September 8, 2022

Mr. Christopher Cotta
Town Administrator
343 Highland Road
Tiverton, Rhode Island 02878

Dear Mr. Cotta:

An actuarial valuation of the Town of Tiverton Police Department Pension Plan (Plan) was performed as of July 1, 2022. The purpose of the valuation is to:

- Compare the current value of Trust assets with accrued liabilities to assess the funded condition of the Pension Plan,
- Compute the Town's recommended contribution rate for the Fiscal Year ending June 30, 2023, and
- Provide information which may be required by the Town's auditors under Governmental Accounting Standards.

This valuation has been conducted in accordance with generally accepted actuarial principles and practices. The employee data and asset data were provided by the Plan Administrator. This data has been reviewed for reasonableness, but no attempt has been made to audit such information. We found the information provided by the Plan Administrator to be reasonably consistent and comparable to information received for prior years' valuations. Valuation results are dependent upon the accuracy and integrity of the input data. If the data provided is subsequently found to be incorrect or incomplete, this valuation may need to be revised. Demographic data is snapshot data as of the valuation date.

The valuation was based on the provisions of the Plan as amended through the beginning of the Plan Year. Each actuarial assumption used in this valuation is reasonably related to the past experience of the Plan and represents reasonable expectations of future experience under the Plan. Actual future costs of the Plan will vary from those presented in this report to the extent that actual plan experience differs from that projected and assumed. The Trustees, with advice and approval of the actuary, set the assumptions and methods for the valuation.

The valuation calculations presented in this report have been made on a basis consistent with our understanding of the Plan's funding requirements and policies as well as the Governmental Accounting Standard Board Statement 67. Valuations and calculations for other purposes may differ significantly from the results contained in this report.

MCG uses third-party software to calculate the actuarial liabilities and normal costs, as well as projection of benefit payouts and other items set forth in this report. The software is widely used for the purpose of performing pension valuations. We coded the plan provisions, assumptions, methods, and participant data summarized in this report, and reviewed the liability and cost outputs for reasonableness. We are not aware of any material weaknesses in the software.

The consultants who worked on this assignment are pension actuaries. Advice from MCG Consulting Group is not intended to be a substitute for legal or accounting expertise. To the best of our knowledge and belief, this report is complete and accurate and has been prepared in accordance with generally recognized and accepted actuarial principles and practices.

We are members of the American Academy of Actuaries and meet the Qualification Standards to render the actuarial opinion contained in this report. We are available to answer any questions on the information contained in this report or to provide explanations or further details as needed.

Neither the signing actuary nor the firm of MCG Consulting Group has a conflict of interest that would impair the objectivity of our work. This report is intended for use by the Plan Trustees and should not be used for any purpose other than as stated herein. This report is only valid when presented in its entirety. It must not be reproduced without permission.

Respectfully submitted,

Traci M. Christian, EA, MAAA
Enrollment Number: 20-06694
MCG Consulting Group

Jeffrey A. Brown
JD, LLM, QPA, ERPA
Compensation Planning

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Section One:

Valuation Summary

Liabilities and Funded Condition of Pension Plan

	July 1, 2021	**July 1, 2022**
Actuarial Accrued Liability	$20,444,208	$21,885,711
Actuarial Value of Assets	$18,395,672	$15,320,383
Funded Status of the Plan	90.0%	70.0%

Actuarial Value of Assets

The market value of assets including accrued contributions was used for the July 1, 2022 valuation.

Town's Computed Contribution Rate

The Town's recommended contribution rate was computed as a percentage of active member payroll and assumed to be payable at the end of the year.

	July 1, 2021	**July 1, 2022**
Normal Cost	18.4%	17.6%
Amortization of Unfunded Liability	6.6%	23.4%
Interest	1.9%	3.1%
Total Computed Contribution	26.9%	44.1%
Member portion	10.0%	10.0%
Net Computed Contribution Rate	16.9%	34.1%

Pension Fund Experience

Overall experience during the year ended June 30, 2022, was less favorable than expected. The plan assets earned a rate of return of approximately (14.5)%, compared to an expected return of 7.5%, resulting in an investment loss of over $4M. Liability losses due to higher than expected pay increases added to the asset losses, resulting in a total actuarial loss for the year ended June 30, 2022 of $4,479,198.

