



## **Actuarial Valuation Report**

For Lenawee County Board of Commissioners  
Retirement Income Plan

Plan Year: January 1, 2021 through December 31, 2021

Measurement Date: January 1, 2021

Contract Number: PF 473

# Table of Contents

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Actuarial Certification.....	1
Executive Summary .....	2
Contribution Under Alternative Unfunded Accrued Liability Amortization Periods .....	3
Measures of Plan Liabilities and Assets.....	4
Funded Status Reconciliation.....	6
Contribution Breakdown .....	7
Contribution History .....	8
Schedule of Funding Progress.....	9
Benefit Payment Forecast.....	10
Asset Reconciliation.....	11
Actuarial Value of Assets.....	12
Plan Assets .....	13
Participant Summary and Demographic Statistics .....	14
Participant Reconciliation .....	15
Age / Service Distribution.....	17
Risk Assessment.....	18
Present Value of Accumulated Plan Benefits.....	19
Actuarial Assumptions .....	20
Actuarial Cost and Asset Valuation Methods .....	21
Plan Provision Summary .....	22



# Actuarial Certification

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We have reviewed the calculations performed for this report. They are based on the participant data provided by Lenawee County Board of Commissioners, the plan provisions summarized herein, and asset information provided by MassMutual. While we have not independently audited the participant data, it has been checked for reasonableness and we believe it is consistent and comparable with data used in prior valuations.

Each prescribed assumption was applied in accordance with applicable law and regulations. Each other actuarial assumption is reasonable, in our opinion, taking into account the experience of the plan and reasonable expectations. All calculations were performed using generally accepted actuarial principles and procedures. To the best of our knowledge, the results presented in this report are complete and accurate and are consistent with all applicable laws.

We have no relationship with this plan or the plan sponsor which presents a conflict of interest or may appear to impair the objectivity of my work.

We meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinion contained herein.

The information contained within this report was prepared in connection with the actuarial valuation of the Plan. Use of this report for any other purpose may not be appropriate and may result in mistaken conclusions due to failure to understand applicable assumptions, methodologies, or inapplicability of the report for that purpose. No one may make any representations or warranties based on any statement or conclusions contained in this report without the written consent of Empower Retirement.


IRS Circular 230 Disclosure: IRS regulations require us to notify you that this communication was not intended or written to be used, and cannot be used, by any taxpayer for the purpose of avoiding penalties the IRS might impose on that taxpayer.



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## Executive Summary

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This Actuarial Valuation Report is submitted in conjunction with the January 1, 2021 plan anniversary and reflects the funded position of the plan as of that date. This Executive Summary below shows the determination of your contribution requirement and other valuation results.

The 2021 recommended employer contribution is equal to \$1,649,656 compared to \$1,531,364 for 2020. The contribution is the sum of the normal cost and the amortization of the Unfunded Actuarial Accrued Liability, adjusted with interest at the valuation interest rate to the end of the year, and then reduced by expected employee contributions.

	<u>2021</u>	<u>2020</u>
1. Actuarial Accrued Liability	\$94,126,330	\$90,792,951
2. Actuarial Value of Assets	75,593,951	73,506,701
3. Unfunded Actuarial Accrued Liability: 1.-2.	<u>\$18,532,379</u>	<u>\$17,286,250</u>
4. Normal Cost	297,146	320,738
5. 20-Year Amortization of Unfunded Liability	1,634,882	1,524,953
6. Annual Expenses	44,000	44,000
7. Total Annual Cost: (4) + (5)	<u>1,976,028</u>	<u>1,889,691</u>
8. Estimated Employee Contributions	382,157	410,112
9. <b>Employer Contribution with Interest: 7.-8. adjusted with interest</b>	<b>\$1,649,656</b>	<b>\$1,531,364</b>
10. Valuation Interest Rate	7.00%	7.00%
11. Total Number of Participants		
a. Active	100	114
b. Terminated Vested Participants	57	56
c. Retired Participants and Beneficiaries	352	344
d. Opt-Out Employees	24	25
e. Disabled	4	6
f. Total Participants	<u>537</u>	<u>545</u>
12. Valuation Payroll	3,821,571	4,101,123
13. Total Payroll	5,551,430	6,123,795
14. Normal Cost as a Percent of Valuation Payroll	7.78%	7.82%
15. Contribution as a Percent of Valuation Payroll	43.17%	37.34%
16. Market Value of Assets	\$79,232,630	\$73,754,018
17. Funded Ratio - Actuarial Value of Assets Basis	80.31%	80.96%
18. Funded Ratio - Market Value of Assets Basis	84.18%	81.23%



