

LOWELL

RETIREMENT SYSTEM

AUDIT REPORT

JAN. 1, 2018 - DEC. 31, 2022



PUBLIC EMPLOYEE RETIREMENT ADMINISTRATION COMMISSION
COMMONWEALTH OF MASSACHUSETTS

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PERAC

COMMONWEALTH OF MASSACHUSETTS | PUBLIC EMPLOYEE RETIREMENT ADMINISTRATION COMMISSION

PHILIP Y. BROWN, ESQ., *Chair*

WILLIAM T. KEEFE, *Executive Director*

Auditor DIANA DIZOGLIO | KATHLEEN M. FALLON | KATE FITZPATRICK | JAMES J. GUIDO | RICHARD MACKINNON, JR. | JENNIFER F. SULLIVAN, ESQ.

September 2, 2025

The Public Employee Retirement Administration Commission (PERAC) has completed a review of the audits of the Lowell Retirement System conducted by the firm Powers & Sullivan, LLC, Certified Public Accountants (P&S). The audits covered the period from January 1, 2018, to December 31, 2022 P&S was subsequently acquired by the firm Marcum LLP, which was then acquired by the firm CBIZ, Inc.

We conducted an inspection of the work papers prepared by P&S. We determined that the audits were conducted in a competent professional manner and the work papers demonstrated that audit tests and procedures were performed in sufficient detail to allow us to accept the final audit reports as issued.

We identified specific differences between these financial audits designed to provide an opinion on financial statements and our compliance audits performed in accordance with the accounting and management standards established by PERAC in regulation 840 CMR 25.00 and in compliance with the provisions specified in PERAC Memo #18/2019.

Accordingly, we supplemented the field work conducted in the audits by P&S with certain limited procedures designed to provide additional assurance that the accounting and management standards established by PERAC were adhered to and complied with. The specific objectives of our review were to determine: 1) that the Board is exercising appropriate fiduciary oversight, 2) that cash balances are accurately stated, 3) that retirement contributions are accurately deducted, 4) that retirement allowances were correctly calculated, and 5) that required member documentation is maintained.

To achieve these objectives, we inspected certain records of the Lowell Retirement Board in the above areas. Specifically, we reviewed the minutes of the Board meetings for compliance with fiduciary oversight, and verified cash balances. We tested the payroll records of a sample of active members to confirm that the correct percentage of regular compensation is being deducted, including the additional two percent over \$30,000. We tested a sample of members who



retired during our audit period to verify that their retirement allowance was calculated in accordance with the statute. We also reviewed a sample of member files for accuracy and completeness.

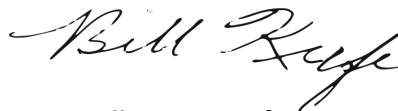
In our opinion, the financial records are being maintained and the management functions are being performed in conformity with the standards established by PERAC with the exception of those related to our supplemental work which are detailed in the findings presented in this report.

It should be noted that the financial statements included in this audit report were based on the work performed by P&S and the tests conducted for the periods referenced in their opinion. These audits were not performed by employees or representatives of PERAC. It should also be noted that the opinions expressed in these audit reports were based on the laws and regulations in effect at the time.

The financial statements and footnotes presented in this report were limited to the express results as of and for the years ended December 31, 2022, December 31, 2021, December 31, 2020, December 31, 2019, and December 31, 2018.

In closing, I wish to acknowledge the work of Powers & Sullivan, LLC who conducted these examinations, and the PERAC examiners who conducted limited procedures to supplement the field work and express my appreciation to the Lowell Retirement Board and staff for their courtesy and cooperation.

Sincerely,

A handwritten signature in black ink, appearing to read "Bill Keefe", written in a cursive style.

William T. Keefe.
Executive Director

EXPLANATION OF FINDINGS AND RECOMMENDATIONS

1. New Retirees' Allowance Calculations:

We tested the retirement allowance calculations of 19 new retirees during the audit period and found seven allowances with issues. The following three retirees were superannuation retirements.

- One member had average compensation understated by approximately \$2,800 due to an incorrect 3-year period being used.
- Two members had understated average salaries due to how the board handled the time that they were collecting workers' compensation. Chapter, 32 §5(3)(b) states that "the rate in effect for him immediately preceding any period of his absence without compensation shall be used as the rate for such period of absence", which the Board did not apply.

The following four retirees were accidental disability retirements.

- One member had their salary understated by approximately \$1,000 because not a full 52 weeks of compensation was included.
- One member received a retroactive salary payment several months after the approval of the retirement, but the benefit was not recalculated.
- Two members had an overstated salary because a full retroactive payment was included when only part of it related to the one-year period.

Recommendation: The Retirement Board should recalculate the above noted retirement allowances. When calculating any amounts owed on allowances, interest must be applied.

Board Response:

The Lowell Retirement Board's staff have made the corrections and re-submitted these calculations for approval. The allowances will be adjusted once the approvals have been received and any overpayments will be addressed by the Board after the retirees have been notified.

2. Fifth Board Member Appointments:

The Board did not follow procedures set forth in the PERAC Memo #28/2017 to appoint the Fifth Board member in 2018, 2021 and 2024. The Board did not post the opening or interview candidates in these years.

Recommendation: The Board must follow PERAC Memo #28/2017 for the proper procedures to appoint the Fifth Board member.

Board Response:

The Board understands PERAC's position regarding the appointment of the 5th member, but it respectfully disagrees with it. The Board has conferred with its counsel, who points out that the only statutory requirements for appointing the Board's 5th member is set forth in M.G.L. c. 32, § 20(4)(b), which states that the 5th member (1) shall not be an employee a retiree, or official of the governmental unit and (2) shall be chosen by the other four members for a three-year term. The Board is also aware that pursuant to M.G.L. c. 32, § 20(4 7/8E), the 5th member cannot be an employee, contractor, vendor or person receiving remuneration, financial benefit or consideration of any kind, other than a retirement benefit or the statutory stipend for serving on the retirement board,

EXPLANATION OF FINDINGS AND RECOMMENDATIONS (Continued)

from a retirement board or from a person doing business with a retirement board unless that person became a board member prior to April 2, 2012. Board Counsel also pointed out that M.G.L. c. 32 § 23B, which sets for the procurement process for selecting investment, actuarial, legal and accounting services, does not require an interview process. The Board's only fiduciary duty as defined in M.G.L. c. 32, § 1 pertains to the investment of retirement system funds as set forth in M.G.L. c. 32 § 23(3), and to the extent the Board has any general fiduciary duty, it is to comply with the retirement law, related laws, regulatory provisions, administrative and court decisions to which the Board is a party and binding appellate decisions. Since the Board's process in appointing its 5th member has not violated any statute or regulatory provision, or any appellate court interpretation thereof, or any binding administrative or lower court decision, the Board does not believe that PERAC's view as to what constitutes best or preferred practices in appointing a 5th member, which are not codified in statute or regulation, should be an audit finding.

PERAC Response:

Likewise, PERAC respectfully disagrees and holds the position that conducting an open, transparent and competitive process to assure system membership that a diligent effort was made to attract candidates and select a fifth member is part of the board's fiduciary duty. This position was explained in Memorandum #28 of 2017 which was upheld by the Division of Administrative Law Appeals in *Watertown Retirement Board v. Perac*, CR-19-0013 (August 28, 2020). That case was not appealed and is therefore a final decision of CRAB. DALA determined that PERAC's memo and the guidance that boards must solicit resumes and interview qualified candidates was not arbitrary and that retirement boards were bound by Memo 28/2017. A prior ruling in *Grimes v. Malden Retirement Board & PERAC*, CR-15-1 (2016) stated that boards are bound by PERAC memos subject to appeal by an aggrieved party.

FINAL DETERMINATION:

PERAC Audit staff will follow up in six (6) months to ensure appropriate actions have been taken regarding all findings.

SUPPLEMENTARY INFORMATION

SCHEDULE OF ALLOCATION OF INVESTMENTS OWNED

(percentages by category)

AS OF DECEMBER 31, 2022		
	MARKET VALUE	PERCENTAGE OF TOTAL ASSETS
Cash	\$11,807,120	2.4%
Pooled Alternative Investment Funds	22,361	0.0%
PRIT Cash Fund	1,007,346	0.2%
PRIT Core Fund	<u>469,756,789</u>	<u>97.3%</u>
Grand Total	<u>\$482,593,615</u>	<u>100.0%</u>

For the year ending December 31, 2022, the rate of return for the investments of the Lowell Retirement System was -10.80%. For the ten-year period ending December 31, 2022, the rate of return for the investments of the Lowell Retirement System averaged 8.06%. For the 38-year period ending December 31, 2022, since PERAC began evaluating the returns of the retirement systems, the rate of return on the investments of the Lowell Retirement System was 8.87%.

The composite rate of return for all retirement systems for the year ending December 31, 2022 was -10.84%. For the ten-year period ending December 31, 2022, the composite rate of return for the investments of all retirement systems averaged 8.18%. For the 38-year period ending December 31, 2022, since PERAC began evaluating the returns of the retirement systems, the composite rate of return on the investments of all retirement systems averaged 8.99%.

SUPPLEMENTARY INFORMATION (Continued)

ADMINISTRATION OF THE SYSTEM

The System is administered by a five-person Board of Retirement consisting of the City Auditor who shall be a member ex-officio, a second member appointed by the governing authority, a third and fourth member who shall be elected by the members in or retired from the service of such system, and a fifth member appointed by the other four board members.

Ex-officio Member: Kelly Oakes

Appointed Member: David R. Keene Serves until successor is appointed

Elected Member: William J. Desrosiers, Chairperson Term Expires: 8/3/2028

Elected Member: Robert W. Littlefield Term Expires: 12/13/2026

Appointed Member: Michael M. Brennan Term Expires: 4/25/2027

The Board members are required to meet at least once a month. The Board must keep a record of all of its proceedings. The Board must annually submit to the appropriate authority an estimate of the expenses of administration and cost of operation of the system. The board must annually file a financial statement of condition for the system with the Executive Director of PERAC.

The investment of the system's funds is the responsibility of the Board. All retirement allowances must be approved by the Retirement Board. The PERAC Actuary performs verification prior to payment, unless the system has obtained a waiver for superannuation calculations allowing them to bypass this requirement. All expenses incurred by the System must be approved by a majority vote of the Board. Payments shall be made only upon vouchers signed by two persons designated by the Board.

Retirement board members and employees are bonded by an authorized agent representing a company licensed to do business in Massachusetts. Fidelity insurance is the only required policy coverage under Ch. 32 §21 and §23 as well as 840 CMR 17.01. The policy is designed to cover specific intentional acts such as theft, fraud or embezzlement and also specify who commits such acts, most commonly employees of the system. This coverage reimburses the system for the losses it suffers as a result of its employees' actions. It does not insure the employees for their illegal acts. Statutorily required coverage is provided by the current fidelity insurance policy to a limit of \$1,000,000 with a \$10,000 deductible issued through Travelers Casualty and Surety Company. The system also has Fiduciary coverage to a limit of \$50,000,000 under a blanket policy issued through the Massachusetts Association of Contributory Retirement Systems.

BOARD REGULATIONS

The Lowell Retirement Board has adopted Regulations which are available on the PERAC website at <https://mass.gov/lowell-retirement-board-regulations>.

SUPPLEMENTARY INFORMATION (Continued)

MEMBERSHIP EXHIBIT

	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Retirement in Past Years										
Superannuation	56	53	61	55	48	64	58	65	77	51
Ordinary Disability	2	2	0	1	1	1	0	0	0	1
Accidental Disability	0	3	7	5	7	2	1	1	1	3
Total Retirements	58	58	68	61	56	67	59	66	78	55
 Total Retirees, Beneficiaries and Survivors	1,166	1,176	1,201	1,219	1,222	1,248	1,294	1,316	1,356	1,373
 Total Active Members	1,712	1,789	1,804	1,822	1,797	1,841	1,928	1,923	1,980	2,176
Pension Payments										
Superannuation	\$16,676,329	\$17,785,402	\$18,638,934	\$19,611,191	\$20,430,938	\$21,268,399	\$22,719,216	\$23,604,448	\$25,468,204	\$26,624,177
Survivor/Beneficiary Payments	1,698,049	1,642,746	1,622,886	1,744,385	1,742,835	1,841,692	1,944,941	2,067,395	2,188,099	2,217,793
Ordinary Disability	232,781	304,756	240,727	235,176	260,867	347,721	356,551	346,403	339,624	353,949
Accidental Disability	6,326,898	6,453,211	6,711,884	6,759,111	7,050,105	7,342,961	7,142,272	7,249,318	7,083,205	6,912,344
Other	<u>2,295,765</u>	<u>2,232,732</u>	<u>2,735,094</u>	<u>2,588,226</u>	<u>3,259,193</u>	<u>3,031,901</u>	<u>3,289,276</u>	<u>3,122,033</u>	<u>2,924,704</u>	<u>3,228,990</u>
Total Payments for Year	<u>\$27,229,822</u>	<u>\$28,418,848</u>	<u>\$29,949,525</u>	<u>\$30,938,090</u>	<u>\$32,743,938</u>	<u>\$33,832,674</u>	<u>\$35,452,256</u>	<u>\$36,389,597</u>	<u>\$38,003,836</u>	<u>\$39,337,254</u>



**Powers &
Sullivan, LLC**
CPAs AND ADVISORS

LOWELL CONTRIBUTORY RETIREMENT SYSTEM

FINANCIAL STATEMENTS

YEAR ENDED DECEMBER 31, 2022

LOWELL CONTRIBUTORY RETIREMENT SYSTEM

FINANCIAL STATEMENTS

YEAR ENDED DECEMBER 31, 2022

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Financial Section

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Independent Auditor's Report

To the Honorable Lowell Contributory Retirement Board
Lowell Contributory Retirement System
Lowell, Massachusetts

Opinions

We have audited the accompanying financial statements of Lowell Contributory Retirement System (System) as of and for the year ended December 31, 2022, and the related notes to the financial statements, which collectively comprise the System's financial statements as listed in the table of contents.

In our opinion, the financial statements referred to above present fairly, in all material respects, the financial position of the System as of December 31, 2022, and the changes in its financial position for the year then ended in accordance with accounting principles generally accepted in the United States of America.

Basis for Opinions

We conducted our audit in accordance with auditing standards generally accepted in the United States of America. Our responsibilities under those standards are further described in the Auditor's Responsibilities for the Audit of the Financial Statements section of our report. We are required to be independent of the System and to meet our other ethical responsibilities, in accordance with the relevant ethical requirements relating to our audit. We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinions.

Responsibilities of Management's for the Financial Statements

Management is responsible for the preparation and fair presentation of these financial statements in accordance with accounting principles generally accepted in the United States of America; and for the design, implementation, and maintenance of internal control relevant to the preparation and fair presentation of financial statements that are free from material misstatement, whether due to fraud or error.

In preparing the financial statements, management is required to evaluate whether there are conditions or events, considered in the aggregate, that raise substantial doubt about the System's ability to continue as a going concern for twelve months beyond the financial statement date, including any currently known information that may raise substantial doubt shortly thereafter.

Auditor's Responsibilities for the Audit of the Financial Statements

Our objectives are to obtain reasonable assurance about whether the financial statements as a whole are free from material misstatement, whether due to fraud or error, and to issue an auditor's report that includes our opinions. Reasonable assurance is a high level of assurance but is not absolute assurance and therefore is not a guarantee that an audit conducted in accordance with generally accepted auditing standards will always detect a material misstatement when it exists. The risk of not detecting a material misstatement resulting from fraud is

higher than for one resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations, or the override of internal control. Misstatements are considered material if there is a substantial likelihood that, individually or in the aggregate, they would influence the judgement made by a reasonable user based on the financial statements.

In performing an audit in accordance with generally accepted auditing standards, we:

- Exercise professional judgement and maintain professional skepticism throughout the audit.
- Identify and assess the risks of material misstatement of the financial statements, whether due to fraud or error, and design and perform auditing procedures responsive to those risks. Such procedures include examining, on a test basis, evidence regarding the amounts and disclosures in the financial statements.
- Obtain an understanding of internal control relevant to the audit in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the System's internal control. Accordingly, no such opinion is expressed.
- Evaluate the appropriateness of accounting policies used and the reasonableness of significant accounting estimates made by management, as well as evaluate the overall presentation of the financial statements.
- Conclude whether, in our judgement, there are conditions or events, considered in the aggregate, that raise substantial doubt about the System's ability to continue as a going concern for a reasonable period of time.

We are required to communicate with those charged with governance regarding, among other matters, the planned scope and timing of the audit, significant audit findings, and certain internal control-related matters that we identified during the audit.

Required Supplementary Information

Accounting principles generally accepted in the United States of America require that Management's Discussion and Analysis; the Schedule of Changes in the Net Pension Liability and Related Ratios; the Schedule of Contributions; and the Schedule of Investment Returns be presented to supplement the financial statements. Such information is the responsibility of management and, although not a part of the financial statements, is required by the Governmental Accounting Standards Board, who considers it to be an essential part of financial reporting for placing the financial statements in an appropriate operational, economic, or historical context. We have applied certain limited procedures to the required supplementary information in accordance with auditing standards generally accepted in the United States of America, which consisted of inquiries of management about the methods of preparing the information and comparing the information for consistency with management's responses to our inquiries, the financial statements, and other knowledge we obtained during our audit of the financial statements. We do not express an opinion or provide any assurance on the information because the limited procedures do not provide us with sufficient evidence to express an opinion or provide any assurance.

Other Reporting Required by Government Auditing Standards

In accordance with *Government Auditing Standards*, we have also issued our report dated October 26, 2023, on our consideration of the System's internal control over financial reporting and on our tests of its compliance with certain provisions of laws, regulations, contracts, grant agreements and other matters. The purpose of that report is solely to describe the scope of our testing of internal control over financial reporting and compliance and the results of that testing, and not to provide an opinion on the effectiveness of System's internal control over financial

reporting or on compliance. That report is an integral part of an audit performed in accordance with *Government Auditing Standards* in considering the System's internal control over financial reporting and compliance.

Restriction on Use

This report is intended solely for the information and use of the System, the Public Employee Retirement Commission and all member units and is not intended to be and should not be used by anyone other than these specified parties.

Powers & Sullivan, LLC

October 26, 2023

Management's Discussion and Analysis

As management of the Lowell Contributory Retirement System (System), we offer readers of these financial statements this narrative overview and analysis of the financial activities for the year ended December 31, 2022. The System complies with financial reporting requirements issued by the Governmental Accounting Standards Board (GASB).

The GASB is the authoritative standard setting body that provides guidance on how to prepare financial statements in conformity with generally accepted accounting principles (GAAP). Users of these financial statements rely on the GASB to establish consistent reporting standards for all governments in the United States. This consistent application is the only way users can assess the financial condition of a public retirement system compared to others.

Financial Highlights

- The System's assets/net position totaled \$482.6 million at year end.
- The System's net position decreased by \$64.2 million for the year ended December 31, 2022.
- Total investment loss was \$58.4 million, investment expenses were \$2.5 million, and net investment loss was \$60.9 million.
- Total contributions were \$47.0 million including \$33.4 million from employers and \$11.3 million from members.
- Retirement benefits, refunds, and transfers amounted to \$49.6 million.
- Administrative expenses were \$420,000 or 0.8% of total deductions.
- The total pension liability of the member units was \$810.3 million as of December 31, 2022, and the net pension liability was \$327.7 million.
- The System's fiduciary net position as a percentage of the total pension liability was 59.56%.
- The discount rate used was 7.00%, which represented a decrease from the prior year of 7.10%.

Overview of the Financial Statements

This discussion and analysis is intended to serve as an introduction to the System's fiduciary financial statements. These fiduciary financial statements comprise of four components: 1) management's discussion and analysis, 2) fiduciary financial statements, 3) notes to the financial statements and 4) required supplementary information.

Fiduciary Financial Statements

The *statement of fiduciary net position* presents information on all assets less liabilities with the difference reported as *net position*. Over time, increases or decreases in net position may serve as a useful indicator of whether the financial position is improving or deteriorating.

The *statement of changes in fiduciary net position* presents information showing how the System's net position changed during the most recent year. All changes in net position are reported as soon as the underlying event giving rise to the change occurs, *regardless of the timing of related cash flows*. Thus, additions and deductions are reported in this statement for some items that will only result in cash flows in future periods.

Notes to the Financial Statements

The notes provide additional information that is essential to a full understanding of the data provided in the fiduciary financial statements.

Required Supplementary Information

Accounting principles generally accepted in the United States of America require that the Schedule of Changes in the Net Pension Liability and Related Ratios; the Schedule of Contributions; and the Schedule of Investment Return be presented to supplement the financial statements. Such information, although not a part of the financial statements, is required by the Governmental Accounting Standards Board who considers it to be an essential part of financial reporting for placing the financial statements in an appropriate operational, economic, or historical context.

Financial Analysis

As noted earlier, net position may serve over time as a useful indicator of the System's financial position. The System's net position was \$482.6 million at the close of 2022.

The assets accumulated are held to provide pension benefits for qualified retirees along with active and inactive employees of the member units. At year-end, the System's net position included cash and cash equivalents of \$12.8 million and investments of \$469.8 million.

In 2022, contributions to the System were \$47.0 million while retirement benefit payments, refunds, transfers, and administration expenses were \$50.2 million which resulted in a current deficiency of \$3.3 million. In 2021, contributions to the System were \$43.5 million while retirement benefit payments, refunds, transfers and administration expenses were \$48.5 million which resulted in a deficiency of \$5.0 million. During 2022, the System reported a net investment loss of \$60.9 million which resulted in a decrease of \$64.2 million in net position. During 2021, the System supported the deficiency with net investment income.

Net investment income/(loss) was \$(60.9) million and \$88.1 million in 2022 and 2021, respectively. The annual money weighted rate of return was (11.20)% and 19.16% in 2022 and 2021, respectively. The System's investment policy is designed to achieve a long-term rate of return of 7.00% and fluctuation in annual investment returns is expected.

The following tables present summarized financial information for the past two years.

	2022	2021
Assets:		
Cash and cash equivalents.....	\$ 12,814,466	\$ 12,522,114
Investments.....	469,779,150	534,310,834
Receivables.....	32,437	-
Total assets.....	482,626,053	546,832,948
Liabilities:		
Accounts payable.....	114	-
Net Position Restricted for Pensions.....	\$ 482,625,939	\$ 546,832,948

	2022	2021
Additions:		
Contributions:		
Member contributions.....	\$ 11,308,224	\$ 10,417,970
Employer contributions.....	33,427,761	31,775,438
Other contributions.....	2,216,791	1,299,642
Total contributions.....	46,952,776	43,493,050
Net investment income (loss).....	(80,912,562)	88,097,806
Total additions.....	(13,959,786)	131,590,856
Deductions:		
Administration.....	420,106	404,586
Retirement benefits, refunds and transfers.....	49,827,117	48,119,523
Total deductions.....	50,247,223	48,524,109
Net increase (decrease) in fiduciary net position.....	(64,207,009)	83,066,747
Fiduciary net position at beginning of year.....	546,832,948	463,766,201
Fiduciary net position at end of year.....	\$ 482,625,939	\$ 546,832,948

Requests for Information

This financial report is designed to provide a general overview of the System's finances for all those with an interest in the System's finances. Questions concerning any of the information provided in this report or requests for additional financial information should be addressed to the System's Board, 375 Merrimack Street, Basement Room 3, Lowell, Massachusetts, 01852.

STATEMENT OF FIDUCIARY NET POSITION

DECEMBER 31, 2022

Assets

Cash and cash equivalents.....	\$ 12,814,466
Investments:	
Investments in Pension Reserve Investment Trust.....	469,756,789
Equity mutual funds.....	<u>22,361</u>
Total investments.....	<u>469,779,150</u>
Receivables, net of allowance for uncollectibles:	
Interest and dividends receivable.....	<u>32,437</u>
Total Assets.....	<u>482,626,053</u>

Liabilities

Accounts payable.....	<u>114</u>
Net Position Restricted for Pensions.....	\$ <u>482,625,939</u>

See notes to financial statements

STATEMENT OF CHANGES IN FIDUCIARY NET POSITION

YEAR ENDED DECEMBER 31, 2022

Additions:	
Contributions:	
Employer pension appropriation.....	\$ 33,427,761
Member contributions.....	11,308,224
Transfers from other systems.....	962,817
3(8)(c) contributions from other systems.....	1,004,261
Workers' compensation settlements.....	24,000
State COLA reimbursements.....	<u>225,713</u>
Total contributions.....	<u>46,952,776</u>
Net investment income (loss):	
Investment income (loss).....	(58,425,055)
Less: investment expense.....	<u>(2,487,507)</u>
Net investment income (loss).....	<u>(60,912,562)</u>
Total additions.....	<u>(13,959,786)</u>
Deductions:	
Retirement benefits and refunds.....	46,390,288
Transfers to other systems.....	1,511,417
3(8)(c) transfer to other systems.....	1,925,412
Administration.....	<u>420,106</u>
Total deductions.....	<u>50,247,223</u>
Net increase in fiduciary net position.....	(64,207,009)
Fiduciary net position at beginning of year.....	<u>546,832,948</u>
Fiduciary net position at end of year.....	<u>\$ 482,625,939</u>

See notes to financial statements.

NOTE 1 – PLAN DESCRIPTION

The Lowell Contributory Retirement System (System) is a multiple-employer, cost-sharing, contributory defined benefit pension plan covering all employees of the governmental member units deemed eligible by the Lowell Contributory Retirement Board (Board), with the exception of school department employees who serve in a teaching capacity. The pensions of such school employees are administered by the Commonwealth of Massachusetts' Teachers Retirement System. Membership in the System is mandatory immediately upon the commencement of employment for all permanent employees working a minimum of 20 hours per week. As of December 31, 2022, the System had 3 participating employers.

The System is a member of the Massachusetts Contributory Retirement System and is governed by Chapter 32 of the Massachusetts General Laws. The Public Employee Retirement Administration Commission (PERAC) is the state agency responsible for oversight of the Commonwealth's public retirement systems.

The Retirement Board is responsible for maintaining records of member employee contributions, for determining eligibility for retirement due to any service and disability, or for the payment of retirement benefits. The System is governed by a five-member Board who establish the policies under which the System operates. Board members are appointed or elected as specified by Massachusetts General Laws (MGL) CH. 32, Section 20 for terms not to exceed 3 years.

Massachusetts contributory retirement system benefits are, with certain exceptions such as cost of living adjustments which can be adopted by the Board from time to time, uniform from system to system. The System provides for retirement allowance benefits up to a maximum of 80% of a member's highest three-year average annual rate of regular compensation. For persons who became members on or after April 2, 2012, average salary is the average annual rate of regular compensation received during the five consecutive years that produced the highest average, or, if greater, during the last five years (whether or not consecutive) preceding retirement. Benefit payments are based upon a member's age, length of creditable service, level of compensation, and group classification.

There are three classes of membership in the retirement system: group 1, group 2, and group 4. Group 1 consists of general employees which includes clerical and administrative positions. Group 2 consists of positions that have been specified as hazardous. Lastly, group 4 consists of police officers, firefighters, and other hazardous positions.

Members become vested after ten years of creditable service. A superannuation retirement allowance may be received upon the completion of 20 years of service or upon reaching the age of 55 with 10 years of service. Normal retirement for most employees occurs at age 65 (except for certain hazardous duty and public safety positions, whose normal retirement is at age 55).

A retirement allowance consists of two parts: an annuity and a pension. A member's accumulated total deductions and the interest they generate constitute the annuity. The differential between the total retirement benefit and the annuity is the pension. The average retirement benefit is approximately 80-85% pension and 15-20% annuity.

Active members contribute between 5 and 11% of their gross regular compensation. The percentage rate is keyed to the date upon which an employee's membership commences. These deductions are deposited in the Annuity Savings Fund and earn interest at a rate determined by the Public Employee Retirement Administration Commission's (PERAC) actuary. When a member's retirement becomes effective, his/her deductions and related interest are transferred to the Annuity Reserve Fund. Any cost-of-living adjustments granted between 1981 and 1997 and any increase in other benefits imposed by the Commonwealth of Massachusetts' state law during those years are borne by the Commonwealth and are deposited into the Pension Fund. Cost-of-living adjustments granted after 1997 must be approved by the System and all costs are borne by the System.

The pension portion of any retirement benefit is paid from the Pension Fund of the System. The governmental unit employing the member must annually appropriate and contribute the amount of current-year pension assessment. MGL Chapter 32 requires that systems be on an actuarially determined funding schedule to be fully funded by 2040. Under the current funding schedule, the System will be fully funded by 2037.

Members who become permanently and totally disabled for further duty may be eligible to receive a disability retirement allowance. The amount of benefits to be received in such cases is dependent on several factors, including whether or not the disability is work related, the member's age, years of creditable service, level of compensation, veterans' status and group classification.

Employees who resign from service and who are not eligible to receive a retirement allowance or are under the age of 55 are entitled to request a refund of their accumulated total deductions.

Survivor benefits are extended to eligible beneficiaries of members whose death occurs prior to or following retirement.

NOTE 2 – SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

The accompanying financial statements of the System have been prepared in accordance with accounting principles generally accepted in the United States of America (GAAP). The Governmental Accounting Standards Board (GASB) is the recognized standard-setting body for establishing governmental accounting and financial reporting principles.

The System is a special-purpose government engaged only in fiduciary activities. Accordingly, the financial statements are reported using the flow of economic resources measurement focus and use the accrual basis of accounting. Under this method, additions are recorded when earned and deductions are recorded when the liabilities are incurred.

Cash and Investments

Cash and cash equivalents are considered to be cash on hand, demand deposits, and short-term investments with an original maturity of three months or less from the date of acquisition. Investments are carried at fair value. The fair values were determined by the closing price for those securities traded on national stock exchanges and at the average bid-and-asked quotation for those securities traded in the over-the-counter market. The fair value of private equities are based on management's valuation of estimates and assumptions from information and representations provided by the respective general partners, in the absence of readily ascertainable market values. Real estate assets are reported at fair value utilizing an income approach to valuation along with independent appraisals and estimates by management.

Fair Value Measurements

The System reports required types of financial instruments in accordance with the fair value standards. These standards require an entity to maximize the use of observable inputs (such as quoted prices in active markets) and minimize the use of unobservable inputs (such as appraisals or valuation techniques) to determine fair value.

