,933	188,156,185	184,807,353
MVA / Total Annual Payroll	838.5%	791.8%	714.3%	812.6%
<u>Accrued Liability (AL) Ratio</u>				
Inactive Accrued Liability	2,033,769,790	1,950,055,911	1,859,384,499	1,761,257,761
Total Accrued Liability	2,714,192,284	2,666,221,630	2,601,163,632	2,497,890,179
Inactive AL / Total AL	74.9%	73.1%	71.5%	70.5%
<u>Funded Ratio</u>				
Actuarial Value of Assets (AVA)	1,556,056,167	1,489,266,144	1,470,308,639	1,456,195,876
Total Accrued Liability	2,714,192,284	2,666,221,630	2,601,163,632	2,497,890,179
AVA / Total Accrued Liability	57.3%	55.9%	56.5%	58.3%
<u>Net Cash Flow Ratio</u>				
Net Cash Flow ¹	(50,043,109)	(62,321,928)	(54,809,061)	(45,628,966)
Market Value of Assets (MVA)	1,580,890,628	1,506,834,278	1,343,994,268	1,501,793,976
Ratio	-3.2%	-4.1%	-4.1%	-3.0%

¹ Determined as total contributions and other income minus benefit payments and administrative expenses.

PLAN PROVISIONS

The following describe and reflect provisions in effect as described in Article 13 of the Illinois Pension Code. The provisions below reflect changes included in Public Act 96-0889 and Public Act 96-1490, which created the second “tier” of benefits for members hired on or after January 1, 2011 and provided clarifying changes.

Eligibility	All employees of the District whose duties indicate service during the calendar year for a minimum of 120 days are eligible.
Normal Retirement Eligibility	<p>Hired before January 1, 2011: Age 60 and 5 years of service</p> <p>Hired on or after January 1, 2011: Age 67 and 10 years of service</p>
Normal Retirement Benefit	<p>The annual benefit payable immediately is equal to the sum of:</p> <ul style="list-style-type: none">(a) 2.2% of Average Final Salary for each year of service up to 20 years.(b) 2.4% of Average Final Salary for each year of service in excess of 20 years <p>The benefit shall not exceed 80% of Average Final Salary.</p>
Early Retirement Eligibility	<p>Hired before January 1, 2011: Age 55 (50 if hired before June 13, 1997) and 10 years of service</p> <p>Hired on or after January 1, 2011: Age 62 and 10 years of service</p>
Early Retirement Benefit	<p>Normal Retirement Benefit reduced as follows:</p> <p>Hired before January 1, 2011: If member retires before reaching age 60 with less than 30 years of service, 0.5% for each full month the member is less than age 60 or service is less than 30 years, whichever is less.</p> <p>Hired on or after January 1, 2011: 0.5% per month the member is less than age 67</p>
Deferred Retirement Eligibility	Tier 1: Age 55 (50 if hired before June 13, 1997) and 5 years of service. Tier 2: 10 years of service

Deferred Retirement Benefit	<p>The annual benefit payable at the following ages:</p> <p>Hired before January 1, 2011:</p> <p>Age 62, if withdraw on or after age 55 (50 if hired before June 13, 1997) with at least 5 years of service and less than 10 years</p> <p>Age 55 (50 if hired before June 13, 1997), if withdraw with 10 years of service</p> <p>Hired on or after January 1, 2011: Age 62, if withdraw with 10 years of service</p> <p>The annual benefit amount equals the Normal Retirement Benefit reduced with Early Retirement Reductions.</p>
Minimum Retirement Annuity	<p>10 years of service: \$500 per month plus \$25 per month for each year of service in excess of 10 years, not to exceed \$750 with 20 years of service</p> <p>Less than 10 years of service or retirement before age 60: \$250 per month</p>
Duty Disability Eligibility	<p>Member incurs injury or sickness due to employment with the District and is compensable under the Workers' Compensation Act or the Occupational Disease Act.</p>
Duty Disability Benefit	<p>75% of salary earned on the date of disability, less the amount paid by Workers' Compensation</p> <p>Benefit is 50% of salary if disability resulted from physical defect or disease that existed at the time injury was sustained.</p> <p>Benefits are payable during period of disablement, but not beyond attainment of age 65. If disability occurs at age 60 or older, benefits are payable for a maximum of 5 years.</p>
Ordinary Disability Eligibility	<p>Member becomes disabled due to any cause other than injury or illness incurred in the performance of duty.</p>
Ordinary Disability Benefit	<p>50% of earnable salary at the date of disability</p> <p>Member may receive ordinary disability benefits for a maximum period of the lesser of 25% of member's actual service prior to disablement or 5 years.</p>

Surviving Spouse Annuity Eligibility

Hired before June 13, 1997: Immediately eligible if married to member on date of member's death while in service or married to member on member's date of termination from service and remained married until member's death. Dissolution of marriage after retirement shall not divest the member's spouse of entitlement if marriage was in effect for at least 10 years on the date of retirement.

Hired on or after June 13, 1997: Eligible after 3 years of service. Conditions for marriage described for members hired prior to June 13, 1997 apply.

Surviving Spouse Benefit

Hired before January 1, 2011: Retirement annuity earned at the time of death multiplied by a factor of 60% plus 1% for each year of member's total service, to a maximum of 85%. If hired after January 1, 1992, annuity is reduced by 0.25% for each full month spouse is younger than member to maximum reduction of 60%. Discount is reduced by 10% for each year marriage is in effect.

Hired on or after January 1, 2011: 66 2/3% of retirement annuity earned at the time of death.

Minimum Surviving Spouse Annuity

Member with 10 years of service: greater of (a) \$500 per month plus \$25 per month for each year of service in excess of 10, not to exceed \$750 per month, or (b) 50% of the retirement annuity of member at time of death.

Member with less than 10 years of service: \$250 per month.

Children's Annuity Eligibility

Member parent dies in service or deceased parent was former member with at least 10 years of service. Child is unmarried and less than age 18 (23, if full-time student).

Children's Annuity Benefit

\$500 per month for each child if have living parent and \$1,000 per month for each child if neither parent is living to a maximum of \$5,000 per month.

Cost-of-Living Adjustments

Hired before January 1, 2011: Retirement annuity is increased on the anniversary of retirement by 3% of the monthly annuity payable at the time of increase.

Spouse annuity is increased on the earlier of the anniversary of the member's death or retirement (whichever occurs first) by 3% of the monthly annuity payable at the time of increase.

Hired on or after January 1, 2011: increase percentage is the lesser of 3% or ½ the increase in CPI-U during the previous calendar year. Increase is based on the originally granted retirement or spouse's annuity.

Member Contributions – retiree annuity

<u>Pay period:</u>	<u>Contribution % Annuity:</u>	<u>Contribution % Annual Inc.:</u>
Before January 1, 2013	7.0%	0.5%
During calendar year 2013	7.5%	1.0%
During calendar year 2014	8.0%	1.5%
During calendar year 2015 and until Fund is 90% funded	8.5%	1.5%
After Fund is 90% funded	7.0%	0.5%

Members hired on or after January 1, 2011 have member contributions of 7.5% (7.0% of pay for the annuity and 0.5% of pay for annual increases).

Member Contributions – spouse annuity

<u>Pay period:</u>	<u>Contribution percentage:</u>
Before January 1, 2015	1.5%
During calendar year 2015 and until Fund is 90% funded	2.0%
After Fund is 90% funded	1.5%

Members hired on or after January 1, 2011 contribute 1.5% of pay.