## Contribution Under Alternative Unfunded Accrued Liability Amortization Periods

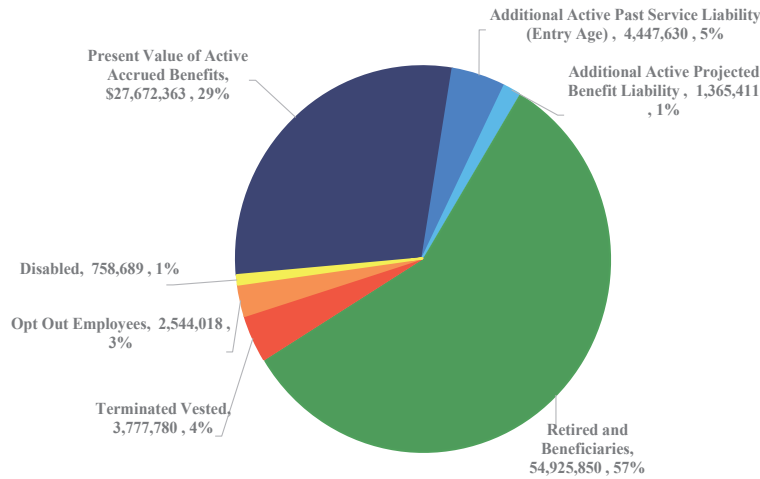
Amortization Period in Years	10	15	19	20
1. Unfunded Actuarial Accrued Liability (UAL)	\$18,532,379	\$18,532,379	\$18,532,379	\$18,532,379
2. Normal Cost	297,146	297,146	297,146	297,146
3. Amortization of Unfunded Liability	2,465,974	1,901,639	1,675,758	1,634,882
4. Annual Expenses	44,000	44,000	44,000	44,000
5. Total Annual Cost: (2) + (3) + (4)	\$2,807,120	\$2,242,785	\$2,016,904	\$1,976,028
6. Estimated Employee Contributions	382,157	382,157	382,157	382,157
7. Interest at the assumed rate of return on (5) - (6)	84,874	65,122	57,216	55,785
8. <b>Annual Employer Cost with Interest: (5) - (6) + (7), but not less than zero</b>	<b>\$2,509,837</b>	<b>\$1,925,750</b>	<b>\$1,691,963</b>	<b>\$1,649,656</b>



# Measures of Plan Liabilities and Assets

	<b>Participant Count</b>	<b>Present Value of Accrued Benefits</b>	<b>Actuarial Accrued Liability</b>	<b>Present Value Future Benefits</b>
Active	100	\$27,672,363	\$32,119,993	\$33,485,404
Terminated Vested	57	3,777,780	3,777,780	3,777,780
Retired and Beneficiaries	352	54,925,850	54,925,850	54,925,850
Disabled	4	758,689	758,689	758,689
Opt-Out Actives	24	2,544,018	2,544,018	2,544,018
<b>Total</b>	<b>537</b>	<b>\$89,678,700</b>	<b>\$94,126,330</b>	<b>\$95,491,741</b>

Actuarial Value of Assets: \$75,593,951  
 Market Value of Assets: \$79,232,630



Present Value of Active Accrued Benefits	\$27,672,363	29.0%
Additional Active Past Service Liability (Entry Age)	4,447,630	4.7%
Additional Active Projected Benefit Liability (Present Value of Future Benefits)	1,365,411	1.4%
Retired and beneficiaries	54,925,850	57.5%
Terminated Vested	3,777,780	4.0%
Disabled	758,689	2.7%
Opt-Out Actives	2,544,018	0.8%
<b>Total</b>	<b>\$95,491,741</b>	<b>100.0%</b>



# Measures of Plan Liabilities and Assets (cont.)

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## **Liability Measurement**

Before comparing and contrasting different measures of Plan liability, it is first necessary to briefly discuss how liability is measured. In order to measure any pension plan liability, assumptions must be made pertaining to what may happen in the future. Two important assumptions are the interest rate and the mortality assumptions.

The interest assumption determines the time-value of money. In other words, it determines how much is needed today to grow to a given amount at some time in the future. A pension plan's liability consists of promises to pay benefits at some time in the future, so a measure of that liability is how much money is needed today to provide for those promised benefits in the future.

The mortality assumption predicts how long a participant will live. Since retirement benefits are generally paid for the participant's life, the mortality assumption predicts how long retirement benefits will be paid.

For some purposes, the value of annuities that have been purchased for non-highly compensated employees must be included in the liability measurement.

## **Asset Measurement**

Actuarial Value of Assets is the asset value used in the determination of the plan's contribution requirements, maximum tax-deductible limits and the plan's funded status. It is either equal to the Market Value of Assets or an average of market values. Please see the Funding Methods section of this Report for a description of the method used to determine the Actuarial Value of Assets.

Either value includes contributions that have been made after the valuation date for the prior Plan Year.

## **Present Value of Future Benefits**

This is the liability associated with the promise to pay the benefits that participants will be entitled to assuming they work until retirement. Of the four measures of liability discussed here, this is typically the largest because it is based on projected benefits. In other words, it includes not only benefits that have been accrued to date, but also benefits that are expected to be earned in the future. The interest and mortality assumptions are chosen by the plan actuary. The interest assumption is a reasonable long-term expectation of future asset returns given how plan assets are invested, and the mortality assumption is based on a standard, current mortality table.

## **Actuarial Accrued Liability**

This measure of liability is closely related to the Value of Future Benefits. Briefly, it is the portion of the Value of Future Benefits that the Actuarial Cost Method attributes to past service. In other words, it is the portion of the Value of Future Benefits that is deemed to be accrued. The actuarial assumptions used here are the same as those used in the Present Value of Future Benefits.

## **Present Value of Accrued Benefits – Accumulated Benefit Liabilities**

This liability measure is based on accrued benefits. It does not take into account future salary and service increases. The interest assumption is generally the expected long-term return on the plan's assets.