Fair value standards also require the government to classify these financial instruments into a three-level hierarchy based on the priority of inputs to the valuation technique or in accordance with net asset value practical expedient rules, which allow for either Level 1, Level 2 or Level 3 depending on lock up and notice periods associated with the underlying funds.

Instruments measured and reported at fair value are classified and disclosed in one of the following categories:

Level 1 – Quoted prices are available in active markets for identical instruments as of the reporting date. Instruments, which are generally included in this category, include actively traded equity and debt securities, U.S. government obligations, and mutual funds with quoted market prices in active markets.

Level 2 – Pricing inputs are other than quoted in active markets, which are either directly or indirectly observable as of the reporting date, and fair value is determined through the use of models or other valuation methodologies. Certain fixed income securities, primarily corporate bonds, are classified as Level 2 because fair values are estimated using pricing models, matrix pricing, or discounted cash flows.

Level 3 – Pricing inputs are unobservable for the instrument and include situations where there is little, if any, market activity for the instrument. The inputs into the determination of fair value require significant management judgment or estimation.

In some instances, the inputs used to measure fair value may fall into different levels of the fair value hierarchy and is based on the lowest level of input that is significant to the fair value measurement.

Market price is affected by a number of factors, including the type of instrument and the characteristics specific to the instrument. Instruments with readily available active quoted prices generally will have a higher degree of market price observability and a lesser degree of judgment used in measuring fair value. It is reasonably possible that change in values of these instruments will occur in the near term and that such changes could materially affect amounts reported in these financial statements. For more information on the fair value of the System's financial instruments, see Note 4 – Cash and Investments.

Accounts Receivable

Accounts receivable may consist of member deductions, pension fund appropriations, interest and dividends, and other miscellaneous reimbursements. These receivables are considered 100% collectible and therefore do not report an allowance for uncollectible accounts. On December 31, 2022, the System reported receivables related to interest and dividends.

NOTE 3 – PLAN ADMINISTRATION

The System is administered by a five-person Board of Retirement consisting of the City Auditor, who shall be a member ex-officio, two elected members chosen by the employees of the System for a three-year term, one appointed by the City Manager, and one non-employee or retiree appointed by the other members for a three-year term. City Council confirmation is not required.

Chairman - Elected.....	William J. Desrosiers	Term Expires:	8/3/2025
Appointed Member.....	David R. Keene	Term Expires:	Indefinite
Appointed Member.....	Michael M. Brennan	Term Expires:	4/25/2024
Elected Member.....	Robert Littlefield	Term Expires:	12/13/2023
Ex-Officio.....	Kelly Oakes	Term Expires:	Indefinite

Board members are required to meet at least once a month. Meetings are generally held the last week of each month. The Board must keep a record of all of its proceedings. The Board must annually submit to the appropriate authority an estimate of the expenses of administration and cost of operation of the System. The Board must annually file a financial statement of condition for the System with the Executive Director of PERAC.

The investment of the System's funds is the responsibility of the Board. All retirement allowances must be approved by the Retirement Board. The PERAC Actuary performs verification prior to payment, unless the System has obtained a waiver for superannuation calculations allowing them to bypass this requirement. All expenses incurred by the System must be approved by a majority vote of the Board. Payments shall be made only upon vouchers signed by three persons designated by the Board.

System board members and employees are bonded by an authorized agent representing a company licensed to do business in Massachusetts. The System has obtained bonding through the Massachusetts Association of Contributory Retirement Systems program that provides \$10,000,000 of fiduciary protection for Trustees and employees. Also obtained is separate fidelity coverage policy pertaining to ERISA/Crime to a limit of \$1,000,000 issued through the Travelers Casualty & Surety Company.

NOTE 4 – CASH AND INVESTMENTS

Custodial Credit Risk - Deposits

At December 31, 2022, the carrying amount of the System's deposits totaled \$12,814,466, this was comprised of \$11,807,120 of cash deposited with banks along with \$1,007,346 in the PRIT Cash Fund. The bank balance totaled \$12,915,828, of which \$11,908,482 was covered by Federal Deposit Insurance and the remaining \$1,007,346 in the PRIT Cash Fund was uninsured and uncollateralized.

Investments

The System's investments are as follows:

<u>Investment Type</u>	<u>Fair Value</u>
Equity mutual funds.....	\$ 22,361
Pension Reserve Investment Trust (PRIT).....	469,756,789
Total investments.....	<u>\$ 469,779,150</u>

Approximately 99.9% of the Retirement System's investments are in Pension Reserve Investment Trust (PRIT). This investment pool was established by the Treasurer of the Commonwealth of Massachusetts, who serves as Trustee. PRIT is administered by the Pension Reserves Investment Management Board (PRIM). The fair values of the positions in each investment Pool are the same as the value of each Pool's shares. The Administration does not have the ability to control any of the investment decisions relative to its funds in PRIT.

The effective weighted duration rate for PRIT investments ranged from 1.98 to 14.64 years.

The remaining 0.1% of the System's funds are invested in equity mutual funds. The fair values were determined by the closing price for those securities traded on national stock exchanges and at the average bid-and-asked quotation for those securities traded in the over-the-counter market.

Fair Value of Investments

The System holds investments that are measured at fair value on a recurring basis. Because investing is a key part of the System's mission, the System shows greater disaggregation in its disclosures. The System chooses a tabular format for disclosing the levels within the fair value hierarchy. The System categorizes its fair value measurements within the fair value hierarchy established by generally accepted accounting principles.

The following table presents financial assets at December 31, 2022, for which the System measures fair value on a recurring basis, by level, within the fair value hierarchy:

Investment Type	December 31, 2022	Fair Value Measurements Using		
		Quoted Prices in Active Markets for Identical Assets (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)
Investments measured at fair value:				
Equity mutual funds.....	\$ 22,361	\$ 22,361	\$ -	\$ -
Investments measured at net asset value:				
Pension Reserve Investment Trust (PRIT).....	469,756,789			
Total investments.....	\$ 469,779,150			

Equity mutual funds classified in Level 1 are valued using prices quoted in active markets for those securities.

PRIT Investments are valued using the net asset value (NAV) method.

The System's annual money-weighted rate of return on pension plan investments was (11.20)%. The money-weighted rate of return expresses investment performance, net of pension plan investment expense, adjusted for the changing amounts actually invested, measured monthly.

NOTE 5 – MEMBERSHIP

The following table represents the System's membership at December 31, 2022:

Active members.....	1,859
Inactive members.....	588
Retirees and beneficiaries currently receiving benefits.....	1,341
Total.....	3,788

NOTE 6 – ACTUARIAL VALUATION

Components of the net pension liability as of December 31, 2022, were as follows:

Total pension liability	\$ 810,316,745
Total pension plan's fiduciary net position.....	(482,625,939)
Total net pension liability	<u>\$ 327,690,806</u>
The pension plan's fiduciary net position as a percentage of the total pension liability	59.56%

The total pension liability was determined by an actuarial valuation as of January 1, 2023, rolled back to the System's measurement date of December 31, 2022, using the following assumptions:

Valuation date.....	January 1, 2023.
Actuarial cost method.....	Entry Age Normal.
Amortization method - UAAL.....	Increasing dollar amount at 4% to reduce the Unfunded Actuarial Accrued Liability to zero on or before June 30, 2036, with annual increases in appropriations limited to 5.28%.
Asset valuation method.....	The Actuarial Value of Assets is the fair value of assets as of the valuation date reduced by the sum of: a) 80% of gains and losses of the prior year; b) 60% of gains and losses of the second prior year; c) 40% of gains and losses of the third prior year and d) 20% of gains and losses of the fourth prior year. Investment gains and losses are determined by the excess or deficiency of the expected return over the actual return on the fair value. The actuarial valuation of assets is further constrained to be not less than 90% or more than 110% of fair value.
Investment rate of return/Discount rate.....	7.00%, net of pension plan investment expense, including inflation. Previously 7.10%.
Inflation rate.....	2.40% per year.
Projected salary increases.....	6% - 4.25% for Group 1 (based on service) 7% - 4.75% for Group 4 (based on service)
Payroll growth.....	3.50% per year.
Cost of living adjustments.....	3% of the first \$17,000 of the annual retirement allowance.
Mortality rates.....	RP-2014 Blue Collar Mortality Table with full generational mortality improvement using Scale MP-2021. For disabled lives, RP-2014 Blue Collar Mortality Table set forward one year with full generational mortality improvement using Scale MP-2021.

Investment policy: The System's policy in regard to the allocation of invested assets in PRIT is established by PRIM. The policy with regard to the allocation of all other invested assets is established by the Retirement Board. Plan assets are managed on a total return basis with a long-term objective of achieving a fully funded status for the benefits provided through the pension plan.

The long-term expected rate of return on pension plan investments was 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 expense 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 the target asset allocation percentage and by adding expected inflation.

Best estimates of arithmetic real rates of return for each major asset class included in the System's target asset allocation as of December 31, 2022, are summarized in the following table:

Asset Class	Long-Term Expected Asset Allocation	Long-Term Expected Real Rate of Return
Global equity	38.00%	4.74%
Core fixed income	15.00%	2.10%
Value-added fixed income	8.00%	5.20%
Private equity	15.00%	7.60%
Real estate	10.00%	3.10%
Timber/natural resources	4.00%	4.40%
Portfolio completion	10.00%	3.90%
Total	100.00%	

Discount rate: The discount rate used to measure the total pension liability was 7.00%, a decrease from the previous year of 7.10%. The projection of cash flows used to determine the discount rate assumed plan member contributions will be made at the current contribution rates and that contributions will be made at rates equal to the actuarially determined contribution rates. Based on those assumptions, the System'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 was applied to all periods of projected benefit payments to determine the total pension liability.

Sensitivity of the net pension liability to changes in the discount rate: The following presents the net pension liability, calculated using the discount rate of 7.00%, as well as what the net pension liability would be if it were calculated using a discount rate that is 1-percentage-point lower (6.00%) or 1-percentage-point higher (8.00%) than the current rate:

	December 31, 2022 Measurement Date		
	1% Decrease (6.00%)	Current Discount (7.00%)	1% Increase (8.00%)
Lowell Contributory Retirement System's net pension liability	\$ 419,983,431	\$ 327,690,806	\$ 249,716,229

Contributions: Governmental employers are required to pay an annual appropriation as established by PERAC. The total appropriation includes the amounts to pay the pension portion of each member's retirement allowance, an amount to amortize the actuarially determined unfunded liability to zero in accordance with the system's funding schedule, and additional appropriations in accordance with adopted early retirement incentive programs. The pension fund appropriations are allocated amongst employers based on covered payroll.

NOTE 7 – COMMITMENTS AND CONTINGENCIES

The System has no significant commitments or contingencies as of December 31, 2022.

NOTE 8 – SUBSEQUENT EVENTS

Management has evaluated subsequent events through October 26, 2023, which is the date the financial statements were available to be issued.

NOTE 9 – IMPLEMENTATION OF GASB PRONOUNCEMENTS

There were no GASB pronouncements required to be implemented in 2022, that impacted the Retirement System's financial statements.

None of the issued GASB statements that are required to be implemented in future years are anticipated to impact the Systems financial statements.

Required Supplementary Information

**SCHEDULE OF CHANGES IN THE NET PENSION LIABILITY
AND RELATED RATIOS**

	December 31, 2014	December 31, 2015	December 31, 2016	December 31, 2017
Total pension liability:				
Service cost.....	\$ 12,776,431	\$ 12,776,431	\$ 15,389,829	\$ 14,902,167
Interest.....	39,817,736	42,298,799	45,581,124	47,847,969
Changes in benefit terms.....	-	-	5,820,520	-
Differences between expected and actual experience.....	-	5,750,829	-	(8,810,808)
Changes in assumptions.....	-	31,423,849	-	-
Benefit payments.....	(33,577,831)	(35,136,789)	(35,772,737)	(38,335,654)
Net change in total pension liability.....	19,016,336	57,113,119	31,018,736	15,603,674
Total pension liability - beginning.....	514,510,622	533,526,958	590,640,077	621,658,813
Total pension liability - ending (a).....	\$ 533,526,958	\$ 590,640,077	\$ 621,658,813	\$ 637,262,487
Plan fiduciary net position:				
Employer pension appropriation.....	\$ 21,880,170	\$ 21,837,654	\$ 24,701,289	\$ 26,141,731
Member contributions.....	8,983,678	8,903,043	8,204,174	8,451,653
Net investment income (loss).....	21,617,178	1,213,427	21,730,686	54,289,195
Administrative expenses.....	(358,770)	(355,999)	(367,634)	(381,369)
Retirement benefits and refunds.....	(33,577,831)	(35,136,789)	(35,772,737)	(38,335,654)
Net increase (decrease) in fiduciary net position.....	18,544,425	(3,538,664)	18,495,778	50,165,556
Fiduciary net position - beginning of year.....	295,923,280	314,467,705	310,929,041	329,424,819
Fiduciary net position - end of year (b).....	\$ 314,467,705	\$ 310,929,041	\$ 329,424,819	\$ 379,590,375
Net pension liability - ending (a)-(b).....	\$ 219,059,253	\$ 279,711,036	\$ 292,233,994	\$ 257,672,112
Plan fiduciary net position as a percentage of the total pension liability.....	58.94%	52.64%	52.99%	59.57%
Covered payroll.....	\$ 80,555,739	\$ 89,520,851	\$ 92,654,081	\$ 93,366,659
Net pension liability as a percentage of covered payroll.....	271.94%	312.45%	315.40%	275.98%

Note: this schedule is intended to present information for 10 years.
Until a 10-year trend is compiled, information is presented for those years for which information is available.

See notes to required supplementary information.

	December 31, 2018	December 31, 2019	December 31, 2020	December 31, 2021	December 31, 2022
\$	15,498,254	\$ 15,425,214	\$ 16,042,223	\$ 18,406,022	\$ 19,050,233
	49,064,991	50,412,209	52,261,974	53,459,239	55,310,258
	(5,025,406)	-	(1,012,629)	-	(4,618,353)
	6,798,833	-	44,598,349	-	4,137,994
	(39,328,169)	(41,425,669)	(43,123,465)	(45,815,916)	(47,061,728)
	27,008,303	24,411,754	68,786,452	26,049,345	26,818,404
	637,262,487	664,270,790	688,682,544	757,448,996	783,498,341
\$	664,270,790	\$ 688,682,544	\$ 757,448,996	\$ 783,498,341	\$ 810,316,745
\$	27,448,818	\$ 28,821,259	\$ 30,262,322	\$ 31,775,438	\$ 33,427,781
	9,311,730	9,181,343	10,246,145	9,414,005	10,759,824
	(8,694,089)	57,232,976	45,371,767	88,097,806	(60,912,562)
	(347,172)	(397,038)	(384,932)	(404,588)	(420,106)
	(39,328,169)	(41,425,669)	(43,123,465)	(45,815,916)	(47,061,728)
	(11,808,882)	53,412,871	42,371,837	83,066,747	(64,207,009)
	379,590,375	367,981,493	421,394,364	463,766,201	546,832,948
\$	367,981,493	\$ 421,394,364	\$ 463,766,201	\$ 546,832,948	\$ 482,625,939
\$	296,289,297	\$ 267,288,180	\$ 293,682,795	\$ 236,665,393	\$ 327,690,806
	55.40%	81.19%	61.23%	69.79%	59.56%
\$	95,898,286	\$ 100,274,819	\$ 100,140,377	\$ 101,362,725	\$ 105,084,446
	308.97%	266.56%	293.27%	233.48%	311.84%

SCHEDULE OF CONTRIBUTIONS

Year	Actuarially determined contribution	Contributions in relation to the actuarially determined contribution	Contribution deficiency (excess)	Covered payroll	Contributions as a percentage of covered payroll
December 31, 2022.....	\$ 33,427,761	\$ (33,427,761)	\$ -	\$ 105,084,446	31.81%
December 31, 2021.....	31,775,438	(31,775,438)	-	101,362,725	31.35%
December 31, 2020.....	30,262,322	(30,262,322)	-	100,140,377	30.22%
December 31, 2019.....	28,821,259	(28,821,259)	-	100,274,819	28.74%
December 31, 2018.....	27,448,818	(27,448,818)	-	95,896,286	28.62%
December 31, 2017.....	26,141,731	(26,141,731)	-	93,366,659	28.00%
December 31, 2016.....	24,701,289	(24,701,289)	-	92,654,081	26.66%
December 31, 2015.....	21,837,654	(21,837,654)	-	89,520,851	24.39%
December 31, 2014.....	21,880,170	(21,880,170)	-	80,555,739	27.16%

Note: this schedule is intended to present information for 10 years.
Until a 10-year trend is compiled, information is presented for those years for which information is available.

See notes to required supplementary information

SCHEDULE OF INVESTMENT RETURNS

<u>Year</u>	<u>Annual money-weighted rate of return, net of investment expense</u>
December 31, 2022.....	-11.20%
December 31, 2021.....	19.16%
December 31, 2020.....	11.15%
December 31, 2019.....	15.66%
December 31, 2018.....	-2.29%
December 31, 2017.....	16.63%
December 31, 2016.....	7.01%
December 31, 2015.....	0.48%
December 31, 2014.....	7.81%

Note: this schedule is intended to present information for 10 years. Until a 10-year trend is compiled, information is presented for those years for which information is available.

See notes to required supplementary information.

NOTE A – CHANGES IN THE NET PENSION LIABILITY AND RELATED RATIOS

The Schedule of Changes in the Net Pension Liability and Related Ratios includes the detailed changes in the System's total pension liability, changes in the System's net position, and the ending net pension liability. It also demonstrates the System's net position as a percentage of the total pension liability and the net pension liability as a percentage of covered payroll.

NOTE B – CONTRIBUTIONS

Governmental employers are required to pay an annual appropriation as established by PERAC. The total appropriation includes the amounts to pay the pension portion of each member's retirement allowance, an amount to amortize the actuarially determined unfunded liability to zero in accordance with the System's funding schedule, and additional appropriations in accordance with adopted early retirement incentive programs. The total appropriations are payable on July 1 and January 1. Employers may choose to pay the entire appropriation in July at a discounted rate. Accordingly, actual employer contributions may be less than the "total appropriation." The pension fund appropriations are allocated amongst employers based on covered payroll.

NOTE C – MONEY WEIGHTED RATE OF RETURN

The money weighted rate of return is calculated as the internal rate of return on pension plan investments, net of pension plan investment expense. A money weighted rate of return expresses investment performance, net of pension plan investment expense, adjusted for the changing amounts actually invested. Inputs to the money weighted rate of return calculation are determined monthly.

NOTE D – CHANGES IN ACTUARIAL ASSUMPTIONS AND PLAN PROVISIONSChanges in Assumptions

- The discount rate was decreased from 7.10% to 7.00%.
- The mortality improvement rates were updated.

Change in Plan Provisions

None.

Audit of Specific Elements, Accounts and Items of Financial Statements

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Independent Auditor's Report

To the Honorable Lowell Contributory Retirement Board
Lowell Contributory Retirement System
Lowell, Massachusetts

Report on the Audit of the Schedule of Employer Allocations and Schedule of Pension Amounts by Employer

Opinion

We have audited the accompanying schedule of employer allocations of the Lowell Contributory Retirement System (System) as of and for the year ended December 31, 2022, and the related notes. We have also audited the total for all entities of the rows titled net pension liability, total deferred outflows of resources, total deferred inflows of resources, total contributions, and total pension expense included in the accompanying schedule of pension amounts by employer of the System's Pension Plan as of and for the year ended December 31, 2022, and the related notes.

In our opinion, the accompanying schedule of employer allocations and schedule of pension amounts by employer present fairly, in all material respects the employer allocations and net pension liability, total deferred outflows of resources, total deferred inflows of resources, total contributions and total pension expense for the total of all participating entities for the System as of and for the year ended December 31, 2022, in accordance with accounting principles generally accepted in the United States of America.

Basis for Opinion

We conducted our audit in accordance with auditing standards generally accepted in the United States of America (GAAS). Our responsibilities under those standards are further described in the Auditor's Responsibilities for the Audit of the Schedules section of our report. We are required to be independent of the System and to meet our other ethical responsibilities, in accordance with the relevant ethical requirements relating to our audit. We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinions.

Responsibilities of Management for the Schedules

Management is responsible for the preparation and fair presentation of the schedules in accordance with accounting principles generally accepted in the United States of America and for the design, implementation, and maintenance of internal control relevant to the preparation and fair presentation of the schedules that are free from material misstatement, whether due to fraud or error.

Auditor's Responsibilities for the Audit of the Schedules

Our objectives are to obtain reasonable assurance about whether the schedule of employer allocations and the specified row totals included in the schedule of pension amounts by employer as a whole are free from material

misstatement, whether due to fraud or error, and to issue an auditor's report that includes our opinions. Reasonable assurance is a high level of assurance but is not absolute assurance and therefore is not a guarantee that an audit conducted in accordance with GAAS will always detect a material misstatement when it exists. The risk of not detecting a material misstatement resulting from fraud is higher than one resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations, or the override of internal control. Misstatements are considered material if there is a substantial likelihood that, individually or in the aggregate, they would influence the judgement made by a reasonable user based on the schedules.

In performing an audit in accordance with GAAS, we:

- Exercise professional judgement and maintain professional skepticism throughout the audit.
- Identify and assess the risks of material misstatement of the schedules, whether due to fraud or error, and design and perform audit procedures responsive to those risks. Such procedures include examining, on a test basis, evidence regarding the amounts and disclosures in the schedules.
- Obtain an understanding of internal control relevant to the audit in order to design audit procedures that are appropriate in the circumstances, but not for the purposes of expressing an opinion on the effectiveness of the System's internal control. Accordingly, no such opinion is expressed.
- Evaluate the appropriateness of accounting policies used and the reasonableness of significant accounting estimates made by management, as well as evaluate the overall presentation of the schedules.

We are required to communicate with those charged with governance regarding, among other matters, the planned scope and timing of the audit, significant audit findings, and certain internal control-related matters that we identified during the audit.

Other Matter

We have audited, in accordance with auditing standards generally accepted in the United States of America, the financial statements of the System as of and for the year ended December 31, 2022, and our report thereon, dated October 26, 2023, expressed an unmodified opinion on those financial statements.

Restriction on Use

This report is intended solely for the information and use of System management, the System employers and their auditors and is not intended to be and should not be used by anyone other than these specified parties.

Powers & Sullivan, LLC

October 26, 2023

SCHEDULE OF EMPLOYER ALLOCATIONS

FOR THE YEAR ENDED DECEMBER 31, 2022

Employer	FY2023 Pension Fund Appropriation	Share of Net Pension Liability	Percent of Total Net Pension Liability
City of Lowell.....	\$ 22,292,974	\$ 218,536,999	66.690%
City of Lowell - School Department.....	9,369,801	91,851,733	28.030%
Lowell Housing Authority.....	1,634,618	16,024,080	4.890%
Lowell Regional Transit Authority.....	130,368	1,277,994	0.390%
Total.....	\$ 33,427,761	\$ 327,690,806	100.000%

See notes to schedule of employer allocations and schedule of pension amounts by employer.

SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

FOR THE YEAR ENDED DECEMBER 31, 2022

	City of Lowell	City of Lowell - School Department	Lowell Regional Transit Authority	Lowell Housing Authority	Totals
Net Pension Liability					
Beginning net pension liability.....	\$ 160,293,471	\$ 63,591,991	\$ 1,183,327	\$ 11,596,604	\$ 236,665,393
Ending net pension liability.....	\$ 218,536,999	\$ 91,851,733	\$ 1,277,994	\$ 16,024,080	\$ 327,690,806
Deferred Outflows of Resources					
Net difference between projected and actual investment earnings on pension plan investments.....	\$ 23,131,726	\$ 9,722,332	\$ 135,273	\$ 1,696,119	\$ 34,685,450
Changes of assumptions.....	17,176,419	7,219,298	100,447	1,258,448	25,755,613
Changes in proportion and differences between employer contributions and proportionate share of contributions.....	283,176	4,252,591	101,737	402,183	5,039,686
Total Deferred Outflows of Resources.....	\$ 40,591,320	\$ 21,194,221	\$ 337,457	\$ 3,357,751	\$ 65,480,749
Deferred Inflows of Resources					
Differences between expected and actual experience.....	\$ 3,547,697	\$ 1,491,107	\$ 20,747	\$ 260,133	\$ 5,319,684
Changes in proportion and differences between employer contributions and proportionate share of contributions.....	3,136,396	689,151	246,090	1,068,059	5,039,686
Total Deferred Inflows of Resources.....	\$ 6,684,093	\$ 2,080,258	\$ 266,837	\$ 1,328,192	\$ 10,359,370
Pension Expense					
Proportionate share of plan pension expense.....	\$ 26,402,512	\$ 11,097,052	\$ 154,400	\$ 1,935,947	\$ 39,589,911
Net amortization of deferred amounts from changes in proportion and differences between employer contributions and proportionate share of contributions.....	(696,044)	1,220,801	(43,873)	(490,884)	-
Total Employer Pension Expense.....	\$ 25,716,468	\$ 12,317,853	\$ 110,527	\$ 1,445,063	\$ 39,589,911
Contributions					
Statutory required contribution.....	\$ 22,292,974	\$ 9,369,801	\$ 130,368	\$ 1,634,618	\$ 33,427,761
Contribution in relation to statutory required contribution.....	(22,292,974)	(9,369,801)	(130,368)	(1,634,618)	(33,427,761)
Contribution deficiency/(excess).....	\$ -	\$ -	\$ -	\$ -	\$ -
Contributions as a percentage of covered payroll.....	32.07%	32.07%	30.42%	27.59%	31.81%
Deferred Outflows/(Inflows) Recognized in Future Pension Expense					
June 30, 2024.....	\$ 4,494,189	\$ 3,467,539	\$ 18,808	\$ (221,506)	\$ 7,759,030
June 30, 2025.....	8,213,073	4,699,580	26,003	572,747	13,500,403
June 30, 2026.....	8,848,948	4,595,906	24,140	855,323	14,124,316
June 30, 2027.....	12,754,191	5,976,420	40,137	1,029,536	19,800,284
June 30, 2028.....	(403,184)	385,519	(38,468)	(6,541)	(62,654)
Total Deferred Outflows/(Inflows) Recognized in Future Pension Expense.....	\$ 33,907,237	\$ 19,113,963	\$ 70,620	\$ 2,029,559	\$ 55,121,379
Discount Rate Sensitivity					
1% decrease (6.00%).....	\$ 280,086,950	\$ 117,721,356	\$ 1,637,035	\$ 20,537,190	\$ 419,983,431
Current discount rate (7.00%).....	\$ 218,536,999	\$ 91,851,733	\$ 1,277,994	\$ 16,024,080	\$ 327,690,806
1% increase (8.00%).....	\$ 166,535,753	\$ 69,995,459	\$ 973,893	\$ 12,211,124	\$ 249,716,229
Covered Payroll.....	\$ 69,514,176	\$ 29,217,698	\$ 428,541	\$ 5,924,031	\$ 105,084,446

See notes to schedule of employer allocations and schedule of pension amounts by employer.

NOTE 1 – Plan Description

The Lowell Contributory Retirement System (System) is a multiple-employer, cost-sharing, contributory defined benefit pension plan covering all employees of the governmental member units deemed eligible by the Lowell Contributory Retirement Board (Board), with the exception of school department employees who serve in a teaching capacity. The pensions of such school employees are administered by the Commonwealth of Massachusetts' Teachers Retirement System. Membership in the System is mandatory immediately upon the commencement of employment for all permanent employees working a minimum of 20 hours per week. As of January 1, 2021, the System had 3 participating employers.

The System is governed by a five-member board comprised of the City Auditor (ex-officio), two elected members, a member appointed by the City Manager and a member appointed by the other four members.

The System is component unit of the City of Lowell, is presented using the accrual basis of accounting and is reported as a pension and other employee benefit trust fund in the fiduciary fund financial statements. That report may be obtained by contacting the City Auditor located at 375 Merrimack Street, Lowell, Massachusetts, 01852.

The System also issues a publicly available unaudited financial report in accordance with the guidelines established by the Commonwealth's PERAC. That report may be obtained by contacting the System located at 375 Merrimack Street, Lowell, Massachusetts, 01852.

NOTE 2 – Schedule of Employer Allocations

Governmental Accounting Standards Board (GASB) Statement #68 requires employers participating in a cost-sharing pension plan to recognize pension liabilities as employees provide services to the government and earn their pension benefits. Employers participating in cost-sharing plans are required to recognize their proportionate share of the System's collective pension amounts for all benefits provided through the System including the net pension liability, deferred outflows of resources, deferred inflows of resources, pension expense, and contributions.

GASB Statement #68 requires the allocation of the collective pension amounts be consistent with the manner in which contributions to the System are determined. As permissible under GASB Statement #68, The Schedule of Employer Allocations is used to demonstrate the allocation of System's collective pension amounts.

Massachusetts General Law (MGL) Chapter 32 Section 22 Paragraph 7c dictates that Massachusetts cost sharing defined benefit pension plans allocate the annual required pension fund appropriation to employer units based on their proportionate share of the aggregate of the annual rates of regular compensation of all members in service of the system who are employees of any government unit at the close of business on September 30th immediately preceding the fiscal year unless another methodology is approved by the Board. The member unit appropriations were based on the proportionate aggregate rates of regular compensation as of the close of business on September 30, 2021. The allocation of the net pension liability, deferred outflows, and pension expense was allocated based on the proportionate aggregate rates of regular compensation as of the close of business on September 30th.

NOTE 3 – Schedule of Pension Amounts by Employer

The Schedule of Pension Amounts by Employer presents the net pension liability, the various categories of deferred outflows of resources and deferred inflows of resources, pension expense, and contributions for all participating employers including differences between expected and actual economic experience; differences between projected and actual investment earnings, net; and changes of assumptions. Additionally, the changes in proportion and differences between employer contributions and proportionate share of contributions are presented in accordance with GASB statements.

Changes in Assumptions

- The discount rate was decreased from 7.10% to 7.00%
- The mortality improvement rates were updated.

Change in Plan Provisions

None.