Refund to Member upon Termination	<p>Hired before January 1, 2011: Eligible for refund of all member contributions without interest if under age 55 (50 if hired before June 13, 1997); if age 60 with less than 20 years of service; or if 60 with less than 5 years of service. Upon receipt of refund, member forfeits rights to benefits from the Fund.</p> <p>Hired on or after January 1, 2011: Eligible for refund of all member contributions without interest if under age 62; or if have less than 10 years of service on termination. Upon receipt of refund, member forfeits rights to benefits from the Fund.</p>
Refund for Surviving Spouse's Annuity	<p>Members unmarried at the time of retirement will receive a refund of contributions for spouse annuity with interest at 3% per year, compounded annually.</p>
Refund of Remaining Amounts	<p>If upon death the total amount contributed by the member with 3% interest per year has not been paid to the member, the spouse or designated beneficiaries or estate receives a refund of the excess amount.</p>
Required Contribution – Illinois Pension Code	<p>Lesser of actuarially determined contribution and 4.19 multiplied by total member contributions for the two years prior.</p>
District's Funding Policy	<p>Effective August 27, 2014, the District implemented a policy of contributing an amount equal to 4.19 multiplied by total member contributions for the two years prior until the Fund reaches a funded ratio of 100%.</p>
Pension Service	<p>Any employment, excluding overtime or extra service for which salary is received.</p>
Average Final Salary	<p>Hired before January 1, 2011: Highest average annual salary for any 52 consecutive bi-weekly pay periods within the last 10 years of service immediately preceding the date of retirement.</p> <p>Hired on or after January 1, 2011: Highest average annual salary for 96 consecutive months of service within last 120 months of service, limited to \$106,800 (automatically increased by lesser of 3% or ½ the increase in CPI-U during the previous calendar year).</p>

Pensionable Salary

Salary paid to a Fund member for service to the District or to the Fund, including salary paid for vacation and sick leave and any amounts deferred under a deferred compensation plan established under the Code, but excluding the following: payment for unused vacation or sick leave, overtime pay, termination pay and any compensation in the form of benefits other than salary.

Salary for members hired on or after January 1, 2011 is subject to the salary limitations established in the Illinois Pension Code. The statutory salary limitation is \$115,928.92 for calendar year 2020 and \$116,740.42 for calendar 2021.

Changes in Fund Provisions Since the Prior Valuation

- None

SUPPLEMENTARY TABLES

Table 1 – History of the Development of Unfunded Actuarial Accrued Liability

	Year Ending December 31				
	2020	2019	2018	2017	2016
1. Unfunded Actuarial Accrued Liability (UAAL), as of beginning of year	1,176,955,486	1,130,854,993	1,041,694,303	1,070,919,694	1,063,049,156
2. Employer Normal Cost, as of beginning of year	12,115,137	12,537,329	11,897,996	12,094,866	12,130,605
3. Expected Interest on 1. and 2.	86,207,620	82,895,943	79,019,422	81,226,842	80,638,482
4. Employer Contributions, with interest	111,693,429	90,560,949	90,377,021	93,166,990	83,215,042
5. Employer Contributions in Excess of Normal Cost plus Interest (4) - (2) - (3)	13,370,672	(4,872,323)	(540,397)	(154,718)	(9,554,045)
6. Expected UAAL as of December 31, 2020 (1)+(2)+(3)-(4)	1,163,584,814	1,135,727,316	1,042,775,097	1,071,084,412	1,072,603,201
7. Change in UAAL Due to Actuarial (Gain)/Loss, by component:					
Investment Return	(10,483,804)	23,071,682	40,260,410	(27,925,002)	(15,960,567)
Salary Increases	(6,558,614)	(4,517,433)	(7,369,068)	(11,576,111)	(844,096)
Decrement Experience	18,970,774	21,233,555	14,320,903	13,672,315	12,199,482
Inactive Mortality Experience	(1,824,785)	(1,301,600)	4,104,912	(2,787,776)	311,000
Other Changes	(5,552,268)	2,741,966	(135,723)	(773,535)	2,620,674
Total change due to (Gain)/Loss	(5,448,697)	41,228,170	51,181,434	(29,390,109)	(1,673,507)
8. Change in UAAL Due to Assumption Changes/ Method Changes	-	-	37,438,859	-	-
9. Unfunded Actuarial Accrued Liability, as of end of the year	1,158,136,117	1,176,955,486	1,130,854,993	1,041,694,303	1,070,929,694

Table 2 – History of Active Member Data

Actuarial Valuation Date	Active Members	Percent Increase	Annual Payroll	Percent Increase	Annual Pensionable Payroll	Percent Increase	Average Pensionable Payroll	Percent Increase
12/31/2011	1,888		164,275,424		164,275,424		87,010	
12/31/2012	1,856	-1.7%	163,816,934	-0.3%	163,816,934	-0.3%	88,263	1.4%
12/31/2013	1,858	0.1%	169,375,857	3.4%	169,375,857	3.4%	91,160	3.3%
12/31/2014	1,873	0.8%	176,183,941	4.0%	176,183,941	4.0%	94,065	3.2%
12/31/2015	1,846	-1.4%	177,792,308	0.9%	177,507,159	0.8%	96,158	2.2%
12/31/2016	1,843	-0.2%	182,980,055	2.9%	182,640,163	2.9%	99,099	3.1%
12/31/2017	1,835	-0.4%	184,807,353	1.0%	184,385,188	1.0%	100,482	1.4%
12/31/2018	1,832	-0.2%	188,156,185	1.8%	187,849,708	1.9%	102,538	2.0%
12/31/2019	1,817	-0.8%	190,294,933	1.1%	189,961,010	1.1%	104,547	2.0%
12/31/2020	1,769	-2.6%	188,542,848	-0.9%	188,072,970	-1.0%	106,316	1.7%
5-year Average Increase/ (Decrease)		-0.8%		1.2%		1.2%		2.0%

Table 3 – History of Employee Annuitant Data

Actuarial Valuation Date	Employee Annuitant	Total Annuities (Annual)	Average Annuities (Annual)	Increase in Average Benefit	Average Age
12/31/2011	1,683	101,092,773	60,067	n/a	n/a
12/31/2012	1,681	104,021,486	61,881	3.02%	n/a
12/31/2013	1,704	108,173,524	63,482	2.59%	n/a
12/31/2014	1,729	113,079,769	65,402	3.02%	n/a
12/31/2015	1,760	118,892,219	67,552	3.29%	n/a
12/31/2016	1,779	123,491,448	69,416	2.76%	n/a
12/31/2017	1,809	129,366,688	71,513	3.02%	n/a
12/31/2018	1,848	135,435,622	73,288	2.48%	n/a
12/31/2019	1,883	142,324,135	75,584	3.13%	72.4
12/31/2020	1,917	149,537,047	78,006	3.20%	72.4

Table 4 – History of Survivor/Child Annuitants

Actuarial Valuation Date	Surviving Spouse Annuitants	Total Spouse Annuities (Annual)	Average Spouse Annuities (Annual)	Increase in Average Spouse Benefit	Child Annuitants	Total Child Annuities
12/31/2011	628	17,961,273	28,601	n/a	17	114,000
12/31/2012	619	19,071,845	30,811	7.73%	17	114,000
12/31/2013	605	19,768,391	32,675	6.05%	20	138,000
12/31/2014	593	20,683,050	34,879	6.74%	21	132,000
12/31/2015	580	21,835,988	37,648	7.94%	19	114,000
12/31/2016	590	23,770,312	40,289	7.01%	25	150,000
12/31/2017	576	24,615,058	42,734	6.07%	23	138,000
12/31/2018	571	25,965,116	45,473	6.41%	24	144,000
12/31/2019	561	27,127,117	48,355	6.34%	21	126,000
12/31/2020	546	27,722,263	50,773	5.00%	20	120,000

Table 5 – History of New Annuitants

Year of Retirement	Number of New Employee Annuitants	Average Annual Benefit at Retirement	Average Age at Retirement	Average Service at Retirement
2012	60	51,464	61.7	n/a
2013	75	45,960	60.6	n/a
2014	80	55,123	61.7	n/a
2015	101	56,673	61.3	n/a
2016	87	57,656	62.6	n/a
2017	98	59,842	59.6	n/a
2018	99	61,111	60.5	n/a
2019	94	73,717	60.9	24.2
2020	104	70,592	61.1	24.0

Table 6 – History of Employee Annuitants and Survivor Annuitants Added to Payroll

Year of Retirement	Employee Annuitants				Survivor Annuitants			
	Added		Removed		Added		Removed	
	Number	Annual Benefits ¹	Number	Annual Benefits	Number	Annual Benefits ¹	Number	Annual Benefits
2011	146	12,073,715	66	2,827,418	34	1,528,506	38	460,244
2012	60	6,027,239	62	3,098,526	38	1,969,114	47	858,542
2013	75	6,497,171	52	2,345,333	29	1,718,098	43	1,021,552
2014	80	7,583,277	55	2,677,032	28	1,846,441	40	931,782
2015	101	9,640,885	70	3,828,434	34	2,313,674	47	1,160,738
2016	87	8,688,540	68	4,089,312	42	3,096,415	32	1,162,089
2017	98	14,254,728	68	3,780,260	25	1,991,463	39	1,146,717
2018	99	6,049,960	60	3,769,202	30	1,798,261	35	1,046,607
2019	94	10,830,012	59	3,941,499	28	2,408,555	38	1,246,555
2020	104	11,484,248	70	4,271,335	34	2,659,591	49	2,064,444

¹ Annual benefits added to the payroll include annuity amounts for new annuitants during the year and cost-of-living increases for existing annuitants.