## Funded Status Reconciliation

	<b>Actuarial Accrued Liability</b>	<b>Actuarial Value of Assets</b>	<b>Unfunded Actuarial Accrued Liability</b>
Amount as of January 1, 2020	\$90,792,951	\$73,506,701	\$ 17,286,250
Normal Cost	320,738	n/a	320,738
Benefit Payments	(5,499,988)	(5,499,988)	0
Expenses	0	(44,450)	(44,450)
Contributions	n/a	2,278,998	(2,278,998)
Expected Growth/Return	6,185,459	4,951,414	1,234,045
Expected Amount as of January 1, 2021	\$91,799,160	\$75,192,675	\$16,606,485
Gains/Loss	261,396	401,276	(139,880)
Actual amount as of January 1, 2021 before plan provision or assumption changes	92,060,556	75,593,951	16,466,605
Assumption Change	2,065,774	n/a	2,065,774
Plan Provision Change	--	n/a	--
Actual amount as of January 1, 2021	\$94,126,330	\$75,593,951	\$18,532,379



## Contribution Breakdown

	<b>01 Sheriff- Command</b>	<b>02 Sheriff- Deputy</b>	<b>04 G.E.I.C Union</b>	<b>05 County Non-Union</b>	<b>06 Steelworkers Union</b>	<b>61 Drain Commission</b>	<b>All Groups</b>
Active Employees	13	23	20	41	1	2	100
Average Age	47.87	52.43	56.13	57.26	57.01	55.14	54.53
Annual Salary (excluding employees over NRA)	\$1,048,872	\$1,301,722	\$462,721	\$954,159	\$0	\$54,097	\$3,821,571
Actuarial Accrued Liability (Active Employees)	\$5,185,389	\$8,355,154	\$4,769,072	\$13,103,539	\$198,849	\$507,990	\$32,119,992
Allocated Actuarial Value of Plan Assets (Active Employees)	2,193,558	3,534,453	2,017,445	5,543,147	84,118	214,893	13,587,614
Unfunded Actuarial Accrued Liability (Active Employees)	2,991,831	4,820,701	2,751,627	7,560,392	114,730	293,097	18,532,378
Entry Age Normal Cost	79,144	117,651	31,427	65,412	0	3,511	297,145
Annual Expenses	6,552	11,138	5,271	19,759	532	747	44,000
Amortization Payment (20 Years)	263,932	425,271	242,742	666,960	10,121	25,856	1,634,882
Total Annual Cost	\$349,628	\$554,060	\$279,441	\$752,132	\$10,653	\$30,114	\$1,976,027
Estimated Employee Contribution (% of Salary)	104,887	130,172	46,272	95,416	0	5,410	382,157
(% of Salary)	(10.00%)	(10.00%)	(10.00%)	(10.00%)	(10.00%)	(10.00%)	(10.00%)
Employer Annual Cost w/ Interest (% of Salary)	\$253,307	\$438,724	\$241,330	\$679,701	\$11,026	\$25,568	\$1,649,656
	(24.15%)	(33.70%)	(52.15%)	(71.24%)	N/A	(47.26%)	(43.17%)

# Contribution History

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The following contributions were made from January 1, 2020 through December 31, 2020.

<u>Date</u>	<u>Amount</u>	<u>Plan Year</u>	<u>Plan Year's Interest Credited</u>
1/2/2020 <sup>(1)</sup>	431,232	2019	30,186
3/24/2020 <sup>(1)</sup>	386,719	2020	20,989
6/29/2020 <sup>(1)</sup>	429,546	2020	15,322
10/5/2020 <sup>(1)</sup>	373,565	2020	6,305
1/5/2021 <sup>(1)</sup>	450,536	2020	-
1/2/2020 <sup>(2)</sup>	158,226	2019	11,076
3/27/2020 <sup>(2)</sup>	140,418	2020	7,540
7/13/2020 <sup>(2)</sup>	153,065	2020	5,049
9/29/2020 <sup>(2)</sup>	130,660	2020	2,355
12/30/2020 <sup>(2)</sup>	156,870	2020	60
	<u>2,810,835</u>		<u>98,883</u>

<sup>(1)</sup> Employer contributions

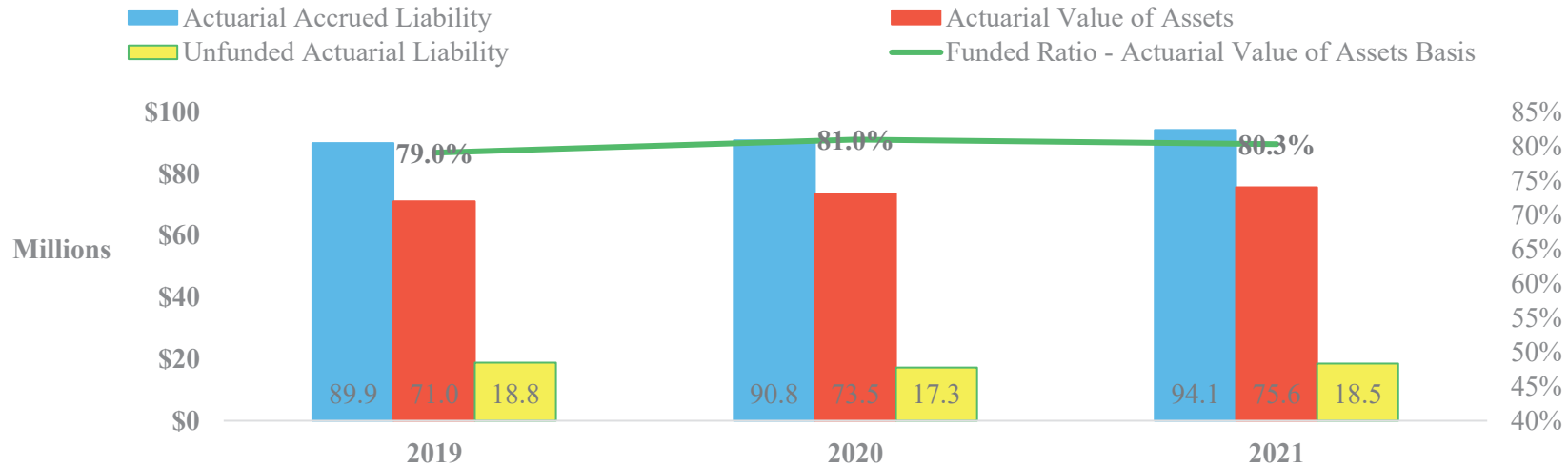
<sup>(2)</sup> Employee contributions

2019 Employer Contributions	431,232
2019 Employee Contributions	158,226
2020 Employer Contributions	1,640,364
2020 Employee Contributions	581,013
	<u>2,810,835</u>