LOWELL CONTRIBUTORY RETIREMENT SYSTEM

FINANCIAL STATEMENTS

YEAR ENDED DECEMBER 31, 2021

LOWELL CONTRIBUTORY RETIREMENT SYSTEM

FINANCIAL STATEMENTS

YEAR ENDED DECEMBER 31, 2021

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Financial Section

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Independent Auditor's Report

To the Honorable Lowell Contributory Retirement Board
Lowell Contributory Retirement System
Lowell, Massachusetts

Opinions

We have audited the accompanying financial statements of Lowell Contributory Retirement System (System) as of and for the year ended December 31, 2021, and the related notes to the financial statements, which collectively comprise the System's financial statements as listed in the table of contents.

In our opinion, the financial statements referred to above present fairly, in all material respects, the financial position of the System as of December 31, 2021, and the changes in its financial position for the year then ended in accordance with accounting principles generally accepted in the United States of America.

Basis for Opinions

We conducted our audit in accordance with auditing standards generally accepted in the United States of America. Our responsibilities under those standards are further described in the Auditor's Responsibilities for the Audit of the Financial Statements section of our report. We are required to be independent of the System and to meet our other ethical responsibilities, in accordance with the relevant ethical requirements relating to our audit. We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinions.

Responsibilities of Management's for the Financial Statements

Management is responsible for the preparation and fair presentation of these financial statements in accordance with accounting principles generally accepted in the United States of America; and for the design, implementation, and maintenance of internal control relevant to the preparation and fair presentation of financial statements that are free from material misstatement, whether due to fraud or error.

In preparing the financial statements, management is required to evaluate whether there are conditions or events, considered in the aggregate, that raise substantial doubt about the System's ability to continue as a going concern for twelve months beyond the financial statement date, including any currently known information that may raise substantial doubt shortly thereafter.

Auditor's Responsibilities for the Audit of the Financial Statements

Our objectives are to obtain reasonable assurance about whether the financial statements as a whole are free from material misstatement, whether due to fraud or error, and to issue an auditor's report that includes our opinions. Reasonable assurance is a high level of assurance but is not absolute assurance and therefore is not a guarantee that an audit conducted in accordance with generally accepted auditing standards will always detect a material misstatement when it exists. The risk of not detecting a material misstatement resulting from fraud is

higher than for one resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations, or the override of internal control. Misstatements are considered material if there is a substantial likelihood that, individually or in the aggregate, they would influence the judgement made by a reasonable user based on the financial statements.

In performing an audit in accordance with generally accepted auditing standards, we:

- Exercise professional judgement and maintain professional skepticism throughout the audit.
- Identify and assess the risks of material misstatement of the financial statements, whether due to fraud or error, and design and perform auditing procedures responsive to those risks. Such procedures include examining, on a test basis, evidence regarding the amounts and disclosures in the financial statements.
- Obtain an understanding of internal control relevant to the audit in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the System's internal control. Accordingly, no such opinion is expressed.
- Evaluate the appropriateness of accounting policies used and the reasonableness of significant accounting estimates made by management, as well as evaluate the overall presentation of the financial statements.
- Conclude whether, in our judgement, there are conditions or events, considered in the aggregate, that raise substantial doubt about the System's ability to continue as a going concern for a reasonable period of time.

We are required to communicate with those charged with governance regarding, among other matters, the planned scope and timing of the audit, significant audit findings, and certain internal control-related matters that we identified during the audit.

Required Supplementary Information

Accounting principles generally accepted in the United States of America require that Management's Discussion and Analysis; the Schedule of Changes in the Net Pension Liability and Related Ratios; the Schedule of Contributions; and the Schedule of Investment Returns be presented to supplement the financial statements. Such information is the responsibility of management and, although not a part of the financial statements, is required by the Governmental Accounting Standards Board, who considers it to be an essential part of financial reporting for placing the financial statements in an appropriate operational, economic, or historical context. We have applied certain limited procedures to the required supplementary information in accordance with auditing standards generally accepted in the United States of America, which consisted of inquiries of management about the methods of preparing the information and comparing the information for consistency with management's responses to our inquiries, the financial statements, and other knowledge we obtained during our audit of the financial statements. We do not express an opinion or provide any assurance on the information because the limited procedures do not provide us with sufficient evidence to express an opinion or provide any assurance.

Other Reporting Required by Government Auditing Standards

In accordance with *Government Auditing Standards*, we have also issued our report dated July 27, 2022, on our consideration of the System's internal control over financial reporting and on our tests of its compliance with certain provisions of laws, regulations, contracts, grant agreements and other matters. The purpose of that report is solely to describe the scope of our testing of internal control over financial reporting and compliance and the results of that testing, and not to provide an opinion on the effectiveness of System's internal control over financial

reporting or on compliance. That report is an integral part of an audit performed in accordance with *Government Auditing Standards* in considering the System's internal control over financial reporting and compliance.

Restriction on Use

This report is intended solely for the information and use of the System, the Public Employee Retirement Commission and all member units and is not intended to be and should not be used by anyone other than these specified parties.

Powers & Sullivan, LLC

July 27, 2022

Management's Discussion and Analysis

As management of the Lowell Contributory Retirement System (System), we offer readers of these financial statements this narrative overview and analysis of the financial activities for the year ended December 31, 2021. The System complies with financial reporting requirements issued by the Governmental Accounting Standards Board (GASB).

The GASB is the authoritative standard setting body that provides guidance on how to prepare financial statements in conformity with generally accepted accounting principles (GAAP). Users of these financial statements rely on the GASB to establish consistent reporting standards for all governments in the United States. This consistent application is the only way users can assess the financial condition of a public retirement system compared to others.

Financial Highlights

- The System's assets/net position totaled \$546.8 million at year end.
- The System's net position increased by \$83.1 million for the year ended December 31, 2021.
- Total investment income was \$90.6 million, investment expenses were \$2.5 million, and net investment income was \$88.1 million.
- Total contributions were \$43.5 million including \$31.8 million from employers and \$10.4 million from members.
- Retirement benefits, refunds, and transfers amounted to \$48.1 million.
- Administrative expenses were \$404,600 or 0.8% of total deductions.
- The total pension liability of the member units was \$783.5 million as of December 31, 2021, and the net pension liability was \$236.7 million.
- The System's fiduciary net position as a percentage of the total pension liability was 69.79%.
- The discount rate used was 7.10%, which did not change from the prior year.

Overview of the Financial Statements

This discussion and analysis is intended to serve as an introduction to the System's fiduciary financial statements. These fiduciary financial statements comprise of four components: 1) management's discussion and analysis, 2) fiduciary financial statements, 3) notes to the financial statements and 4) required supplementary information.

Fiduciary Financial Statements

The *statement of fiduciary net position* presents information on all assets less liabilities with the difference reported as *net position*. Over time, increases or decreases in net position may serve as a useful indicator of whether the financial position is improving or deteriorating.

The *statement of changes in fiduciary net position* presents information showing how the System's net position changed during the most recent year. All changes in net position are reported as soon as the underlying event giving rise to the change occurs, *regardless of the timing of related cash flows*. Thus, additions and deductions are reported in this statement for some items that will only result in cash flows in future periods.

Notes to the Financial Statements

The notes provide additional information that is essential to a full understanding of the data provided in the fiduciary financial statements.

Required Supplementary Information

Accounting principles generally accepted in the United States of America require that the Schedule of Changes in the Net Pension Liability and Related Ratios; the Schedule of Contributions; and the Schedule of Investment Return be presented to supplement the financial statements. Such information, although not a part of the financial statements, is required by the Governmental Accounting Standards Board who considers it to be an essential part of financial reporting for placing the financial statements in an appropriate operational, economic, or historical context.

Financial Analysis

As noted earlier, net position may serve over time as a useful indicator of the System's financial position. The System's net position was \$546.8 million at the close of 2021.

The assets accumulated are held to provide pension benefits for qualified retirees along with active and inactive employees of the member units. At year-end, the System's net position included cash and cash equivalents of \$12.5 million and investments of \$534.3 million.

In 2021, contributions to the System were \$43.5 million while retirement benefit payments, refunds, transfers, and administration expenses were \$48.5 million which resulted in a current deficiency of \$5.0 million. In 2020, contributions to the System were \$42.4 million while retirement benefit payments, refunds, transfers and administration expenses were \$45.4 million which resulted in a deficiency of \$3.0 million. During 2021 and 2020, the System supported the deficiencies with net investment income.

Net investment income was \$88.1 million and \$45.4 million in 2021 and 2020, respectively. The annual money weighted rate of return was 19.16% and 11.15% in 2021 and 2020, respectively. The System's investment policy is designed to achieve a long-term rate of return of 7.1% and fluctuation in annual investment returns is expected.

The following tables present summarized financial information for the past two years.

	2021	2020
Assets:		
Cash and cash equivalents.....	\$ 12,522,114	\$ 41,061,358
Investments.....	534,310,834	422,704,843
Total assets.....	546,832,948	463,766,201
Net Position Restricted for Pensions.....	\$ 546,832,948	\$ 463,766,201

	<u>2021</u>	<u>2020</u>
Additions:		
Contributions:		
Member contributions.....	\$ 10,417,970	\$ 10,437,608
Employer contributions.....	31,775,438	30,262,322
Other contributions.....	<u>1,299,642</u>	<u>1,729,623</u>
Total contributions.....	<u>43,493,050</u>	<u>42,429,553</u>
Net investment income.....	<u>88,097,806</u>	<u>45,371,767</u>
Total additions.....	<u>131,590,856</u>	<u>87,801,320</u>
Deductions:		
Administration.....	404,586	384,932
Retirement benefits, refunds and transfers.....	<u>48,119,523</u>	<u>45,044,551</u>
Total deductions.....	<u>48,524,109</u>	<u>45,429,483</u>
Net increase in fiduciary net position.....	83,066,747	42,371,837
Fiduciary net position at beginning of year.....	<u>463,766,201</u>	<u>421,394,364</u>
Fiduciary net position at end of year.....	<u>\$ 546,832,948</u>	<u>\$ 463,766,201</u>

Requests for Information

This financial report is designed to provide a general overview of the System's finances for all those with an interest in the System's finances. Questions concerning any of the information provided in this report or requests for additional financial information should be addressed to the System's Board, 375 Merrimack Street, Basement Room 3, Lowell, Massachusetts, 01852.

STATEMENT OF FIDUCIARY NET POSITION

DECEMBER 31, 2021

Assets	
Cash and cash equivalents.....	\$ 12,522,114
Investments:	
Investments in Pension Reserve Investment Trust.....	534,025,135
Equity mutual funds.....	<u>285,699</u>
Total investments.....	<u>534,310,834</u>
Total Assets.....	<u>546,832,948</u>
Net Position Restricted for Pensions.....	\$ <u>546,832,948</u>

See notes to financial statements.

STATEMENT OF CHANGES IN FIDUCIARY NET POSITION

YEAR ENDED DECEMBER 31, 2021

Additions:

Contributions:

Employer pension appropriation.....	\$ 31,775,438
Member contributions.....	10,417,970
Transfers from other systems.....	196,262
3(8)(c) contributions from other systems.....	906,696
State COLA reimbursements.....	196,684

Total contributions..... 43,493,050

Net investment income:

Investment income.....	90,566,724
Less: investment expense.....	(2,468,918)

Net investment income..... 88,097,806

Total additions..... 131,590,856

Deductions:

Retirement benefits and refunds.....	45,291,728
Transfers to other systems.....	1,200,227
3(8)(c) transfer to other systems.....	1,627,568
Administration.....	404,586

Total deductions..... 48,524,109

Net increase in fiduciary net position..... 83,066,747

Fiduciary net position at beginning of year..... 463,766,201

Fiduciary net position at end of year..... \$ 546,832,948

See notes to financial statements.

NOTE 1 – PLAN DESCRIPTION

The Lowell Contributory Retirement System (System) is a multiple-employer, cost-sharing, contributory defined benefit pension plan covering all employees of the governmental member units deemed eligible by the Lowell Contributory Retirement Board (Board), with the exception of school department employees who serve in a teaching capacity. The pensions of such school employees are administered by the Commonwealth of Massachusetts' Teachers Retirement System. Membership in the System is mandatory immediately upon the commencement of employment for all permanent employees working a minimum of 20 hours per week. As of December 31, 2021, the System had 3 participating employers.

The System is a member of the Massachusetts Contributory Retirement System and is governed by Chapter 32 of the Massachusetts General Laws. The Public Employee Retirement Administration Commission (PERAC) is the state agency responsible for oversight of the Commonwealth's public retirement systems.

The Retirement Board is responsible for maintaining records of member employee contributions, for determining eligibility for retirement due to any service and disability, or for the payment of retirement benefits. The System is governed by a five-member Board who establish the policies under which the System operates. Board members are appointed or elected as specified by Massachusetts General Laws (MGL) CH. 32, Section 20 for terms not to exceed 3 years.

Massachusetts contributory retirement system benefits are, with certain exceptions such as cost of living adjustments which can be adopted by the Board from time to time, uniform from system to system. The System provides for retirement allowance benefits up to a maximum of 80% of a member's highest three-year average annual rate of regular compensation. For persons who became members on or after April 2, 2012, average salary is the average annual rate of regular compensation received during the five consecutive years that produced the highest average, or, if greater, during the last five years (whether or not consecutive) preceding retirement. Benefit payments are based upon a member's age, length of creditable service, level of compensation, and group classification.

There are three classes of membership in the retirement system: group 1, group 2, and group 4. Group 1 consists of general employees which includes clerical and administrative positions. Group 2 consists of positions that have been specified as hazardous. Lastly, group 4 consists of police officers, firefighters, and other hazardous positions.

Members become vested after ten years of creditable service. A superannuation retirement allowance may be received upon the completion of 20 years of service or upon reaching the age of 55 with 10 years of service. Normal retirement for most employees occurs at age 65 (except for certain hazardous duty and public safety positions, whose normal retirement is at age 55).

A retirement allowance consists of two parts: an annuity and a pension. A member's accumulated total deductions and the interest they generate constitute the annuity. The differential between the total retirement benefit and the annuity is the pension. The average retirement benefit is approximately 80-85% pension and 15-20% annuity.

Active members contribute between 5 and 11% of their gross regular compensation. The percentage rate is keyed to the date upon which an employee's membership commences. These deductions are deposited in the Annuity Savings Fund and earn interest at a rate determined by the Public Employee Retirement Administration Commission's (PERAC) actuary. When a member's retirement becomes effective, his/her deductions and related interest are transferred to the Annuity Reserve Fund. Any cost-of-living adjustments granted between 1981 and 1997 and any increase in other benefits imposed by the Commonwealth of Massachusetts' state law during those years are borne by the Commonwealth and are deposited into the Pension Fund. Cost-of-living adjustments granted after 1997 must be approved by the System and all costs are borne by the System.

The pension portion of any retirement benefit is paid from the Pension Fund of the System. The governmental unit employing the member must annually appropriate and contribute the amount of current-year pension assessment. MGL Chapter 32 requires that systems be on an actuarially determined funding schedule to be fully funded by 2040. Under the current funding schedule, the System will be fully funded by 2037.

Members who become permanently and totally disabled for further duty may be eligible to receive a disability retirement allowance. The amount of benefits to be received in such cases is dependent on several factors, including whether or not the disability is work related, the member's age, years of creditable service, level of compensation, veterans' status and group classification.

Employees who resign from service and who are not eligible to receive a retirement allowance or are under the age of 55 are entitled to request a refund of their accumulated total deductions.

Survivor benefits are extended to eligible beneficiaries of members whose death occurs prior to or following retirement.

NOTE 2 – SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

The accompanying financial statements of the System have been prepared in accordance with accounting principles generally accepted in the United States of America (GAAP). The Governmental Accounting Standards Board (GASB) is the recognized standard-setting body for establishing governmental accounting and financial reporting principles.

The System is a special-purpose government engaged only in fiduciary activities. Accordingly, the financial statements are reported using the flow of economic resources measurement focus and use the accrual basis of accounting. Under this method, additions are recorded when earned and deductions are recorded when the liabilities are incurred.

Cash and Investments

Cash and cash equivalents are considered to be cash on hand, demand deposits, and short-term investments with an original maturity of three months or less from the date of acquisition. Investments are carried at fair value. The fair values were determined by the closing price for those securities traded on national stock exchanges and at the average bid-and-asked quotation for those securities traded in the over-the-counter market. The fair value of private equities are based on management's valuation of estimates and assumptions from information and representations provided by the respective general partners, in the absence of readily ascertainable market values. Real estate assets are reported at fair value utilizing an income approach to valuation along with independent appraisals and estimates by management.

Fair Value Measurements

The System reports required types of financial instruments in accordance with the fair value standards. These standards require an entity to maximize the use of observable inputs (such as quoted prices in active markets) and minimize the use of unobservable inputs (such as appraisals or valuation techniques) to determine fair value.

Fair value standards also require the government to classify these financial instruments into a three-level hierarchy based on the priority of inputs to the valuation technique or in accordance with net asset value practical expedient rules, which allow for either Level 1, Level 2 or Level 3 depending on lock up and notice periods associated with the underlying funds.

Instruments measured and reported at fair value are classified and disclosed in one of the following categories:

Level 1 – Quoted prices are available in active markets for identical instruments as of the reporting date. Instruments, which are generally included in this category, include actively traded equity and debt securities, U.S. government obligations, and mutual funds with quoted market prices in active markets.

Level 2 – Pricing inputs are other than quoted in active markets, which are either directly or indirectly observable as of the reporting date, and fair value is determined through the use of models or other valuation methodologies. Certain fixed income securities, primarily corporate bonds, are classified as Level 2 because fair values are estimated using pricing models, matrix pricing, or discounted cash flows.

Level 3 – Pricing inputs are unobservable for the instrument and include situations where there is little, if any, market activity for the instrument. The inputs into the determination of fair value require significant management judgment or estimation.

In some instances, the inputs used to measure fair value may fall into different levels of the fair value hierarchy and is based on the lowest level of input that is significant to the fair value measurement.

Market price is affected by a number of factors, including the type of instrument and the characteristics specific to the instrument. Instruments with readily available active quoted prices generally will have a higher degree of market price observability and a lesser degree of judgment used in measuring fair value. It is reasonably possible that change in values of these instruments will occur in the near term and that such changes could materially affect amounts reported in these financial statements. For more information on the fair value of the System's financial instruments, see Note 4 – Cash and Investments.

Accounts Receivable

Accounts receivable may consist of member deductions, pension fund appropriations, interest and dividends, and other miscellaneous reimbursements. These receivables are considered 100% collectible and therefore do not report an allowance for uncollectible accounts. On December 31, 2021 or December 31, 2020, the System did not report any receivables.

NOTE 3 – PLAN ADMINISTRATION

The System is administered by a five-person Board of Retirement consisting of the City Auditor, who shall be a member ex-officio, two elected members chosen by the employees of the System for a three-year term, one appointed by the City Manager, and one non-employee or retiree appointed by the other members for a three-year term. City Council confirmation is not required.

Chairman - Elected.....	William J. Desrosiers	Term Expires:	8/3/2022
Appointed Member.....	David R. Keene	Term Expires:	Indefinite
Appointed Member.....	Michael M. Brennan	Term Expires:	4/25/2024
Elected Member.....	Robert Littlefield	Term Expires:	12/13/2023
Ex-Officio.....	Kelly Oakes	Term Expires:	Indefinite

Board members are required to meet at least once a month. Meetings are generally held the last week of each month. The Board must keep a record of all of its proceedings. The Board must annually submit to the appropriate authority an estimate of the expenses of administration and cost of operation of the System. The Board must annually file a financial statement of condition for the System with the Executive Director of PERAC.

The investment of the System's funds is the responsibility of the Board. All retirement allowances must be approved by the Retirement Board. The PERAC Actuary performs verification prior to payment, unless the System has obtained a waiver for superannuation calculations allowing them to bypass this requirement. All expenses incurred by the System must be approved by a majority vote of the Board. Payments shall be made only upon vouchers signed by three persons designated by the Board.

System board members and employees are bonded by an authorized agent representing a company licensed to do business in Massachusetts. The System has obtained bonding through the Massachusetts Association of Contributory Retirement Systems program that provides \$10,000,000 of fiduciary protection for Trustees and employees. Also obtained is separate fidelity coverage policy pertaining to ERISA/Crime to a limit of \$1,000,000 issued through the Travelers Casualty & Surety Company.

NOTE 4 – CASH AND INVESTMENTS

Custodial Credit Risk - Deposits

At December 31, 2021, the carrying amount of the System's deposits totaled \$12,522,114, this was comprised of \$11,521,976 of cash deposited with banks along with \$1,000,138 in the PRIT Cash Fund. The bank balance totaled \$12,648,079, of which \$11,647,941 was covered by Federal Deposit Insurance and the remaining \$1,000,138 in the PRIT Cash Fund was uninsured and uncollateralized.

Investments

The System's investments are as follows:

<u>Investment Type</u>	<u>Fair Value</u>
Equity mutual funds.....	\$ 285,699
Pension Reserve Investment Trust (PRIT).....	534,025,135
Total investments.....	<u>\$ 534,310,834</u>

Approximately 99.9% of the Retirement System's investments are in Pension Reserve Investment Trust (PRIT). This investment pool was established by the Treasurer of the Commonwealth of Massachusetts, who serves as Trustee. PRIT is administered by the Pension Reserves Investment Management Board (PRIM). The fair values of the positions in each investment Pool are the same as the value of each Pool's shares. The Administration does not have the ability to control any of the investment decisions relative to its funds in PRIT.

The effective weighted duration rate for PRIT investments ranged from 1.33 to 15.12 years.

The remaining 0.1% of the System's funds are invested in equity mutual funds. The fair values were determined by the closing price for those securities traded on national stock exchanges and at the average bid-and-asked quotation for those securities traded in the over-the-counter market.

Fair Value of Investments

The System holds investments that are measured at fair value on a recurring basis. Because investing is a key part of the System's mission, the System shows greater disaggregation in its disclosures. The System chooses a tabular format for disclosing the levels within the fair value hierarchy. The System categorizes its fair value measurements within the fair value hierarchy established by generally accepted accounting principles.

The following table presents financial assets at December 31, 2021, for which the System measures fair value on a recurring basis, by level, within the fair value hierarchy:

Investment Type	December 31, 2021	Fair Value Measurements Using		
		Quoted Prices in Active Markets for Identical Assets (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)
Investments measured at fair value:				
Equity mutual funds.....	\$ 285,699	\$ 285,699	\$ -	\$ -
Investments measured at net asset value:				
Pension Reserve Investment Trust (PRIT).....	534,025,135			
Total investments.....	\$ 534,310,834			

Equity mutual funds classified in Level 1 are valued using prices quoted in active markets for those securities.

PRIT Investments are valued using the net asset value (NAV) method.

The System's annual money-weighted rate of return on pension plan investments was 19.16%. The money-weighted rate of return expresses investment performance, net of pension plan investment expense, adjusted for the changing amounts actually invested, measured monthly.

NOTE 5 – MEMBERSHIP

The following table represents the System's membership at December 31, 2021:

Active members.....	1,698
Inactive members.....	337
Retirees and beneficiaries currently receiving benefits.....	1,356
Total.....	3,391

NOTE 6 – ACTUARIAL VALUATION

Components of the net pension liability as of December 31, 2021, were as follows:

Total pension liability	\$ 783,498,341
Total pension plan's fiduciary net position.....	(546,832,948)
Total net pension liability.....	<u>\$ 236,665,393</u>
The pension plan's fiduciary net position as a percentage of the total pension liability.....	69.79%

The total pension liability was determined by an actuarial valuation as of January 1, 2021, rolled forward to the System's measurement date of December 31, 2021, using the following assumptions:

Valuation date.....	January 1, 2021.
Actuarial cost method.....	Entry Age Normal.
Amortization method - UAAL.....	Increasing dollar amount at 4% to reduce the Unfunded Actuarial Accrued Liability to zero on or before June 30, 2037, with annual increases in appropriations limited to 5.2%.
Asset valuation method.....	The Actuarial Value of Assets is the fair value of assets as of the valuation date reduced by the sum of: a) 80% of gains and losses of the prior year, b) 60% of gains and losses of the second prior year, c) 40% of gains and losses of the third prior year and d) 20% of gains and losses of the fourth prior year. Investment gains and losses are determined by the excess or deficiency of the expected return over the actual return on the fair value. The actuarial valuation of assets is further constrained to be not less than 90% or more than 110% of market value.
Investment rate of return.....	7.10%, net of pension plan investment expense, including
Discount rate.....	7.10%
Inflation rate.....	2.3% per year.

Projected salary increases.....	6% - 4.25% for Group 1 (based on service) 7% - 4.75% for Group 4 (based on service)
Payroll growth.....	3.5% per year.
Cost of living adjustments.....	3% of the first \$17,000 of the annual retirement allowance.
Mortality rates.....	RP-2014 Blue Collar Mortality Table with full generational mortality improvement using Scale MP-2018. For disabled members, RP-2014 Blue Collar Mortality Table set forward one year with full generational mortality improvement using Scale MP-2018.

Investment policy: The System's policy in regard to the allocation of invested assets in PRIT is established by PRIM. The policy with regard to the allocation of all other invested assets is established by the Retirement Board. Plan assets are managed on a total return basis with a long-term objective of achieving a fully funded status for the benefits provided through the pension plan.

The long-term expected rate of return on pension plan investments was 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 expense 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 the target asset allocation percentage and by adding expected inflation.

Best estimates of arithmetic real rates of return for each major asset class included in the System's target asset allocation as of December 31, 2021, are summarized in the following table:

Asset Class	Long-Term Expected Asset Allocation	Long-Term Expected Real Rate of Return
Global equity.....	38.00%	4.32%
Core fixed income.....	15.00%	0.80%
Value-added fixed income.....	8.00%	4.10%
Private equity.....	15.00%	7.80%
Real estate.....	10.00%	3.70%
Timber/natural resources.....	4.00%	4.30%
Portfolio completion.....	10.00%	3.10%
Total.....	100.00%	

Discount rate: The discount rate used to measure the total pension liability was 7.10%, which was the same as the previous year. The projection of cash flows used to determine the discount rate assumed plan member contributions will be made at the current contribution rates and that contributions will be made at rates equal to the actuarially determined contribution rates. Based on those assumptions, the System'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 was applied to all periods of projected benefit payments to determine the total pension liability.

Sensitivity of the net pension liability to changes in the discount rate: The following presents the net pension liability, calculated using the discount rate of 7.10%, as well as what the net pension liability would be if it were calculated using a discount rate that is 1-percentage-point lower (6.10%) or 1-percentage-point higher (8.10%) than the current rate:

	December 31, 2021 Measurement Date		
	1% Decrease (6.10%)	Current Discount (7.10%)	1% Increase (8.10%)
Lowell Contributory Retirement System's net pension liability.....	\$ 326,765,032	\$ 236,665,393	\$ 160,698,420

Contributions: Governmental employers are required to pay an annual appropriation as established by PERAC. The total appropriation includes the amounts to pay the pension portion of each member's retirement allowance, an amount to amortize the actuarially determined unfunded liability to zero in accordance with the system's funding schedule, and additional appropriations in accordance with adopted early retirement incentive programs. The pension fund appropriations are allocated amongst employers based on covered payroll.

NOTE 7 – COMMITMENTS AND CONTINGENCIES

The System has no significant commitments or contingencies as of December 31, 2021.

NOTE 8 – SUBSEQUENT EVENTS

Management has evaluated subsequent events through July 27, 2022, which is the date the financial statements were available to be issued.

The Retirement System carries its investments at fair (market) value in accordance with Generally Accepted Accounting Principles (GAAP). Market value adjustments are recorded monthly. Subsequent to year end, the System's investment of \$534,025,135 in the Pension Reserves Investment Trust (PRIT), as determined by PRIT, has declined in value by approximately (\$56 million). The market value decline is consistent with recent trends in the overall financial securities market.

In accordance with GAAP, the System has not recorded the losses in its financial statements as the impairments were not known as of December 31, 2021. The System has recorded the losses associated with the investments during calendar year 2022.

NOTE 9 – IMPLEMENTATION OF GASB PRONOUNCEMENTS

There were no GASB pronouncements required to be implemented in 2021, that impacted the Retirement System's financial statements.

None of the issued GASB statements that are required to be implemented in future years are anticipated to impact the Systems financial statements.

Required Supplementary Information

**SCHEDULE OF CHANGES IN THE NET PENSION LIABILITY
AND RELATED RATIOS**

	December 31, 2014	December 31, 2015	December 31, 2016	December 31, 2017
Total pension liability:				
Service cost.....	\$ 12,776,431	\$ 12,776,431	\$ 15,389,829	\$ 14,902,167
Interest.....	39,817,736	42,298,799	45,581,124	47,847,969
Changes in benefit terms.....	-	-	5,820,520	-
Differences between expected and actual experience.....	-	5,750,829	-	(8,810,808)
Changes in assumptions.....	-	31,423,849	-	-
Benefit payments.....	(33,577,831)	(35,136,789)	(35,772,737)	(38,335,654)
Net change in total pension liability.....	19,016,336	57,113,119	31,018,736	15,603,674
Total pension liability - beginning.....	514,510,622	533,526,958	590,640,077	621,658,813
Total pension liability - ending (a).....	\$ 533,526,958	\$ 590,640,077	\$ 621,658,813	\$ 637,262,487
Plan fiduciary net position:				
Employer pension appropriation.....	\$ 21,880,170	\$ 21,837,654	\$ 24,701,289	\$ 26,141,731
Member contributions.....	8,983,678	8,903,043	8,204,174	8,451,653
Net investment income (loss).....	21,617,178	1,213,427	21,730,686	54,289,195
Administrative expenses.....	(358,770)	(355,999)	(367,634)	(381,369)
Retirement benefits and refunds.....	(33,577,831)	(35,136,789)	(35,772,737)	(38,335,654)
Net increase (decrease) in fiduciary net position.....	18,544,425	(3,538,664)	18,495,778	50,165,556
Fiduciary net position - beginning of year.....	295,923,280	314,467,705	310,929,041	329,424,819
Fiduciary net position - end of year (b).....	\$ 314,467,705	\$ 310,929,041	\$ 329,424,819	\$ 379,590,375
Net pension liability - ending (a)-(b).....	\$ 219,059,253	\$ 279,711,036	\$ 292,233,994	\$ 257,672,112
Plan fiduciary net position as a percentage of the total pension liability.....	58.94%	52.64%	52.99%	59.57%
Covered payroll.....	\$ 80,555,739	\$ 89,520,851	\$ 92,654,081	\$ 93,366,659
Net pension liability as a percentage of covered payroll.....	271.94%	312.45%	315.40%	275.98%

Note: this schedule is intended to present information for 10 years.
Until a 10-year trend is compiled, information is presented for those years for which information is available.