Table 7 – History of Development of Actuarial Value of Assets

Year Ended	Employer Contributions	Employee Contributions	Gross Investment Income	Administrative/ Investment Expenses	Benefit Payments	Refunds	Actuarial Value of Assets, End of Year	Market Value Return
12/31/2011	37,379,137	15,031,961	3,012,778	5,787,836	118,102,369	2,711,115	1,097,397,206	-0.3%
12/31/2012	65,097,835	14,714,496	121,081,385	6,052,080	122,713,908	1,195,737	1,076,740,164	11.9%
12/31/2013	92,944,381	16,890,798	231,567,647	6,856,698	127,205,981	1,128,922	1,188,503,716	21.7%
12/31/2014	73,906,168	18,974,954	87,504,592	7,306,073	132,913,502	984,346	1,263,287,068	6.7%
12/31/2015	71,041,361	21,385,212	4,143,814	7,202,753	139,160,911	1,348,845	1,307,982,039	-0.2%
12/31/2016	80,259,713	20,830,779	118,306,730	6,116,322	145,325,385	2,010,630	1,372,361,950	9.5%
12/31/2017	89,858,224	20,839,829	199,445,312	6,234,729	152,152,914	2,560,129	1,456,195,876	15.6%
12/31/2018	87,167,339	21,032,601	(97,717,715)	6,958,411	159,561,047	1,762,475	1,470,308,639	-7.4%
12/31/2019	87,446,476	21,182,425	230,494,663	6,974,934	167,480,736	1,827,884	1,489,266,144	18.3%
12/31/2020	107,852,191	20,982,056	128,773,718	6,264,304	174,996,453	2,290,858	1,556,056,167	8.7%
Average 5-Year Return								8.5%
Average 10-Year Return								8.1%

Table 8 – Funding Progress

Fiscal Year	Actuarial Accrued Liability	Actuarial Value of Assets	Fair Value of Net Assets	AVA / FVA	UAAL (AVA)	UAAL (FVA)	Funded Ratio (AVA)	Funded Ratio (FVA)	Covered Payroll
2011	2,101,319,098	1,097,397,206	1,021,470,611	107.43%	1,003,921,892	1,079,848,487	52.2%	48.6%	164,275,424
2012	2,136,508,223	1,076,740,164	1,092,402,602	98.57%	1,059,768,059	1,044,105,621	50.4%	51.1%	163,816,934
2013	2,194,911,693	1,188,503,716	1,298,613,827	91.52%	1,006,407,977	896,297,866	54.1%	59.2%	169,375,857
2014	2,296,438,698	1,263,287,068	1,337,795,620	94.43%	1,033,151,630	958,643,078	55.0%	58.3%	176,183,941
2015	2,371,031,195	1,307,982,039	1,286,653,498	101.66%	1,063,049,156	1,084,377,697	55.2%	54.3%	177,507,159
2016	2,443,291,644	1,372,361,950	1,352,598,383	101.46%	1,070,929,694	1,090,693,261	56.2%	55.4%	182,640,163
2017	2,497,890,179	1,456,195,876	1,501,793,976	96.96%	1,041,694,303	996,096,203	58.3%	60.1%	184,385,188
2018	2,601,163,632	1,470,308,639	1,343,994,268	109.40%	1,130,854,993	1,257,169,364	56.5%	51.7%	187,849,708
2019	2,666,221,630	1,489,266,144	1,506,834,278	98.83%	1,176,955,486	1,159,387,352	55.9%	56.5%	189,961,010
2020	2,714,192,284	1,556,056,167	1,580,890,628	98.43%	1,158,136,117	1,133,301,656	57.3%	58.2%	188,072,970

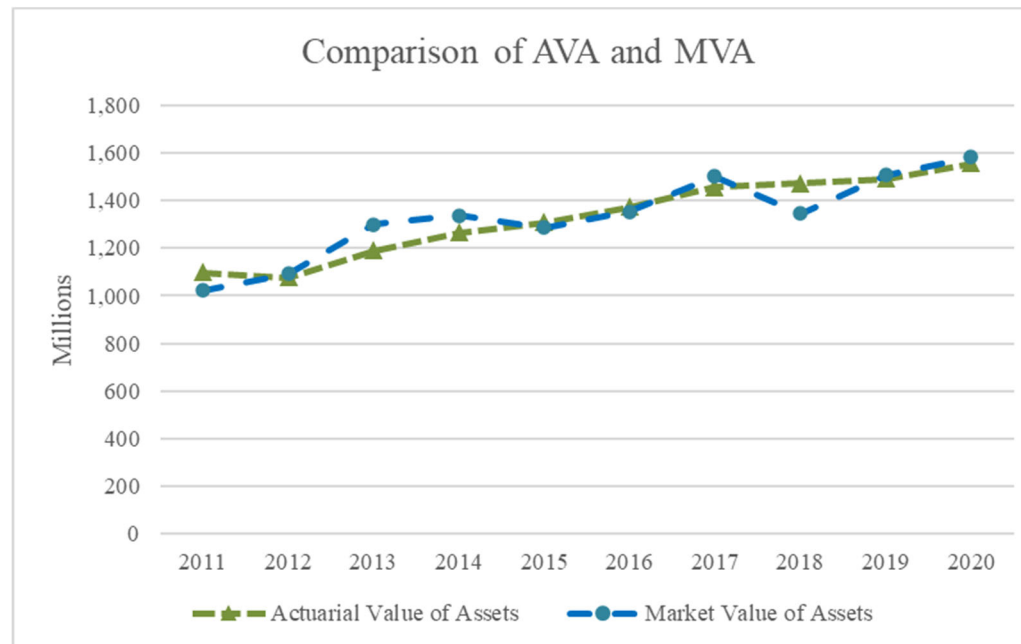


Table 9 – Solvency Test

Year Ended	Actuarial Accrued Liabilities			Actuarial Value of Assets	Portion of Liabilities Covered by Assets		
	(1)	(2)	(3)		(1)	(2)	(3)
	Active and Inactive Member Contributions	Retirees and Survivors	Active and Inactive Members (ER Financed)		Active and Inactive Member Contributions	Retirees and Survivors	Active and Inactive Members (ER Financed)
12/31/2011	199,015,897	1,433,294,765	469,008,436	1,097,397,206	100%	63%	0%
12/31/2012	213,323,414	1,431,829,221	491,355,588	1,076,740,164	100%	60%	0%
12/31/2013	223,354,127	1,463,856,177	507,701,389	1,188,503,716	100%	66%	0%
12/31/2014	231,430,077	1,541,326,692	422,154,924	1,263,287,068	100%	67%	0%
12/31/2015	236,967,954	1,616,195,435	517,867,805	1,307,982,039	100%	66%	0%
12/31/2016	244,239,334	1,676,732,070	522,320,240	1,372,361,950	100%	67%	0%
12/31/2017	247,730,731	1,745,598,298	504,561,150	1,456,195,876	100%	69%	0%
12/31/2018	251,845,144	1,843,563,888	505,754,600	1,470,308,639	100%	66%	0%
12/31/2019	251,719,321	1,929,940,867	484,561,442	1,489,266,144	100%	64%	0%
12/31/2020	249,921,777	2,013,763,878	450,506,629	1,556,056,167	100%	65%	0%