Benefit Provision Changes

There were no changes to the Plan provisions.

Assumption and Method Changes

The mortality projection scale was updated to MP-2021, from scale MP-2020 used in the prior valuation.

Participant Data

	July 1, 2021	July 1, 2022
Active Members	29	30
Active Member Payroll	$1,947,756	$2,218,219
Average Member Payroll	67,164	73,941
Retirees and Beneficiaries	36	38
Annual Pensions	$1,194,665	$1,287,122

Financial Data

Market Value of Assets	$18,395,672	$15,320,383

Conclusion and Comments

The long-term viability of this plan is dependent on adherence to funding the actuarial recommended contribution each year. The Funding Improvement Plan, which required town contributions of at least $700,000 each year, has run its course, but the town has continued to contribute at that level in the succeeding years. Large actuarial losses in the prior year due to negative asset returns have significantly increased the Town's recommended contribution for the 2022-23 fiscal year.

The opposite happened in the prior valuation, as large investment gains significantly reduced the Town's recommended contribution. With the assets invested 79% in equities, volatility in asset returns should be expected in the future. We suggest possibly adopting an "asset smoothing" method, which would change the way we consider asset values in calculating the Town's recommended contribution. The method would spread each year's asset gains and losses (differences from the 7.5% returns we assume), over the succeeding years, thus tempering the effect of large asset swings in the calculation of the recommended contributions.

Section Two:

Actuarial Calculations – Funding

Unfunded Actuarial Accrued Liability

	July 1, 2021	July 1, 2022
Actuarial Accrued Liability	$20,444,208	$21,885,711
Actuarial Value of Assets	$18,395,672	$15,320,383
Unfunded Actuarial Accrued liability	$2,048,536	$6,565,328
Funded Status of the Plan	90.0%	70.0%

Computed Contribution Rates

The normal cost represents the benefits earned in the current year. Accrued liabilities exceeded accumulated assets as of July 1, 2012. The excess is being amortized as a level percent of payroll over 25 years (until June 30, 2037). Beginning with the July 1, 2017 valuation, annual changes to the unfunded liability due to assumption changes, actuarial gains and losses, etc. are amortized as a level percent of pay over fixed periods. The sum of the annual amortization charges and credits is a component of the recommended contribution. The following table sets forth the schedule of amortizations as of the current valuation date:

Date Estab.	Description	Rem. Years	Outstanding Balance	22-23 Payment
7/1/12	Unfunded Actuarial Liability	15	$5,545,907	$475,714
7/1/17	Change Mortality Table	15	657,087	56,363
7/1/17	Actuarial (Gain)/Loss	10	(442,901)	(52,220)
7/1/18	New Mortality Projection Scale	16	(82,056)	(6,713)
7/1/18	Actuarial (Gain)/Loss	11	(299,633)	(32,690)
7/1/19	Change Mortality Table	17	614,819	48,148
7/1/19	Actuarial (Gain)/Loss	12	47,807	4,866
7/1/20	Change Mortality Table	18	(38,948)	(2,930)
7/1/20	Actuarial (Gain)/Loss	13	(321,364)	(30,726)
7/1/21	Change Mortality Table	19	(53,445)	(3,873)
7/1/21	Actuarial (Gain)/Loss	14	(3,564,240)	(321,973)
7/1/22	Change in Mortality Table	20	23,097	1,617
7/1/22	Actuarial (Gain)/Loss	15	4,479,198	384,214
	Total		$6,565,328	$519,797

Contribution Recommendation for Fiscal Year Beginning July 1, 2022:

	Dollar Amount	As a Percent Of Current Payroll
Total Normal Cost	$390,639	17.6%
Amortization of Unfunded Liability	519,797	23.4%
Interest to End of Fiscal Year	68,283	3.1%
Total Computed Contribution	978,719	44.1%
Expected Member portion	(221,822)	(10.0)%
Town's Net Computed Contribution Rate	$756,897	34.1%