See notes to required supplementary information.

December 31, 2018	December 31, 2019	December 31, 2020	December 31, 2021
\$ 15,498,254	\$ 15,425,214	\$ 16,042,223	\$ 18,406,022
49,064,991	50,412,209	52,261,974	53,459,239
(5,025,406)	-	(1,012,629)	-
6,798,833	-	44,598,349	-
(39,328,169)	(41,425,669)	(43,123,465)	(45,815,916)
27,008,303	24,411,754	68,786,452	26,049,345
637,262,487	664,270,790	688,682,544	757,448,996
\$ 664,270,790	\$ 688,682,544	\$ 757,448,996	\$ 783,498,341
\$ 27,448,818	\$ 28,821,259	\$ 30,262,322	\$ 31,775,438
9,311,730	9,181,343	10,246,145	9,414,005
(8,694,089)	57,232,976	45,371,767	88,097,806
(347,172)	(397,038)	(384,932)	(404,588)
(39,328,169)	(41,425,669)	(43,123,465)	(45,815,916)
(11,008,882)	53,412,871	42,371,837	83,066,747
379,590,375	367,981,493	421,394,364	463,766,201
\$ 367,981,493	\$ 421,394,364	\$ 463,766,201	\$ 546,832,948
\$ 296,289,297	\$ 267,288,180	\$ 293,682,795	\$ 236,665,393
55.40%	61.19%	61.23%	69.79%
\$ 95,890,286	\$ 100,274,819	\$ 100,140,377	\$ 101,362,725
308.97%	266.56%	293.27%	233.48%

SCHEDULE OF CONTRIBUTIONS

Year	Actuarially determined contribution	Contributions in relation to the actuarially determined contribution	Contribution deficiency (excess)	Covered payroll	Contributions as a percentage of covered payroll
December 31, 2021.....	\$ 31,775,438	\$ (31,775,438)	\$ -	\$ 101,362,725	31.35%
December 31, 2020.....	30,262,322	(30,262,322)	-	100,140,377	30.22%
December 31, 2019.....	28,821,259	(28,821,259)	-	100,274,819	28.74%
December 31, 2018.....	27,448,818	(27,448,818)	-	95,896,286	28.62%
December 31, 2017.....	26,141,731	(26,141,731)	-	93,366,659	28.00%
December 31, 2016.....	24,701,289	(24,701,289)	-	92,654,081	26.66%
December 31, 2015.....	21,837,654	(21,837,654)	-	89,520,851	24.39%
December 31, 2014.....	21,880,170	(21,880,170)	-	80,555,739	27.16%

Note: this schedule is intended to present information for 10 years.
Until a 10-year trend is compiled, information is presented for those years for which information is available.

See notes to required supplementary information.

SCHEDULE OF INVESTMENT RETURNS

<u>Year</u>	<u>Annual money-weighted rate of return, net of investment expense</u>
December 31, 2021.....	19.16%
December 31, 2020.....	11.15%
December 31, 2019.....	15.66%
December 31, 2018.....	-2.29%
December 31, 2017.....	16.63%
December 31, 2016.....	7.01%
December 31, 2015.....	0.48%
December 31, 2014.....	7.81%

Note: this schedule is intended to present information for 10 years.
Until a 10-year trend is compiled, information is presented for those
years for which information is available.

See notes to required supplementary information.

NOTE A – CHANGES IN THE NET PENSION LIABILITY AND RELATED RATIOS

The Schedule of Changes in the Net Pension Liability and Related Ratios includes the detailed changes in the System's total pension liability, changes in the System's net position, and the ending net pension liability. It also demonstrates the System's net position as a percentage of the total pension liability and the net pension liability as a percentage of covered payroll.

NOTE B – CONTRIBUTIONS

Governmental employers are required to pay an annual appropriation as established by PERAC. The total appropriation includes the amounts to pay the pension portion of each member's retirement allowance, an amount to amortize the actuarially determined unfunded liability to zero in accordance with the System's funding schedule, and additional appropriations in accordance with adopted early retirement incentive programs. The total appropriations are payable on July 1 and January 1. Employers may choose to pay the entire appropriation in July at a discounted rate. Accordingly, actual employer contributions may be less than the "total appropriation." The pension fund appropriations are allocated amongst employers based on covered payroll.

NOTE C – MONEY WEIGHTED RATE OF RETURN

The money weighted rate of return is calculated as the internal rate of return on pension plan investments, net of pension plan investment expense. A money weighted rate of return expresses investment performance, net of pension plan investment expense, adjusted for the changing amounts actually invested. Inputs to the money weighted rate of return calculation are determined monthly.

NOTE D – CHANGES IN ACTUARIAL ASSUMPTIONS AND PLAN PROVISIONSChanges in Assumptions

None.

Change in Plan Provisions

None.

Audit of Specific Elements, Accounts and Items of Financial Statements

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Independent Auditor's Report

To the Honorable Lowell Contributory Retirement Board
Lowell Contributory Retirement System
Lowell, Massachusetts

Report on the Audit of the Schedule of Employer Allocations and Schedule of Pension Amounts by Employer

Opinion

We have audited the accompanying schedule of employer allocations of the Lowell Contributory Retirement System (System) as of and for the year ended December 31, 2021, and the related notes. We have also audited the total for all entities of the rows titled net pension liability, total deferred outflows of resources, total deferred inflows of resources, total contributions, and total pension expense included in the accompanying schedule of pension amounts by employer of the System's Pension Plan as of and for the year ended December 31, 2021, and the related notes.

In our opinion, the accompanying schedule of employer allocations and schedule of pension amounts by employer present fairly, in all material respects the employer allocations and net pension liability, total deferred outflows of resources, total deferred inflows of resources, total contributions and total pension expense for the total of all participating entities for the System as of and for the year ended December 31, 2021, in accordance with accounting principles generally accepted in the United States of America.

Basis for Opinion

We conducted our audit in accordance with auditing standards generally accepted in the United States of America (GAAS). Our responsibilities under those standards are further described in the Auditor's Responsibilities for the Audit of the Schedules section of our report. We are required to be independent of the System and to meet our other ethical responsibilities, in accordance with the relevant ethical requirements relating to our audit. We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinions.

Responsibilities of Management for the Schedules

Management is responsible for the preparation and fair presentation of the schedules in accordance with accounting principles generally accepted in the United States of America and for the design, implementation, and maintenance of internal control relevant to the preparation and fair presentation of the schedules that are free from material misstatement, whether due to fraud or error.

Auditor's Responsibilities for the Audit of the Schedules

Our objectives are to obtain reasonable assurance about whether the schedule of employer allocations and the specified row totals included in the schedule of pension amounts by employer as a whole are free from material

misstatement, whether due to fraud or error, and to issue an auditor's report that includes our opinions. Reasonable assurance is a high level of assurance but is not absolute assurance and therefore is not a guarantee that an audit conducted in accordance with GAAS will always detect a material misstatement when it exists. The risk of not detecting a material misstatement resulting from fraud is higher than one resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations, or the override of internal control. Misstatements are considered material if there is a substantial likelihood that, individually or in the aggregate, they would influence the judgement made by a reasonable user based on the schedules.

In performing an audit in accordance with GAAS, we:

- Exercise professional judgement and maintain professional skepticism throughout the audit.
- Identify and assess the risks of material misstatement of the schedules, whether due to fraud or error, and design and perform audit procedures responsive to those risks. Such procedures include examining, on a test basis, evidence regarding the amounts and disclosures in the schedules.
- Obtain an understanding of internal control relevant to the audit in order to design audit procedures that are appropriate in the circumstances, but not for the purposes of expressing an opinion on the effectiveness of the System's internal control. Accordingly, no such opinion is expressed.
- Evaluate the appropriateness of accounting policies used and the reasonableness of significant accounting estimates made by management, as well as evaluate the overall presentation of the schedules.

We are required to communicate with those charged with governance regarding, among other matters, the planned scope and timing of the audit, significant audit findings, and certain internal control-related matters that we identified during the audit.

Other Matter

We have audited, in accordance with auditing standards generally accepted in the United States of America, the financial statements of the System as of and for the year ended December 31, 2021, and our report thereon, dated July 27, 2022, expressed an unmodified opinion on those financial statements.

Restriction on Use

This report is intended solely for the information and use of System management, the System employers and their auditors and is not intended to be and should not be used by anyone other than these specified parties.

Powers & Sullivan, LLC

July 27, 2022

SCHEDULE OF EMPLOYER ALLOCATIONS

FOR THE YEAR ENDED DECEMBER 31, 2021

Employer	FY2022 Pension Fund Appropriation	Share of Net Pension Liability	Percent of Total Net Pension Liability
City of Lowell.....	\$ 21,521,504	\$ 160,293,471	67.730%
City of Lowell - School Department.....	8,538,060	63,591,991	26.870%
Lowell Housing Authority.....	1,556,997	11,596,604	4.900%
Lowell Regional Transit Authority.....	158,877	1,183,327	0.500%
Total.....	\$ 31,775,438	\$ 236,665,393	100.000%

See notes to schedule of employer allocations and schedule of pension amounts by employer.

SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

FOR THE YEAR ENDED DECEMBER 31, 2021

	City of Lowell	City of Lowell - School Department	Lowell Regional Transit Authority	Lowell Housing Authority	Totals
Net Pension Liability					
Beginning net pension liability	\$ 198,647,042	\$ 79,852,352	\$ 1,350,941	\$ 13,832,460	\$ 293,682,795
Ending net pension liability	\$ 160,293,471	\$ 63,591,991	\$ 1,183,327	\$ 11,596,604	\$ 236,665,393
Deferred Outflows of Resources					
Changes of assumptions	\$ 21,181,501	\$ 8,403,173	\$ 156,367	\$ 1,532,399	\$ 31,273,440
Changes in proportion and differences between employer contributions and proportionate share of contributions	442,526	2,620,241	145,257	640,281	3,848,305
Total Deferred Outflows of Resources	\$ 21,624,027	\$ 11,023,414	\$ 301,624	\$ 2,172,680	\$ 35,121,745
Deferred Inflows of Resources					
Differences between expected and actual experience	\$ 2,679,343	\$ 1,062,955	\$ 19,780	\$ 193,840	\$ 3,955,918
Net difference between projected and actual investment earnings on pension plan investments	38,646,336	15,331,862	285,297	2,795,911	57,059,406
Changes in proportion and differences between employer contributions and proportionate share of contributions	1,211,145	826,324	40,435	1,770,401	3,848,305
Total Deferred Inflows of Resources	\$ 42,536,824	\$ 17,221,141	\$ 345,512	\$ 4,760,152	\$ 64,863,629
Pension Expense					
Proportionate share of plan pension expense	\$ 12,833,319	\$ 5,130,934	\$ 95,476	\$ 935,673	\$ 19,095,402
Net amortization of deferred amounts from changes in proportion and differences between employer contributions and proportionate share of contributions	(182,265)	672,083	7,026	(496,944)	-
Total Employer Pension Expense	\$ 12,751,054	\$ 5,803,017	\$ 102,502	\$ 438,829	\$ 19,095,402
Contributions					
Statutory required contribution	\$ 21,521,504	\$ 8,538,080	\$ 158,877	\$ 1,556,997	\$ 31,775,438
Contribution in relation to statutory required contribution	(21,521,504)	(8,538,080)	(158,877)	(1,556,997)	(31,775,438)
Contribution deficiency/(excess)	\$ -	\$ -	\$ -	\$ -	\$ -
Contributions as a percentage of covered payroll	31.84%	30.05%	40.44%	31.40%	31.35%
Deferred Outflows/(Inflows) Recognized in Future Pension Expense					
June 30, 2023	\$ (4,081,590)	\$ (854,896)	\$ (21,532)	\$ (766,785)	\$ (5,724,783)
June 30, 2024	(8,353,989)	(2,480,250)	(20,693)	(1,186,311)	(12,041,253)
June 30, 2025	(4,575,404)	(1,325,809)	(7,183)	(391,484)	(6,299,880)
June 30, 2026	(3,933,036)	(1,425,724)	(8,361)	(308,847)	(5,675,968)
June 30, 2027	31,232	(111,048)	13,881	65,935	-
Total Deferred Outflows/(Inflows) Recognized in Future Pension Expense	\$ (20,912,787)	\$ (6,197,727)	\$ (43,888)	\$ (2,587,472)	\$ (29,741,884)
Discount Rate Sensitivity					
1% decrease (6.10%)	\$ 221,317,956	\$ 87,801,764	\$ 1,633,825	\$ 16,011,487	\$ 326,765,032
Current discount rate (7.10%)	\$ 160,293,471	\$ 63,591,991	\$ 1,183,327	\$ 11,596,604	\$ 236,665,393
1% increase (8.10%)	\$ 108,841,040	\$ 43,179,665	\$ 803,492	\$ 7,874,223	\$ 160,698,420
Covered Payroll	\$ 67,596,311	\$ 29,414,444	\$ 392,914	\$ 4,959,056	\$ 101,362,725

See notes to schedule of employer allocations and schedule of pension amounts by employer.

Lowell Contributory Retirement System

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Pension Amounts by Employer

NOTE 1 – Plan Description

The Lowell Contributory Retirement System (System) is a multiple-employer, cost-sharing, contributory defined benefit pension plan covering all employees of the governmental member units deemed eligible by the Lowell Contributory Retirement Board (Board), with the exception of school department employees who serve in a teaching capacity. The pensions of such school employees are administered by the Commonwealth of Massachusetts' Teachers Retirement System. Membership in the System is mandatory immediately upon the commencement of employment for all permanent employees working a minimum of 20 hours per week. As of January 1, 2021, the System had 3 participating employers.

The System is governed by a five-member board comprised of the City Auditor (ex-officio), two elected members, a member appointed by the City Manager and a member appointed by the other four members.

The System is component unit of the City of Lowell, is presented using the accrual basis of accounting and is reported as a pension and other employee benefit trust fund in the fiduciary fund financial statements. That report may be obtained by contacting the City Auditor located at 375 Merrimack Street, Lowell, Massachusetts, 01852.

The System also issues a publicly available unaudited financial report in accordance with the guidelines established by the Commonwealth's PERAC. That report may be obtained by contacting the System located at 375 Merrimack Street, Lowell, Massachusetts, 01852.

NOTE 2 – Schedule of Employer Allocations

Governmental Accounting Standards Board (GASB) Statement #68 requires employers participating in a cost-sharing pension plan to recognize pension liabilities as employees provide services to the government and earn their pension benefits. Employers participating in cost-sharing plans are required to recognize their proportionate share of the System's collective pension amounts for all benefits provided through the System including the net pension liability, deferred outflows of resources, deferred inflows of resources, pension expense, and contributions.

GASB Statement #68 requires the allocation of the collective pension amounts be consistent with the manner in which contributions to the System are determined. As permissible under GASB Statement #68, The Schedule of Employer Allocations is used to demonstrate the allocation of System's collective pension amounts.

Massachusetts General Law (MGL) Chapter 32 Section 22 Paragraph 7c dictates that Massachusetts cost sharing defined benefit pension plans allocate the annual required pension fund appropriation to employer units based on their proportionate share of the aggregate of the annual rates of regular compensation of all members in service of the system who are employees of any government unit at the close of business on September 30th immediately preceding the fiscal year unless another methodology is approved by the Board. The member unit appropriations were based on the proportionate aggregate rates of regular compensation as of the close of business on September 30, 2020. The allocation of the net pension liability, deferred outflows, and pension expense was allocated based on the proportionate aggregate rates of regular compensation as of the close of business on September 30th.

NOTE 3 – Schedule of Pension Amounts by Employer

The Schedule of Pension Amounts by Employer presents the net pension liability, the various categories of deferred outflows of resources and deferred inflows of resources, pension expense, and contributions for all participating employers including differences between expected and actual economic experience; differences between projected and actual investment earnings, net; and changes of assumptions. Additionally, the changes in proportion and differences between employer contributions and proportionate share of contributions are presented in accordance with GASB statements.

Changes in Assumptions

None.

Change in Plan Provisions

None.

LOWELL CONTRIBUTORY RETIREMENT SYSTEM

FINANCIAL STATEMENTS

YEAR ENDED DECEMBER 31, 2020

LOWELL CONTRIBUTORY RETIREMENT SYSTEM

FINANCIAL STATEMENTS

YEAR ENDED DECEMBER 31, 2020

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Financial Section

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Independent Auditor's Report

To the Honorable Lowell Contributory Retirement Board
Lowell Contributory Retirement System
Lowell, Massachusetts

Report on the Financial Statements

We have audited the accompanying financial statements of Lowell Contributory Retirement System (System) as of and for the year ended December 31, 2020, and the related notes to the financial statements, which collectively comprise the System's financial statements as listed in the table of contents.

Management's Responsibility for the Financial Statements

Management is responsible for the preparation and fair presentation of these financial statements in accordance with accounting principles generally accepted in the United States of America; this includes the design, implementation, and maintenance of internal control relevant to the preparation and fair presentation of financial statements that are free from material misstatement, whether due to fraud or error.

Auditor's Responsibility

Our responsibility is to express an opinion on these financial statements based on our audit. We conducted our audit in accordance with auditing standards generally accepted in the United States of America and the standards applicable to financial audits contained in *Government Auditing Standards*, issued by the Comptroller General of the United States. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free from material misstatement.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the financial statements. The procedures selected depend on the auditor's judgment, including the assessment of the risks of material misstatement of the financial statements, whether due to fraud or error. In making those risk assessments, the auditor considers internal control relevant to the System's preparation and fair presentation of the financial statements in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the System's internal control. Accordingly, we express no such opinion. An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of significant accounting estimates made by management, as well as evaluating the overall presentation of the financial statements.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinion.

Opinion

In our opinion, the financial statements referred to above present fairly, in all material respects, the financial position of the System as of December 31, 2020, and the results of its operations and changes in its financial position for the year then ended in accordance with accounting principles generally accepted in the United States of America.

Other Matters

Required Supplementary Information

Accounting principles generally accepted in the United States of America require that the Management's Discussion and Analysis; Schedule of Changes in the Net Pension Liability and Related Ratios; the Schedule of Contributions; and the Schedule of Investment Returns be presented to supplement the financial statements. Such information, although not a part of the financial statements, is required by the Governmental Accounting Standards Board who considers it to be an essential part of financial reporting for placing the financial statements in an appropriate operational, economic, or historical context. We have applied certain limited procedures to the required supplementary information in accordance with auditing standards generally accepted in the United States of America, which consisted of inquiries of management about the methods of preparing the information and comparing the information for consistency with management's responses to our inquiries, the financial statements, and other knowledge we obtained during our audit of the financial statements. We do not express an opinion or provide any assurance on the information because the limited procedures do not provide us with sufficient evidence to express an opinion or provide any assurance.

Other Reporting Required by Government Auditing Standards

In accordance with *Government Auditing Standards*, we have also issued our report dated September 14, 2021, on our consideration of the System's internal control over financial reporting and on our tests of its compliance with certain provisions of laws, regulations, contracts, grant agreements and other matters. The purpose of that report is to describe the scope of our testing of internal control over financial reporting and compliance and the results of that testing, and not to provide an opinion on the internal control over financial reporting or on compliance. That report is an integral part of an audit performed in accordance with *Government Auditing Standards* in considering the System's internal control over financial reporting and compliance.

Restriction on Use

This report is intended solely for the information and use of the System, the Public Employee Retirement Commission and all member units and is not intended to be and should not be used by anyone other than these specified parties.

Powers + Sullivan, LLC

September 14, 2021

Management's Discussion and Analysis

As management of the Lowell Contributory Retirement System (System), we offer readers of these financial statements this narrative overview and analysis of the financial activities for the year ended December 31, 2020. The System complies with financial reporting requirements issued by the Governmental Accounting Standards Board (GASB).

The GASB is the authoritative standard setting body that provides guidance on how to prepare financial statements in conformity with generally accepted accounting principles (GAAP). Users of these financial statements rely on the GASB to establish consistent reporting standards for all governments in the United States. This consistent application is the only way users can assess the financial condition of a public retirement system compared to others.

Financial Highlights

- The System's assets/net position totaled \$463.8 million at year end.
- The System's net position increased by \$42.4 million for the year ended December 31, 2020.
- Total investment income was \$47.3 million, investment expenses were \$1.9 million, and net investment income was \$45.4 million.
- Total contributions were \$42.4 million including \$30.3 million from employers and \$10.4 million from members.
- Retirement benefits, refunds, and transfers amounted to \$45 million.
- Administrative expenses were \$385,000 or 0.8% of total deductions.
- The total pension liability was \$757.4 million as of December 31, 2020, and the net pension liability was \$293.7 million.
- The System's fiduciary net position as a percentage of the total pension liability was 61.23%.
- The discount rate used was 7.10%, a decrease from the prior year's discount rate of 7.65%.

Overview of the Financial Statements

This discussion and analysis is intended to serve as an introduction to the System's fiduciary financial statements. These fiduciary financial statements comprise of four components: 1) management's discussion and analysis, 2) fiduciary financial statements, 3) notes to the financial statements and 4) required supplementary information.

Fiduciary Financial Statements

The *statement of fiduciary net position* presents information on all assets and deferred outflows less deferred inflows and liabilities with the difference reported as *net position*. Over time, increases or decreases in net position may serve as a useful indicator of whether the financial position is improving or deteriorating.

The *statement of changes in fiduciary net position* presents information showing how the System's net position changed during the most recent year. All changes in net position are reported as soon as the underlying event giving rise to the change occurs, *regardless of the timing of related cash flows*. Thus, additions and deductions are reported in this statement for some items that will only result in cash flows in future periods.

Notes to the financial statements

The notes provide additional information that is essential to a full understanding of the data provided in the fiduciary financial statements.

Required Supplementary Information

Accounting principles generally accepted in the United States of America require that the Schedule of Changes in the Net Pension Liability and Related Ratios; the Schedule of Contributions; and the Schedule of Investment Return be presented to supplement the financial statements. Such information, although not a part of the financial statements, is required by the Governmental Accounting Standards Board who considers it to be an essential part of financial reporting for placing the financial statements in an appropriate operational, economic, or historical context.

Financial Analysis

As noted earlier, net position may serve over time as a useful indicator of the System's financial position. The System's net position was \$463.8 million at the close of 2020.

The assets accumulated are held to provide pension benefits for qualified retirees along with active and inactive employees of the member units. At year-end, the System's net position included cash and cash equivalents of \$41.1 million and investments of \$422.7 million.

In 2020, the System's contributions were \$42.4 million while retirement benefit payments, refunds, transfers and administration expenses were \$45.4 million which resulted in a current deficiency of \$3 million. In 2019, the System's contributions were \$40.5 million while retirement benefit payments, refunds, transfers and administration expenses were \$44.3 million which resulted in a deficiency of \$3.8 million. During 2020 and 2019, the System supported the deficiency with net investment income.

Net investment income was \$45.4 million and \$57.2 million in 2020 and 2019, respectively. The annual money weighted rate of return was 11.15% and 15.66% in 2020 and 2019, respectively. The System's investment policy is designed to achieve a long-term rate of return of 7.1% and fluctuation in annual investment returns is expected.

The following tables present summarized financial information for the past two years.

	2020	2019
Assets:		
Cash and cash equivalents.....	\$ 41,061,358	\$ 10,438,894
Investments.....	422,704,843	410,942,807
Interest and dividends receivable.....	-	12,663
Total assets.....	463,766,201	421,394,364
Net Position Restricted for Pension Benefits.....	\$ 463,766,201	\$ 421,394,364

	2020	2019
Additions:		
Contributions:		
Member contributions.....	\$ 10,437,608	\$ 9,779,705
Employer contributions.....	30,262,322	28,821,259
Other contributions.....	1,729,623	1,893,926
Total contributions.....	42,429,553	40,494,890
Net investment income.....	45,371,767	57,232,976
Total additions.....	87,801,320	97,727,866
Deductions:		
Administration.....	384,932	397,038
Retirement benefits, refunds and transfers.....	45,044,551	43,917,957
Total deductions.....	45,429,483	44,314,995
Net increase in fiduciary net position.....	42,371,837	53,412,871
Fiduciary net position at beginning of year.....	421,394,364	367,981,493
Fiduciary net position at end of year.....	\$ 463,766,201	\$ 421,394,364

Requests for Information

This financial report is designed to provide a general overview of the System's finances for all those with an interest in the System's finances. Questions concerning any of the information provided in this report or requests for additional financial information should be addressed to the System's Board, 375 Merrimack Street, Basement Room 3, Lowell, Massachusetts, 01852.

STATEMENT OF FIDUCIARY NET POSITION

DECEMBER 31, 2020

Assets	
Cash and cash equivalents.....	\$ 41,061,358
Investments:	
Investments in Pension Reserve Investment Trust.....	422,263,957
Equity mutual funds.....	<u>440,886</u>
Total investments.....	<u>422,704,843</u>
Total Assets.....	<u>463,766,201</u>
Net Position Restricted for Pensions.....	\$ <u>463,766,201</u>

See notes to financial statements.

STATEMENT OF CHANGES IN FIDUCIARY NET POSITION

YEAR ENDED DECEMBER 31, 2020

Additions:	
Contributions:	
Employer pension appropriation.....	\$ 30,262,322
Member contributions.....	10,437,608
Transfers from other systems.....	544,308
3(8)(c) contributions from other systems.....	854,345
Workers' compensation settlements.....	8,500
State COLA reimbursements.....	322,470
Total contributions.....	<u>42,429,553</u>
Net investment income:	
Investment income.....	47,314,324
Less: investment expense.....	<u>(1,942,557)</u>
Net investment income.....	<u>45,371,767</u>
Total additions.....	<u>87,801,320</u>
Deductions:	
Retirement benefits and refunds.....	42,615,964
Transfers to other systems.....	735,771
3(8)(c) transfer to other systems.....	1,692,816
Administration.....	<u>384,932</u>
Total deductions.....	<u>45,429,483</u>
Net increase in fiduciary net position.....	42,371,837
Fiduciary net position at beginning of year.....	<u>421,394,364</u>
Fiduciary net position at end of year.....	<u>\$ 463,766,201</u>

See notes to financial statements.

NOTE 1 – PLAN DESCRIPTION

The Lowell Contributory Retirement System (System) is a multiple-employer, cost-sharing, contributory defined benefit pension plan covering all employees of the governmental member units deemed eligible by the Lowell Contributory Retirement Board (Board), with the exception of school department employees who serve in a teaching capacity. The pensions of such school employees are administered by the Commonwealth of Massachusetts' Teachers Retirement System. Membership in the System is mandatory immediately upon the commencement of employment for all permanent employees working a minimum of 20 hours per week. As of December 31, 2020, the System had 3 participating employers.

The System is a member of the Massachusetts Contributory Retirement System and is governed by Chapter 32 of the Massachusetts General Laws. The Public Employee Retirement Administration Commission (PERAC) is the state agency responsible for oversight of the Commonwealth's public retirement systems.

The Retirement Board is responsible for maintaining records of member employee contributions, for determining eligibility for retirement due to any service and disability, or for the payment of retirement benefits. The System is governed by a five-member Board who establish the policies under which the System operates. Board members are appointed or elected as specified by Massachusetts General Laws (MGL) CH. 32, Section 20 for terms not to exceed 3 years.

Massachusetts contributory retirement system benefits are, with certain exceptions such as cost of living adjustments which can be adopted by the Board from time to time, uniform from system to system. The System provides for retirement allowance benefits up to a maximum of 80% of a member's highest three-year average annual rate of regular compensation. For persons who became members on or after April 2, 2012, average salary is the average annual rate of regular compensation received during the five consecutive years that produced the highest average, or, if greater, during the last five years (whether or not consecutive) preceding retirement. Benefit payments are based upon a member's age, length of creditable service, level of compensation, and group classification.

There are three classes of membership in the retirement system: group 1, group 2, and group 4. Group 1 consists of general employees which includes clerical and administrative positions. Group 2 consists of positions that have been specified as hazardous. Lastly, group 4 consists of police officers, firefighters, and other hazardous positions.

Members become vested after ten years of creditable service. A superannuation retirement allowance may be received upon the completion of 20 years of service or upon reaching the age of 55 with 10 years of service. Normal retirement for most employees occurs at age 65 (except for certain hazardous duty and public safety positions, whose normal retirement is at age 55).

A retirement allowance consists of two parts: an annuity and a pension. A member's accumulated total deductions and the interest they generate constitute the annuity. The differential between the total retirement benefit and the annuity is the pension. The average retirement benefit is approximately 80-85% pension and 15-20% annuity.

Active members contribute between 5 and 11% of their gross regular compensation. The percentage rate is keyed to the date upon which an employee's membership commences. These deductions are deposited in the Annuity Savings Fund and earn interest at a rate determined by the Public Employee Retirement Administration Commission's (PERAC) actuary. When a member's retirement becomes effective, his/her deductions and related interest are transferred to the Annuity Reserve Fund. Any cost-of-living adjustments granted between 1981 and 1997 and any increase in other benefits imposed by the Commonwealth of Massachusetts' state law during those years are borne by the Commonwealth and are deposited into the Pension Fund. Cost-of-living adjustments granted after 1997 must be approved by the System and all costs are borne by the System.

The pension portion of any retirement benefit is paid from the Pension Fund of the System. The governmental unit employing the member must annually appropriate and contribute the amount of current-year pension assessment. MGL Chapter 32 requires that systems be on an actuarially determined funding schedule to be fully funded by 2040. Under the current funding schedule, the System will be fully funded by 2037.

Members who become permanently and totally disabled for further duty may be eligible to receive a disability retirement allowance. The amount of benefits to be received in such cases is dependent on several factors, including whether or not the disability is work related, the member's age, years of creditable service, level of compensation, veterans' status and group classification.

Employees who resign from service and who are not eligible to receive a retirement allowance or are under the age of 55 are entitled to request a refund of their accumulated total deductions.

Survivor benefits are extended to eligible beneficiaries of members whose death occurs prior to or following retirement.

NOTE 2 – SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

The accompanying financial statements of the System have been prepared in accordance with accounting principles generally accepted in the United States of America (GAAP). The Governmental Accounting Standards Board (GASB) is the recognized standard-setting body for establishing governmental accounting and financial reporting principles.

