

The Protecting Local Government Retirement and Benefits Act (PA 202 of 2017) Health Care (OPRB) Report

Enter Local Unit Name (Gladwin County)	Instructions: For a list of detailed instructions on how to complete and submit this form, visit <a href="http://michigan.gov/LocalRetirementReporting">michigan.gov/LocalRetirementReporting</a> .
Enter Local Unit Mailing Address (280000)	
Unit Type (County)	
Fiscal Year (fiscal year only, e.g. 2019) (2019)	
Contact Name (Chief Administrative Officer) (Laura Brandon-Mawal)	Questions: For questions, please email <a href="mailto:localretirementreporting@michigan.gov">localretirementreporting@michigan.gov</a> . Return this original Excel file. Do not submit a scanned image or PDF.
Contact Name (Chief Administrative Officer) (Laura Brandon-Mawal)	
City (for designated) Email Address (laurab@gladwincounty.mi.gov)	
Contact Telephone Number (989-426-7351 ext 86)	

OPRB System Name (not division) (1) Gladwin County	If your OPRB system is separated by divisions, you would only enter one system. For example, one could have different divisions of the same system for union and non-union employees. However, these would be only one system and should be reported as such on this form.
OPRB System Name (not division) (2)	
OPRB System Name (not division) (3)	
OPRB System Name (not division) (4)	
OPRB System Name (not division) (5)	

Line	Descriptive Information	Source of Data	System 1	System 2	System 3	System 4	System 5
1	Is this unit a primary unit (County, Township, City, Village)?	Obtained	YES	YES			
2	Provide the name of your retirement health care system	Calculated from above	Gladwin County				
3	Financial Information						
4	Enter retirement health care system's assets (system fiduciary net position ending)	Most Recent Audit Report	16,921,324				
5	Enter retirement health care system's liabilities (total OPRB liability)	Most Recent Audit Report	5,516,427				
6	Funded ratio	Calculated	306.7%				
7	Actuarially determined contribution (ADC)	Most Recent Audit Report	572,075				
7a	Do the financial statements include an ADC calculated in compliance with numbered letter 2019-37	Most Recent Audit Report	YES				
8	Governmental Fund Revenues	Most Recent Audit Report	11,215,871				
9	All systems combined ADC/Governmental fund revenues	Calculated	5.1%				
10	Memberships						
11	Indicate number of active members	Most Recent Actuarial Funding Valuation or System Investment Provider	92				
12	Indicate number of inactive members	Most Recent Actuarial Funding Valuation	31				
13	Indicate number of retirees and beneficiaries	Most Recent Actuarial Funding Valuation	97				
14	Provide the amount of premiums paid on behalf of the retirees	Most Recent Audit Report or Accounting Records					
15	Investment Performance						
16	Enter actual rate of return - prior 1-year period	Most Recent Actuarial Funding Valuation or System Investment Provider	14.02%				
17	Enter actual rate of return - prior 5-year period	Most Recent Actuarial Funding Valuation or System Investment Provider	6.39%				
18	Enter actual rate of return - prior 10-year period	Most Recent Actuarial Funding Valuation or System Investment Provider	7.97%				
19	Actuarial Assumptions						
20	Assumed Rate of Investment Return	Most Recent Actuarial Funding Valuation	7.35%				
21	Enter discount rate	Most Recent Actuarial Funding Valuation	Level Percent				
22	Amortization method utilized for funding the system's unfunded actuarial accrued liability, if any	Most Recent Actuarial Funding Valuation	19				
23	Amortization period utilized for funding the system's unfunded actuarial accrued liability, if any	Most Recent Actuarial Funding Valuation	NO				
24	Is each division within the System closed to new employees?	Most Recent Actuarial Funding Valuation	2.00%				
25	Health care inflation assumption for the next year	Most Recent Actuarial Funding Valuation	2.00%				
26	Health care inflation assumption - Long Term Trend Rate	Most Recent Actuarial Funding Valuation	2.00%				
27	Uniform Assumptions						
28	Enter retirement health care system's actuarial value of assets using uniform assumptions	Most Recent Actuarial Funding Valuation	17,045,035				
29	Enter retirement health care system's actuarial accrued liabilities using uniform assumptions	Most Recent Actuarial Funding Valuation	29,618,064				
30	Funded ratio using uniform assumptions	Calculated	57.5%				
31	Actuarially Determined Contribution (ADC) using uniform assumptions	Most Recent Actuarial Funding Valuation	1,302,216				
32	All systems combined ADC/Governmental fund revenues	Calculated	11.6%				
33	Summary Report						
34	Did the local government pay the retiree insurance premiums for the year?	Accounting Records	YES				
35	Did the local government pay the normal cost for employees hired after June 30, 2018?	Accounting Records	YES				
36	Does this system trigger "underfunded status" as defined by PA 202 of 2017?	Primary unit triggers: Less than 40% funded AND greater than 12% ARC/Governmental fund revenues; Non-Primary unit triggers: Less than 40% funded	NO	NO	NO	NO	NO

**Requirements (For your information, the following are requirements of PA 202 of 2017)**  
 Local units must post the current year report on their website or in a public place.  
 The local unit of government must electronically submit the form to its governing body.  
 Local units must have had an actuarial experience study conducted by the plan actuary for each retirement system at least every 5 years.  
 Local units must have had a peer actuarial audit conducted by an actuary that is not the plan actuary OR replace the plan actuary at least every 8 years.