Town of Tiverton Police Department Pension Plan
Projection of Funded Status and Recommended Contributions

Year Beginning	Total Normal Cost	Amortization of Unfunded	Recommended Contribution	Member Contribution	Town Contribution	Payroll	Town Contribution as a % of Payroll	Benefit Payments	Assets	Accrued Liability	Unfunded Liability	Funded Ratio
2022	390,639	519,796	978,719	221,822	756,897	2,218,219	34.1%	1,294,895	15,320,383	21,885,711	6,565,328	70.0%
2023	404,311	537,988	1,012,972	229,586	783,386	2,295,857	34.1%	1,369,508	16,141,379	22,603,623	6,462,244	71.4%
2024	418,462	556,819	1,048,427	237,621	810,806	2,376,212	34.1%	1,404,678	16,982,076	23,312,665	6,330,589	72.8%
2025	433,108	576,306	1,085,121	245,938	839,183	2,459,379	34.1%	1,600,026	17,886,121	24,053,608	6,167,486	74.4%
2026	448,267	596,476	1,123,099	254,546	868,553	2,545,457	34.1%	1,617,785	18,693,366	24,663,193	5,969,827	75.8%
2027	463,957	617,352	1,162,407	263,455	898,952	2,634,548	34.1%	1,635,782	19,582,132	25,316,368	5,734,236	77.3%
2028	480,195	638,958	1,203,090	272,676	930,414	2,726,758	34.1%	1,653,259	20,559,665	26,016,725	5,457,060	79.0%
2029	497,002	661,320	1,245,196	282,219	962,977	2,822,194	34.1%	1,671,369	21,634,589	26,768,933	5,134,344	80.8%
2030	514,397	684,467	1,288,779	292,097	996,682	2,920,971	34.1%	1,693,641	22,815,029	27,576,835	4,761,806	82.7%
2031	532,401	708,424	1,333,887	302,320	1,031,566	3,023,205	34.1%	1,710,141	24,106,111	28,440,921	4,334,810	84.8%
2032	551,035	806,880	1,459,759	312,902	1,146,857	3,129,017	36.7%	1,727,574	25,523,706	29,372,050	3,848,344	86.9%
2033	570,321	882,848	1,562,157	323,853	1,238,304	3,238,533	38.2%	1,761,918	27,160,125	30,374,958	3,214,833	89.4%
2034	590,282	906,397	1,608,930	335,188	1,273,742	3,351,881	38.0%	1,761,788	28,989,882	31,438,185	2,448,303	92.2%
2035	610,942	986,174	1,716,900	346,920	1,369,980	3,469,197	39.5%	1,760,407	31,005,534	32,602,748	1,597,214	95.1%
2036	632,325	1,541,865	2,337,254	359,062	1,978,193	3,590,619	55.1%	1,774,894	33,285,810	33,878,295	592,484	98.3%
2037	654,457	-	703,541	371,629	331,912	3,716,291	8.9%	1,848,951	36,365,695	35,257,464	(1,108,231)	103.1%
2038	677,363	-	728,165	384,636	343,529	3,846,361	8.9%	1,859,968	37,904,759	36,687,028	(1,217,731)	103.3%
2039	701,070	-	753,651	398,098	355,552	3,980,983	8.9%	1,873,438	39,573,370	38,237,003	(1,336,367)	103.5%
2040	725,608	-	780,028	412,032	367,997	4,120,318	8.9%	1,931,928	41,379,593	39,914,737	(1,464,857)	103.7%
2041	751,004	-	807,329	426,453	380,876	4,264,529	8.9%	2,020,933	43,287,967	41,683,995	(1,603,972)	103.8%
2042	777,289	-	835,586	441,379	394,207	4,413,787	8.9%	2,165,255	45,275,451	43,520,906	(1,754,545)	104.0%

The results presented here are ESTIMATES. They are based on the data, assumptions, methods and plan provisions outlined in this report unless otherwise noted. These results are for **discussion purposes only** and should not be relied upon for puposes of making cash contributions to the Plan nor for any other purposes.