The System is a special-purpose government engaged only in fiduciary activities. Accordingly, the financial statements are reported using the flow of economic resources measurement focus and use the accrual basis of accounting. Under this method, additions are recorded when earned and deductions are recorded when the liabilities are incurred.

Cash and Investments

Cash and cash equivalents are considered to be cash on hand, demand deposits, and short-term investments with an original maturity of three months or less from the date of acquisition. Investments are carried at fair value. The fair values were determined by the closing price for those securities traded on national stock exchanges and at the average bid-and-asked quotation for those securities traded in the over-the-counter market. The fair value of private equities are based on management's valuation of estimates and assumptions from information and representations provided by the respective general partners, in the absence of readily ascertainable market values. Real estate assets are reported at fair value utilizing an income approach to valuation along with independent appraisals and estimates by management.

Fair Value Measurements

The System reports required types of financial instruments in accordance with the fair value standards. These standards require an entity to maximize the use of observable inputs (such as quoted prices in active markets) and minimize the use of unobservable inputs (such as appraisals or valuation techniques) to determine fair value.

Fair value standards also require the government to classify these financial instruments into a three-level hierarchy based on the priority of inputs to the valuation technique or in accordance with net asset value practical expedient rules, which allow for either Level 1, Level 2 or Level 3 depending on lock up and notice periods associated with the underlying funds.

Instruments measured and reported at fair value are classified and disclosed in one of the following categories:

Level 1 – Quoted prices are available in active markets for identical instruments as of the reporting date. Instruments, which are generally included in this category, include actively traded equity and debt securities, U.S. government obligations, and mutual funds with quoted market prices in active markets.

Level 2 – Pricing inputs are other than quoted in active markets, which are either directly or indirectly observable as of the reporting date, and fair value is determined through the use of models or other valuation methodologies. Certain fixed income securities, primarily corporate bonds, are classified as Level 2 because fair values are estimated using pricing models, matrix pricing, or discounted cash flows.

Level 3 – Pricing inputs are unobservable for the instrument and include situations where there is little, if any, market activity for the instrument. The inputs into the determination of fair value require significant management judgment or estimation.

In some instances, the inputs used to measure fair value may fall into different levels of the fair value hierarchy and is based on the lowest level of input that is significant to the fair value measurement.

Market price is affected by a number of factors, including the type of instrument and the characteristics specific to the instrument. Instruments with readily available active quoted prices generally will have a higher degree of market price observability and a lesser degree of judgment used in measuring fair value. It is reasonably possible that change in values of these instruments will occur in the near term and that such changes could materially affect amounts reported in these financial statements. For more information on the fair value of the System's financial instruments, see Note 4 – Cash and Investments.

Accounts Receivable

Accounts receivable may consist of member deductions, pension fund appropriations, interest and dividends, and other miscellaneous reimbursements. These receivables are considered 100% collectible and therefore do not report an allowance for uncollectible accounts.

NOTE 3 – PLAN ADMINISTRATION

The System is administered by a five-person Board of Retirement consisting of the City Auditor, who shall be a member ex-officio, two elected members chosen by the employees of the System for a three-year term, one appointed by the City Manager, and one non-employee or retiree appointed by the other members for a three-year term. City Council confirmation is not required.

Chairman - Elected.....	William J. Desrosiers	Term Expires:	8/3/2022
Appointed Member.....	David R. Keene	Term Expires:	Indefinite
Appointed Member.....	Michael M. Brennan	Term Expires:	4/25/2024
Elected Member.....	Robert Littlefield	Term Expires:	12/13/2023
Ex-Officio.....	Sheryl Wright	Term Expires:	Indefinite

Board members are required to meet at least once a month. Meetings are generally held the last week of each month. The Board must keep a record of all of its proceedings. The Board must annually submit to the appropriate authority an estimate of the expenses of administration and cost of operation of the System. The Board must annually file a financial statement of condition for the System with the Executive Director of PERAC.

The investment of the System's funds is the responsibility of the Board. All retirement allowances must be approved by the Retirement Board. The PERAC Actuary performs verification prior to payment, unless the System has obtained a waiver for superannuation calculations allowing them to bypass this requirement. All expenses incurred by the System must be approved by a majority vote of the Board. Payments shall be made only upon vouchers signed by three persons designated by the Board.

System board members and employees are bonded by an authorized agent representing a company licensed to do business in Massachusetts. The System has obtained bonding through the Massachusetts Association of Contributory Retirement Systems program that provides \$10,000,000 of fiduciary protection for Trustees and employees. Also obtained is separate fidelity coverage policy pertaining to ERISA/Crime to a limit of \$1,000,000 issued through the Travelers Casualty & Surety Company.

NOTE 4 – CASH AND INVESTMENTS

Custodial Credit Risk - Deposits

At December 31, 2020, the carrying amount of the System's deposits totaled \$41,061,358, and the bank balance totaled \$41,212,412, all of which was covered by Federal Depository Insurance.

Investments

The System's investments are as follows:

<u>Investment Type</u>	<u>Fair Value</u>
Equity mutual funds.....	\$ 440,886
Pension Reserve Investment Trust (PRIT).....	422,263,957
Total investments.....	<u>\$ 422,704,843</u>

Approximately 99.9% of the Retirement System's investments are in Pension Reserve Investment Trust (PRIT). This investment pool was established by the Treasurer of the Commonwealth of Massachusetts, who serves as Trustee. PRIT is administered by the Pension Reserves Investment Management Board (PRIM). The fair values of the positions in each investment Pool are the same as the value of each Pool's shares. The Administration does not have the ability to control any of the investment decisions relative to its funds in PRIT.

The remaining 0.1% of the System's funds are invested in equity mutual funds. The fair values were determined by the closing price for those securities traded on national stock exchanges and at the average bid-and-asked quotation for those securities traded in the over-the-counter market.

Fair Market Value of Investments

The System holds investments that are measured at fair value on a recurring basis. Because investing is a key part of the System's mission, the System shows greater disaggregation in its disclosures. The System chooses a tabular format for disclosing the levels within the fair value hierarchy. The System categorizes its fair value measurements within the fair value hierarchy established by generally accepted accounting principles.

The following table presents financial assets at December 31, 2020, for which the System measures fair value on a recurring basis, by level, within the fair value hierarchy:

Investment Type	December 31, 2020	Fair Value Measurements Using		
		Quoted Prices in Active Markets for Identical Assets (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)
Investments measured at fair value:				
Equity mutual funds.....	\$ 440,886	\$ 440,886	\$ -	\$ -
Investments measured at net asset value:				
Pension Reserve Investment Trust (PRIT).....	422,263,957			
Total investments.....	\$ 422,704,843			

Equity mutual funds classified in Level 1 are valued using prices quoted in active markets for those securities.

PRIT Investments are valued using the net asset value (NAV) method. This investment pool was established by the Treasurer of the Commonwealth of Massachusetts, who serves as Trustee. PRIT is administered by the Pension Reserves Investment Management Board (PRIM). The fair values of the positions in each investment Pool are the same as the value of each Pool's shares. The System does not have the ability to control any of the investment decisions relative to its fund held with PRIT.

The System's annual money-weighted rate of return on pension plan investments was 11.15%. The money-weighted rate of return expresses investment performance, net of pension plan investment expense, adjusted for the changing amounts actually invested, measured monthly.

NOTE 5 – MEMBERSHIP

The following table represents the System's membership at December 31, 2020:

Active members.....	1,693
Inactive members.....	474
Retirees and beneficiaries currently receiving benefits.....	1,288
Total.....	3,455

NOTE 6 – RECEIVABLES

At December 31, 2020, the System did not report any receivables.

NOTE 7 – ACTUARIAL VALUATION

Components of the net pension liability as of December 31, 2020, were as follows:

Total pension liability.....	\$ 757,448,996
Total pension plan's fiduciary net position.....	<u>(463,766,201)</u>
Total net pension liability.....	<u>\$ 293,682,795</u>
The pension plan's fiduciary net position as a percentage of the total pension liability.....	61.23%

The total pension liability was determined by an actuarial valuation as of January 1, 2021, rolled back to the System's measurement date of December 31, 2020, using the following assumptions:

Valuation date.....	January 1, 2021.
Actuarial cost method.....	Entry Age Normal.
Amortization method - UAAL.....	Increasing dollar amount at 4% to reduce the Unfunded Actuarial Accrued Liability to zero on or before June 30, 2037, with annual increases in appropriations limited to 5.2%.
Asset valuation method.....	The Actuarial Value of Assets is the fair value of assets as of the valuation date reduced by the sum of: a) 80% of gains and losses of the prior year, b) 60% of gains and losses of the second prior year, c) 40% of gains and losses of the third prior year and d) 20% of gains and losses of the fourth prior year. Investment gains and losses are determined by the excess or deficiency of the expected return over the actual return on the fair value. The actuarial valuation of assets is further constrained to be not less than 90% or more than 110% of market value.
Investment rate of return.....	7.10%, net of pension plan investment expense, including inflation.
Discount rate.....	7.10%
Inflation rate.....	2.3% per year.

Projected salary increases.....	6% - 4.25% for Group 1 (based on service) 7% - 4.75% for Group 4 (based on service)
Payroll growth.....	3.5% per year.
Cost of living adjustments.....	3% of the first \$17,000 of the annual retirement allowance.
Mortality rates.....	RP-2014 Blue Collar Mortality Table with full generational mortality improvement using Scale MP-2018. For disabled members, RP-2014 Blue Collar Mortality Table set forward one year with full generational mortality improvement using Scale MP-2018.

Investment policy: The System's policy in regard to the allocation of invested assets in PRIT is established by PRIM. The policy with regard to the allocation of all other invested assets is established by the Retirement Board. Plan assets are managed on a total return basis with a long-term objective of achieving a fully funded status for the benefits provided through the pension plan.

The long-term expected rate of return on pension plan investments was 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 expense 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 the target asset allocation percentage and by adding expected inflation.

Best estimates of arithmetic real rates of return for each major asset class included in the System's target asset allocation as of December 31, 2020, are summarized in the following table:

Asset Class	Long-Term Expected Asset Allocation	Long-Term Expected Real Rate of Return
Global equity.....	39.00%	4.43%
Core fixed income.....	15.00%	0.40%
Value-added fixed income.....	8.00%	3.90%
Private equity.....	13.00%	7.90%
Real estate.....	10.00%	3.70%
Timber/natural resources.....	4.00%	4.30%
Portfolio completion.....	11.00%	2.90%
Total.....	100.00%	

Discount rate: The discount rate used to measure the total pension liability was 7.10%. The projection of cash flows used to determine the discount rate assumed plan member contributions will be made at the current contribution rates and that contributions will be made at rates equal to the actuarially determined contribution rates. Based on those assumptions, the System'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 was applied to all periods of projected benefit payments to determine the total pension liability.

Sensitivity of the net pension liability to changes in the discount rate: The following presents the net pension liability, calculated using the discount rate of 7.10%, as well as what the net pension liability would be if it were calculated using a discount rate that is 1-percentage-point lower (6.10%) or 1-percentage-point higher (8.10%) than the current rate:

	December 31, 2020 Measurement Date		
	1% Decrease (6.10%)	Current Discount (7.10%)	1% Increase (8.10%)
Lowell Contributory Retirement System's net pension liability	\$ 381,266,428	\$ 293,682,795	\$ 219,849,422

Contributions: Governmental employers are required to pay an annual appropriation as established by PERAC. The total appropriation includes the amounts to pay the pension portion of each member's retirement allowance, an amount to amortize the actuarially determined unfunded liability to zero in accordance with the system's funding schedule, and additional appropriations in accordance with adopted early retirement incentive programs. The pension fund appropriations are allocated amongst employers based on covered payroll.

NOTE 8 – COMMITMENTS AND CONTINGENCIES

The System has no significant commitments or contingencies as of December 31, 2020.

NOTE 9 – SUBSEQUENT EVENTS

Management has evaluated subsequent events through September 14, 2021, which is the date the financial statements were available to be issued.

NOTE 10 – IMPLEMENTATION OF GASB PRONOUNCEMENTS

In May of 2020, the GASB issued Statement #95, *Postponement of the Effective Dates of Certain Authoritative Guidance*. The objective of this Statement is to provide temporary relief to governments and other stakeholders in light of the COVID-19 pandemic. This Statement postponed the required implementation of many of the upcoming Statements for one year or longer.

There were no GASB pronouncements required to be implemented in 2020, that impacted the Retirement System's financial statements.

None of the issued GASB statements that are required to be implemented in future years are anticipated to impact the Systems financial statements.

Required Supplementary Information

**SCHEDULE OF CHANGES IN THE NET PENSION LIABILITY
AND RELATED RATIOS**

	December 31, 2014	December 31, 2015	December 31, 2016	December 31, 2017	December 31, 2018	December 31, 2019	December 31, 2020
Total pension liability:							
Service cost	\$ 12,778,431	\$ 12,778,431	\$ 15,308,809	\$ 14,802,187	\$ 15,499,254	\$ 15,425,214	\$ 16,042,222
Interest	38,917,736	42,298,799	45,581,124	47,947,988	49,684,981	50,412,309	52,261,974
Changes in benefit terms	-	-	5,620,620	-	-	-	-
Differences between expected and actual experience	-	5,760,829	-	(8,816,808)	(5,825,408)	-	(1,612,829)
Changes in assumptions	-	31,423,848	-	-	8,798,823	-	44,598,349
Benefit payments	(33,577,801)	(35,136,788)	(35,772,737)	(38,335,654)	(38,328,189)	(41,425,669)	(43,123,485)
Net change in total pension liability	18,916,336	57,113,119	31,019,736	15,688,874	27,008,303	24,411,754	68,788,452
Total pension liability - beginning	514,510,622	533,526,859	590,840,877	621,658,813	637,262,487	654,270,790	689,582,544
Total pension liability - ending (a)	\$ 533,526,859	\$ 590,640,077	\$ 621,858,813	\$ 637,262,487	\$ 664,270,790	\$ 689,682,544	\$ 757,448,996
Plan fiduciary net position:							
Employer pension appropriation	\$ 21,880,170	\$ 21,837,054	\$ 24,701,289	\$ 26,141,731	\$ 27,448,818	\$ 28,921,259	\$ 30,262,322
Member contributions	8,989,578	9,909,043	9,204,174	9,451,853	9,311,730	9,161,343	10,248,145
Net investment income (loss)	21,817,178	1,213,427	21,730,886	54,269,195	(8,894,089)	57,292,976	45,371,767
Administrative expenses	(356,770)	(355,899)	(387,634)	(381,369)	(347,172)	(397,038)	(384,932)
Retirement benefits and refunds	(33,577,831)	(35,136,788)	(35,772,737)	(38,335,654)	(38,328,189)	(41,425,669)	(43,123,485)
Net increase (decrease) in fiduciary net position	18,544,425	(3,538,664)	18,485,779	50,165,556	(11,800,892)	53,412,071	42,371,627
Fiduciary net position - beginning of year	295,923,280	314,467,705	310,929,041	329,424,819	378,590,375	387,881,493	421,384,584
Fiduciary net position - end of year (b)	\$ 314,467,705	\$ 310,929,041	\$ 329,424,819	\$ 379,590,375	\$ 387,881,493	\$ 421,394,364	\$ 463,756,211
Net pension liability - ending (a)-(b)	\$ 219,059,253	\$ 279,711,036	\$ 292,233,994	\$ 257,672,112	\$ 286,289,297	\$ 267,289,180	\$ 293,682,785
Plan fiduciary net position as a percentage of the total pension liability	58.84%	52.64%	52.93%	59.57%	55.40%	61.19%	61.23%
Covered payroll	\$ 60,555,799	\$ 89,520,051	\$ 92,854,081	\$ 93,368,859	\$ 95,098,208	\$ 100,774,019	\$ 100,140,977
Net pension liability as a percentage of covered payroll	271.64%	312.45%	315.40%	275.98%	308.97%	266.56%	293.27%

Note: this schedule is intended to present information for 10 years
Until a 10-year trend is compiled, information is presented for those years for which information is available

See notes to required supplementary information

SCHEDULE OF CONTRIBUTIONS

Year	Actuarially determined contribution	Contributions in relation to the actuarially determined contribution	Contribution deficiency (excess)	Covered payroll	Contributions as a percentage of covered payroll
December 31, 2020	\$ 30,262,322	\$ (30,262,322)	-	\$ 100,140,377	30.22%
December 31, 2019	28,821,259	(28,821,259)	-	100,274,819	28.74%
December 31, 2018	27,448,818	(27,448,818)	-	95,896,286	28.62%
December 31, 2017	26,141,731	(26,141,731)	-	93,366,659	28.00%
December 31, 2016	24,701,289	(24,701,289)	-	92,654,081	26.66%
December 31, 2015	21,837,654	(21,837,654)	-	89,520,851	24.39%
December 31, 2014	21,880,170	(21,880,170)	-	80,555,739	27.16%

Note: this schedule is intended to present information for 10 years.
Until a 10-year trend is compiled, information is presented for those years for which information is available.

See notes to required supplementary information.

SCHEDULE OF INVESTMENT RETURNS

<u>Year</u>	<u>Annual money-weighted rate of return, net of investment expense</u>
December 31, 2020.....	11.15%
December 31, 2019.....	15.66%
December 31, 2018.....	-2.29%
December 31, 2017.....	16.63%
December 31, 2016.....	7.81%
December 31, 2015.....	0.48%
December 31, 2014.....	7.81%

Note: this schedule is intended to present information for 10 years. Until a 10-year trend is compiled, information is presented for those years for which information is available.

See notes to required supplementary information.

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NOTE A – CHANGES IN THE NET PENSION LIABILITY AND RELATED RATIOS

The Schedule of Changes in the Net Pension Liability and Related Ratios includes the detailed changes in the System's total pension liability, changes in the System's net position, and the ending net pension liability. It also demonstrates the System's net position as a percentage of the total pension liability and the net pension liability as a percentage of covered payroll.

NOTE B – CONTRIBUTIONS

Governmental employers are required to pay an annual appropriation as established by PERAC. The total appropriation includes the amounts to pay the pension portion of each member's retirement allowance, an amount to amortize the actuarially determined unfunded liability to zero in accordance with the System's funding schedule, and additional appropriations in accordance with adopted early retirement incentive programs. The total appropriations are payable on July 1 and January 1. Employers may choose to pay the entire appropriation in July at a discounted rate. Accordingly, actual employer contributions may be less than the "total appropriation." The pension fund appropriations are allocated amongst employers based on covered payroll.

NOTE C – MONEY WEIGHTED RATE OF RETURN

The money weighted rate of return is calculated as the internal rate of return on pension plan investments, net of pension plan investment expense. A money weighted rate of return expresses investment performance, net of pension plan investment expense, adjusted for the changing amounts actually invested. Inputs to the money weighted rate of return calculation are determined monthly.

NOTE D – CHANGES IN ACTUARIAL ASSUMPTIONS AND PLAN PROVISIONSChanges in Assumptions

The following assumption changes were reflected in the January 1, 2021 actuarial valuation:

- The investment return rate was decreased from 7.65% to 7.10%.
- Mortality tables and mortality improvement scale were updated.

Change in Plan Provisions

None

Audit of Specific Elements, Accounts and Items of Financial Statements



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Independent Auditor's Report

To the Honorable Lowell Contributory Retirement Board
Lowell Contributory Retirement System
Lowell, Massachusetts

We have audited the accompanying schedule of employer allocations of the Lowell Contributory Retirement System (System) as of and for the year ended December 31, 2020, and the related notes. We have also audited the total for all entities of the rows titled net pension liability, total deferred outflows of resources, total deferred inflows of resources, covered payroll, total pension expense and contributions included in the accompanying schedule of pension amounts by employer of the System's Pension Plan as of and for the year ended December 31, 2020, and the related notes.

Management's Responsibility for the Schedules

Management is responsible for the preparation and fair presentation of these schedules in accordance with accounting principles generally accepted in the United States of America; this includes the design, implementation, and maintenance of internal control relevant to the preparation and fair presentation of the schedules that are free from material misstatement, whether due to fraud or error.

Auditor's Responsibility

Our responsibility is to express opinions on the schedule of employer allocations and the specified row totals included in the schedule of pension amounts by employer based on our audit. We conducted our audit in accordance with auditing standards generally accepted in the United States of America. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the schedule of employer allocations and specified column totals included in the schedule of pension amounts by employer are free from material misstatement.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the schedule of employer allocations and the specified column totals included in the schedule of pension amounts by employer. The procedures selected depend on the auditor's judgment, including the assessment of the risks of material misstatement of the schedule of employer allocations and the specified column totals included in the schedule of pension amounts by employer, whether due to fraud or error. In making those risk assessments, the auditor considers internal control relevant to the System's preparation and fair presentation of the schedule of employer allocations and the specified column totals included in the schedule of pension amounts by employer in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the System's internal control. Accordingly, we express no such opinion. An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of significant accounting estimates made by management, as well as evaluating the overall presentation of the schedule of employer allocations and the specified column totals included in the schedule of pension amounts by employer.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinions.

Opinions

In our opinion, the schedules referred to above present fairly, in all material respects, the employer allocations and net pension liability, total deferred outflows of resources, total deferred inflows of resources, total covered payroll, total pension expense and contributions for the total of all participating entities for the System as of and for the year ended December 31, 2020, in accordance with accounting principles generally accepted in the United States of America.

Other Matter

We have audited, in accordance with auditing standards generally accepted in the United States of America, the financial statements of the System as of and for the year ended December 31, 2020, and our report thereon, dated September 14, 2021, expressed an unmodified opinion on those financial statements.

Restriction on Use

This report is intended solely for the information and use of the System management, the System employers and their auditors and is not intended to be and should not be used by anyone other than these specified parties.

Powers + Sullivan, LLC

September 14, 2021

SCHEDULE OF EMPLOYER ALLOCATIONS

FOR THE YEAR ENDED DECEMBER 31, 2020

Employer	FY2021 Pension Fund Appropriation	Share of Net Pension Liability	Percent of Total Net Pension Liability
City of Lowell.....	\$ 20,469,435	\$ 198,647,042	67.640%
City of Lowell - School Department.....	8,228,325	79,852,352	27.190%
Lowell Housing Authority.....	1,425,355	13,832,460	4.710%
Lowell Regional Transit Authority.....	139,207	1,350,941	0.460%
Total.....	\$ 30,262,322	\$ 293,682,795	100.000%

See notes to schedule of employer allocations and schedule of pension amounts by employer.

SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

FOR THE YEAR ENDED DECEMBER 31, 2020

	City of Lowell	City of Lowell - School Department	Lowell Regional Transit Authority	Lowell Housing Authority	Totals
Net Pension Liability					
Beginning net pension liability.....	\$ 181,771,516	\$ 70,730,654	\$ 1,226,960	\$ 13,559,048	\$ 267,288,180
Ending net pension liability.....	\$ 199,647,042	\$ 79,852,352	\$ 1,350,941	\$ 13,832,460	\$ 293,682,795
Deferred Outflows of Resources					
Differences between expected and actual experience.....	\$ 38,512	\$ 15,481	\$ 262	\$ 2,682	\$ 56,937
Changes of assumptions.....	27,408,225	11,017,588	186,395	1,908,527	40,520,735
Changes in proportion and differences between employer contributions and proportionate share of contributions.....	372,627	3,540,765	77,528	348,113	4,339,033
Total Deferred Outflows of Resources.....	\$ 27,819,364	\$ 14,573,834	\$ 264,185	\$ 2,259,322	\$ 44,916,705
Deferred Inflows of Resources					
Differences between expected and actual experience.....	\$ 4,333,907	\$ 1,742,148	\$ 29,474	\$ 301,784	\$ 6,407,313
Net difference between projected and actual investment earnings on pension plan investments.....	13,240,447	5,322,409	90,044	921,977	19,574,877
Changes in proportion and differences between employer contributions and proportionate share of contributions.....	1,574,686	181,686	77,316	2,505,345	4,339,033
Total Deferred Inflows of Resources.....	\$ 19,149,040	\$ 7,246,243	\$ 196,834	\$ 3,729,106	\$ 30,321,223
Pension Expense					
Proportionate share of plan pension expense.....	\$ 22,650,662	\$ 9,105,216	\$ 154,042	\$ 1,577,257	\$ 33,487,377
Net amortization of deferred amounts from changes in proportion and differences between employer contributions and proportionate share of contributions.....	117,314	651,923	(13,565)	(755,672)	-
Total Employer Pension Expense.....	\$ 22,768,176	\$ 9,757,139	\$ 140,477	\$ 821,585	\$ 33,487,377
Contributions					
Statutory required contribution.....	\$ 20,469,435	\$ 8,228,325	\$ 139,207	\$ 1,425,355	\$ 30,262,322
Contribution in relation to statutory required contribution.....	(20,469,435)	(8,228,325)	(139,207)	(1,425,355)	(30,262,322)
Contribution deficiency/(excess).....	\$ -	\$ -	\$ -	\$ -	\$ -
Contributions as a percentage of covered payroll.....	30.18%	30.58%	27.47%	29.04%	30.22%
Deferred Outflows/(Inflows) Recognized in Future Pension Expense					
June 30, 2022.....	\$ (256,606)	\$ 816,288	\$ (12,731)	\$ (591,823)	\$ (44,872)
June 30, 2023.....	3,384,610	2,300,073	12,247	(326,153)	5,370,777
June 30, 2024.....	(882,115)	654,508	15,612	(733,698)	(945,693)
June 30, 2025.....	2,891,315	1,827,320	26,825	50,220	4,795,680
June 30, 2026.....	3,533,120	1,729,402	25,398	131,670	5,419,590
Total Deferred Outflows/(Inflows) Recognized in Future Pension Expense.....	\$ 6,570,324	\$ 7,327,591	\$ 67,351	\$ (1,469,784)	\$ 14,595,482
Discount Rate Sensitivity					
1% decrease (6.10%).....	\$ 257,888,612	\$ 103,666,341	\$ 1,753,826	\$ 17,957,649	\$ 381,266,428
Current discount rate (7.10%).....	\$ 198,647,042	\$ 79,852,352	\$ 1,350,941	\$ 13,832,460	\$ 293,682,795
1% increase (8.10%).....	\$ 148,706,149	\$ 59,777,058	\$ 1,011,307	\$ 10,354,908	\$ 219,849,422
Covered Payroll.....	\$ 67,821,259	\$ 26,904,046	\$ 506,791	\$ 4,908,281	\$ 100,140,377

See notes to schedule of employer allocations and schedule of pension amounts by employer.

NOTE 1 – Plan Description

The Lowell Contributory Retirement System (System) is a multiple-employer, cost-sharing, contributory defined benefit pension plan covering all employees of the governmental member units deemed eligible by the Lowell Contributory Retirement Board (Board), with the exception of school department employees who serve in a teaching capacity. The pensions of such school employees are administered by the Commonwealth of Massachusetts' Teachers Retirement System. Membership in the System is mandatory immediately upon the commencement of employment for all permanent employees working a minimum of 20 hours per week. As of January 1, 2021, the System had 3 participating employers.

The System is governed by a five-member board comprised of the City Auditor (ex-officio), two elected members, a member appointed by the City Manager and a member appointed by the other four members.

The System is component unit of the City of Lowell, is presented using the accrual basis of accounting and is reported as a pension and other postemployment benefit trust fund in the fiduciary fund financial statements. That report may be obtained by contacting the City Auditor located at 375 Merrimack Street, Lowell, Massachusetts, 01852.

The System also issues a publicly available unaudited financial report in accordance with the guidelines established by the Commonwealth's PERAC. That report may be obtained by contacting the System located at 375 Merrimack Street, Lowell, Massachusetts, 01852.

NOTE 2 – Schedule of Employer Allocations

Governmental Accounting Standards Board (GASB) Statement #68 requires employers participating in a cost-sharing pension plan to recognize pension liabilities as employees provide services to the government and earn their pension benefits. Employers participating in cost-sharing plans are required to recognize their proportionate share of the System's collective pension amounts for all benefits provided through the System including the net pension liability, deferred outflows of resources, deferred inflows of resources, pension expense, and contributions.

GASB Statement #68 requires the allocation of the collective pension amounts be consistent with the manner in which contributions to the System are determined. As permissible under GASB Statement #68, The Schedule of Employer Allocations is used to demonstrate the allocation of System's collective pension amounts.

Massachusetts General Law (MGL) Chapter 32 Section 22 Paragraph 7c dictates that Massachusetts cost sharing defined benefit pension plans allocate the annual required pension fund appropriation to employer units based on their proportionate share of the aggregate of the annual rates of regular compensation of all members in service of the system who are employees of any government unit at the close of business on September 30th immediately preceding the fiscal year unless another methodology is approved by the Board. The member unit appropriations were based on the proportionate aggregate rates of regular compensation as of the close of business on September 30, 2019. The allocation of the net pension liability, deferred outflows, and pension expense was allocated based on the proportionate aggregate rates of regular compensation as of the close of business on September 30.

NOTE 3 – Schedule of Pension Amounts by Employer

The Schedule of Pension Amounts by Employer presents the net pension liability, the various categories of deferred outflows of resources and deferred inflows of resources, pension expense, and contributions for all participating employers including differences between expected and actual economic experience; differences between projected and actual investment earnings, net; and changes of assumptions. Additionally, the changes in proportion and differences between employer contributions and proportionate share of contributions are presented in accordance with GASB statements.

Changes in Assumptions

The following assumption changes were reflected in the January 1, 2021 actuarial valuation:

- The investment return rate was decreased from 7.65% to 7.10%.
- Mortality tables and mortality improvement scale were updated.

Change in Plan Provisions

None

LOWELL CONTRIBUTORY RETIREMENT SYSTEM

FINANCIAL STATEMENTS

YEAR ENDED DECEMBER 31, 2019

LOWELL CONTRIBUTORY RETIREMENT SYSTEM

FINANCIAL STATEMENTS

YEAR ENDED DECEMBER 31, 2019

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Financial Section

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Independent Auditor's Report

To the Honorable Lowell Contributory Retirement Board
Lowell Contributory Retirement System
Lowell, Massachusetts

Report on the Financial Statements

We have audited the accompanying financial statements of Lowell Contributory Retirement System (System) as of and for the year ended December 31, 2019, and the related notes to the financial statements, which collectively comprise the Lowell Contributory Retirement System's financial statements as listed in the table of contents.