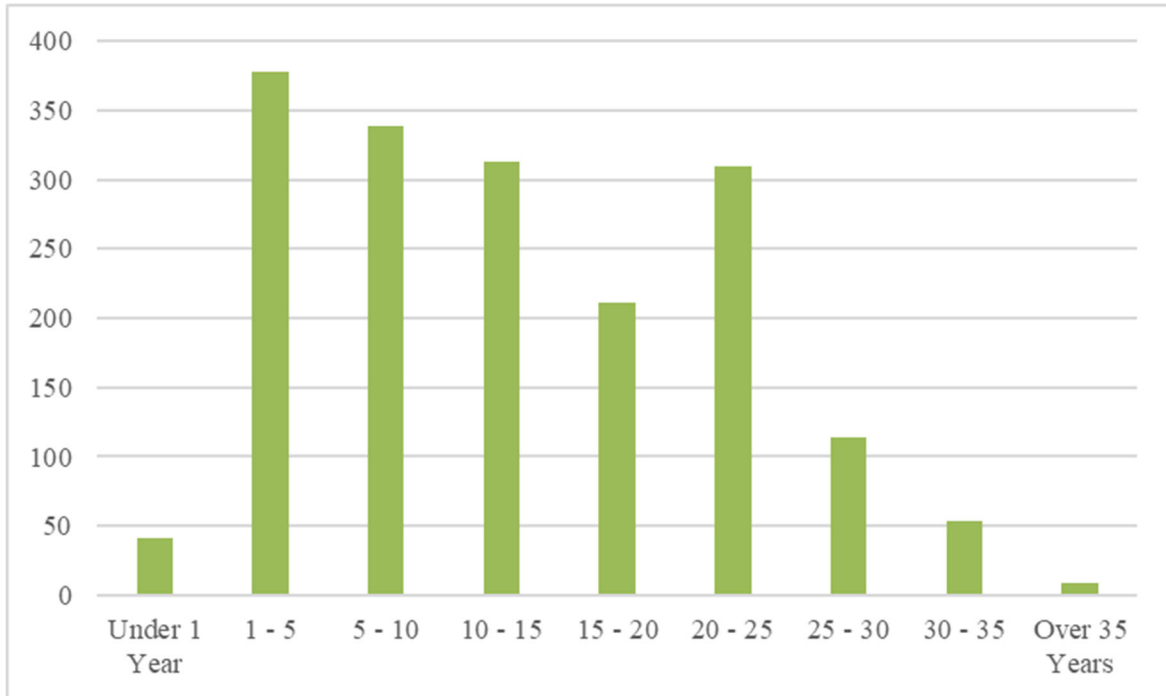
Table 10 – Contribution History

Contribution Year Ended	Actuarially Determined Contribution for Fiscal Year End	Maximum Employer Contribution	Employer Contribution	% of Actuarially Determined Contribution Contributed	Estimated Multiplier Necessary to Match ADC
12/31/2011	69,393,171	34,362,000	37,379,137	53.87%	4.42
12/31/2012	74,828,844	34,761,000	65,097,835	87.00%	2.82
12/31/2013	74,774,148	62,984,000	92,944,381	124.30%	2.98
12/31/2014	69,924,438	61,654,000	73,906,168	105.69%	3.94
12/31/2015	62,603,576	70,772,000	71,041,361	113.48%	3.71
12/31/2016	64,596,066	79,505,000	80,259,713	124.25%	3.40
12/31/2017	65,727,912	89,604,000	89,858,224	136.71%	3.07
12/31/2018	64,988,583	87,281,000	87,167,339	134.13%	3.12
12/31/2019	74,279,999	87,319,000	87,446,476	117.73%	3.56
12/31/2020	77,392,414	88,127,000	107,852,191	139.36%	3.68

Table 11 – Contribution Rates

Year	Total Actuarially Determined Contribution Rate	Actual Employer Contribution	Actual Employee Contribution	Deficiency (Excess) in Annual Contribution
2011	48.77%	21.42%	8.62%	18.73%
2012	54.54%	39.62%	8.96%	5.96%
2013	55.62%	56.73%	10.31%	-11.42%
2014	52.18%	43.63%	11.20%	-2.65%
2015	47.28%	40.32%	12.14%	-5.18%
2016	48.06%	45.21%	11.74%	-8.89%
2017	47.52%	49.20%	11.41%	-13.09%
2018	46.67%	47.27%	11.41%	-12.01%
2019	50.86%	46.55%	11.28%	-6.97%
2020	51.93%	56.78%	11.05%	-15.90%
2021	51.93%	47.19% (Est)	11.07% (Est)	-6.33% (Est)