Recommended Town Contributions

Year Ended June 30	Computed Contribution	% of Payroll Contribution Rates
2010	1,023,362	59.6
2011	1,067,884	60.6
2012	682,092	43.0
2013	590,573	40.1
2014	544,334	37.6
2015	536,634	36.9
2016	503,576	29.3
2017	559,740	33.2
2018	575,463	33.9
2019	583,132	30.9
2020	672,532	33.9
2021	653,478	34.6
2022	329,452	16.9
2023	**756,897**	**34.1**

History of Assets, Investment Returns and Accrued Liabilities

Valuation Date July 1	Valuation Assets	Rate of Investment Returns	Actuarial Accrued Liabilities	Funded Ratio	Unfunded Actuarial Accrued Liabilities
2010	5,632,552	N/A	14,529,430	38.8	8,896,878
2011	6,959,498	25.5%	12,858,385	54.1	5,898,887
2012	6,694,416	-3.2%	13,228,181	50.6	6,533,765
2013	7,465,375	9.8%	13,616,401	54.8	6,151,026
2014	8,848,568	15.3%	14,002,853	63.2	5,154,285
2015	9,778,266	7.8%	14,604,337	67.0	4,826,071
2016	9,556,569	-3.3%	15,266,488	62.6	5,709,919
2017	11,051,030	14.9%	16,938,557*	65.2	5,887,527
2018	12,374,127	12.0%	17,853,211	69.3	5,479,084
2019	13,182,526	6.8%	19,331,488*	68.2	6,148,962
2020	13,843,625	6.2%	19,601,842	70.6	5,758,217
2021	18,395,672	34.7%	20,444,208	90.0	2,048,536
2022	**15,320,383**	**-14.5%**	**21,885,711**	**70.0**	**6,565,328**

*Mortality was changed in the 2017 valuation from RP-2000 to tables reflecting generational improvements. The mortality projection scales are updated each year since 2017. In the 2019 valuation, the base table was changed to one newly developed for public safety workers.

Section Three:

Retirement Plan Benefit Provisions

Benefit Provision Summary

Effective Date
July 1, 1978

Eligibility
All employees are eligible after completing their probationary service.

Monthly Compensation
Compensation includes regular base pay including longevity and incentive earnings.

Credited Service
Service measured from the date of employment (or one year prior to completing probationary
service, if later.)

Final Average Earnings
Average of the highest three consecutive years of total Monthly Compensation in a ten-year period prior to retirement or termination of employment.

Normal Retirement Benefit
For retirements on or after June 1, 2000, a monthly benefit equal to 2.5% of Final Average Earnings multiplied by Credited Service for the first 20 years of Service, Plus 2% of Final Average Earnings multiplied by Credited Service in excess of 20 years subject to a maximum benefit of 75% of Final Average Earnings.

Normal Form
The Normal Form of payment is a Life Annuity.

Normal Retirement Date
All Members hired after June 30, 2007 must have at least 10 years of Credited Service or be at least 65 with 5 years of Credited Service in order to be able to retire.
Members who satisfy the previous sentence or who were hired before July 1, 2007 may retire in accordance with the following rules:

- A Member hired prior to July 1, 2012 may retire, with full benefits, on the earlier of his 55th birthday or upon completion of 20 years of Credited Service.
- A Member hired on or after July 1, 2012 may retire, with full benefits, upon the earlier of his 55th birthday or upon completion of 25 years of Credited Service.

Disability Retirement
If the disability was duty-related, the benefit is 66 2/3% of Final Average Compensation. The non-duty-related Disability Benefit is 50% of final Compensation.

Pre-Retirement Death Benefit
The Beneficiary of a Participant who dies shall receive a benefit of $400 for each year of service, subject to a minimum of $2,000 and a maximum of $8,000. After retirement, the benefit is reduced by 25% per year but not less than $2,000.