# Schedule of Funding Progress

## Funded Position

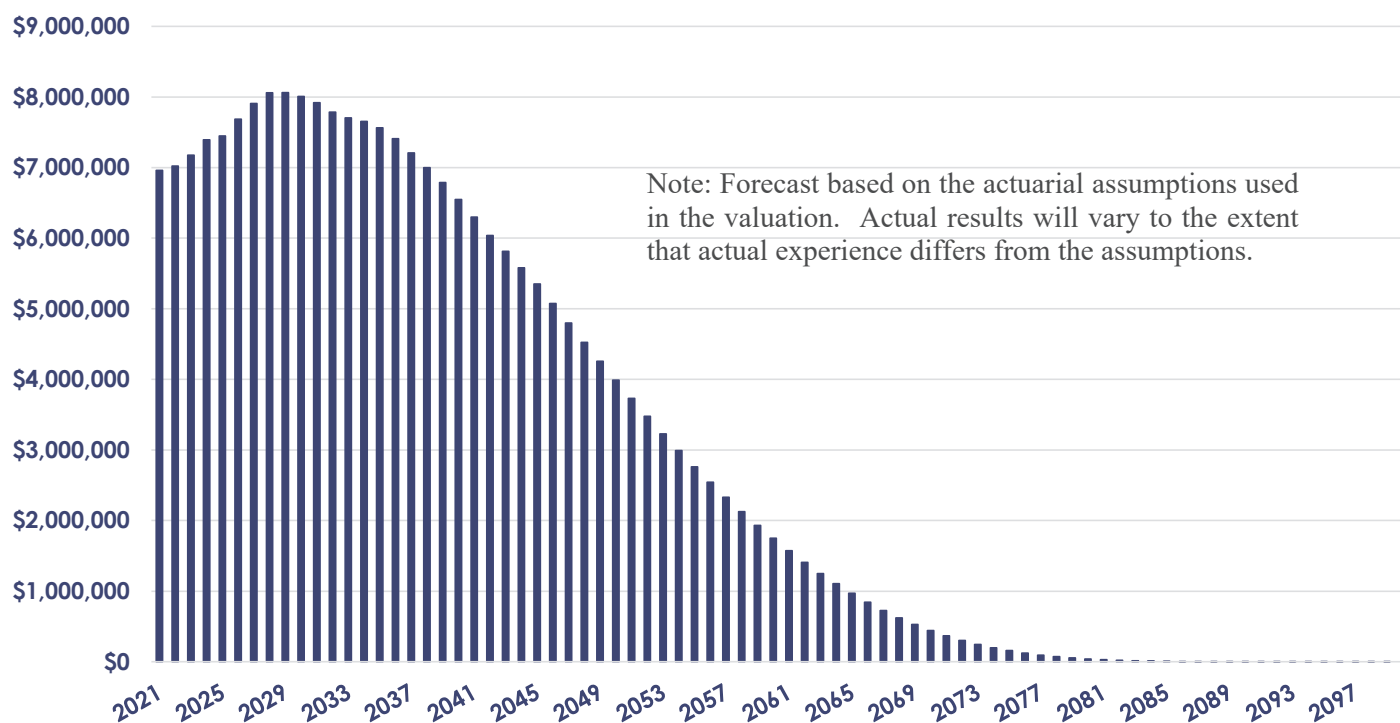


Valuation Date	Actuarial Value of Assets	Actuarial Accrued Liability (AAL)	Unfunded AAL (UAAL)	Funded Ratio	Covered Payroll	UAAL as a Percentage of Covered Payroll	Employer Contribution	Contribution as a Percentage of Covered Payroll
1/1/2021	\$75,593,951	\$94,126,330	\$18,532,379	80.3%	\$3,821,571	484.94%	\$1,649,656	43.2%
1/1/2020	73,506,701	90,792,951	17,286,250	81.0%	4,101,123	421.50%	1,531,364	37.3%
1/1/2019	71,026,516	89,872,893	18,846,377	79.0%	4,380,030	430.28%	1,666,866	38.1%



For plan sponsor use only

# Benefit Payment Forecast



Year	Amount	Year	Amount	Year	Amount	Year	Amount
2021	\$6,959,536	2041	\$6,300,472	2061	\$1,573,823	2081	\$29,302
2022	7,021,668	2042	6,036,321	2062	1,407,922	2082	20,826
2023	7,176,327	2043	5,813,572	2063	1,251,611	2083	14,484
2024	7,394,669	2044	5,581,854	2064	1,105,151	2084	9,843
2025	7,450,040	2045	5,350,267	2065	968,805	2085	6,527
2026	7,685,567	2046	5,075,201	2066	842,764	2086	4,216
2027	7,908,444	2047	4,800,227	2067	727,161	2087	2,650
2028	8,060,188	2048	4,527,040	2068	622,027	2088	1,618
2029	8,061,668	2049	4,256,928	2069	527,280	2089	959
2030	8,009,120	2050	3,991,158	2070	442,730	2090	552
2031	7,918,721	2051	3,730,895	2071	368,033	2091	308
2032	7,786,793	2052	3,477,170	2072	302,727	2092	167
2033	7,702,776	2053	3,230,848	2073	246,260	2093	89
2034	7,654,648	2054	2,992,670	2074	198,003	2094	46
2035	7,563,183	2055	2,762,992	2075	157,278	2095	23
2036	7,410,282	2056	2,542,116	2076	123,351	2096	12
2037	7,207,541	2057	2,330,219	2077	95,458	2097	6
2038	6,999,255	2058	2,127,385	2078	72,828	2098	3
2039	6,788,093	2059	1,933,672	2079	54,709	2099	1
2040	6,546,770	2060	1,749,124	2080	40,409	2100	1