Graph 12 – Distribution of Active Members by Service



Graph 13 – Distribution of Active Members by Age

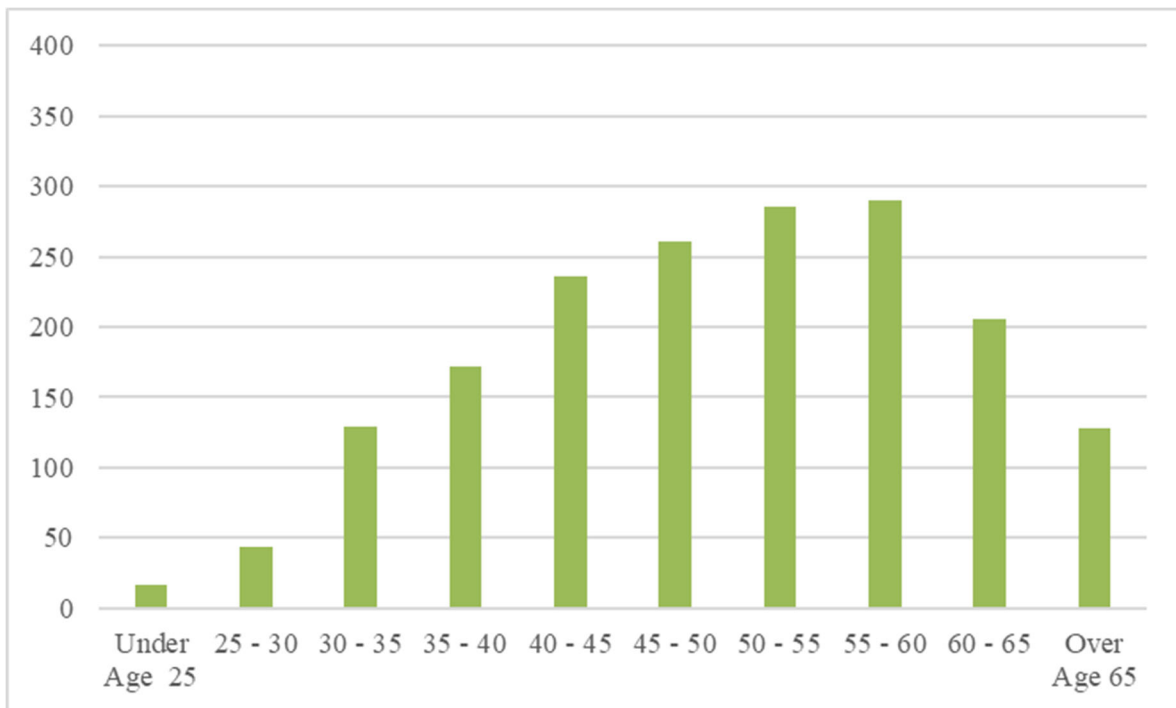
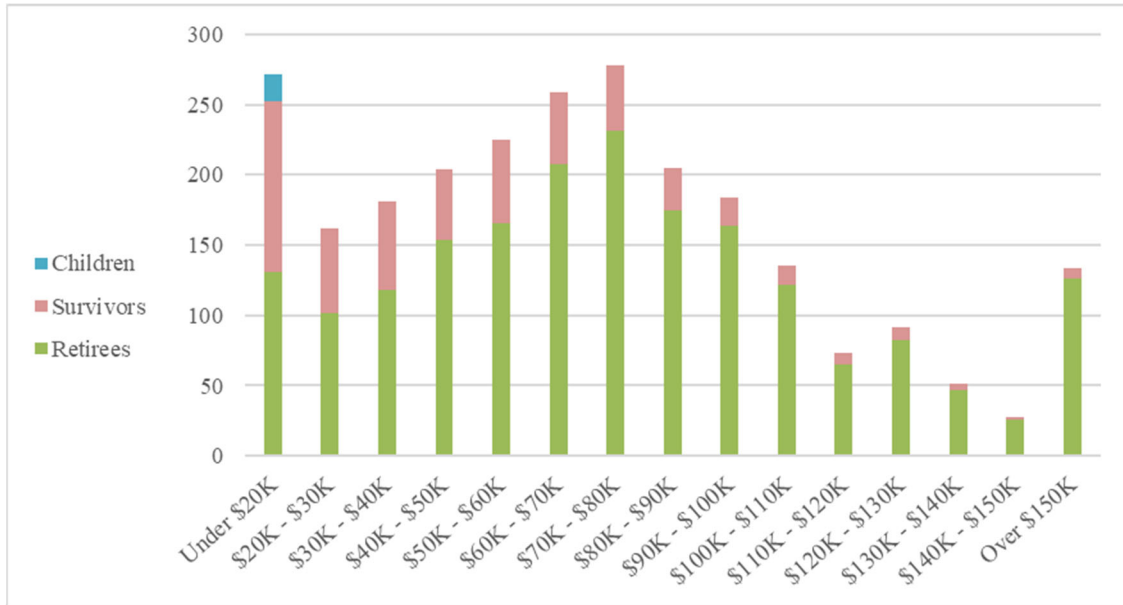
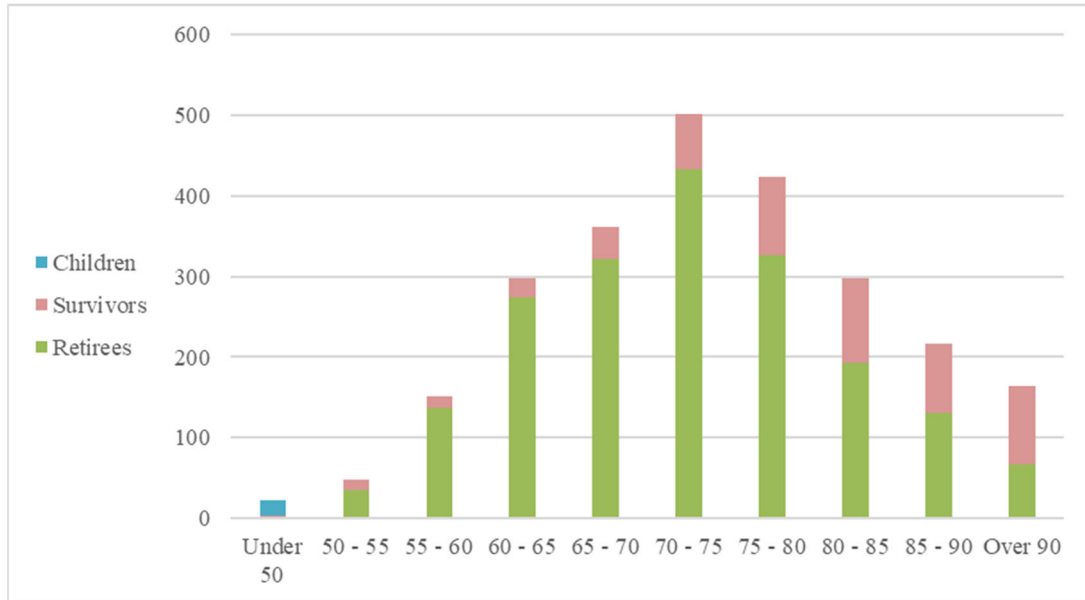


Table 14 – Distribution of Annuitants by Annual Benefit



Annual Benefit	Retirees	Survivors	Children	Total
Under \$20K	131	121	20	272
\$20K - \$30K	102	60	0	162
\$30K - \$40K	118	63	0	181
\$40K - \$50K	154	50	0	204
\$50K - \$60K	166	59	0	225
\$60K - \$70K	208	51	0	259
\$70K - \$80K	231	47	0	278
\$80K - \$90K	175	30	0	205
\$90K - \$100K	164	20	0	184
\$100K - \$110K	122	13	0	135
\$110K - \$120K	65	8	0	73
\$120K - \$130K	82	10	0	92
\$130K - \$140K	47	4	0	51
\$140K - \$150K	26	2	0	28
Over \$150K	126	8	0	134
Total	1,917	546	20	2,483

Table 15 – Distribution of Annuitants by Age



Age	Retirees	Survivors	Children	Total
Under 50	0	3	20	23
50 - 55	36	12	0	48
55 - 60	137	14	0	151
60 - 65	274	24	0	298
65 - 70	321	40	0	361
70 - 75	433	68	0	501
75 - 80	326	97	0	423
80 - 85	192	106	0	298
85 - 90	131	85	0	216
Over 90	67	97	0	164
Total	1,917	546	20	2,483

GASB 67/68 RESULTS

SUMMARY

Valuation Date	12/31/2020	12/31/2019
Measurement Date	12/31/2020	12/31/2019
Plan Membership:		
Inactives Currently Receiving Benefits	2,483	2,465
Inactives Not Yet Receiving Benefits	132	131
Active Plan Members	<u>1,769</u>	<u>1,817</u>
Total	4,384	4,413
Covered Payroll	\$ 188,072,970	\$ 189,961,010
Net Pension Liability		
Total Pension Liability	\$ 2,701,962,060	\$ 2,653,769,022
Plan Fiduciary Net Position	<u>1,580,890,628</u>	<u>1,506,834,278</u>
Net Pension Liability	\$ 1,121,071,432	\$ 1,146,934,744
Plan Fiduciary Net Position		
As a Percentage of Total Pension Liability	58.51%	56.78%
Net Pension Liability		
As a Percentage of Covered Payroll	596.08%	603.77%
Total Pension Expense	\$ 100,744,878	\$ 133,237,886
Development of Single Discount Rate		
Single Discount Rate	7.25%	7.25%
Long-Term Expected Rate of Return	7.25%	7.25%
High-quality Municipal Bond Rate	1.93%	3.26%
Number of Years Future Benefit Payments		
Are Expected to be Paid	99	99

SCHEDULE OF CHANGES IN NET PENSION LIABILITY
 PLAN REPORTING

Measurement Date	12/31/2020	12/31/2019
Total Pension Liability		
Service Cost	32,591,914	33,039,382
Interest	188,334,503	183,916,142
Changes of Benefit Terms	-	-
Differences Between Expected and Actual Experience	4,553,932	17,732,815
Changes of Assumptions	-	-
Benefit Payments, Including Refunds of Employee Contributions	(177,287,311)	(169,308,620)
Net Change in Total Pension Liability	48,193,038	65,379,719
Total Pension Liability - Beginning	2,653,769,022	2,588,389,303
Total Pension Liability - Ending (a)	\$2,701,962,060	\$ 2,653,769,022
Plan Fiduciary Net Position		
Contributions - Employer	107,852,191	87,446,476
Contributions - Employee	20,982,056	21,182,425
Net Investment Income	124,099,459	225,158,880
Benefit Payments, Including Refunds of Employee Contributions	(177,287,311)	(169,308,620)
Administrative Expense	(1,592,783)	(1,642,209)
Other	2,738	3,058
Net Change in Plan Fiduciary Net Position	74,056,350	162,840,010
Plan Fiduciary Net Position - Beginning	1,506,834,278	1,343,994,268
Plan Fiduciary Net Position - Ending (b)	\$1,580,890,628	\$ 1,506,834,278
Net Pension Liability - Ending (a) - (b)	\$1,121,071,432	\$ 1,146,934,744
Plan Fiduciary Net Position as a Percentage of the Total Pension Liability	58.51%	56.78%
Covered Payroll	\$ 188,072,970	\$ 189,961,010
Net Pension Liability as a Percentage of Covered Payroll	596.08%	603.77%