Vesting

100% after 10 years.

Pre-Retirement Death Benefit

50% of Accrued Benefit at time of death payable to spouse until death or remarriage with additional benefits payable to surviving children under age 18 if no spouse survives.

Employee Contributions

10% of compensation

Post-Retirement COLA

Base Benefit increased 1% of the compensation each year for the position from which they retired. These increases are cumulative, not compounded.

Section Four:

Actuarial Assumptions And Methods

Actuarial Assumptions

Economic Assumptions

(i) Interest Rate	7.5% (net of administrative and investment expenses paid by the Trust)
(ii) Salary Increases	3.5%

Demographic Assumptions

(i) Mortality	Public Safety 2010 base mortality, projected generationally using mortality improvement scale MP-2021. (Previously, scale MP-2020)
(ii) Disability	Sample disability rates are as follows:

Annual Rates of Disability

Age	Males	Females
25	.03%	.05%
30	.04	.06
40	.07	.10
50	.18	.26
55	.36	.49
60	.90	1.21

(iii) Turnover	None Assumed
(iv) Retirement	The rate is 50% at first eligibility, then the rate is 10% per year thereafter with 100% at age 55 (or first eligible if later.)
(v) Marital Status	80% of participants are assumed to be married with males 3 years older than their female spouses.
(vi) COLA adjustments	1.3% increase each year.
(vii) Asset Value	Assets are valued at market, plus receivables.

Actuarial Methods Used for the Valuation

Normal Cost

Normal cost and the allocation of actuarial present values between service rendered before and after the valuation date were determined using an individual entry age actuarial cost method having the following characteristics:

- ❖ The annual normal costs for each individual active member, payable from date of hire to date of retirement, are sufficient to accumulate the value of the member's benefit at the time of retirement;

- ❖ Each annual normal cost is a constant percentage of the member's year-by-year projected covered pay.

Financing of Unfunded Actuarial Accrued Liability

The excess of actuarial accrued liabilities over accrued assets is amortized as a level percent-of-payroll in layers, with the original unfunded accrued liability being amortized over the remaining period that was previously established (ending June 30, 2037). New layers of amortization are established for changes in method, changes of assumptions, changes to the plan, and actuarial gains and losses. The annual net amount of amortization is added to the normal cost and increased with interest to compute the recommended contribution amount.

Assessment and Disclosure of Risk

The results presented in this report are based upon actuarial assumptions and methods. The assumptions represent the expected experience for the Plan and the methods allocate costs to past and future service. When the actual experience of the Plan is different from what is assumed in the valuation, volatility in the funded status of the Plan and the contribution requirements can result.

The Actuarial Standards of Practice require the plan's actuary to assess certain risks to the plan. Specifically, the impact of future events that may differ significantly from the assumptions used to produce the current actuarial valuation. The purpose of this information is to make the plan sponsor aware of such risks. For a more detailed analysis of any of these items, please contact our office.

Assumptions: Actuarial assumptions such as interest rates, rates of retirement and withdrawal as well as mortality tables used for calculating the actuarially recommended contribution are important factors. Each actuarial assumption used in this valuation is reasonably related to the past experience of the Plan and represents reasonable expectations of future experience under the Plan. With advice from the actuary, the trustees approve the assumptions for the valuation. When actual plan experience deviates from what is expected, the resulting gain or loss is amortized over future years and becomes part of the recommended contribution. If there is a decrease in the assumed future return on plan investments, the overall funding requirement, barring other mitigating circumstances, will increase. Updates to mortality tables often extend life expectancies, which also results in an increase to plan liabilities.

Contribution Risk: Funding less than the actuarially recommended contribution will not typically fully fund the Plan on a long-term basis. If the Plan is underfunded, additional contributions may be required.

Investment Risk: Plan assets include contributions and asset earnings. The Plan's investment portfolio should take into consideration the funded status of the Plan, anticipated future contribution levels, and the expected future years of the Plan. Investment performance may have a significant impact on future required contributions to fully fund the Plan on a long-term basis.