## Asset Reconciliation

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	<b>Actuarial Value</b>	<b>Market Value</b>
Assets as of January 1, 2020	\$73,506,701	\$73,754,018
Contributions	1,770,842	2,360,299
Investment Income	5,410,311	8,212,216
Benefit Payments	(5,499,988)	(5,499,988)
Expenses	(44,450)	(44,450)
Assets as of January 1, 2021 before receivable	\$75,143,415	\$78,782,094 <sup>(1)</sup>
Contribution Receivable	450,536	450,536
Assets as of January 1, 2021	\$75,593,951	\$79,232,630
Estimated Rate of Return <sup>(2)</sup>	7.55%	11.38%

<sup>(1)</sup> Cash basis

<sup>(2)</sup> Contributions assumed to be made mid-year.

# Actuarial Value of Assets

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The actuarial value of assets is the expected value, adjusted so that gains and losses are recognized over 5-year periods. Actuarial Value is not greater than 110% of the Market Value, or less than 90% of the Market Value.

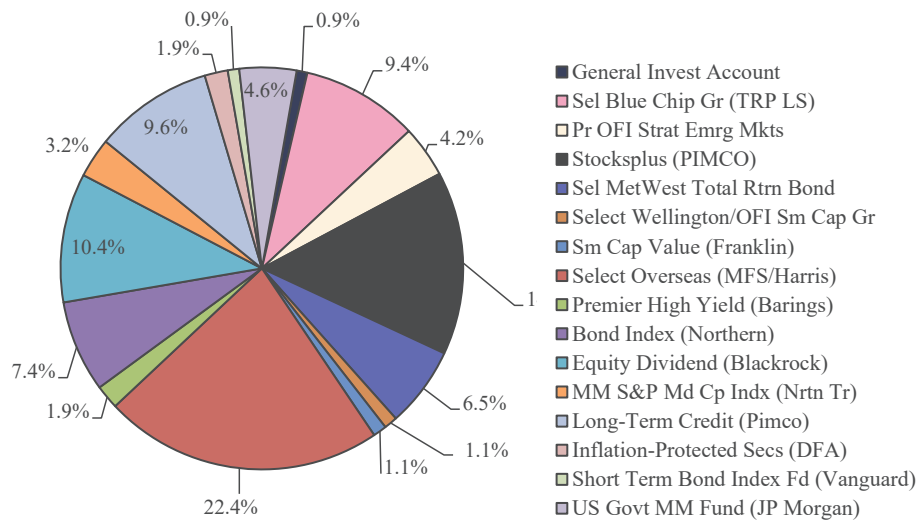
1.	Market value of assets as of January 1, 2020								\$73,754,018
2.	Cash flow for 2020 plan year								
a.	Contributions								2,360,299
b.	Benefit payments and expenses								(5,544,438)
c.	Net Cash Flow: (a) + (b)								(3,184,139)
3.	Interest on Cash Flow								
a.	Interest on (1) at 7%								5,162,781
b.	Interest on (2)(a) at 7%								98,883
c.	Interest on (2)(b) at 7%								(194,055)
d.	Total Interest: (a) + (b) + (c)								5,067,609
4.	Expected market value of assets as of January 1, 2021: (1) + (2)(c) + (3)(d)								75,637,487
5.	Actual market value of assets as of January 1, 2021								78,782,094
6.	(Gain)/Loss: (4) - (5)								(3,144,607)
7.	Deferred (Gain)/Loss:								
a.		2020/2021	(3,144,607)	x	80%	=	(2,515,686)		
b.		2019/2020	(8,477,131)	x	60%	=	(5,086,279)		
c.		2018/2019	9,908,216	x	40%	=	3,963,286		
d.		2017/2018	0	x	20%	=	0		
							Total deferred: (a) + (b) + (c) + (d)		(3,638,679)
8.	Preliminary actuarial value of assets as of January 1, 2021: (5) + 7(e)								75,143,415
9.	90% of January 1, 2021 market value of assets								70,903,885
10.	110% of January 1, 2021 market value of assets								86,660,304
11.	Actuarial value of assets as of January 1, 2021: Lesser of (8) and (10), but not less than (9)								\$75,143,415
12.	Contributions receivable								450,536
13.	Actuarial value of assets as of January 1, 2021: (11) + (12)								<u>\$75,593,951</u>