SENSITIVITY OF CHANGES IN DISCOUNT RATE
 PLAN REPORTING

Sensitivity of Net Pension Liability to changes in the Discount Rate:

	1% Decrease 6.25%	Current Discount Rate 7.25%	1% Increase 8.25%
Sponsor's Net Pension Liability	\$ 1,422,861,759	\$ 1,121,071,432	\$ 866,595,596

SCHEDULE OF CHANGES IN NET PENSION LIABILITY
DISTRICT REPORTING

GASB 68 Reporting Period Ending Measurement Date	12/31/2020 12/31/2019	12/31/2019 12/31/2018
Total Pension Liability		
Service Cost	33,039,382	32,212,530
Interest	183,916,142	182,881,416
Changes of Benefit Terms	-	-
Differences Between Expected and Actual Experience	17,732,815	12,157,757
Changes of Assumptions	-	35,593,015
Benefit Payments, Including Refunds of Employee Contributions	(169,308,620)	(161,323,522)
Net Change in Total Pension Liability	65,379,719	101,521,196
Total Pension Liability - Beginning	2,588,389,303	2,486,868,107
Total Pension Liability - Ending (a)	\$2,653,769,022	\$ 2,588,389,303
Plan Fiduciary Net Position		
Contributions - Employer	87,446,476	87,167,339
Contributions - Employee	21,182,425	21,032,601
Contributions - Buy Back	-	-
Net Investment Income	225,158,880	(103,006,062)
Benefit Payments, Including Refunds of Employee Contributions	(169,308,620)	(161,323,522)
Administrative Expense	(1,642,209)	(1,685,479)
Other	3,058	15,415
Net Change in Plan Fiduciary Net Position	162,840,010	(157,799,708)
Plan Fiduciary Net Position - Beginning	1,343,994,268	1,501,793,976
Plan Fiduciary Net Position - Ending (b)	\$1,506,834,278	\$ 1,343,994,268
Net Pension Liability - Ending (a) - (b)	\$1,146,934,744	\$ 1,244,395,035
Plan Fiduciary Net Position as a Percentage of the Total Pension Liability	56.78%	51.92%
Covered Payroll	\$ 189,961,010	\$ 187,849,708
Net Pension Liability as a Percentage of Covered Payroll	603.77%	662.44%

STATEMENT OF CHANGES IN NET PENSION LIABILITY
DISTRICT REPORTING YEAR-END DECEMBER 31, 2020

	Increase (Decrease)		
	Total Pension Liability	Plan Fiduciary Net Position	Net Pension Liability
	(a)	(b)	(a)-(b)
Reporting Period Ending December 31, 2019	\$2,588,389,303	\$1,343,994,268	\$1,244,395,035
Adjustment to beginning of year	-	-	-
Changes for a Year:			
Service Cost	33,039,382	-	33,039,382
Interest	183,916,142	-	183,916,142
Differences Between Expected and Actual Experience	17,732,815	-	17,732,815
Changes of Assumptions	-	-	-
Changes of Benefit Terms	-	-	-
Contributions - Employer	-	87,446,476	(87,446,476)
Contributions - Employee	-	21,182,425	(21,182,425)
Contributions - Buy Back	-	-	-
Net Investment Income	-	225,158,880	(225,158,880)
Benefit Payments, Including Refunds of Employee Contributions	(169,308,620)	(169,308,620)	-
Administrative Expense	-	(1,642,209)	1,642,209
Other Changes	-	3,058	(3,058)
Net Changes	65,379,719	162,840,010	(97,460,291)
Reporting Period Ending December 31, 2020	\$2,653,769,022	\$1,506,834,278	\$1,146,934,744

Sensitivity of Net Pension Liability to changes in the Discount Rate:

	Current Discount		
	1% Decrease	Rate	1% Increase
	6.25%	7.25%	8.25%
Sponsor's Net Pension Liability	\$ 1,446,814,051	\$ 1,146,934,744	\$ 894,253,229

Pension Plan Fiduciary Net Position

Detailed information about the Pension Plan's Fiduciary Net Position is available in a separately issued Plan financial report.

STATEMENT OF CHANGES IN NET PENSION LIABILITY
DISTRICT REPORTING YEAR-END DECEMBER 31, 2021

	Increase (Decrease)		
	Total Pension Liability	Plan Fiduciary Net Position	Net Pension Liability
	(a)	(b)	(a)-(b)
Reporting Period Ending December 31, 2020	\$2,653,769,022	\$1,506,834,278	\$1,146,934,744
Adjustment to beginning of year	-	-	-
Changes for a Year:			
Service Cost	32,591,914	-	32,591,914
Interest	188,334,503	-	188,334,503
Differences Between Expected and Actual Experience	4,553,932	-	4,553,932
Changes of Assumptions	-	-	-
Changes of Benefit Terms	-	-	-
Contributions - Employer	-	107,852,191	(107,852,191)
Contributions - Employee	-	20,982,056	(20,982,056)
Contributions - Buy Back	-	-	-
Net Investment Income	-	124,099,459	(124,099,459)
Benefit Payments, Including Refunds of Employee Contributions	(177,287,311)	(177,287,311)	-
Administrative Expense	-	(1,592,783)	1,592,783
Other Changes	-	2,738	(2,738)
Net Changes	48,193,038	74,056,350	(25,863,312)
Reporting Period Ending December 31, 2021	\$2,701,962,060	\$1,580,890,628	\$1,121,071,432

Sensitivity of Net Pension Liability to changes in the Discount Rate:

	Current Discount		
	1% Decrease	Rate	1% Increase
	6.25%	7.25%	8.25%
Sponsor's Net Pension Liability	\$ 1,422,861,759	\$ 1,121,071,432	\$ 866,595,596

Pension Plan Fiduciary Net Position

Detailed information about the Pension Plan's Fiduciary Net Position is available in a separately issued Plan financial report.

FINAL PENSION EXPENSE AND DEFERRED OUTFLOWS OF RESOURCES AND
 DEFERRED INFLOWS OF RESOURCES RELATED TO PENSIONS
 YEAR-END DECEMBER 31, 2020

For the year ended December 31, 2020, the Sponsor will recognize a pension expense of \$133,237,886. On December 31, 2020, the Sponsor reported deferred outflows of resources and deferred inflows of resources related to pensions from the following sources:

	Deferred Outflows of Resources	Deferred Inflows of Resources
Differences between actual and expected experience	29,890,761	995,382
Changes of assumptions	23,728,676	0
Net difference between projected and actual earnings on pension plan investments	0	17,642,159
Employer contributions after the measurement date	107,852,191	0
Total	\$161,471,628	\$18,637,541

The outcome of the Deferred Outflows of resources related to pensions resulting from Employer contributions subsequent to the measurement date has been recognized as a reduction of the Net Pension Liability in the year ended 12/31/2020.

Amounts reported as deferred outflows of resources and deferred inflows of resources related to pensions will be recognized in pension expense as follows:

Year-ended December 31:

2021	\$117,068,627
2022	\$10,588,255
2023	\$27,303,498
2024	(\$15,081,762)
2025	\$2,955,469
Thereafter	\$0

PRELIMINARY PENSION EXPENSE AND DEFERRED OUTFLOWS OF RESOURCES AND
 DEFERRED INFLOWS OF RESOURCES RELATED TO PENSIONS
 YEAR-END DECEMBER 31, 2021

For the year ended December 31, 2021, the Sponsor will recognize a pension expense of \$100,744,878. On December 31, 2021, the Sponsor reported deferred outflows of resources and deferred inflows of resources related to pensions from the following sources:

	Deferred Outflows of Resources	Deferred Inflows of Resources
Differences between actual and expected experience	23,997,990	663,588
Changes of assumptions	17,796,507	0
Net difference between projected and actual earnings on pension plan investments	0	24,905,012
Employer contributions after the measurement date	TBD	0
Total	TBD	\$25,568,600

The outcome of the Deferred Outflows of resources related to pensions resulting from Employer contributions subsequent to the measurement date will be recognized as a reduction of the Net Pension Liability in the year ended 12/31/2021.