Demographic Risk: Demographic changes from year to year can have a significant impact on valuation results.

Section Five:

Valuation Data

Summary of Asset Information Submitted for the Valuation

Statement of Assets

As of June 30, 2022, the net market value of Pension Plan assets was reported to be $15,320,383.

Market Value of Assets as of July 1, 2021	$18,395,672
a. Revenues	
(i) Member Contributions	$225,116
(ii) Employer (Town) Contributions	700,000
(iii) Investment Income (Net of investment fees)	(2,687,637)
b. Disbursements	
(i) Benefits Paid	$1,301,168
(ii) Administrative expenses	11,600
Market Value of Assets as of July 1, 2022	$15,320,383

The rate of return on this year's investments was -14.5%.

Actuarial Value of Assets

The market value of assets was used for the July 1, 2022 valuation.

Participant Summary

Retirees Included in the Valuation

There were 38 retirees and beneficiaries of deceased retirees included in the valuation, with annual pensions totaling $1,287,122. The breakdown by age division is as follows:

Retirees and Beneficiaries

Age	Number	Average Annual Pensions
Under 40		
40-44	3	$37,867
45-49	4	33,604
50-54	2	39,386
55-59	7	37,024
60-64	5	43,431
65-69	2	24,904
70-74	3	36,710
75-79	6	31,263
Over 80	6	22,750
Total	38	$33,872

Active Members – Age and Service Distribution

	Service							
Age	**0 - 4**	**5 - 9**	**10 - 14**	**15 - 19**	**20 - 24**	**25 - 29**	**Over 30**	**Total**
20 - 24	1							1
25 - 29	4	3						7
30 - 34	4	4	1					9
35 - 39	1							1
40 - 44		2	1	1	1			5
45 - 49				1				1
50 - 54		1			2	2		5
55 - 59				1				1
60 - 64								
65+								
Total	10	10	2	3	3	2		30

Total Active Participant Information

	2020	2021	2022
Active Members	28	29	30
Valuation Payroll	1,889,588	1,947,756	2,218,219
Average Compensation	67,485	67,164	73,941
Average Age (yrs.)	39.0	37.4	27.6
Average Service (yrs.)	11.2	10.4	9.6

Reconciliation with Prior Year

	Actives	Retirees
July 1, 2021 Participants	29	36
Corrections		
New Participants	4	
Returned to Active		
Retirements	(2)	2
Deaths		(1)
New Beneficiaries		1
Benefits Expire		
Terminations		
- Vested		
- Non-Vested		
- Lump-Sums	(1)	
July 1, 2022 Participants	30	38

Section Six:

Accounting Disclosures

GASB Statement Nos. 67 and 68 Supplementary Information

The information presented in the required supplementary schedules was determined as part of the actuarial valuations at the dates indicated. Additional information as of the latest actuarial valuation as well as the previous 10 years follows:

Valuation Date June 30	Total Pension Liability	Plan Assets	Net Pension Liability	Percent Funded	Annual Covered Payroll	NPL As a % Of Covered Payroll
2012	13.228	6.694	6.534	50.6	1.473	443.5
2013	13.616	7.465	6.151	54.8	1.448	424.8
2014	14.003	8.849	5.154	63.2	1.455	354.3
2015	14.604	9.778	4.826	67.0	1.716	281.2
2016	15.266	9.556	5.710	62.6	1.686	338.6
2017	16.939	11.051	5.888	65.2	1.700	346.3
2018	17.853	12.374	5.479	69.3	1.888	290.1
2019	19.332	13.183	6.149	68.2	1.983	310.1
2020	19.602	13.844	5.758	70.6	1.890	304.7
2021	20.444	18.396	2.048	90.0	1.948	105.2
2022	21.886	15.320	6.565	70.0	2.218	296.0

Dollar amounts in millions.