Management's Responsibility for the Financial Statements

Management is responsible for the preparation and fair presentation of these financial statements in accordance with accounting principles generally accepted in the United States of America; this includes the design, implementation, and maintenance of internal control relevant to the preparation and fair presentation of financial statements that are free from material misstatement, whether due to fraud or error.

Auditor's Responsibility

Our responsibility is to express an opinion on these financial statements based on our audit. We conducted our audit in accordance with auditing standards generally accepted in the United States of America and the standards applicable to financial audits contained in *Government Auditing Standards*, issued by the Comptroller General of the United States. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free from material misstatement.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the financial statements. The procedures selected depend on the auditor's judgment, including the assessment of the risks of material misstatement of the financial statements, whether due to fraud or error. In making those risk assessments, the auditor considers internal control relevant to the entity's preparation and fair presentation of the financial statements in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the entity's internal control. Accordingly, we express no such opinion. An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of significant accounting estimates made by management, as well as evaluating the overall presentation of the financial statements.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinion.

Opinion

In our opinion, the financial statements referred to above present fairly, in all material respects, the financial position of the Lowell Contributory Retirement System as of December 31, 2019, and the results of its operations and changes in its financial position for the year then ended in accordance with accounting principles generally accepted in the United States of America.

Other Matters

Required Supplementary Information

Accounting principles generally accepted in the United States of America require that the Management's Discussion and Analysis; Schedule of Changes in the Net Pension Liability and Related Ratios; the Schedule of Contributions; and the Schedule of Investment Return be presented to supplement the financial statements. Such information, although not a part of the financial statements, is required by the Governmental Accounting Standards Board who considers it to be an essential part of financial reporting for placing the financial statements in an appropriate operational, economic, or historical context. We have applied certain limited procedures to the required supplementary information in accordance with auditing standards generally accepted in the United States of America, which consisted of inquiries of management about the methods of preparing the information and comparing the information for consistency with management's responses to our inquiries, the financial statements, and other knowledge we obtained during our audit of the financial statements. We do not express an opinion or provide any assurance on the information because the limited procedures do not provide us with sufficient evidence to express an opinion or provide any assurance.

Other Reporting Required by *Government Auditing Standards*

In accordance with *Government Auditing Standards*, we have also issued our report dated October 1, 2020, on our consideration of the Lowell Contributory Retirement System's internal control over financial reporting and on our tests of its compliance with certain provisions of laws, regulations, contracts, grant agreements and other matters. The purpose of that report is to describe the scope of our testing of internal control over financial reporting and compliance and the results of that testing, and not to provide an opinion on the internal control over financial reporting or on compliance. That report is an integral part of an audit performed in accordance with *Government Auditing Standards* in considering the Lowell Contributory Retirement System's internal control over financial reporting and compliance.

Restriction on Use

This report is intended solely for the information and use of the Lowell Contributory Retirement System, the Public Employee Retirement Commission and all member units and is not intended to be and should not be used by anyone other than these specified parties.

Powers + Sullivan, LLC

October 1, 2020

Management's Discussion and Analysis

As management of the Lowell Contributory Retirement System (System), we offer readers of these financial statements this narrative overview and analysis of the financial activities for the year ended December 31, 2019. The System complies with financial reporting requirements issued by the Governmental Accounting Standards Board (GASB).

The GASB is the authoritative standard setting body that provides guidance on how to prepare financial statements in conformity with generally accepted accounting principles (GAAP). Users of these financial statements rely on the GASB to establish consistent reporting standards for all governments in the United States. This consistent application is the only way users can assess the financial condition of a public retirement system compared to others.

Financial Highlights

- The System's assets/net position totaled \$421.4 million at year end.
- The System's net position increased by \$53.4 million for the year ended December 31, 2019.
- Total investment income was \$59.2 million, investment expenses were \$2.0 million, and net investment income was \$57.2 million.
- Total contributions were \$40.5 million including \$28.8 million from employers and \$9.8 million from members.
- Retirement benefits, refunds, and transfers amounted to \$43.9 million.
- Administrative expenses were \$397,000 or 0.9% of total deductions.
- The total pension liability was \$688.7 million as of December 31, 2019, and the net pension liability was \$267.3 million.
- The System's fiduciary net position as a percentage of the total pension liability was 61.19%.
- The discount rate used was 7.65%.

Overview of the Financial Statements

This discussion and analysis is intended to serve as an introduction to the System's fiduciary financial statements. These fiduciary financial statements comprise of four components: 1) management's discussion and analysis, 2) fiduciary financial statements, 3) notes to the financial statements and 4) required supplementary information.

Fiduciary Financial Statements

The *statement of net position* presents information on all assets and deferred outflows less deferred inflows and liabilities with the difference reported as *net position*. Over time, increases or decreases in net position may serve as a useful indicator of whether the financial position is improving or deteriorating.

The *statement of changes in fiduciary net position* presents information showing how the System's net position changed during the most recent year. All changes in net position are reported as soon as the underlying event giving rise to the change occurs, *regardless of the timing of related cash flows*. Thus, additions and deductions are reported in this statement for some items that will only result in cash flows in future periods.

Notes to the financial statements

The notes provide additional information that is essential to a full understanding of the data provided in the fiduciary financial statements.

Required Supplementary Information

Accounting principles generally accepted in the United States of America require that the Schedule of Changes in the Net Pension Liability and Related Ratios; the Schedule of Contributions; and the Schedule of Investment Return be presented to supplement the financial statements. Such information, although not a part of the financial statements, is required by the Governmental Accounting Standards Board who considers it to be an essential part of financial reporting for placing the financial statements in an appropriate operational, economic, or historical context.

Financial Analysis

As noted earlier, net position may serve over time as a useful indicator of the System's financial position. The System's net position was \$421.4 million at the close of 2019.

The assets accumulated are held to provide pension benefits for qualified retirees along with active and inactive employees of the member units. At year-end, the System's net position included cash and cash equivalents of \$10.4 million and investments of \$410.9 million.

In 2019, the System's contributions were \$40.5 million while retirement benefit payments, refunds, transfers and administration expenses were \$44.3 million which resulted in a current deficiency of \$3.8 million. In 2018, the System's contributions were \$39.2 million while retirement benefit payments, refunds, transfers and administration expenses were \$42.1 million which resulted in a deficiency of \$2.9 million. During 2019, the System supported the deficiency with net investment income. In 2018, there was a net investment loss and therefore the expenses were supported by reserves.

Net investment income/(loss) was \$57.2 million and \$(8.7) million in 2019 and 2018, respectively. The annual money weighted rate of return was 15.66% and -2.29% in 2019 and 2018, respectively. The System's investment policy is designed to achieve a long-term rate of return of 7.65% and fluctuation in annual investment returns is expected.

The following tables present summarized financial information for the past two years.

	2019	2018
Assets:		
Cash and cash equivalents.....	\$ 10,438,894	\$ 11,070,104
Investments.....	410,942,807	356,893,960
Interest and dividends receivable.....	12,663	17,429
Total assets.....	421,394,364	367,981,493
Net Position Restricted for Pension Benefits.....	\$ 421,394,364	\$ 367,981,493

	2019	2018
Additions:		
Contributions:		
Member contributions.....	\$ 9,779,705	\$ 9,435,776
Employer contributions.....	28,821,259	27,448,818
Other contributions.....	1,893,926	2,315,491
Total contributions.....	40,494,890	39,200,085
Net investment income (loss).....	57,232,976	(8,694,089)
Total additions.....	97,727,866	30,505,996
Deductions:		
Administration.....	397,038	347,172
Retirement benefits, refunds and transfers.....	43,917,957	41,767,706
Total deductions.....	44,314,995	42,114,878
Net increase (decrease) in fiduciary net position.....	53,412,871	(11,608,882)
Fiduciary net position at beginning of year.....	367,981,493	379,590,375
Fiduciary net position at end of year.....	\$ 421,394,364	\$ 367,981,493

Requests for Information

This financial report is designed to provide a general overview of the System's finances for all those with an interest in the System's finances. Questions concerning any of the information provided in this report or requests for additional financial information should be addressed to the System's Board, 375 Merrimack Street, Basement Room 3, Lowell, Massachusetts, 01852.

STATEMENT OF FIDUCIARY NET POSITION

DECEMBER 31, 2019

Assets	
Cash and cash equivalents.....	\$ 10,438,894
Investments:	
Investments in Pension Reserve Investment Trust.....	410,557,862
Equity mutual funds.....	<u>384,945</u>
Total investments.....	<u>410,942,807</u>
Interest and dividends receivable.....	<u>12,663</u>
Total Assets.....	<u>421,394,364</u>
Net Position Restricted for Pensions.....	\$ <u>421,394,364</u>

See notes to financial statements.

STATEMENT OF CHANGES IN FIDUCIARY NET POSITION

YEAR ENDED DECEMBER 31, 2019

Additions:	
Contributions:	
Employer pension appropriation.....	\$ 28,821,259
Member contributions.....	9,779,705
Transfers from other systems.....	474,489
3(8)(c) contributions from other systems.....	766,738
Workers' compensation settlements.....	27,250
State COLA reimbursements.....	625,449
Total contributions.....	<u>40,494,890</u>
Net investment income:	
Investment income.....	59,245,071
Less: investment expense.....	<u>(2,012,095)</u>
Net investment income.....	<u>57,232,976</u>
Total additions.....	<u>97,727,866</u>
Deductions:	
Retirement benefits and refunds.....	41,098,095
Transfers to other systems.....	1,072,851
3(8)(c) transfer to other systems.....	1,747,011
Administration.....	<u>397,038</u>
Total deductions.....	<u>44,314,995</u>
Net increase in fiduciary net position.....	53,412,871
Fiduciary net position at beginning of year.....	<u>367,981,493</u>
Fiduciary net position at end of year.....	<u>\$ 421,394,364</u>

See notes to financial statements.

NOTE 1 – PLAN DESCRIPTION

The Lowell Contributory Retirement System (System) is a multiple-employer, cost-sharing, contributory defined benefit pension plan covering all employees of the governmental member units deemed eligible by the Lowell Contributory Retirement Board (Board), with the exception of school department employees who serve in a teaching capacity. The pensions of such school employees are administered by the Commonwealth of Massachusetts' Teachers Retirement System. Membership in the System is mandatory immediately upon the commencement of employment for all permanent employees working a minimum of 20 hours per week. As of December 31, 2019, the System had 3 participating employers.

The System is a member of the Massachusetts Contributory Retirement System and is governed by Chapter 32 of the Massachusetts General Laws. The Public Employee Retirement Administration Commission (PERAC) is the state agency responsible for oversight of the Commonwealth's public retirement systems.

The Retirement Board is responsible for maintaining records of member employee contributions, for determining eligibility for retirement due to any service and disability, or for the payment of retirement benefits. The System is governed by a five-member Board who establish the policies under which the System operates. Board members are appointed or elected as specified by Massachusetts General Laws (MGL) CH. 32, Section 20 for terms not to exceed 3 years.

Massachusetts contributory retirement system benefits are, with certain exceptions such as cost of living adjustments which can be adopted by the Board from time to time, uniform from system to system. The System provides for retirement allowance benefits up to a maximum of 80% of a member's highest three-year average annual rate of regular compensation. For persons who became members on or after April 2, 2012, average salary is the average annual rate of regular compensation received during the five consecutive years that produced the highest average, or, if greater, during the last five years (whether or not consecutive) preceding retirement. Benefit payments are based upon a member's age, length of creditable service, level of compensation, and group classification.

There are three classes of membership in the retirement system: group 1, group 2, and group 4. Group 1 consists of general employees which includes clerical and administrative positions. Group 2 consists of positions that have been specified as hazardous. Lastly, group 4 consists of police officers, firefighters, and other hazardous positions.

Members become vested after ten years of creditable service. A superannuation retirement allowance may be received upon the completion of 20 years of service or upon reaching the age of 55 with 10 years of service. Normal retirement for most employees occurs at age 65 (except for certain hazardous duty and public safety positions, whose normal retirement is at age 55).

A retirement allowance consists of two parts: an annuity and a pension. A member's accumulated total deductions and the interest they generate constitute the annuity. The differential between the total retirement benefit and the annuity is the pension. The average retirement benefit is approximately 80-85% pension and 15-20% annuity.

Active members contribute between 5 and 11% of their gross regular compensation. The percentage rate is keyed to the date upon which an employee's membership commences. These deductions are deposited in the Annuity Savings Fund and earn interest at a rate determined by the Public Employee Retirement Administration Commission's (PERAC) actuary. When a member's retirement becomes effective, his/her deductions and related interest are transferred to the Annuity Reserve Fund. Any cost-of-living adjustments granted between 1981 and 1997 and any increase in other benefits imposed by the Commonwealth of Massachusetts' state law during those years are borne by the Commonwealth and are deposited into the Pension Fund. Cost-of-living adjustments

granted after 1997 must be approved by the System and all costs are borne by the System.

The pension portion of any retirement benefit is paid from the Pension Fund of the System. The governmental unit employing the member must annually appropriate and contribute the amount of current-year pension assessment. MGL Chapter 32 requires that systems be on an actuarially determined funding schedule to be fully funded by 2040. Under the current funding schedule, the System will be fully funded by 2036.

Members who become permanently and totally disabled for further duty may be eligible to receive a disability retirement allowance. The amount of benefits to be received in such cases is dependent on several factors, including whether or not the disability is work related, the member's age, years of creditable service, level of compensation, veterans' status and group classification.

Employees who resign from service and who are not eligible to receive a retirement allowance or are under the age of 55 are entitled to request a refund of their accumulated total deductions.

Survivor benefits are extended to eligible beneficiaries of members whose death occurs prior to or following retirement.

NOTE 2 – SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

The accompanying financial statements of the System have been prepared in accordance with accounting principles generally accepted in the United States of America (GAAP). The Governmental Accounting Standards Board (GASB) is the recognized standard-setting body for establishing governmental accounting and financial reporting principles.

The System is a special-purpose government engaged only in fiduciary activities. Accordingly, the financial statements are reported using the flow of economic resources measurement focus and use the accrual basis of accounting. Under this method, additions are recorded when earned and deductions are recorded when the liabilities are incurred.

Cash and Investments

Cash and cash equivalents are considered to be cash on hand, demand deposits, and short-term investments with an original maturity of three months or less from the date of acquisition. Investments are carried at fair value. The fair values were determined by the closing price for those securities traded on national stock exchanges and at the average bid-and-asked quotation for those securities traded in the over-the-counter market. The fair value of private equities are based on management's valuation of estimates and assumptions from information and representations provided by the respective general partners, in the absence of readily ascertainable market values. Real estate assets are reported at fair value utilizing an income approach to valuation along with independent appraisals and estimates by management.

Fair Value Measurements

The System reports required types of financial instruments in accordance with the fair value standards. These standards require an entity to maximize the use of observable inputs (such as quoted prices in active markets) and minimize the use of unobservable inputs (such as appraisals or valuation techniques) to determine fair value.

Fair value standards also require the government to classify these financial instruments into a three-level hierarchy based on the priority of inputs to the valuation technique or in accordance with net asset value practical expedient rules, which allow for either Level 1, Level 2 or Level 3 depending on look up and notice periods.

associated with the underlying funds.

Instruments measured and reported at fair value are classified and disclosed in one of the following categories:

Level 1 – Quoted prices are available in active markets for identical instruments as of the reporting date. Instruments, which are generally included in this category, include actively traded equity and debt securities, U.S. government obligations, and mutual funds with quoted market prices in active markets.

Level 2 – Pricing inputs are other than quoted in active markets, which are either directly or indirectly observable as of the reporting date, and fair value is determined through the use of models or other valuation methodologies. Certain fixed income securities, primarily corporate bonds, are classified as Level 2 because fair values are estimated using pricing models, matrix pricing, or discounted cash flows.

Level 3 – Pricing inputs are unobservable for the instrument and include situations where there is little, if any, market activity for the instrument. The inputs into the determination of fair value require significant management judgment or estimation.

In some instances, the inputs used to measure fair value may fall into different levels of the fair value hierarchy and is based on the lowest level of input that is significant to the fair value measurement.

Market price is affected by a number of factors, including the type of instrument and the characteristics specific to the instrument. Instruments with readily available active quoted prices generally will have a higher degree of market price observability and a lesser degree of judgment used in measuring fair value. It is reasonably possible that change in values of these instruments will occur in the near term and that such changes could materially affect amounts reported in these financial statements. For more information on the fair value of the System's financial instruments, see Note 4 – Cash and Investments.

Accounts Receivable

Accounts receivable may consist of member deductions, pension fund appropriations, interest and dividends, and other miscellaneous reimbursements. These receivables are considered 100% collectible and therefore do not report an allowance for uncollectible accounts.

NOTE 3 – PLAN ADMINISTRATION

The System is administered by a five-person Board of Retirement consisting of the City Auditor, who shall be a member ex-officio, two elected members chosen by the employees of the System for a three-year term, one appointed by the City Manager, and one non-employee or retiree appointed by the other members for a three year term. City Council confirmation is not required.

Chairman - Elected.....	Joseph P. Mahoney	Term Expires:	12/13/2020
Elected Member.....	William J. Desrosiers	Term Expires:	8/3/2022
Appointed Member.....	David R. Keene	Term Expires:	Indefinite
Appointed Member.....	Michael M. Brennan	Term Expires:	4/25/2021
Ex-Officio.....	Tina Masiello	Term Expires:	Indefinite

Board members are required to meet at least once a month. Meetings are generally held the last week of each month. The Board must keep a record of all of its proceedings. The Board must annually submit to the appropriate authority an estimate of the expenses of administration and cost of operation of the System. The Board must annually file a financial statement of condition for the System with the Executive Director of PERAC.

The investment of the System's funds is the responsibility of the Board. All retirement allowances must be approved by the Retirement Board. The PERAC Actuary performs verification prior to payment, unless the System has obtained a waiver for superannuation calculations allowing them to bypass this requirement. All expenses incurred by the System must be approved by a majority vote of the Board. Payments shall be made only upon vouchers signed by three persons designated by the Board.

System board members and employees are bonded by an authorized agent representing a company licensed to do business in Massachusetts. The System has obtained bonding through the Massachusetts Association of Contributory Retirement Systems program that provides \$10,000,000 of fiduciary protection for Trustees and employees. Also obtained is separate fidelity coverage policy pertaining to ERISA/Crime to a limit of \$1,000,000 issued through the Travelers Casualty & Surety Company.

NOTE 4 – CASH AND INVESTMENTS

Custodial Credit Risk - Deposits

At December 31, 2019, the carrying amount of the System's deposits totaled \$10,438,894, and the bank balance totaled \$10,492,040, all of which was covered by Federal Depository Insurance.

Investments

The System's investments are as follows:

<u>Investment Type</u>	<u>Fair Value</u>
Equity mutual funds.....	\$ 384,945
Pension Reserve Investment Trust (PRIT).....	<u>410,557,862</u>
Total investments.....	<u>\$ 410,942,807</u>

Approximately 99.9% of the Retirement System's investments are in Pension Reserve Investment Trust (PRIT). This investment pool was established by the Treasurer of the Commonwealth of Massachusetts, who serves as Trustee. PRIT is administered by the Pension Reserves Investment Management Board (PRIM). The fair values of the positions in each investment Pool are the same as the value of each Pool's shares. The Administration does not have the ability to control any of the investment decisions relative to its funds in PRIT.

The remaining 0.1% of the System's funds are invested in equity mutual funds. The fair values were determined by the closing price for those securities traded on national stock exchanges and at the average bid-and-asked quotation for those securities traded in the over-the-counter market.

Fair Market Value of Investments

The System holds investments that are measured at fair value on a recurring basis. Because investing is a key part of the System's mission, the System shows greater disaggregation in its disclosures. The System chooses a tabular format for disclosing the levels within the fair value hierarchy. The System categorizes its fair value measurements within the fair value hierarchy established by generally accepted accounting principles.

The following table presents financial assets at December 31, 2019, for which the System measures fair value on a recurring basis, by level, within the fair value hierarchy:

Investment Type	December 31, 2019	Fair Value Measurements Using		
		Quoted Prices in Active Markets for Identical Assets (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)
Investments measured at fair value:				
Equity mutual funds.....	\$ 384,945	\$ 384,945	\$ -	\$ -
Investments measured at net asset value:				
Pension Reserve Investment Trust (PRIT).....	410,557,862			
Total investments.....	\$ 410,942,807			

Equity mutual funds classified in Level 1 are valued using prices quoted in active markets for those securities.

PRIT Investments are valued using the net asset value (NAV) method. This investment pool was established by the Treasurer of the Commonwealth of Massachusetts, who serves as Trustee. PRIT is administered by the Pension Reserves Investment Management Board (PRIM). The fair values of the positions in each investment Pool are the same as the value of each Pool's shares. The System does not have the ability to control any of the investment decisions relative to its funds in PRIT.

The Administration's annual money-weighted rate of return on pension plan investments was 15.66%. The money-weighted rate of return expresses investment performance, net of pension plan investment expense, adjusted for the changing amounts actually invested, measured monthly.

NOTE 5 – MEMBERSHIP

The following table represents the System's membership at December 31, 2019:

Active members	1,745
Inactive members	239
Retirees and beneficiaries currently receiving benefits	1,294
Total	<u>3,278</u>

NOTE 6 – RECEIVABLES

At December 31, 2019, the System had \$12,663 of interest and dividends receivable.

NOTE 7 – ACTUARIAL VALUATION

Components of the net pension liability as of December 31, 2019, were as follows:

Total pension liability	\$ 688,682,544
Total pension plan's fiduciary net position	<u>(421,394,364)</u>
Total net pension liability	<u>\$ 267,288,180</u>
The pension plan's fiduciary net position as a percentage of the total pension liability	61.19%

The total pension liability was determined by an actuarial valuation as of January 1, 2019, updated to the plan's measurement date of December 31, 2019, using the following assumptions:

Valuation date	January 1, 2019.
Actuarial cost method	Entry Age Normal.
Amortization method - UAAL	Increasing dollar amount at 4% to reduce the Unfunded Actuarial Accrued Liability to zero on or before June 30, 2036, with annual increases in appropriations limited to 5%.
Amortization method - 2003 ERI Actuarial Liability	Level dollar amount to reduce the 2003 ERI Actuarial Accrued Liability to zero on or before June 30, 2020.

Asset valuation method.....	The Actuarial Value of Assets is the market value of assets as of the valuation date reduced by the sum of: a) 80% of gains and losses of the prior year, b) 60% of gains and losses of the second prior year, c) 40% of gains and losses of the third prior year and d) 20% of gains and losses of the fourth prior year. Investment gains and losses are determined by the excess or deficiency of the expected return over the actual return on the market value. The actuarial valuation of assets is further constrained to be not less than 90% or more than 110% of market value.
Investment rate of return.....	7.65%, net of pension plan investment expense, including inflation.
Discount rate.....	7.65%
Inflation rate.....	2.4% per year.
Projected salary increases.....	6% - 4.25% for Group 1 (based on service) 7% - 4.75% for Group 4 (based on service)
Payroll growth.....	4% per year.
Cost of living adjustments.....	3% of the first \$17,000 of the annual retirement allowance.
Mortality rates.....	RP-2000 Mortality Table (base year 2009) with full generational mortality improvement using Scale BB. For disabled members, RP-2000 Mortality Table (base year 2012) with full generational mortality improvement using Scale BB.

Investment policy: The System's policy in regard to the allocation of invested assets in PRIT is established by PRIM. The policy with regard to the allocation of all other invested assets is established by the Retirement Board. Plan assets are managed on a total return basis with a long-term objective of achieving a fully funded status for the benefits provided through the pension plan.

The long-term expected rate of return on pension plan investments was 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 expense 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 the target asset allocation percentage and by adding expected inflation.

Best estimates of arithmetic real rates of return for each major asset class included in the System's target asset allocation as of December 31, 2019, are summarized in the following table:

Asset Class	Long-Term Expected Asset Allocation	Long-Term Expected Real Rate of Return
Global equity.....	39.00%	4.68%
Core fixed income.....	15.00%	0.59%
Value-added fixed income.....	8.00%	4.40%
Private equity.....	13.00%	8.50%
Real estate.....	10.00%	3.70%
Timber/natural resources.....	4.00%	4.30%
Portfolio completion.....	11.00%	3.40%
Total.....	100.00%	

Discount rate: The discount rate used to measure the total pension liability was 7.65%. The projection of cash flows used to determine the discount rate assumed plan member contributions will be made at the current contribution rates and that contributions will be made at rates equal to the actuarially determined contribution rates. Based on those assumptions, the System'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 was applied to all periods of projected benefit payments to determine the total pension liability.

Sensitivity of the net pension liability to changes in the discount rate. The following presents the net pension liability, calculated using the discount rate of 7.65%, as well as what the net pension liability would be if it were calculated using a discount rate that is 1-percentage-point lower (6.65%) or 1-percentage-point higher (8.65%) than the current rate:

	December 31, 2019 Measurement Date		
	1% Decrease (6.65%)	Current Discount (7.65%)	1% Increase (8.65%)
Lowell Contributory Retirement System's net pension liability.....	\$ 344,218,267	\$ 267,288,180	\$ 202,174,526

Contributions: Governmental employers are required to pay an annual appropriation as established by PERAC. The total appropriation includes the amounts to pay the pension portion of each member's retirement allowance, an amount to amortize the actuarially determined unfunded liability to zero in accordance with the system's funding schedule, and additional appropriations in accordance with adopted early retirement incentive programs. The pension fund appropriations are allocated amongst employers based on covered payroll.

NOTE 8 – COMMITMENTS AND CONTINGENCIES

The System has no significant commitments or contingencies as of December 31, 2019.

NOTE 9 – SUBSEQUENT EVENTS

Management has evaluated subsequent events through October 1, 2020, which is the date the financial statements were available to be issued.

NOTE 10 – IMPLEMENTATION OF GASB PRONOUNCEMENTS

In May of 2020, the GASB issued Statement #95, *Postponement of the Effective Dates of Certain Authoritative Guidance*. The objective of this Statement is to provide temporary relief to governments and other stakeholders in light of the COVID-19 pandemic. This Statement postponed the required implementation of many of the upcoming Statements for one year or longer.

There were no GASB pronouncements required to be implemented in 2019 that impacted the Retirement System's financial statements.

None of the issued GASB statements that are required to be implemented in future years are anticipated to impact the Systems financial statements.

Required Supplementary Information

**SCHEDULE OF CHANGES IN THE NET PENSION LIABILITY
AND RELATED RATIOS**

	December 31, 2014	December 31, 2015	December 31, 2016	December 31, 2017	December 31, 2018	December 31, 2019
Total pension liability:						
Service cost	\$ 12,776,431	\$ 12,776,431	\$ 15,389,029	\$ 14,902,167	\$ 15,488,254	\$ 15,425,214
Interest	39,817,736	42,298,799	45,581,124	47,847,969	49,064,991	50,412,209
Changes in benefit terms	-	-	5,820,520	-	-	-
Differences between expected and actual experience	-	5,750,829	-	(6,810,808)	(5,025,406)	-
Changes in assumptions	-	31,423,849	-	-	6,798,633	-
Benefit payments	(33,577,831)	(35,136,789)	(35,772,737)	(38,335,654)	(39,329,169)	(41,425,669)
Net change in total pension liability	19,016,336	57,113,119	31,018,736	15,603,674	27,008,303	24,411,754
Total pension liability - beginning	514,510,622	533,526,958	590,840,077	621,658,813	637,262,487	664,270,790
Total pension liability - ending (a)	\$ 533,526,958	\$ 590,640,077	\$ 621,658,813	\$ 637,262,487	\$ 664,270,790	\$ 688,682,544
Plan fiduciary net position:						
Employer pension appropriation	\$ 21,880,170	\$ 21,837,654	\$ 24,701,289	\$ 26,141,731	\$ 27,448,818	\$ 28,821,259
Member contributions	8,993,678	8,903,043	9,204,174	8,451,653	9,311,730	9,191,343
Net investment income (loss)	21,617,176	1,213,427	21,730,886	54,269,195	(8,694,089)	57,332,976
Administrative expenses	(358,770)	(355,999)	(367,634)	(381,389)	(347,172)	(397,038)
Retirement benefits and refunds	(38,577,831)	(35,136,789)	(35,772,737)	(38,335,654)	(39,329,169)	(41,425,669)
Net increase (decrease) in fiduciary net position	18,544,425	(3,536,664)	16,495,779	50,105,556	(11,608,662)	53,412,871
Fiduciary net position - beginning of year	295,923,280	314,467,705	310,929,041	329,424,819	379,590,375	367,987,493
Fiduciary net position - end of year (b)	\$ 314,467,705	\$ 310,929,041	\$ 329,424,819	\$ 379,590,375	\$ 367,981,713	\$ 421,399,364
Net pension liability - ending (a)-(b)	\$ 219,059,253	\$ 279,711,036	\$ 292,233,994	\$ 257,672,112	\$ 296,289,297	\$ 267,288,180
Plan fiduciary net position as a percentage of the total pension liability	58.94%	52.04%	52.89%	59.57%	55.40%	61.19%
Covered payroll	\$ 80,555,739	\$ 89,520,851	\$ 92,654,061	\$ 93,366,659	\$ 95,898,286	\$ 100,274,819
Net pension liability as a percentage of covered payroll	271.94%	312.45%	315.40%	275.90%	308.97%	266.50%

Note: this schedule is intended to present information for 10 years.
Until a 10-year trend is compiled, information is presented for those years for which information is available.

See notes to required supplementary information.

SCHEDULE OF CONTRIBUTIONS

<u>Year</u>	<u>Actuarially determined contribution</u>	<u>Contributions in relation to the actuarially determined contribution</u>	<u>Contribution deficiency (excess)</u>	<u>Covered payroll</u>	<u>Contributions as a percentage of covered payroll</u>
December 31, 2019	\$ 28,821,259	\$ (28,821,259)	\$ -	\$ 100,274,819	28.74%
December 31, 2018.....	27,448,818	(27,448,818)	-	95,896,286	28.62%
December 31, 2017.....	26,141,731	(26,141,731)	-	93,366,859	28.00%
December 31, 2016.....	24,701,289	(24,701,289)	-	92,654,081	26.66%
December 31, 2015	21,837,654	(21,837,654)	-	89,520,851	24.39%
December 31, 2014.....	21,880,170	(21,880,170)	-	80,555,739	27.16%

Note: this schedule is intended to present information for 10 years.
Until a 10-year trend is compiled, information is presented for those years for which information is available.