Amounts reported as deferred outflows of resources and deferred inflows of resources related to pensions will be recognized in pension expense as follows:

Year-ended December 31:

2022	\$8,013,617
2023	\$24,728,860
2024	(\$17,656,400)
2025	\$380,831
2026	\$758,989
Thereafter	\$0

FINAL COMPONENTS OF PENSION EXPENSE
 YEAR-END DECEMBER 31, 2020

	Net Pension Liability	Deferred Inflows	Deferred Outflows	Pension Expense
Beginning Balance	\$1,244,395,035	\$ 65,930,741	\$331,610,814	
Employer Contributions made after December 31, 2019	-	-	107,852,191	-
Total Pension Liability Factors:				
Service Cost	33,039,382	-	-	33,039,382
Interest	183,916,142	-	-	183,916,142
Changes in Benefit Terms	-	-	-	-
Differences Between Expected and Actual Experience With Regard to Economic or Demographic Assumptions	17,732,815	-	17,732,815	-
Current Year Amortization	-	(331,794)	(11,497,902)	11,166,108
Changes in Assumptions About Future Economic or Demographic Factors or Other Inputs	-	-	-	-
Current Year Amortization	-	-	(5,932,169)	5,932,169
Benefit Payments, Including Refunds of Employee Contributions	(169,308,620)	-	-	-
Net Change	65,379,719	(331,794)	108,154,935	234,053,801
Plan Fiduciary Net Position:				
Contributions - Employer	87,446,476	-	(87,446,476)	-
Contributions - Employee	21,182,425	-	-	(21,182,425)
Projected Net Investment Income	95,180,415	-	-	(95,180,415)
Difference Between Projected and Actual Earnings on Pension Plan Investments	129,978,465	129,978,465	-	-
Current Year Amortization	-	(48,788,709)	(62,696,483)	13,907,774
Benefit Payments, Including Refunds of Employee Contributions	(169,308,620)	-	-	-
Administrative Expenses	(1,642,209)	-	-	1,642,209
Other	3,058	-	-	(3,058)
Net Change	162,840,010	81,189,756	(150,142,959)	(100,815,915)
Ending Balance	\$1,146,934,744	\$146,788,703	\$289,622,790	\$133,237,886

**PRELIMINARY COMPONENTS OF PENSION EXPENSE
YEAR-END DECEMBER 31, 2021**

	Net Pension Liability	Deferred Inflows	Deferred Outflows	Pension Expense
Beginning Balance	\$ 1,146,934,744	\$146,788,703	\$289,622,790	
Employer Contributions made after December 31, 2020	-	-	TBD ¹	-
Total Pension Liability Factors:				
Service Cost	32,591,914	-	-	32,591,914
Interest	188,334,503	-	-	188,334,503
Changes in Benefit Terms	-	-	-	-
Differences Between Expected and Actual Experience With Regard to Economic or Demographic Assumptions	4,553,932	-	4,553,932	-
Current Year Amortization	-	(331,794)	(10,446,703)	10,114,909
Changes in Assumptions About Future Economic or Demographic Factors or Other Inputs	-	-	-	-
Current Year Amortization	-	-	(5,932,169)	5,932,169
Benefit Payments, Including Refunds of Employee Contributions	(177,287,311)	-	-	-
Net Change	48,193,038	(331,794)	(11,824,940)	236,973,495
Plan Fiduciary Net Position:				
Contributions - Employer	107,852,191	-	(107,852,191)	-
Contributions - Employee	20,982,056	-	-	(20,982,056)
Projected Net Investment Income	107,431,323	-	-	(107,431,323)
Difference Between Projected and Actual Earnings on Pension Plan Investments	16,668,136	16,668,136	-	-
Current Year Amortization	-	(52,122,337)	(42,717,054)	(9,405,283)
Benefit Payments, Including Refunds of Employee Contributions	(177,287,311)	-	-	-
Administrative Expenses	(1,592,783)	-	-	1,592,783
Other	2,738	-	-	(2,738)
Net Change	74,056,350	(35,454,201)	(150,569,245)	(136,228,617)
Ending Balance	\$ 1,121,071,432	\$111,002,708	TBD	\$100,744,878

¹ Employer contributions made after the December 31, 2020 measurement date, but before December 31, 2021 need to be added.

AMORTIZATION SCHEDULE – EXPERIENCE

Increase (Decrease) in Pension Expense Arising from the Recognition of the
Effects of Differences between Expected and Actual Experience

Year Base Established	Differences Between Expected and Actual Experience	Recognition Period (Years)	2021	2022	2023	2024	2025	Thereafter
2020	\$ 4,553,932	6	\$ 758,987	\$ 758,989	\$ 758,989	\$ 758,989	\$ 758,989	\$ 758,989
2019	\$ 17,732,815	6	\$ 2,955,469	\$ 2,955,469	\$ 2,955,469	\$ 2,955,469	\$ 2,955,469	\$ -
2018	\$ 12,157,757	6	\$ 2,026,293	\$ 2,026,293	\$ 2,026,293	\$ 2,026,293	\$ -	\$ -
2017	\$ (1,990,761)	6	\$ (331,794)	\$ (331,794)	\$ (331,794)	\$ -	\$ -	\$ -
2016	\$ 13,813,742	6	\$ 2,302,290	\$ 2,302,290	\$ -	\$ -	\$ -	\$ -
2015	\$ 14,421,984	6	\$ 2,403,664	\$ -	\$ -	\$ -	\$ -	\$ -
2014	\$ 10,861,109	6	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Net Increase (Decrease) in Pension Expense			10,114,909	7,711,247	5,408,957	5,740,751	3,714,458	758,989

AMORTIZATION SCHEDULE – CHANGES OF ASSUMPTIONS

Increase (Decrease) in Pension Expense Arising from the Recognition of the
Effects of Changes of Assumptions

Year Base Established	Effects of Changes in Assumptions	Recognition Period (Years)	2021	2022	2023	2024	2025	Thereafter
2018	\$ 35,593,015	6	\$ 5,932,169	\$ 5,932,169	\$ 5,932,169	\$ 5,932,169	\$ -	\$ -
Net Increase (Decrease) in Pension Expense			\$ 5,932,169	\$ 5,932,169	\$ 5,932,169	\$ 5,932,169	\$ -	\$ -

AMORTIZATION SCHEDULE – INVESTMENTS

			Increase (Decrease) in Pension Expense Arising from the Recognition of the Differences Between Projected and Actual Earnings on Pension Plan Investments						
Year Base Established	Differences Between Projected and Actual Earnings		Recognition Period (Years)						
			2021	2022	2023	2024	2025	Thereafter	
2020	\$	(16,668,136)	5	\$ (3,333,628)	\$ (3,333,627)	\$ (3,333,627)	\$ (3,333,627)	\$ (3,333,627)	\$ -
2019	\$	(129,978,465)	5	\$ (25,995,693)	\$ (25,995,693)	\$ (25,995,693)	\$ (25,995,693)	\$ -	\$ -
2018	\$	213,585,270	5	\$ 42,717,054	\$ 42,717,054	\$ 42,717,054	\$ -	\$ -	\$ -
2017	\$	(95,087,666)	5	\$ (19,017,533)	\$ (19,017,533)	\$ -	\$ -	\$ -	\$ -
2016	\$	(18,877,416)	5	\$ (3,775,483)	\$ -	\$ -	\$ -	\$ -	\$ -
2015	\$	99,897,144	5	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Net Increase (Decrease) in Pension Expense			\$ (9,405,283)	\$ (5,629,799)	\$ 13,387,734	\$ (29,329,320)	\$ (3,333,627)	\$ -	