Schedule of Employer Contributions

Year Ended June 30	Annual Recommended Contribution	Percent Contributed
2012	682,092	81%
2013	590,573	119%
2014	544,334	152%
2015	536,634	149%
2016	503,576	139%
2017	559,740	116%
2018	575,463	122%
2019	583,132	120%
2020	672,532	104%
2021	653,478	107%
2022	329,452	212%

Schedule of Changes in Net Pension Liability

Year End June 30	Beginning of Year Net Pension Liability	Service Cost	Interest Cost	Expected Return On Assets	Employer Contrib.	Employee Contrib.	Plan Changes	Assumption Changes	(Gain)/ Loss	End of Year Net Pension Liability
2013	6,533,765	318,749	989,770	(507,331)	(700,000)	(143,389)	-	-	(340,538)	6,151,026
2014	6,151,026	285,815	1,016,416	(595,528)	(825,000)	(166,440)	-	-	(712,004)	5,154,285
2015	5,154,285	315,103	1,047,597	(699,268)	(800,000)	(179,257)	-	-	(12,389)	4,826,071
2016	4,826,071	322,696	1,091,027	(763,745)	(700,000)	(172,701)	-	-	1,106,571	5,709,919
2017	5,709,919	302,324	1,138,411	(741,343)	(650,000)	(186,677)	-	677,967	314,893	5,887,527
2018	5,887,527	289,431	1,257,599	(852,452)	(700,000)	(195,936)	-	(83,567)	(207,085)	5,479,084
2019	5,479,084	334,284	1,328,812	(950,560)	(700,000)	(193,790)	-	620,398	851,132	6,148,962
2020	6,148,962	364,994	1,437,861	(998,439)	(700,000)	(192,361)	-	(39,072)	(302,800)	5,758,217
2021	5,758,217	354,423	1,453,595	(1,034,147)	(700,000)	(193,952)	-	(53,458)	(3,589,600)	2,048,536
2022	2,048,536	358,218	1,511,432	(1,379,675)	(700,000)	(221,185)	-	23,097	4,948,002	6,565,328

Schedule of Contributions

Year Ending June 30	Actuarially Determined Contribution	Contributions in Relation to the Actuarially Determined Contribution	Contribution Deficiency (Excess)	Covered Employee Payroll	Contributions as a Percentage of Covered Employee Payroll
2012	682,092	550,000	132,092	1,587,328	34.65%
2013	590,573	700,000	(109,427)	1,473,196	47.52%
2014	544,334	825,000	(280,666)	1,448,086	56.97%
2015	536,634	800,000	(263,366)	1,454,719	54.99%
2016	503,576	700,000	(196,424)	1,716,424	40.78%
2017	559,740	650,000	(90,620)	1,686,288	38.55%
2018	575,463	700,000	(124,537)	1,700,026	41.18%
2019	583,132	700,000	(116,868)	1,888,393	37.07%
2020	672,532	700,000	(27,468)	1,982,955	35.30%
2021	653,478	700,000	(46,522)	1,889,588	37.05%
2022	329,452	700,000	(370,548)	1,947,756	35.94%

Pension Expense for Year Ended June 30, 2022

Service cost	$ 358,218
Interest on the total pension liability	1,511,432
Employee contributions	(225,116)
Projected earnings on pension plan investments	(1,379,675)
Pension plan administrative expense	11,600
Outflows / (inflows) of resources recognized in the current year due to	
Difference between expected and actual experience	206,790
Changes of assumptions	137,441
Difference between projected and actual earnings on plan investments	7,502
Pension expense	$ 628,192

Long-term Expected Real Rates of Return

The long-term expected rate of return on pension plan investments was determined using a method in which the best-estimate ranges of expected future real rates of return (expected returns, net of investment expenses and inflation) are developed for each major asset class. These are combined to produce the long-term expected rate of return by weighting the expected future real rates of return by the target asset allocation percentage as shown in the following table, and then adding expected inflation, which is 2.5%. The target allocation and best estimates of arithmetic real rates of return for each major asset class are summarized in the following table:

Asset Class	Target Allocation	Long-Term Expected Real Rate of Return
Equities	80%	6.0%
Fixed Income	17%	2.5%
Cash and Equivalents	3%	0.0%