# Plan Assets

	<u>Market Value</u>	<u>Percent of Total</u>
General Invest Account	\$612,062	0.8%
Sel Blue Chip Gr (TRP LS)	7,401,229	9.4%
Pr OFI Strat Emrg Mkts	3,288,975	4.2%
Stocksplus (PIMCO)	11,625,193	14.7%
Sel MetWest Total Rtrn Bond	5,108,498	6.5%
Select Wellington/OFI Sm Cap Gr	843,647	1.1%
Sm Cap Value (Franklin)	852,947	1.1%
Select Overseas (MFS/Harris)	17,670,860	22.4%
Premier High Yield (Barings)	1,526,037	1.9%
Bond Index (Northern)	5,807,437	7.4%
Equity Dividend (Blackrock)	8,205,415	10.4%
MM S&P Md Cp Indx (Nrtm Tr)	2,513,863	3.2%
Long-Term Credit (Pimco)	7,530,458	9.6%
Inflation-Protected Secs (DFA)	1,463,642	1.9%
]Short Term Bond Index Fd (Vanguard)	723,912	0.9%
US Govt MM Fund (JP Morgan)	3,607,919	4.6%
<b>Subtotal</b>	<b>\$78,782,094</b>	<b>100.0%</b>
Contribution receivable	450,536	
<b>Total</b>	<b>\$79,232,630</b>	

**Market Value of Assets**



## Participant Summary and Demographic Statistics

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<b>Classification of Funded Participants as of January 1,</b>	<b>2021</b>	<b>2020</b>
Actives	100	114
Terminated Vested	57	56
Retired	352	344
Disabled	4	6
Opt-out Active Employees	24	25
<b>Total Participants</b>	<b>537</b>	<b>545</b>

### **Demographic Statistics as of January 1,**

#### Active Participants

Average Age	54.7	54.4
Average Service	25.9	25.9
Average Compensation	\$55,514	\$53,718

#### Terminated Vested Participants

Average Age	56.2	56.0
Average Annual Benefit	\$9,109	\$8,577

#### Retired Participants

Average Age	77.5	76.8
Average Annual Benefit	\$16,163	\$15,238





## Participant Reconciliation

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	<u>Active</u>	<u>Vested Term</u>	<u>Retired &amp; Beneficiaries &amp; Disabled</u>	<u>Opt Outs</u>	<u>Total</u>
<b>1. Number of Participants as of January 1, 2020</b>	114	56	350	25	545
<b>2. Changes in status during the year:</b>					
New Participants					
Non-Vested Terminations					
Vested Terminations	(3)	4		(1)	
Rehired	1		(1)		
Participants who Retired	(12)	(3)	15		
Death with Beneficiary					
Death without a beneficiary			(9)		(9)
Cashed Out					
Lump Sum Cashout					
New Alt Payee			1		1
Data Correction					
<b>3. Number of Participants as of January 1, 2021</b>	<u>100</u>	<u>57</u>	<u>356</u>	<u>24</u>	<u>537</u>

## Membership History

<u>Year</u>	<u>Active</u>	<u>Vested Term</u>	<u>Retired &amp; Beneficiaries &amp; Disabled</u>	<u>Opt Outs</u>	<u>Total</u>
2021	100	57	356	24	537
2020	114	56	350	25	545
2019	124	55	545	26	550

# Age / Service Distribution

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## Summary of Active Participants

	Years of credited service										<u>Total</u>
	<u>Under 1</u>	<u>1 to 4</u>	<u>5 to 9</u>	<u>10 to 14</u>	<u>15 to 19</u>	<u>20 to 24</u>	<u>25 to 29</u>	<u>30 to 34</u>	<u>35 to 39</u>	<u>40 &amp; up</u>	
<b>Attained</b>											
<b>Age</b>	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.
<b>Under 25</b>	0	0	0	0	0	0	0	0	0	0	0
<b>25 to 29</b>	0	0	0	0	0	0	0	0	0	0	0
<b>30 to 34</b>	0	0	0	0	0	0	0	0	0	0	0
<b>35 to 39</b>	0	0	0	0	0	0	0	0	0	0	0
<b>40 to 44</b>	0	0	0	0	4	4	0	0	0	0	8
<b>45 to 49</b>	0	0	0	0	4	12	1	0	0	0	17
<b>50 to 54</b>	0	0	0	0	4	12	7	7	0	0	30
<b>55 to 59</b>	0	0	0	0	2	6	4	5	4	0	21
<b>60 to 64</b>	0	0	0	0	2	4	4	3	2	4	19
<b>65 to 69</b>	0	0	0	0	0	1	0	1	1	1	4
<b>70 &amp; up</b>	0	0	0	0	0	1	0	0	0	0	1
<b>Total</b>	0	0	0	0	16	40	16	16	7	5	100



# Risk Assessment

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The results shown in this report are dependent upon assumptions used for measuring the assets and liabilities. The plan's future financial condition may be significantly different if assets and liabilities are measured under other assumptions and will be ultimately determined by actual plan experience. The plan's future financial condition is subject to certain risks, including:

**Investment risk and contribution risk.** For example, if assets do not perform as well as assumed or future contributions are lower than assumed, the funded status may be lower.

**Demographic/longevity risk.** For example, if participants live longer than assumed, liabilities may be higher, and the funded status would decrease.