SCHEDULE OF CONTRIBUTIONS

Plan Year-End	Actuarially Determined Contribution	Contributions in Relation to the Actuarially Determined Contributions	Contribution Deficiency (Excess)	Covered Payroll	Contributions as a Percentage of Covered Payroll
12/31/2020	77,392,414	107,852,191	(30,459,777)	188,072,970	57.35%
12/31/2019	74,279,999	87,446,476	(13,166,477)	189,961,010	46.03%

The following assumptions were used to determine the Actuarially Determined Contribution for the plan year ending December 31, 2020:

Calculation Timing	The Actuarially Determined Contribution is calculated using a December 31, 2019 valuation date.
Interest Rate	7.25%
Mortality Rate	<i>Healthy and Disabled Lives</i> RP-2000 Combined Healthy Mortality Table with Generational Mortality Improvements (Scale AA). Female rates are adjusted by a factor of 1.04 and male rates are unadjusted.
Assumptions	All other assumptions and methods used for determining the Actuarially Determined Contribution can be found in the December 31, 2019 Actuarial Valuation Report for the Metropolitan Water Reclamation District Retirement Fund prepared by Foster & Foster Actuaries and Consultants.

SCHEDULE OF INVESTMENT RETURNS

For the year ended December 31, 2020, the annual money-weighted return on Pension Plan investments, net of pension plan investment expense, was not available. The money-weighted rate of return expresses investment performance, net of investment expense, adjusted for the changing amounts actually invested.

Plan Year-End	Annual Money-Weighted Rate of Return Net of Investment Expense
12/31/2020	8.67%
12/31/2019	18.25%

ASSUMPTIONS – GASB PENSION LIABILITY AND PENSION EXPENSE

The GASB 67 Pension Liability for Plan reporting as of December 31, 2020 and Preliminary GASB 68 Pension Expense for the District's January 1, 2021 - December 31, 2021 reporting period were determined as follows:

Valuation Date	December 31, 2020
Measurement Date	December 31, 2020
Discount Rate	7.25%
Inflation	2.50%
Salary Increases	Service-based rates
Other Assumptions	A summary of complete assumptions can be found in the accompanying Actuarial Valuation as of December 31, 2020 for the Metropolitan Water Reclamation District Retirement Fund prepared by Foster & Foster Actuaries and Consultants.

The GASB 67 Total Pension Liability and Preliminary GASB 68 Pension Expense reflect no assumption changes.

The GASB 68 Pension Liability and Final Pension Expense for the current District reporting period were determined as follows:

Valuation Date	December 31, 2019
Measurement Date	December 31, 2019
GASB 68 Expense Measurement Period	December 31, 2019 - December 31, 2019
Reporting Period	January 1, 2020 - December 31, 2020
Discount Rate	7.25%
Inflation	2.50%
Salary Increases	Service-based rates
Other Assumptions	A summary of complete assumptions can be found in the Actuarial Valuation as of December 31, 2019 for the Metropolitan Water Reclamation District Retirement Fund prepared by Foster & Foster Actuaries and Consultants.

The GASB 68 Total Pension Liability and Final GASB 68 Pension Expense reflect no assumption changes.

NOTES TO THE FINANCIAL STATEMENTS

Support for Long-Term Expected Rate of Return

The Long-Term Expected Rate of Return on Pension Plan investments can be determined using a building-block method in which best-estimate ranges of expected future real rates of return (expected returns, net of Pension Plan investment expenses and inflation) are developed for each major asset class.

These ranges are combined to produce the Long-Term Expected Rate of Return by weighting the expected future real rates of return by target asset allocation percentage and by adding expected inflation.

Best estimates of geometric real rates of return for each major asset class included in the Pension Plan's target asset allocation adopted as of December 31, 2020, as provided by Marquette Associates, are summarized in the following table:

Asset Class	Target Allocation	Long Term Expected Real Rate of Return
Domestic Equity	41.00%	5.20%
International Equity	22.00%	5.60%
Bonds	27.00%	2.20%
Private Real Estate	10.00%	5.60%
Cash	0.00%	0.00%
Total	100.00%	

Inflation rate of investment advisor 2.00%

Concentrations

The Plan did not hold investments in any one organization that represent 5 percent or more of the Pension Plan's fiduciary net position.

Discount Rate

The Discount Rate used to measure the Total Pension Liability was 7.25 percent.

The projection of cash flows used to determine the Discount Rate assumed that Plan Member contributions will be made at the current contribution rate and that Sponsor contributions will be made at rates equal to the difference between actuarially determined contribution rates and the Member rate. Based on those assumptions, the Pension Plan's Fiduciary Net Position was projected to be available to make all projected future benefit payments of current plan members. Therefore, the Long-Term Expected Rate of Return on Pension Plan investments (7.25 percent) was applied to all periods of projected benefit payments to determine the Total Pension Liability.

For the purpose of this valuation, the expected rate of return on pension plan investments is 7.25 percent. The municipal bond rate is 1.93 percent (based on the daily rate closest to, but not later than the measurement date of the S&P Municipal Bond 20 Year High Grade Rate Index). The resulting single discount rate is 7.25 percent.

SUMMARY OF CURRENT PLAN

Article 13 Pension Fund

The Fund is established and administered as prescribed by “Article 13. Metropolitan Water Reclamation District Retirement Fund” of the Illinois Pension Code.

Fund Administration

The Fund is a single employer defined benefit pension plan administered by a Board of Trustees comprised of:

- a.) Three members appointed by the Board of Commissioners of the Water Reclamation District, one of which must be a retiree participating in the Fund
- b.) Four elected employee members.

Benefits Provided

The Plan provides retirement, termination, disability and death benefits.

A summary of the benefit provisions can be found in the accompanying Actuarial Valuation as of December 31, 2020 for the Metropolitan Water Reclamation District Retirement Fund prepared by Foster & Foster Actuaries and Consultants.

HISTORY OF NET PENSION LIABILITY

Measurement Date	Total Pension Liability	Fund Net Position	Net Pension Liability	Fund Net Position as a Percentage of Total Pension Liability
12/31/2014	2,285,095,580	1,337,795,620	947,299,960	58.54%
12/31/2015	2,359,766,327	1,286,653,498	1,073,112,829	54.52%
12/31/2016	2,432,163,441	1,352,598,383	1,079,565,058	55.61%
12/31/2017	2,486,868,107	1,501,793,976	985,074,131	60.39%
12/31/2018	2,588,389,303	1,343,994,268	1,244,395,035	51.92%
12/31/2019	2,653,769,022	1,506,834,278	1,146,934,744	56.78%
12/31/2020	2,701,962,060	1,580,890,628	1,121,071,432	58.51%

HISTORY OF SENSITIVITY OF NET PENSION LIABILITY TO CHANGES IN THE DISCOUNT RATE

	1% Decrease	Current	1% Increase
12/31/2014			
Discount Rate	6.50%	7.50%	8.50%
Net Pension Liability	\$1,217,729,913	\$947,299,960	\$720,078,909
12/31/2015			
Discount Rate	6.50%	7.50%	8.50%
Net Pension Liability	\$1,349,610,381	\$1,073,112,829	\$840,620,797
12/31/2016			
Discount Rate	6.50%	7.50%	8.50%
Net Pension Liability	\$1,361,928,929	\$1,079,565,058	\$841,925,382
12/31/2017			
Discount Rate	6.50%	7.50%	8.50%
Net Pension Liability	\$1,269,993,791	\$985,074,131	\$745,011,954
12/31/2018			
Discount Rate	6.25%	7.25%	8.25%
Net Pension Liability	\$1,539,876,439	\$1,244,395,035	\$995,556,421
12/31/2019			
Discount Rate	6.25%	7.25%	8.25%
Net Pension Liability	\$1,446,814,051	\$1,146,934,744	\$894,253,229
12/31/2020			
Discount Rate	6.25%	7.25%	8.25%
Net Pension Liability	\$1,422,861,759	\$1,121,071,432	\$866,595,596