See notes to required supplementary information.

SCHEDULE OF INVESTMENT RETURNS

<u>Year</u>	<u>Annual money-weighted rate of return, net of investment expense</u>
December 31, 2019.....	15.66%
December 31, 2018.....	-2.29%
December 31, 2017.....	16.63%
December 31, 2016.....	7.81%
December 31, 2015.....	0.48%
December 31, 2014.....	7.81%

Note: this schedule is intended to present information for 10 years. Until a 10-year trend is compiled, information is presented for those years for which information is available.

See notes to required supplementary information.

NOTE A – CHANGES IN THE NET PENSION LIABILITY AND RELATED RATIOS

The Schedule of Changes in the Net Pension Liability and Related Ratios includes the detailed changes in the System's total pension liability, changes in the System's net position, and the ending net pension liability. It also demonstrates the plan's net position as a percentage of the total pension liability and the net pension liability as a percentage of covered payroll.

NOTE B – CONTRIBUTIONS

Governmental employers are required to pay an annual appropriation as established by PERAC. The total appropriation includes the amounts to pay the pension portion of each member's retirement allowance, an amount to amortize the actuarially determined unfunded liability to zero in accordance with the System's funding schedule, and additional appropriations in accordance with adopted early retirement incentive programs. The total appropriations are payable on July 1 and January 1. Employers may choose to pay the entire appropriation in July at a discounted rate. Accordingly, actual employer contributions may be less than the "total appropriation". The pension fund appropriations are allocated amongst employers based on covered payroll.

NOTE C – MONEY WEIGHTED RATE OF RETURN

The money weighted rate of return is calculated as the internal rate of return on pension plan investments, net of pension plan investment expense. A money weighted rate of return expresses investment performance, net of pension plan investment expense, adjusted for the changing amounts actually invested. Inputs to the money weighted rate of return calculation are determined monthly.

NOTE D - CHANGES IN ACTUARIAL ASSUMPTIONS AND PLAN PROVISIONSChanges in Assumptions

The following assumption change was reflected in the January 1, 2019 actuarial valuation:

- The investment return rate was decreased from 7.75% to 7.65%.

Change in Plan Provisions

None

Audit of Specific Elements, Accounts and Items of Financial Statements



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Independent Auditor's Report

To the Honorable Lowell Contributory Retirement Board
Lowell Contributory Retirement System
Lowell, Massachusetts

We have audited the accompanying schedule of employer allocations of the Lowell Contributory Retirement System (System) as of and for the year ended December 31, 2019, and the related notes. We have also audited the total for all entities of the columns titled net pension liability, total deferred outflows of resources, total deferred inflows of resources, total covered payroll, total pension expense and contributions included in the accompanying schedule of pension amounts by employer of the System's Pension Plan as of and for the year ended December 31, 2019, and the related notes.

Management's Responsibility for the Schedules

Management is responsible for the preparation and fair presentation of these schedules in accordance with accounting principles generally accepted in the United States of America; this includes the design, implementation, and maintenance of internal control relevant to the preparation and fair presentation of the schedules that are free from material misstatement, whether due to fraud or error.

Auditor's Responsibility

Our responsibility is to express opinions on the schedule of employer allocations and the specified column totals included in the schedule of pension amounts by employer based on our audit. We conducted our audit in accordance with auditing standards generally accepted in the United States of America. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the schedule of employer allocations and specified column totals included in the schedule of pension amounts by employer are free from material misstatement.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the schedule of employer allocations and the specified column totals included in the schedule of pension amounts by employer. The procedures selected depend on the auditor's judgment, including the assessment of the risks of material misstatement of the schedule of employer allocations and the specified column totals included in the schedule of pension amounts by employer, whether due to fraud or error. In making those risk assessments, the auditor considers internal control relevant to the entity's preparation and fair presentation of the schedule of employer allocations and the specified column totals included in the schedule of pension amounts by employer in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the entity's internal control. Accordingly, we express no such opinion. An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of significant accounting estimates made by management, as well as evaluating the overall presentation of the schedule of employer allocations and the specified column totals included in the schedule of pension amounts by employer.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinions.

Opinions

In our opinion, the schedules referred to above present fairly, in all material respects, the employer allocations and net pension liability, total deferred outflows of resources, total deferred inflows of resources, total covered payroll, total pension expense and contributions for the total of all participating entities for the Lowell Contributory Retirement System as of and for the year ended December 31, 2019, in accordance with accounting principles generally accepted in the United States of America.

Other Matter

We have audited, in accordance with auditing standards generally accepted in the United States of America, the financial statements of the Lowell Contributory Retirement System as of and for the year ended December 31, 2019, and our report thereon, dated October 1, 2020, expressed an unmodified opinion on those financial statements.

Restriction on Use

This report is intended solely for the information and use of the Lowell Contributory Retirement System management, the Lowell Contributory Retirement System employers and their auditors and is not intended to be and should not be used by anyone other than these specified parties.

Powers + Sullivan, LLC

October 1, 2020

SCHEDULE OF EMPLOYER ALLOCATIONS

FOR THE YEAR ENDED DECEMBER 31, 2019

Employer	FY2020 Pension Fund Appropriation	Additional Appropriation E.R.I.	FY2020 Total Appropriation	Share of Net Pension Liability	Percent of Total Net Pension Liability
City of Lowell.....	\$ 19,122,122	\$ 478,009	\$ 19,600,131	\$ 181,771,518	68.008%
City of Lowell - School Department.....	7,626,775	-	7,626,775	70,730,654	28.462%
Lowell Housing Authority.....	1,431,966	30,085	1,462,051	13,559,048	5.073%
Lowell Regional Transit Authority.....	118,859	13,443	132,302	1,226,960	0.459%
Total.....	\$ 28,299,722	\$ 521,537	\$ 28,821,259	\$ 267,288,180	100.000%

See notes to schedule of employer allocations and schedule of pension amounts by employer.

SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

FOR THE YEAR ENDED DECEMBER 31, 2019

	City of Lowell	City of Lowell - School Department	Lowell Regional Transit Authority	Lowell Housing Authority	Totals
Net Pension Liability					
Beginning net pension liability.....	\$ 202,692,071	\$ 77,373,609	\$ 1,336,828	\$ 14,886,789	\$ 296,289,297
Ending net pension liability.....	\$ 181,771,518	\$ 70,730,654	\$ 1,226,960	\$ 13,659,048	\$ 267,288,180
Deferred Outflows of Resources					
Differences between expected and actual experience.....	\$ 684,083	\$ 256,190	\$ 4,618	\$ 51,028	\$ 1,005,919
Changes of assumptions.....	6,830,511	2,657,878	46,106	509,515	10,044,010
Changes in proportion and differences between employer contributions and proportionate share of contributions.....	853,484	2,453,895	105,280	493,344	3,906,003
Total Deferred Outflows of Resources.....	\$ 8,368,078	\$ 5,377,963	\$ 156,004	\$ 1,053,887	\$ 14,955,932
Deferred Inflows of Resources					
Differences between expected and actual experience.....	\$ 5,335,790	\$ 2,076,255	\$ 36,017	\$ 398,017	\$ 7,846,079
Net difference between projected and actual investment earnings on pension plan investments.....	8,009,677	3,116,713	54,065	597,473	11,777,928
Changes in proportion and differences between employer contributions and proportionate share of contributions.....	929,070	450,288	121,282	2,405,363	3,906,003
Total Deferred Inflows of Resources.....	\$ 14,274,537	\$ 5,643,256	\$ 211,364	\$ 3,400,853	\$ 23,530,010
Pension Expense					
Proportionate share of plan pension expense.....	\$ 23,992,182	\$ 9,335,804	\$ 161,947	\$ 1,789,669	\$ 35,279,602
Net amortization of deferred amounts from changes in proportion and differences between employer contributions and proportionate share of contributions.....	294,049	300,365	(14,029)	(580,386)	-
Total Employer Pension Expense.....	\$ 24,286,231	\$ 9,636,169	\$ 147,918	\$ 1,209,284	\$ 35,279,602
Contributions					
Statutory required contribution.....	\$ 19,600,131	\$ 7,626,776	\$ 132,302	\$ 1,462,051	\$ 28,821,259
Contribution in relation to statutory required contribution.....	(19,600,131)	(7,626,776)	(132,302)	(1,462,051)	(28,821,259)
Contribution deficiency/(excess).....	\$ -	\$ -	\$ -	\$ -	\$ -
Contributions as a percentage of covered payroll.....	28.90%	27.57%	28.85%	30.96%	28.74%
Deferred Outflows/(inflows) Recognized in					
Future Pension Expense					
June 30, 2021.....	\$ 1,236,448	\$ 667,070	\$ (7,668)	\$ (510,088)	\$ 1,385,762
June 30, 2022.....	(3,333,386)	(800,863)	(35,155)	(659,381)	(4,828,805)
June 30, 2023.....	327,640	643,494	(10,229)	(374,061)	586,844
June 30, 2024.....	(3,962,190)	(956,109)	(6,803)	(804,524)	(5,729,626)
June 30, 2025.....	(174,971)	181,135	4,495	1,088	11,747
Total Deferred Outflows/(inflows) Recognized in Future Pension Expense.....	\$ (5,906,459)	\$ (265,293)	\$ (55,360)	\$ (2,346,966)	\$ (8,574,078)
Discount Rate Sensitivity					
1% decrease (6.65%).....	\$ 234,088,455	\$ 91,088,139	\$ 1,580,100	\$ 17,461,573	\$ 344,218,267
Current discount rate (7.65%).....	\$ 181,771,518	\$ 70,730,654	\$ 1,226,960	\$ 13,659,048	\$ 267,288,180
1% increase (8.65%).....	\$ 137,490,444	\$ 53,500,070	\$ 928,062	\$ 10,255,950	\$ 202,174,526
Covered Payroll.....	\$ 67,826,542	\$ 27,267,398	\$ 458,529	\$ 4,722,350	\$ 100,274,819

See notes to schedule of employer allocations and schedule of pension amounts by employer.

NOTE 1 – Plan Description

The Lowell Contributory Retirement System (System) is a multiple-employer, cost-sharing, contributory defined benefit pension plan covering all employees of the governmental member units deemed eligible by the Lowell Contributory Retirement Board (Board), with the exception of school department employees who serve in a teaching capacity. The pensions of such school employees are administered by the Commonwealth of Massachusetts' Teachers Retirement System. Membership in the System is mandatory immediately upon the commencement of employment for all permanent employees working a minimum of 20 hours per week. As of January 1, 2019, the System had 3 participating employers.

The System is governed by a five-member board comprised of the City Auditor (ex-officio), two elected members, a member appointed by the City Manager and a member appointed by the other four members.

The System is component unit of the City of Lowell, is presented using the accrual basis of accounting and is reported as a pension trust fund in the fiduciary fund financial statements. That report may be obtained by contacting the City Auditor located at 375 Merrimack Street, Lowell, Massachusetts, 01852.

The System also issues a publicly available unaudited financial report in accordance with the guidelines established by the Commonwealth's PERAC. That report may be obtained by contacting the System located at 375 Merrimack Street, Lowell, Massachusetts, 01852.

NOTE 2 – Schedule of Employer Allocations

Governmental Accounting Standards Board (GASB) Statement #68 requires employers participating in a cost-sharing pension plan to recognize pension liabilities as employees provide services to the government and earn their pension benefits. For the first time, employers participating in cost-sharing plans are required to recognize their proportionate share of the plan's collective pension amounts for all benefits provided through the plan including the net pension liability, deferred outflows of resources, deferred inflows of resources, pension expense, and contributions.

GASB Statement #68 requires the allocation of the collective pension amounts be consistent with the manner in which contributions to the plan are determined. As permissible under GASB Statement #68, The Schedule of Employer Allocations is used to demonstrate the allocation of Lowell Contributory Retirement System's collective pension amounts.

Massachusetts General Law (MGL) Chapter 32 Section 22 Paragraph 7c dictates that Massachusetts cost sharing defined benefit pension plans allocate the annual required pension fund appropriation to employer units based on their proportionate share of the aggregate of the annual rates of regular compensation of all members in service of the system who are employees of any government unit at the close of business on September 30th immediately preceding the fiscal year unless another methodology is approved by the Board. The member unit appropriations were based on the proportionate aggregate rates of regular compensation as of the close of business on September 30. The allocation of the net pension liability, deferred outflows, and pension expense was allocated based on the proportionate aggregate rates of regular compensation as of the close of business on September 30 and included the Early Retirement Incentive attributable to each member unit.

When a member unit accepts an Early Retirement Incentive Program (E.R.I. or ERIP), PERAC completes an analysis of the costs and liabilities attributable to the additional benefits payable in accordance with the ERIP. The accrued liability for the members who accept the ERIP as retirees including the ERIP less the accrued liability for the members as active employees excluding the ERIP represents the increase in accrued liability due to the

ERIP. The net increase is amortized for each member unit accepting the ERIP and is separately identified in the system's funding schedule. The 2003 ERIP is being amortized on a straight-line basis ending on June 30, 2020.

NOTE 3 – Schedule of Pension Amounts by Employer

The Schedule of Pension Amounts by Employer presents the net pension liability, the various categories of deferred outflows of resources and deferred inflows of resources, pension expense, and contributions for all participating employers including differences between expected and actual economic experience; differences between projected and actual investment earnings, net; and changes of assumptions. Additionally, the changes in proportion and differences between employer contributions and proportionate share of contributions are presented in accordance with GASB statements.

Changes in Assumptions

The following assumption change was reflected in the January 1, 2019 actuarial valuation:

- The investment return rate was changed from 7.75% to 7.65%.

Change in Plan Provisions

None

LOWELL CONTRIBUTORY RETIREMENT SYSTEM

FINANCIAL STATEMENTS

YEAR ENDED DECEMBER 31, 2018

LOWELL CONTRIBUTORY RETIREMENT SYSTEM

FINANCIAL STATEMENTS

YEAR ENDED DECEMBER 31, 2018

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Financial Section

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Independent Auditor's Report

To the Honorable Lowell Contributory Retirement Board
Lowell Contributory Retirement System
Lowell, Massachusetts

Report on the Financial Statements

We have audited the accompanying financial statements of Lowell Contributory Retirement System (LCRS) as of and for the year ended December 31, 2018, and the related notes to the financial statements, which collectively comprise the Lowell Contributory Retirement System's financial statements as listed in the table of contents.

Management's Responsibility for the Financial Statements

Management is responsible for the preparation and fair presentation of these financial statements in accordance with accounting principles generally accepted in the United States of America; this includes the design, implementation, and maintenance of internal control relevant to the preparation and fair presentation of financial statements that are free from material misstatement, whether due to fraud or error.

Auditor's Responsibility

Our responsibility is to express an opinion on these financial statements based on our audit. We conducted our audit in accordance with auditing standards generally accepted in the United States of America and the standards applicable to financial audits contained in *Government Auditing Standards*, issued by the Comptroller General of the United States. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free from material misstatement.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the financial statements. The procedures selected depend on the auditor's judgment, including the assessment of the risks of material misstatement of the financial statements, whether due to fraud or error. In making those risk assessments, the auditor considers internal control relevant to the entity's preparation and fair presentation of the financial statements in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the entity's internal control. Accordingly, we express no such opinion. An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of significant accounting estimates made by management, as well as evaluating the overall presentation of the financial statements.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinion.

Opinion

In our opinion, the financial statements referred to above present fairly, in all material respects, the financial position of the Lowell Contributory Retirement System as of December 31, 2018, and the results of its operations and changes in its financial position for the year then ended in accordance with accounting principles generally accepted in the United States of America.

Other Matters

Required Supplementary Information

Accounting principles generally accepted in the United States of America require that the Management's Discussion and Analysis; Schedule of Changes in the Net Pension Liability and Related Ratios; the Schedule of Contributions; and the Schedule of Investment Return be presented to supplement the financial statements. Such information, although not a part of the financial statements, is required by the Governmental Accounting Standards Board who considers it to be an essential part of financial reporting for placing the financial statements in an appropriate operational, economic, or historical context. We have applied certain limited procedures to the required supplementary information in accordance with auditing standards generally accepted in the United States of America, which consisted of inquiries of management about the methods of preparing the information and comparing the information for consistency with management's responses to our inquiries, the financial statements, and other knowledge we obtained during our audit of the financial statements. We do not express an opinion or provide any assurance on the information because the limited procedures do not provide us with sufficient evidence to express an opinion or provide any assurance.

Other Reporting Required by Government Auditing Standards

In accordance with *Government Auditing Standards*, we have also issued our report dated October 8, 2019, on our consideration of the Lowell Contributory Retirement System's internal control over financial reporting and on our tests of its compliance with certain provisions of laws, regulations, contracts, grant agreements and other matters. The purpose of that report is to describe the scope of our testing of internal control over financial reporting and compliance and the results of that testing, and not to provide an opinion on the internal control over financial reporting or on compliance. That report is an integral part of an audit performed in accordance with *Government Auditing Standards* in considering the Lowell Contributory Retirement System's internal control over financial reporting and compliance.

Restriction on Use

This report is intended solely for the information and use of the Lowell Contributory Retirement System, the Public Employee Retirement Commission and all member units and is not intended to be and should not be used by anyone other than these specified parties.

Powers + Sullivan, LLC

October 8, 2019

Management's Discussion and Analysis

As management of the Lowell Contributory Retirement System (System), we offer readers of these financial statements this narrative overview and analysis of the financial activities for the year ended December 31, 2018. The System complies with financial reporting requirements issued by the Governmental Accounting Standards Board (GASB).

The GASB is the authoritative standard setting body that provides guidance on how to prepare financial statements in conformity with generally accepted accounting principles (GAAP). Users of these financial statements rely on the GASB to establish consistent reporting standards for all governments in the United States. This consistent application is the only way users can assess the financial condition of a public retirement system compared to others.

Financial Highlights

- The System's assets/net position totaled \$368.0 million at year end.
- The System's net position decreased by \$11.6 million for the year ended December 31, 2018.
- Total investment loss was \$6.7 million, investment expenses were \$2.0 million, and total investment loss was \$8.7 million.
- Total contributions were \$39.2 million including \$27.4 million from employers and \$9.4 million from members.
- Retirement benefits, refunds, and transfers amounted to \$41.8 million.
- Administrative expenses were \$347,000 or 0.8% of total deductions.
- The total pension liability was \$664.3 million as of December 31, 2018, and the net pension liability was \$296.3 million.
- The System's fiduciary net position as a percentage of the total pension liability was 55.40%.
- The discount rate used was 7.65%.

Overview of the Financial Statements

This discussion and analysis is intended to serve as an introduction to the System's fiduciary financial statements. These fiduciary financial statements comprise of four components: 1) management's discussion and analysis, 2) fiduciary financial statements, 3) notes to the financial statements and 4) required supplementary information.

Fiduciary Financial Statements

The *statement of net position* presents information on all assets and deferred outflows less deferred inflows and liabilities with the difference reported as *net position*. Over time, increases or decreases in net position may serve as a useful indicator of whether the financial position is improving or deteriorating.

The *statement of changes in fiduciary net position* presents information showing how the System's net position changed during the most recent year. All changes in net position are reported as soon as the underlying event giving rise to the change occurs, *regardless of the timing of related cash flows*. Thus, additions and deductions are reported in this statement for some items that will only result in cash flows in future periods.

Notes to the financial statements

The notes provide additional information that is essential to a full understanding of the data provided in the fiduciary financial statements.

Required Supplementary Information

Accounting principles generally accepted in the United States of America require that the Schedule of Changes in the Net Pension Liability and Related Ratios; the Schedule of Contributions; and the Schedule of Investment Return be presented to supplement the financial statements. Such information, although not a part of the financial statements, is required by the Governmental Accounting Standards Board who considers it to be an essential part of financial reporting for placing the financial statements in an appropriate operational, economic, or historical context.

Financial Analysis

As noted earlier, net position may serve over time as a useful indicator of the System's financial position. The System's net position was \$368.0 million at the close of 2018.

The assets accumulated are held to provide pension benefits for qualified retirees along with active and inactive employees of the member units. At year-end, the System's net position include cash and cash equivalents of \$11.1 million and investments of \$356.9 million.

In 2018, the System's contributions were \$39.2 million while retirement benefit payments, refunds, transfers and administration expenses were \$42.1 million which resulted in a current deficiency of \$2.9 million. In 2017, the System's contributions were \$36.4 million while retirement benefit payments, refunds, transfers and administration expenses were \$40.5 million which resulted in a deficiency of \$4.1 million. In 2017, the System supported the deficiency with net investment income. During 2018, there was a net investment loss and therefore the expenses were supported by reserves.

Net investment income/(loss) was \$(8.7) million and \$54.3 million in 2018 and 2017, respectively. The annual money weighted rate of return was -2.29% and 16.63% in 2018 and 2017, respectively. The System's investment policy is designed to achieve a long-term rate of return of 7.65% and fluctuation in annual investment returns is expected.

The following tables present summarized financial information for the past two years.

	2018	2017
Assets:		
Cash and cash equivalents.....	\$ 11,070,104	\$ 10,038,133
Investments.....	356,893,960	369,542,719
Interest and dividends receivable.....	17,429	9,523
Total assets.....	367,981,493	379,590,375
Net Position Restricted for Pension Benefits.....	\$ 367,981,493	\$ 379,590,375

	2018	2017
Additions:		
Contributions:		
Member contributions.....	\$ 9,435,776	\$ 8,962,891
Employer contributions.....	27,448,818	26,141,731
Other contributions.....	2,315,491	1,251,232
Total contributions.....	39,200,085	36,355,854
Net investment income (loss).....	(8,694,089)	54,289,195
Total additions.....	30,505,996	90,645,049
Deductions:		
Administration.....	347,172	381,369
Retirement benefits, refunds and transfers.....	41,767,706	40,098,124
Total deductions.....	42,114,878	40,479,493
Net increase (decrease) in fiduciary net position.....	(11,608,882)	50,165,556
Fiduciary net position at beginning of year.....	379,590,375	329,424,819
Fiduciary net position at end of year.....	\$ 367,981,493	\$ 379,590,375

Requests for Information

This financial report is designed to provide a general overview of the System's finances for all those with an interest in the System's finances. Questions concerning any of the information provided in this report or requests for additional financial information should be addressed to the System's Board, 375 Merrimack Street, Basement Room 3, Lowell, Massachusetts, 01852.

STATEMENT OF FIDUCIARY NET POSITION

DECEMBER 31, 2018

Assets

Cash and cash equivalents.....	\$	11,070,104
Investments:		
Investments in Pension Reserve Investment Trust.....		356,475,342
Equity securities.....		<u>418,618</u>
Total investments.....		<u>356,893,960</u>
Interest and dividends receivable.....		<u>17,429</u>
Total Assets.....		<u>367,981,493</u>
Net Position Restricted for Pensions.....	\$	<u>367,981,493</u>

See notes to financial statements.

STATEMENT OF CHANGES IN FIDUCIARY NET POSITION

YEAR ENDED DECEMBER 31, 2018

Additions:	
Contributions:	
Employer pension appropriation.....	\$ 27,448,818
Member contributions.....	9,435,776
Transfers from other systems.....	973,481
3(8)(c) contributions from other systems.....	663,348
Workers' compensation settlements.....	8,000
State COLA reimbursements.....	670,662
Total contributions.....	39,200,085
Net investment income:	
Investment income (loss).....	(6,694,357)
Less: investment expense.....	(1,999,732)
Net investment income (loss).....	(8,694,089)
Total additions.....	30,505,996
Deductions:	
Administration.....	347,172
Retirement benefits and refunds.....	39,236,589
Transfers to other systems.....	1,097,527
3(8)(c) transfer to other systems.....	1,433,590
Total deductions.....	42,114,878
Net decrease in fiduciary net position.....	(11,608,882)
Fiduciary net position at beginning of year.....	379,590,375
Fiduciary net position at end of year.....	\$ 367,981,493

See notes to financial statements.

NOTE 1 – PLAN DESCRIPTION

The Lowell Contributory Retirement System (System) is a multiple-employer, cost-sharing, contributory defined benefit pension plan covering all employees of the governmental member units deemed eligible by the Lowell Contributory Retirement Board (Board), with the exception of school department employees who serve in a teaching capacity. The pensions of such school employees are administered by the Commonwealth of Massachusetts' Teachers Retirement System. Membership in the System is mandatory immediately upon the commencement of employment for all permanent employees working a minimum of 20 hours per week. As of December 31, 2018, the System had 3 participating employers.

The System is a member of the Massachusetts Contributory Retirement System and is governed by Chapter 32 of the Massachusetts General Laws. The Public Employee Retirement Administration Commission (PERAC) is the state agency responsible for oversight of the Commonwealth's public retirement systems.

The Retirement Board is responsible for maintaining records of member employee contributions, for determining eligibility for retirement due to any service and disability, or for the payment of retirement benefits. The System is governed by a five member Board who establish the policies under which the System operates. Board members are appointed or elected as specified by Massachusetts General Laws (MGL) CH. 32, Section 20 for terms not to exceed 3 years.

Massachusetts contributory retirement system benefits are, with certain exceptions such as cost of living adjustments which can be adopted by the Board from time to time, uniform from system to system. The System provides for retirement allowance benefits up to a maximum of 80% of a member's highest three-year average annual rate of regular compensation. For persons who became members on or after April 2, 2012, average salary is the average annual rate of regular compensation received during the five consecutive years that produced the highest average, or, if greater, during the last five years (whether or not consecutive) preceding retirement. Benefit payments are based upon a member's age, length of creditable service, level of compensation, and group classification.

There are three classes of membership in the retirement system: group 1, group 2, and group 4. Group 1 consists of general employees which includes clerical and administrative positions. Group 2 consists of positions that have been specified as hazardous. Lastly, group 4 consists of police officers, firefighters, and other hazardous positions.

Members become vested after ten years of creditable service. A superannuation retirement allowance may be received upon the completion of 20 years of service or upon reaching the age of 55 with 10 years of service. Normal retirement for most employees occurs at age 65 (except for certain hazardous duty and public safety positions, whose normal retirement is at age 55).

A retirement allowance consists of two parts: an annuity and a pension. A member's accumulated total deductions and the interest they generate constitute the annuity. The differential between the total retirement benefit and the annuity is the pension. The average retirement benefit is approximately 80-85% pension and 15-20% annuity.

Active members contribute between 5 and 11% of their gross regular compensation. The percentage rate is keyed to the date upon which an employee's membership commences. These deductions are deposited in the Annuity Savings Fund and earn interest at a rate determined by the Public Employee Retirement Administration Commission's (PERAC) actuary. When a member's retirement becomes effective, his/her deductions and related interest are transferred to the Annuity Reserve Fund. Any cost-of-living adjustments granted between 1981 and 1997 and any increase in other benefits imposed by the Commonwealth of Massachusetts' state law during those years are borne by the Commonwealth and are deposited into the Pension Fund. Cost-of-living adjustments

granted after 1997 must be approved by the System and all costs are borne by the System.

The pension portion of any retirement benefit is paid from the Pension Fund of the System. The governmental unit employing the member must annually appropriate and contribute the amount of current-year pension assessment. MGL Chapter 32 requires that systems be on an actuarially determined funding schedule to be fully funded by 2040. Under the current funding schedule, the System will be fully funded by 2036.

Members who become permanently and totally disabled for further duty may be eligible to receive a disability retirement allowance. The amount of benefits to be received in such cases is dependent on several factors, including whether or not the disability is work related, the member's age, years of creditable service, level of compensation, veterans' status and group classification.

Employees who resign from service and who are not eligible to receive a retirement allowance or are under the age of 55 are entitled to request a refund of their accumulated total deductions.

Survivor benefits are extended to eligible beneficiaries of members whose death occurs prior to or following retirement.

NOTE 2 – SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

The accompanying financial statements of the System have been prepared in accordance with accounting principles generally accepted in the United States of America (GAAP). The Governmental Accounting Standards Board (GASB) is the recognized standard-setting body for establishing governmental accounting and financial reporting principles.

The System is a special-purpose government engaged only in fiduciary activities. Accordingly, the financial statements are reported using the flow of economic resources measurement focus and use the accrual basis of accounting. Under this method, additions are recorded when earned and deductions are recorded when the liabilities are incurred.

Cash and Investments

Cash and cash equivalents are considered to be cash on hand, demand deposits, and short-term investments with an original maturity of three months or less from the date of acquisition. Investments are carried at fair value. The fair values were determined by the closing price for those securities traded on national stock exchanges and at the average bid-and-asked quotation for those securities traded in the over-the-counter market. The fair value of private equities are based on management's valuation of estimates and assumptions from information and representations provided by the respective general partners, in the absence of readily ascertainable market values. Real estate assets are reported at fair value utilizing an income approach to valuation along with independent appraisals and estimates by management.

Fair Value Measurements

The System reports required types of financial instruments in accordance with the fair value standards. These standards require an entity to maximize the use of observable inputs (such as quoted prices in active markets) and minimize the use of unobservable inputs (such as appraisals or valuation techniques) to determine fair value.

Fair value standards also require the government to classify these financial instruments into a three-level hierarchy based on the priority of inputs to the valuation technique or in accordance with net asset value practical expedient rules, which allow for either Level 1, Level 2 or Level 3 depending on look up and notice periods.

associated with the underlying funds.

Instruments measured and reported at fair value are classified and disclosed in one of the following categories:

Level 1 – Quoted prices are available in active markets for identical instruments as of the reporting date. Instruments, which are generally included in this category, include actively traded equity and debt securities, U.S. government obligations, and mutual funds with quoted market prices in active markets.

Level 2 – Pricing inputs are other than quoted in active markets, which are either directly or indirectly observable as of the reporting date, and fair value is determined through the use of models or other valuation methodologies. Certain fixed income securities, primarily corporate bonds, are classified as Level 2 because fair values are estimated using pricing models, matrix pricing, or discounted cash flows.

Level 3 – Pricing inputs are unobservable for the instrument and include situations where there is little, if any, market activity for the instrument. The inputs into the determination of fair value require significant management judgment or estimation.

In some instances, the inputs used to measure fair value may fall into different levels of the fair value hierarchy and is based on the lowest level of input that is significant to the fair value measurement.