Changes in the Net Pension Liability

	Increase (Decrease)		
	Total Pension Liability (a)	Plan Fiduciary Net Position (b)	Net Pension Liability (a) – (b)
Balances at 6/30/21	$ 20,444,208	$ 18,395,672	$ 2,048,536
Changes for the year			
Service cost	358,218		358,218
Interest	1,511,432		1,511,432
Difference between expected and actual experience	849,924		849,924
Contributions - employer		700,000	(700,000)
Contributions - employee		225,116	(225,116)
Net investment income		(2,687,637)	2,687,637
Changes of Assumptions	23,097		23,097
Benefit payments	(1,301,168)	(1,301,168)	--
Administrative expense		(11,600)	11,600
Other changes		--	--
Net changes	1,441,503	(3,075,289)	4,516,792
Balances at 6/30/22	$ 21,885,711	$ 15,320,383	$ 6,565,328

Statement of Outflows and Inflows Arising During the Current Period

1. Difference between expected and actual experience of the TPL (gains) / losses	$849,924
2. Assumption Changes (gains) / losses	23,097
3. Recognition period: Average of the expected remaining service lives of all plan participants (in years)	6.44
4. Difference between expected and actual return on plan investments	$4,067,312
5. Outflow (inflow) of resources recognized in the current pension expense:	
a. for difference between expected and actual experience of the TPL, (1) / (3)	$131,976
b. for assumption changes, (2) / (3)	3,586
c. for difference between expected and actual return on investments, (4) / 5	813,462

Sensitivity of the Net Pension Liability to Changes in the Discount Rate

	1% Decrease 6.5%	Current Single Discount Rate Assumption 7.5%	1% Increase 8.5%
Total Pension Liability	$ 24,550,022	$ 21,885,711	$ 19,685,527
Plan Fiduciary Net Position	15,320,383	15,320,383	15,320,383
Net Pension Liability / (Asset)	$ 9,229,639	$ 6,565,328	$ 4,365,144

Deferred Outflows and Deferred Inflows of Resources to be Recognized in Future Years

	Deferred Outflows of Resources	Deferred Inflows of Resources
Differences between expected and actual experience	$1,038,326	$ 231,867
Changes in Assumptions	256,357	80,880
Net difference between projected and actual earnings on pension plan investments	1,072,642	--
Total	$2,367,325	$ 312,747

Year Ending June 30	Net Deferred Outflows of Resources
2023	$ 356,688
2024	339,021
2025	208,696
2026	954,962
2027	135,562
Thereafter	59,649
Total	$ 2,054,578

Section Seven:

Glossary of Terms

Glossary of Terms

Accrued Benefit
The benefit earned by a participant payable in the form of a monthly benefit commencing at normal retirement age.

Actuarial Accrued Liability
The actuarial present value of benefits earned as of the valuation date.

Actuarial Gain or Loss
The difference between the plan's actual experience and expected experience based on the actuarial assumptions used in the valuation.

Actuarial Value of Assets
The value of assets as determined by the actuary for the purpose of the valuation. This may or may not include a method of smoothing investment gains and losses over time.

Amortization
The spreading of liabilities or costs over a period of years. A plan's unfunded actuarial accrued liability is amortized over a period of years.

Entry Age Normal Actuarial Cost Method
An actuarial method for determining the annual normal cost and the actuarial accrued liability of a pension plan. Under this method, the annual normal cost is the level amount that would have to be contributed each year from the time each employee entered employment so that his pension will be fully funded by his assumed retirement age.

Normal Cost
That portion of the actuarial present value of plan benefits and expenses allocated to the valuation year.

Present Value
The value of a benefit payment or series of benefit payments determined as of the valuation date by the application of a particular set of actuarial assumptions. It is the single sum which reflects the time value of money (through discounts for investment yield) and the probabilities of payment (taking into account death, disability. withdrawal and age at retirement).

Unfunded Actuarial Accrued Liability
The excess of the actuarial accrued liability over the actuarial value of assets.

Vested Benefit
A benefit that is not forfeited if the participant leaves employment.