<u>Valuation Date</u>	<u>Actives Per Retiree</u>	<u>Ratio of Actuarial Value of Assets to Payroll</u>	<u>Ratio of AAL to Payroll</u>	<u>Benefit Payments as a Percentage of Assets</u>	<u>Benefits less Contributions</u>	<u>Benefits Less Contributions as a Percentage of Assets</u>
1/1/2021	.28	19.78	24.63	7.46%	3,139,689	4.26%
1/1/2020	.33	17.92	22.14	7.53%	3,107,313	4.37%

## Present Value of Accumulated Plan Benefits

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Reporting Date	January 1, 2021
Present Value of Vested Accumulated Plan Benefits	
For Participants Receiving Benefits	\$55,684,539
For Terminated Vested Participants	3,777,780
For Other Vested Participants	24,555,092
Present Value of Vested Accumulated Plan Benefits	<u>\$84,017,411</u>
Present Value of Non-vested Accumulated Plan Benefits	<u>5,661,289</u>
Present Value of Accumulated Plan Benefits	<u>\$89,678,700</u>
Present Value of Accumulated Plan Benefits as of January 1, 2020	\$85,864,829
Increase Due to Benefit Accruals	1,121,669
Decrease Due to Disbursements	(5,499,988)
Increase Due to Passage of Time at 7.00%	5,896,555
Actuarial experience (gains)/losses	333,055
Present Value of Accumulated Plan Benefits as of January 1, 2021 Before Changes	<u>\$87,716,120</u>
Effect of Interest Rate Change, If Applicable	0
Effect of Other Assumptions Changes	1,962,580
Effect of Plan Changes	
Present Value of Accumulated Plan Benefits as of January 1, 2021 After Changes	<u>\$89,678,700</u>
Fair Market Value of Assets	\$79,302,590

# Actuarial Assumptions

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Many of the factors affecting the funding cost and liability cost of the Plan are variables which cannot be predicted with certainty. The following actuarial assumptions have either been mandated by statute and regulation or selected to reasonably anticipate future experience with respect to these variables.

Interest:	7.00%
Preretirement Mortality:	Pub-2010 (General) Mortality Table with Scale MP-2020
Postretirement Mortality:	Pub-2010 (General) Mortality Table with Scale MP-2020
Assumed Retirement:	Plan Normal Retirement Age
Termination:	Termination Table T-5 from the Actuary's Handbook with a 5-year setback for females
Incidence of Disability:	1952 Disability Table, Period 2, Benefit 5, with six month waiting period.
Salary Scale:	3.0%
Marriage:	It is assumed that 80% of participants are married and that a male is 3 years older than his female spouse.
Expenses:	Interest rate is assumed to be net of plan expenses.
Optional Forms:	Liabilities include no load to account for the value of optional annuity forms.

## Summary of Changes to Actuarial Assumptions

The preretirement mortality table was changed to the table above from the RP-2014 Mortality Tables for Non-Annuitants, Fully Generational with Scale MP-2019.

The post-retirement mortality table was changed to the table above from the RP-2014 Mortality Tables for Annuitants, Fully Generational with Scale MP-2019.

# Actuarial Cost and Asset Valuation Methods

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## Actuarial Cost Method

### *Individual Entry Age Normal Method*

The Normal Cost is the level percent of payroll premium necessary to fund the benefit projected to assumed retirement date over the working lifetime of each participants. The Accrued Liability is the excess of the present value as of the valuation date of the benefit projected to assumed retirement age over the present value of future Normal Costs. Or, equivalently, the accumulated value of all past Normal Costs. The benefit projected to assumed retirement date uses projected service, compensation if applicable, and any other components that would be used in the calculation of the benefit. The difference between the Accrued Liability and the Actuarial Value of Assets is the Unfunded Actuarial Accrued Liability. Each year the difference between the expected Unfunded Actuarial Accrued Liability (based on actuarial assumptions being realized exactly) and the actual Unfunded Actuarial Accrued Liability is the Actuarial Gain or Loss.

## Asset Valuation Method

The Actuarial value of Assets are determined using the Five-Year Average Appreciation method with phase-in adopted January 1, 2018. Under this method assets are valued according to the following general formula:

$MV - .8A1 - .6A2 - .4A3 - .2A4$ , not less than 90% of MV; not greater than 110% of MV, where  
MV = Market Value of assets as of valuation date.

$A_n$  = Actuarial Gain/(Loss) due to investment earnings, during the nth year preceding the valuation date. The actuarial gain or loss for a year is determined by calculating the difference between the expected market value of assets and the actual market value of assets.

For assets held outside of the Insurance Company, the Actuarial Value is equal to the reported value.

The Actuarial Value is not greater than 110% of the Market Value, or less than 90% of the Market Value.

## Summary of Changes to Actuarial Cost and Asset Valuation Methods

No changes.

# Plan Provision Summary

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The provisions shown here are only summaries. In the interest of space and simplicity, many of them have been abbreviated, simplified, or paraphrased. In matters of Plan interpretation or application, the actual Plan Document should be consulted.

**Plan:** Lenawee County Board of Commissioners Retirement Income Plan

**Effective Date:** January 1, 1976

**Plan Year:** Calendar Year

**Employer:** Lenawee County Board of Commissioners

**Employee:** Any person who is employed by the Employer. An individual who performs services for the Employer pursuant to an agreement between the Employer and an employee leasing organization shall not be considered to be an Employee.

**Participation:** Each person employed by the County in a position normally requiring 1,000 hours or more per year is eligible to join the plan on date of hire. Except that Participation has been frozen for the following Groups:

**Group 01:** Sheriff Command (Police Officers Labor Council) - Employees hired after January 1, 2006.

**Group 02:** Sheriff Deputy (Police Officers Association of Michigan) - Employees hired after September 1, 2005.

**Group 03:** Nurses M.N.A. Union - Employees hired after January 31, 2002.

**Group 04:** Government Employees' Labor Council - Employees hired after May 1, 2003, except that for District Court Employees, after March 1, 2004.

**Group 05:** Lenawee County Employees (Non-union) - Employees hired after January 1, 2001.

**Group 06:** Steelworkers Union - Employees hired after August 1, 2002.

**Group 61: Drain Commission** - Employees hired after January 1, 2002.

**Group 08: Medical Care Facility (Non-union)** - Employees hired after January 1, 2008.

**Service:** The period of an Employee's employment with the Employer, as determined by the Employer from its personnel records.