Market price is affected by a number of factors, including the type of instrument and the characteristics specific to the instrument. Instruments with readily available active quoted prices generally will have a higher degree of market price observability and a lesser degree of judgment used in measuring fair value. It is reasonably possible that change in values of these instruments will occur in the near term and that such changes could materially affect amounts reported in these financial statements. For more information on the fair value of the System's financial instruments, see Note 4 – Cash and Investments.

Accounts Receivable

Accounts receivable may consist of member deductions, pension fund appropriations, interest and dividends, and other miscellaneous reimbursements. These receivables are considered 100% collectible and therefore do not report an allowance for uncollectibles.

NOTE 3 – PLAN ADMINISTRATION

The System is administered by a five-person Board of Retirement consisting of the City Auditor, who shall be a member ex-officio, two elected members chosen by the employees of the System for a three-year term, one appointed by the City Manager, and one non-employee or retiree appointed by the other members for a three year term. City Council confirmation is not required.

Chairman - Elected	Joseph P. Mahoney	Term Expires:	12/13/2020
Elected Member.....	William J. Desrosiers	Term Expires:	8/3/2022
Appointed Member.....	David R. Keene	Term Expires:	Indefinite
Appointed Member.....	Michael M. Brennan	Term Expires:	4/25/2021
Ex-Officio.....	Karen O'Beirne*	Term Expires:	Indefinite

* Subsequent to December 31, 2018, the City Auditor resigned and Karen O'Beirne is acting City Auditor.

Board members are required to meet at least once a month. Meetings are generally held the last week of each month. The Board must keep a record of all of its proceedings. The Board must annually submit to the appropriate authority an estimate of the expenses of administration and cost of operation of the System. The Board must annually file a financial statement of condition for the System with the Executive Director of PERAC.

The investment of the System's funds is the responsibility of the Board. All retirement allowances must be approved by the Retirement Board. The PERAC Actuary performs verification prior to payment, unless the System has obtained a waiver for superannuation calculations allowing them to bypass this requirement. All expenses incurred by the System must be approved by a majority vote of the Board. Payments shall be made only upon vouchers signed by three persons designated by the Board.

System board members and employees are bonded by an authorized agent representing a company licensed to do business in Massachusetts. The System has obtained bonding through the Massachusetts Association of Contributory Retirement Systems program that provides \$10,000,000 of fiduciary protection for Trustees and employees. Also obtained is separate fidelity coverage policy pertaining to ERISA/Crime to a limit of \$1,000,000 issued through the Travelers Casualty & Surety Company.

NOTE 4 – CASH AND INVESTMENTS

Custodial Credit Risk - Deposits

At December 31, 2018, the carrying amount of the System's deposits totaled \$11,070,104, and the bank balance totaled \$11,150,864, all of which was covered by Federal Depository Insurance.

Investments

The System's investments are as follows:

<u>Investment Type</u>	<u>Fair Value</u>
Equity mutual funds.....	\$ 418,618
Pension Reserve Investment Trust (PRIT).....	356,475,342
Total investments.....	<u>\$ 356,893,960</u>

Approximately 99.9% of the Retirement System's investments are in Pension Reserve Investment Trust (PRIT). This investment pool was established by the Treasurer of the Commonwealth of Massachusetts, who serves as Trustee. PRIT is administered by the Pension Reserves Investment Management Board (PRIM). The fair values of the positions in each investment Pool are the same as the value of each Pool's shares. The Administration does not have the ability to control any of the investment decisions relative to its funds in PRIT.

The remaining 0.1% of the System's funds are invested in equity mutual funds. The fair values were determined by the closing price for those securities traded on national stock exchanges and at the average bid-and-asked quotation for those securities traded in the over-the-counter market.

Fair Market Value of Investments

The System holds investments that are measured at fair value on a recurring basis. Because investing is a key part of the System's mission, the System shows greater disaggregation in its disclosures. The System chooses a tabular format for disclosing the levels within the fair value hierarchy. The System categorizes its fair value measurements within the fair value hierarchy established by generally accepted accounting principles.

The following table presents financial assets at December 31, 2018, for which the System measures fair value on a recurring basis, by level, within the fair value hierarchy:

		Fair Value Measurements Using		
		Quoted Prices in Active Markets for Identical Assets (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)
Investment Type	December 31, 2018			
Investments measured at fair value:				
Equity mutual funds.....	\$ 418,618	\$ 418,618	\$ -	\$ -
Investments measured at net asset value:				
Pension Reserve Investment Trust (PRIT).....	356,475,342			
Total investments.....	\$ 356,893,960			

Equity mutual funds classified in Level 1 are valued using prices quoted in active markets for those securities.

PRIT Investments are valued using the net asset value (NAV) method. This investment pool was established by the Treasurer of the Commonwealth of Massachusetts, who serves as Trustee. PRIT is administered by the Pension Reserves Investment Management Board (PRIM). The fair values of the positions in each investment Pool are the same as the value of each Pool's shares. The System does not have the ability to control any of the investment decisions relative to its funds in PRIT.

The Administration's annual money-weighted rate of return on pension plan investments was -2.29%. The money-weighted rate of return expresses investment performance, net of pension plan investment expense, adjusted for the changing amounts actually invested, measured monthly.

NOTE 5 – MEMBERSHIP

The following table represents the System's membership at December 31, 2018:

Active members.....	1,746
Inactive members.....	348
Retirees and beneficiaries currently receiving benefits.....	1,255
Total	<u>3,349</u>

NOTE 6 – RECEIVABLES

At December 31, 2018, the System had \$17,429 of interest and dividends receivable.

NOTE 7 – ACTUARIAL VALUATION

Components of the net pension liability as of December 31, 2018, were as follows:

Total pension liability.....	\$ 664,270,790
Total pension plan's fiduciary net position.....	<u>(367,981,493)</u>
Total net pension liability.....	\$ <u>296,289,297</u>
The pension plan's fiduciary net position as a percentage of the total pension liability	55.40%

The total pension liability was determined by an actuarial valuation as of January 1, 2019, rolled back to the plan's measurement date of December 31, 2018, using the following assumptions:

Valuation date.....	1/1/2019
Actuarial cost method.....	Entry Age Normal.
Amortization method - UAAL.....	Increasing dollar amount at 4% to reduce the Unfunded Actuarial Accrued Liability to zero on or before June 30, 2036, with annual increases in appropriations limited to 5%.
Amortization method - 2003 ERI Actuarial Liability.....	Level dollar amount to reduce the 2003 ERI Actuarial Accrued Liability to zero on or before June 30, 2020.

Asset valuation method.....	The Actuarial Value of Assets is the market value of assets as of the valuation date reduced by the sum of: a) 80% of gains and losses of the prior year, b) 60% of gains and losses of the second prior year, c) 40% of gains and losses of the third prior year and d) 20% of gains and losses of the fourth prior year. Investment gains and losses are determined by the excess or deficiency of the expected return over the actual return on the market value. The actuarial valuation of assets is further constrained to be not less than 90% or more than 110% of market value.
Investment rate of return.....	7.65%, net of pension plan investment expense, including inflation.
Discount rate.....	7.65%
Inflation rate.....	3% per year.
Projected salary increases.....	6% - 4.25% for Group 1 (based on service) 7% - 4.75% for Group 4 (based on service)
Payroll growth.....	4% per year.
Cost of living adjustments.....	3% of the first \$17,000 of the annual retirement allowance.
Mortality rates.....	RP-2000 Mortality Table (base year 2009) with full generational mortality improvement using Scale BB. For disabled members, RP-2000 Mortality Table (base year 2012) with full generational mortality improvement using Scale BB.

Investment policy: The pension plan's policy in regard to the allocation of invested assets in PRIT is established by PRIM. The policy with regard to the allocation of all other invested assets is established by the Retirement Board. Plan assets are managed on a total return basis with a long-term objective of achieving a fully funded status for the benefits provided through the pension plan.

The long-term expected rate of return on pension plan investments was 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 expense 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 the target asset allocation percentage and by adding expected inflation.

Best estimates of arithmetic real rates of return for each major asset class included in the pension plan's target asset allocation as of December 31, 2018, are summarized in the following table:

Asset Class	Long-Term Expected Asset Allocation	Long-Term Expected Real Rate of Return
Global equity.....	39.00%	4.75%
Fixed income.....	23.00%	2.28%
Private equity.....	13.00%	8.15%
Real estate.....	10.00%	3.43%
Timber/natural resources.....	4.00%	4.00%
Hedge fund and portfolio completion.....	11.00%	3.76%
Total.....	100.00%	

Discount rate: The discount rate used to measure the total pension liability was 7.65%. The projection of cash flows used to determine the discount rate assumed plan member contributions will be made at the current contribution rates and that contributions will be made at rates equal to the actuarially determined contribution rates. 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 was applied to all periods of projected benefit payments to determine the total pension liability.

Sensitivity of the net pension liability to changes in the discount rate: The following presents the net pension liability, calculated using the discount rate of 7.65%, as well as what the net pension liability would be if it were calculated using a discount rate that is 1-percentage-point lower (6.65%) or 1-percentage-point higher (8.65%) than the current rate:

	December 31, 2018 Measurement Date		
	1% Decrease (6.65%)	Current Discount (7.65%)	1% Increase (8.65%)
Lowell Contributory Retirement System's net pension liability.....	\$ 370,982,224	\$ 296,289,297	\$ 233,083,037

Contributions: Governmental employers are required to pay an annual appropriation as established by PERAC. The total appropriation includes the amounts to pay the pension portion of each member's retirement allowance, an amount to amortize the actuarially determined unfunded liability to zero in accordance with the system's funding schedule, and additional appropriations in accordance with adopted early retirement incentive programs. The pension fund appropriations are allocated amongst employers based on covered payroll.

NOTE 8 – COMMITMENTS AND CONTINGENCIES

The System has no significant commitments or contingencies as of December 31, 2018.

NOTE 9 – SUBSEQUENT EVENTS

Management has evaluated subsequent events through October 8, 2019, which is the date the financial statements were available to be issued.

Required Supplementary Information

**SCHEDULE OF CHANGES IN THE NET PENSION LIABILITY
AND RELATED RATIOS**

	December 31, 2014	December 31, 2015	December 31, 2016	December 31, 2017	December 31, 2018
Total pension liability:					
Service cost.....	\$ 12,776,431	\$ 12,776,431	\$ 15,389,829	\$ 14,902,167	\$ 15,498,254
Interest.....	39,817,736	42,298,789	45,581,124	47,847,989	49,084,991
Changes in benefit terms.....	-	-	5,820,520	-	-
Differences between expected and actual experience.....	-	5,750,629	-	(8,610,608)	(5,025,406)
Changes in assumptions.....	-	31,423,849	-	-	6,798,633
Benefit payments.....	(33,577,831)	(35,136,789)	(35,772,737)	(38,335,654)	(39,328,169)
Net change in total pension liability.....	18,018,336	57,113,119	31,018,736	15,603,674	27,008,303
Total pension liability - beginning.....	514,510,622	533,526,958	590,640,077	621,658,813	637,262,487
Total pension liability - ending (a).....	\$ 533,526,958	\$ 590,640,077	\$ 621,658,813	\$ 637,262,487	\$ 664,270,790
Plan fiduciary net position:					
Employer pension appropriation.....	\$ 21,880,170	\$ 21,837,654	\$ 24,701,289	\$ 26,141,731	\$ 27,448,818
Member contributions.....	8,983,678	8,903,043	9,204,174	8,451,653	9,311,730
Net investment income (loss).....	21,617,178	1,213,427	21,730,686	54,289,195	(8,094,089)
Administrative expenses.....	(358,770)	(355,898)	(367,634)	(381,389)	(347,172)
Retirement benefits and refunds.....	(33,577,831)	(35,136,789)	(35,772,737)	(38,335,654)	(39,328,169)
Net increase (decrease) in fiduciary net position.....	18,544,425	(3,538,664)	18,495,778	50,165,556	(11,608,882)
Fiduciary net position - beginning of year.....	295,923,280	314,467,705	310,929,041	329,424,819	379,590,375
Fiduciary net position - end of year (b).....	\$ 314,467,705	\$ 310,929,041	\$ 329,424,819	\$ 379,590,375	\$ 367,981,493
Net pension liability - ending (a)-(b).....	\$ 218,059,253	\$ 279,711,036	\$ 292,233,994	\$ 257,672,112	\$ 296,289,297
Plan fiduciary net position as a percentage of the total pension liability.....	58.94%	52.64%	52.99%	59.57%	55.40%
Covered payroll.....	\$ 80,555,739	\$ 89,520,851	\$ 92,654,081	\$ 93,396,659	\$ 95,896,286
Net pension liability as a percentage of covered payroll.....	271.94%	312.45%	315.40%	275.98%	308.97%

Note: this schedule is intended to present information for 10 years.

Until a 10-year trend is compiled, information is presented for those years for which information is available.

See notes to required supplementary information.

SCHEDULE OF CONTRIBUTIONS

<u>Year</u>	<u>Actuarially determined contribution</u>	<u>Contributions in relation to the actuarially determined contribution</u>	<u>Contribution deficiency (excess)</u>	<u>Covered payroll</u>	<u>Contributions as a percentage of covered payroll</u>
December 31, 2018	\$ 27,448,818	\$ (27,448,818)	\$ -	\$ 95,896,286	28.82%
December 31, 2017	26,141,731	(26,141,731)	-	93,366,659	28.00%
December 31, 2016	24,701,289	(24,701,289)	-	92,654,081	26.66%
December 31, 2015	21,837,654	(21,837,654)	-	89,520,851	24.39%
December 31, 2014	21,880,170	(21,880,170)	-	80,555,739	27.16%

Note: this schedule is intended to present information for 10 years.

Until a 10-year trend is compiled, information is presented for those years for which information is available.

See notes to required supplementary information.

SCHEDULE OF INVESTMENT RETURNS

<u>Year</u>	<u>Annual money-weighted rate of return, net of investment expense</u>
December 31, 2018.....	-2.29%
December 31, 2017.....	16.63%
December 31, 2016.....	7.81%
December 31, 2015.....	0.48%
December 31, 2014.....	7.81%

Note: this schedule is intended to present information for 10 years.
Until a 10-year trend is compiled, information is presented for those
years for which information is available.

See notes to required supplementary information.

NOTE A – CHANGES IN THE NET PENSION LIABILITY AND RELATED RATIOS

The Schedule of Changes in the Net Pension Liability and Related Ratios includes the detailed changes in the System's total pension liability, changes in the System's net position, and the ending net pension liability. It also demonstrates the plan's net position as a percentage of the total pension liability and the net pension liability as a percentage of covered payroll.

NOTE B – CONTRIBUTIONS

Governmental employers are required to pay an annual appropriation as established by PERAC. The total appropriation includes the amounts to pay the pension portion of each member's retirement allowance, an amount to amortize the actuarially determined unfunded liability to zero in accordance with the System's funding schedule, and additional appropriations in accordance with adopted early retirement incentive programs. The total appropriations are payable on July 1 and January 1. Employers may choose to pay the entire appropriation in July at a discounted rate. Accordingly, actual employer contributions may be less than the "total appropriation". The pension fund appropriations are allocated amongst employers based on covered payroll.

NOTE C – MONEY WEIGHTED RATE OF RETURN

The money weighted rate of return is calculated as the internal rate of return on pension plan investments, net of pension plan investment expense. A money weighted rate of return expresses investment performance, net of pension plan investment expense, adjusted for the changing amounts actually invested. Inputs to the money weighted rate of return calculation are determined monthly.

NOTE D - CHANGES IN ACTUARIAL ASSUMPTIONS AND PLAN PROVISIONSChanges in Assumptions

The following assumption change was reflected in the January 1, 2019 actuarial valuation:

- The investment return rate was changed from 7.75% to 7.65%.

Change in Plan Provisions

None

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Audit of Specific Elements, Accounts and Items of Financial Statements



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Independent Auditor's Report

To the Honorable Lowell Contributory Retirement Board
Lowell Contributory Retirement System
Lowell, Massachusetts

We have audited the accompanying schedule of employer allocations of the Lowell Contributory Retirement System (System) as of and for the year ended December 31, 2018, and the related notes. We have also audited the total for all entities of the columns titled net pension liability, total deferred outflows of resources, total deferred inflows of resources, total covered payroll, total pension expense and contributions included in the accompanying schedule of pension amounts by employer of the System's Pension Plan as of and for the year ended December 31, 2018, and the related notes.

Management's Responsibility for the Schedules

Management is responsible for the preparation and fair presentation of these schedules in accordance with accounting principles generally accepted in the United States of America; this includes the design, implementation, and maintenance of internal control relevant to the preparation and fair presentation of the schedules that are free from material misstatement, whether due to fraud or error.

Auditor's Responsibility

Our responsibility is to express opinions on the schedule of employer allocations and the specified column totals included in the schedule of pension amounts by employer based on our audit. We conducted our audit in accordance with auditing standards generally accepted in the United States of America. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the schedule of employer allocations and specified column totals included in the schedule of pension amounts by employer are free from material misstatement.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the schedule of employer allocations and the specified column totals included in the schedule of pension amounts by employer. The procedures selected depend on the auditor's judgment, including the assessment of the risks of material misstatement of the schedule of employer allocations and the specified column totals included in the schedule of pension amounts by employer, whether due to fraud or error. In making those risk assessments, the auditor considers internal control relevant to the entity's preparation and fair presentation of the schedule of employer allocations and the specified column totals included in the schedule of pension amounts by employer in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the entity's internal control. Accordingly, we express no such opinion. An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of significant accounting estimates made by management, as well as evaluating the overall presentation of the schedule of employer allocations and the specified column totals included in the schedule of pension amounts by employer.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinions.

Opinions

In our opinion, the schedules referred to above present fairly, in all material respects, the employer allocations and net pension liability, total deferred outflows of resources, total deferred inflows of resources, total covered payroll, total pension expense and contributions for the total of all participating entities for the Lowell Contributory Retirement System as of and for the year ended December 31, 2018, in accordance with accounting principles generally accepted in the United States of America.

Other Matter

We have audited, in accordance with auditing standards generally accepted in the United States of America, the financial statements of the Lowell Contributory Retirement System as of and for the year ended December 31, 2018, and our report thereon, dated October 8, 2019, expressed an unmodified opinion on those financial statements.

Restriction on Use

This report is intended solely for the information and use of the Lowell Contributory Retirement System management, the Lowell Contributory Retirement System employers and their auditors and is not intended to be and should not be used by anyone other than these specified parties.

Powers + Sullivan, LLC

October 8, 2019

SCHEDULE OF EMPLOYER ALLOCATIONS

FOR THE YEAR ENDED DECEMBER 31, 2018

<u>Employer</u>	<u>FY2019 Pension Fund Appropriation</u>	<u>Additional Appropriation E.R.I.</u>	<u>FY2019 Total Appropriation</u>	<u>Share of Net Pension Liability</u>	<u>Percent of Total Net Pension Liability</u>
City of Lowell.....	\$ 18,299,781	\$ 478,008	\$ 18,777,789	\$ 202,692,071	68.410%
City of Lowell - School Department.....	7,168,042	-	7,168,042	77,373,609	28.114%
Lowell Housing Authority.....	1,349,057	30,085	1,379,142	14,886,789	5.024%
Lowell Regional Transit Authority.....	110,402	13,443	123,845	1,336,828	0.451%
Total.....	\$ 26,927,282	\$ 521,536	\$ 27,448,818	\$ 296,289,297	100.000%

See notes to schedule of employer allocations and schedule of pension amounts by employer.

SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

FOR THE YEAR ENDED DECEMBER 31, 2018

	City of Lowell	City of Lowell -School Department	Lowell Regional Transit Authority	Lowell Housing Authority	Totals
Net Pension Liability					
Beginning net pension liability.....	\$ 175,578,551	\$ 64,795,131	\$ 1,042,000	\$ 16,256,430	\$ 257,672,112
Ending net pension liability.....	\$ 202,692,071	\$ 77,373,609	\$ 1,336,828	\$ 14,886,789	\$ 296,289,297
Deferred Outflows of Resources					
Differences between expected and actual experience.....	\$ 1,337,352	\$ 510,507	\$ 8,820	\$ 99,222	\$ 1,954,901
Net difference between projected and actual investment earnings on pension plan investments.....	12,789,660	4,882,194	84,352	939,341	18,695,547
Changes of assumptions.....	11,188,531	4,270,996	73,792	821,746	16,355,065
Changes in proportion and differences between employer contributions and proportionate share of contributions.....	1,334,342	2,085,040	114,068	508,157	4,041,607
Total Deferred Outflows of Resources.....	\$ 26,649,885	\$ 11,748,737	\$ 281,032	\$ 2,367,466	\$ 41,047,120
Deferred Inflows of Resources					
Differences between expected and actual experience.....	\$ 6,923,201	\$ 2,842,792	\$ 45,661	\$ 508,477	\$ 10,120,131
Changes in proportion and differences between employer contributions and proportionate share of contributions.....	26,490	718,889	165,247	3,130,981	4,041,607
Total Deferred Inflows of Resources.....	\$ 6,949,691	\$ 3,361,681	\$ 210,908	\$ 3,639,458	\$ 14,161,738
Pension Expense					
Proportionate share of plan pension expense.....	\$ 26,461,920	\$ 10,101,307	\$ 174,526	\$ 1,943,508	\$ 38,681,261
Net amortization of deferred amounts from changes in proportion and differences between employer contributions and proportionate share of contributions.....	474,412	145,097	(17,532)	(601,977)	-
Total Employer Pension Expense.....	\$ 26,936,332	\$ 10,246,404	\$ 156,994	\$ 1,341,531	\$ 38,681,261
Contributions					
Statutory required contribution.....	\$ 18,777,789	\$ 7,168,042	\$ 123,845	\$ 1,379,142	\$ 27,448,818
Contribution in relation to statutory required contribution.....	(18,777,789)	(7,168,042)	(123,845)	(1,379,142)	(27,448,818)
Contribution deficiency(excess).....	\$ -	\$ -	\$ -	\$ -	\$ -
Contributions as a percentage of covered payroll.....	28.98%	27.74%	30.63%	28.41%	28.62%
Deferred Outflows/(Inflows) Recognized in Future Pension Expense					
June 30, 2020.....	\$ 8,684,405	\$ 3,279,097	\$ 36,618	\$ 1,008	\$ 12,001,128
June 30, 2021.....	5,434,387	2,038,466	15,181	(237,692)	7,250,342
June 30, 2022.....	839,424	592,147	(11,817)	(383,976)	1,035,778
June 30, 2023.....	4,522,351	2,017,673	12,683	(101,277)	6,451,430
June 30, 2024.....	206,977	440,057	16,606	(528,682)	134,958
Thereafter.....	12,650	19,616	853	(21,373)	11,746
Total Deferred Outflows/(Inflows) Recognized in Future Pension Expense.....	\$ 19,700,194	\$ 8,387,056	\$ 70,124	\$ (1,271,992)	\$ 26,885,382
Discount Rate Sensitivity					
1% decrease (6.65%).....	\$ 253,789,644	\$ 96,879,077	\$ 1,673,835	\$ 18,639,668	\$ 370,982,224
Current discount rate (7.65%).....	\$ 202,692,071	\$ 77,373,609	\$ 1,336,828	\$ 14,886,789	\$ 296,289,297
1% increase (8.65%).....	\$ 159,452,549	\$ 60,867,794	\$ 1,051,647	\$ 11,711,047	\$ 233,083,037
Covered Payroll.....	\$ 64,798,036	\$ 25,839,092	\$ 404,329	\$ 4,854,829	\$ 95,896,286

See notes to schedule of employer allocations and schedule of pension amounts by employer.

NOTE 1 – Plan Description

The Lowell Contributory Retirement System (System) is a multiple-employer, cost-sharing, contributory defined benefit pension plan covering all employees of the governmental member units deemed eligible by the Lowell Contributory Retirement Board (Board), with the exception of school department employees who serve in a teaching capacity. The pensions of such school employees are administered by the Commonwealth of Massachusetts' Teachers Retirement System. Membership in the System is mandatory immediately upon the commencement of employment for all permanent employees working a minimum of 20 hours per week. As of January 1, 2017, the System had 3 participating employers.

The System is governed by a five-member board comprised of the City Auditor (ex-officio), two elected members, a member appointed by the City Manager and a member appointed by the other four members.

The System is component unit of the City of Lowell, is presented using the accrual basis of accounting and is reported as a pension trust fund in the fiduciary fund financial statements. That report may be obtained by contacting the City Auditor located at 375 Merrimack Street, Lowell, Massachusetts, 01852.

The System also issues a publically available unaudited financial report in accordance with the guidelines established by the Commonwealth's PERAC. That report may be obtained by contacting the System located at 375 Merrimack Street, Lowell, Massachusetts, 01852.

NOTE 2 – Schedule of Employer Allocations

Governmental Accounting Standards Board (GASB) Statement #68 requires employers participating in a cost-sharing pension plan to recognize pension liabilities as employees provide services to the government and earn their pension benefits. For the first time, employers participating in cost-sharing plans are required to recognize their proportionate share of the plan's collective pension amounts for all benefits provided through the plan including the net pension liability, deferred outflows of resources, deferred inflows of resources, pension expense, and contributions.

GASB Statement #68 requires the allocation of the collective pension amounts be consistent with the manner in which contributions to the plan are determined. As permissible under GASB Statement #68, The Schedule of Employer Allocations is used to demonstrate the allocation of Lowell Contributory Retirement System's collective pension amounts.

Massachusetts General Law (MGL) Chapter 32 Section 22 Paragraph 7c dictates that Massachusetts cost sharing defined benefit pension plans allocate the annual required pension fund appropriation to employer units based on their proportionate share of the aggregate of the annual rates of regular compensation of all members in service of the system who are employees of any government unit at the close of business on the September 30th immediately preceding the fiscal year unless another methodology is approved by the Board. The member unit appropriations were based on the proportionate aggregate rates of regular compensation as of the close of business on September 30. The allocation of the net pension liability, deferred outflows, and pension expense was allocated based on the proportionate aggregate rates of regular compensation as of the close of business on September 30 and included the Early Retirement Incentive attributable to each member unit.

When a member unit accepts an Early Retirement Incentive Program (E.R.I. or ERIP), PERAC completes an analysis of the costs and liabilities attributable to the additional benefits payable in accordance with the ERIP. The accrued liability for the members who accept the ERIP as retirees including the ERIP less the accrued liability for the members as active employees excluding the ERIP represents the increase in accrued liability due to the

ERIP. The net increase is amortized for each member unit accepting the ERIP and is separately identified in the system's funding schedule. The 2002 ERIP is being amortized on a straight-line basis ending in fiscal 2017. The 2003 ERIP is being amortized on a straight-line basis ending in fiscal 2020.

NOTE 3 – Schedule of Pension Amounts by Employer

The Schedule of Pension Amounts by Employer presents the net pension liability, the various categories of deferred outflows of resources and deferred inflows of resources, pension expense, and contributions for all participating employers including differences between expected and actual economic experience; differences between projected and actual investment earnings, net; and changes of assumptions. Additionally, the changes in proportion and differences between employer contributions and proportionate share of contributions are presented in accordance with GASB statements.

Changes in Assumptions

The following assumption change was reflected in the January 1, 2019 actuarial valuation:

- The investment return rate was changed from 7.75% to 7.65%.

Change in Plan Provisions

None

ERIP. The net increase is amortized for each member unit accepting the ERIP and is separately identified in the system's funding schedule. The 2002 ERIP is being amortized on a straight-line basis ending in fiscal 2017. The 2003 ERIP is being amortized on a straight-line basis ending in fiscal 2020.

NOTE 3 – Schedule of Pension Amounts by Employer

The Schedule of Pension Amounts by Employer presents the net pension liability, the various categories of deferred outflows of resources and deferred inflows of resources, pension expense, and contributions for all participating employers including differences between expected and actual economic experience; differences between projected and actual investment earnings, net; and changes of assumptions. Additionally, the changes in proportion and differences between employer contributions and proportionate share of contributions are presented in accordance with GASB statements.

Changes in Assumptions

The following assumption change was reflected in the January 1, 2019 actuarial valuation:

- The investment return rate was changed from 7.75% to 7.65%.

Change in Plan Provisions

None

COMMONWEALTH OF MASSACHUSETTS

Public Employee Retirement Administration Commission

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PERAC

COMMONWEALTH OF MASSACHUSETTS | PUBLIC EMPLOYEE RETIREMENT ADMINISTRATION COMMISSION

PHILIP Y. BROWN, ESQ., *Chair*

WILLIAM T. KEEFE, *Executive Director*

Auditor DIANA DIZOGLIO | KATHLEEN M. FALLON | KATE FITZPATRICK | JAMES J. GUIDO | RICHARD MACKINNON, JR. | JENNIFER F. SULLIVAN, ESQ.

September 1, 2026

William Desrosiers, Chairperson
Lowell Retirement Board
City Hall, Room 3
375 Merrimack Street
Lowell, MA 01852

REFERENCE: Report of the Examination of the Lowell Retirement Board for the five-year period from January 1, 2018 through December 31, 2022.

Dear Chairperson Desrosiers:

The Public Employee Retirement Administration Commission has completed a follow-up review of the findings and recommendations contained in its audit report of the Lowell Retirement Board for the period referenced above. We conduct these visits as a regular part of the oversight process to ensure the timely implementation of the recommendations contained in that report. The examination also addressed the other matters discussed at the completion of the audit. The results are as follows:

1. The Audit Report cited a finding that seven of the retirement allowances tested needed to be recalculated for various reasons.

Follow-up Result: Corrections for the retirement allowance calculations noted in the finding were provided and the requisite adjustments have been made. Payments including interest were made for back pay and overages have been reduced accordingly. The Board voted to waive the overpayments. This issue is resolved.

2. The Audit Report cited a finding that the Board did not post the opening or interview candidates for the Fifth Member position in 2018, 2021 and 2024 as set forth in PERAC Memo #28/2017.

Follow-up Result: The current term of the Fifth Member ends in April 2027. This issue will be monitored.

The additional matters discussed have been reviewed and have been mostly resolved.



September 1, 2026

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The Commission wishes to acknowledge the effort demonstrated by the staff of the Lowell Retirement Board to correct most of the issues from the most recent examination of the system.

Thank you for your continued cooperation in this matter.

Sincerely,



William T. Keefe
Executive Director

WTK/cms

cc: Lowell Retirement Board Members