**Vesting Service:** All years of Service with the Employer from Date of Employment.

**Benefit Service:** All years of Service with the Employer from Date of Employment.

**Average Monthly Earnings:**

**Group 01: Sheriff Command and Group 02: Sheriff Deputy** - The average of Monthly Earnings in the period of 48 consecutive months with respect to which such sum is the greatest.

**All Other Groups** - The average of Monthly Earnings in the period of 60 consecutive months with respect to which such sum is the greatest.

**Normal Retirement Date:**

**Group 01: Sheriff Command and Group 02: Sheriff Deputy** - First day of the month coincident with otherwise next following the earlier of 1) age 55 and 25 years of service, and 2) age 65 and 8 years of service.





**Group 04: Government Employees' Labor Council (GELC), Group 05: Lenawee County Employees (Non-union), Group 06: Steelworkers Union, Group 03: Nurses M.N.A. Union, and Group 61: Drain Commission Employees** - the earlier of 1) date age and years of service equal 85, and 2) age 62 and 8 years of service.

**All other Groups** - Age 65 and 8 years of service.

**Early Retirement Date:** Any Participant who has attained age 55 and completed 10 years of Benefit Service may elect early retirement on the first day of any calendar month following the termination of Service.

**Late retirement:** Retirement after normal retirement date

**Disability Retirement Date:** Any Participant who has completed 10 years of Benefit Service may elect disability retirement on the first day of any calendar month following the determination of total and permanent disability.

**Normal Retirement Benefit:**

**Group 01: Sheriff Command** - 2.50% of average monthly earnings times all years of benefit service. The maximum monthly benefit is 80% of average monthly earnings.

**Group 02: Sheriff Deputy** - 2.50% of average monthly earnings times all years of benefit service. The maximum monthly benefit is 80% of average monthly earnings.

**Group 03: Nurses M.N.A. Union** - 2.00% of average monthly earnings times all years of benefit service.

**Group 04: Government Employees' Labor Council** - 2.00% of average monthly earnings times all years of benefit service.

**Group 05: Lenawee County Employees (Non-union)** - 2.00% of average monthly earnings times all years of benefit service.

**Group 06: Steelworkers Union** - 2.00% of average monthly earnings times all years of benefit service.

**Group 61: Drain Commission** - 2.00% of average monthly earnings times all years of benefit service.

**Group 07: Medical Care Facility (Union)** - 1.00% of average monthly earnings times all years of benefit service.

**Group 08: Medical Care Facility (Non-union)** - 2.50% of average monthly earnings times all years of benefit service.

**Early Retirement Benefit:** The accrued benefit reduced 1/15 for the first five years, and 1/30 for the next five years for each year the Retirement Date precedes the Normal Retirement Date.

**Termination Benefit:** A Participant who has at least eight years of Vesting Service has a nonforfeitable right to 100% of his or her Accrued Benefit. Benefit is payable at Normal Retirement Date.

**Disability Retirement Benefit:** The accrued benefit reduced by any amounts payable under any worker's compensation or salary continuance program.

**Normal Form:** Single: Modified Cash Refund; Married: Qualified 50% Joint and Survivor Annuity

**Optional Forms:** Joint and Survivor Annuity, Life Annuity with 60 or 120 monthly payments guaranteed, Life Annuity

**Death Benefits:**

**For all employees except Group 7: Medical Care Facility (Union).**

**Pre-retirement:** If the Participant is not vested, no death benefits are payable. If the participant is vested, then the death benefit is 50% of the amount that would have been payable to the Participant under the 50% Joint and Survivor option.

**Post-Retirement:** None except as provided by the annuity form elected.



**Employee Contributions:** (picked up by the Employer under IRC §414(h)(2))

Group 01: Sheriff Command - 10.00% of pay.

Group 02: Sheriff Deputy - 10.00% of pay.

Group 03: Nurses M.N.A. Union - 10.00% of pay.

Group 04: Government Employees' Labor Council (GELC) - 10.00% of pay.

Group 05: Lenawee County Employees (Non-union) – 10.00% of pay.

Group 06: Steelworkers Union - 10.00% of pay.

Group 61: Drain Commission - 10.00% of pay.

**Spin-off of Medical Care Facility employees:** Effective January 1, 2008, all non-retired employees of the Lenawee Medical Care Facility (Formerly Group 7 and Group 8 of this plan) were transferred to successor plans.

**Opt-out Elections:** Active participants in groups 03, 04, 05, 06, and 61 may elect to opt-out of participation in this plan for purposes of benefit accruals only. Vesting service and service for purposes of the Rule of 85 Retirement Age will continue to be credited. Each year the election period will run from November 15th to December 15th, and such election will take effect the following January 1st. At that time, the participant will commence participation in the County's Defined Contribution Plan.



## Empower Acquisition Disclosure

Empower Retirement has acquired the retirement business of Massachusetts Mutual Life Insurance Company (MassMutual). Through this transaction, business written by MassMutual is reinsured by Great-West Life and Annuity Insurance Company and, in New York, by Great-West Life and Annuity Company of New York. Concurrently, MassMutual has retroceded business it reinsures from a cedent, which MassMutual assumed in a previous transaction. On the closing date of the transaction, Empower will administer the business on MassMutual's behalf, with certain administrative services being performed by MassMutual and its affiliates during a temporary transition period. Empower Retirement refers to the products and services offered by Great-West Life and Annuity Insurance Company and its subsidiaries. Empower Retirement is not affiliated with MassMutual or its affiliates.