By emailing this report to the Michigan Department of Treasury, the local unit of government acknowledges that this report is complete and accurate in all known respects.



1134 Municipal Way  
Lansing, MI 48917  
(800) 767-6377

Laura Brandon-Maveal  
Gladwin County  
401 W Cedar  
Gladwin, MI 48624

Customer Number: 260201

Statement of Fiduciary Net Position  
For the Year Ending 12/31/2019

Bargaining Unit	Reserve for Employee Contributions						
	Balance as of 12/31/2018	Invoiced & Other Contributions	Transfers	EE Refunds	Interest on EE Balance	Admin Expenses	Balance as of 12/31/2019
26020101	\$299,949.17	\$16,846.43	(\$56,509.14)	\$0.00	\$3,870.68		\$264,157.14
26020102	\$193,395.83	\$4,013.70	(\$43,580.27)	\$0.00	\$2,406.82		\$156,236.08
26020110	\$156,208.57	\$5,226.72	(\$15,457.37)	\$0.00	\$2,237.95		\$148,215.87
26020111	\$187,156.78	\$22,794.96	(\$347.19)	\$0.00	\$2,969.45		\$212,574.00
26020112	\$156,308.87	\$14,152.70	(\$20,153.40)	\$0.00	\$2,169.26		\$152,477.43
26020113	\$150,415.62	\$74,461.57	\$0.00	(\$4,306.32)	\$2,381.76		\$222,952.63
26020120	\$242,181.42	\$23,155.71	\$0.00	\$0.00	\$3,850.67		\$269,187.80
26020121	\$352,359.23	\$25,113.15	\$10,640.14	(\$10,640.14)	\$5,602.53		\$383,074.91
26020122	\$176,169.43	\$8,955.11	\$0.00	\$0.00	\$2,801.10		\$187,925.64
<b>Total</b>	<b>\$1,914,144.92</b>	<b>\$194,720.05</b>	<b>(\$125,407.23)</b>	<b>(\$14,946.46)</b>	<b>\$28,290.22</b>		<b>\$1,996,801.50</b>

Reserve for Employer Contributions and Benefit Payments

Bargaining Unit	Reserve for Employer Contributions and Benefit Payments						
	Balance as of 12/31/2018	Invoiced & Other Contributions	Transfers & Fees	Benefits Paid	Net Investment Income	Admin Expenses	Balance as of 12/31/2019
26020101	\$1,957,174.40	\$91,992.00	\$56,509.14	(\$216,521.58)	\$298,621.36	(\$5,209.75)	\$2,182,565.57
26020102	\$1,372,607.35	\$57,972.00	\$43,580.27	(\$146,307.12)	\$207,364.50	(\$3,615.04)	\$1,531,601.96
26020110	\$1,618,880.16	\$70,728.00	\$15,457.37	(\$220,767.03)	\$232,085.14	(\$4,033.33)	\$1,712,350.31
26020111	\$2,028,035.99	\$94,864.69	\$347.19	(\$248,832.84)	\$292,011.59	(\$5,078.57)	\$2,161,368.05
26020112	\$1,405,332.75	\$72,456.00	\$20,153.40	(\$153,033.29)	\$207,867.03	(\$3,618.57)	\$1,549,157.32
26020113	\$127,111.89	\$42,159.08	\$0.00	(\$2,378.28)	\$41,995.60	(\$770.70)	\$208,117.59
26020120	\$1,391,062.53	\$75,420.00	\$0.00	(\$96,352.20)	\$220,019.74	(\$3,859.82)	\$1,586,290.25
26020121	\$2,589,589.94	\$240,498.39	(\$10,640.14)	(\$254,196.60)	\$397,410.48	(\$6,940.94)	\$2,966,721.13
26020122	\$897,016.89	\$11,436.00	\$0.00	(\$22,809.12)	\$144,240.71	(\$2,534.79)	\$1,027,349.69
<b>Total</b>	<b>\$13,396,811.90</b>	<b>\$757,546.16</b>	<b>\$125,407.23</b>	<b>(\$1,361,198.06)</b>	<b>\$2,041,616.15</b>	<b>(\$35,661.51)</b>	<b>\$14,924,521.87</b>

Combined Reserves

	Balance as of 12/31/2018	Invoiced & Other Contributions	Transfers	Benefits Paid	Net Investment Income	Admin Expenses	Balance as of 12/31/2019
<b>Total</b>	<b>\$15,310,956.82</b>	<b>\$952,266.21</b>	<b>\$0.00</b>	<b>(\$1,376,144.52)</b>	<b>\$2,069,906.37</b>	<b>(\$35,661.51)</b>	<b>\$16,921,323.37</b>

Outstanding Accounts Receivable at 12/31/2019: \$78,750.78

*Handwritten initials*

**NOTE 8 - OTHER POST EMPLOYMENT BENEFITS (Continued)**

	<u>Total OPEB Liability</u>	<u>Plan Fiduciary Net Position</u>	<u>Net OPEB Liability</u>
<b>Balances at December 31, 2018</b>	\$ 8,630,276	\$ 206,510	\$ 8,423,766
Service cost	177,245	-	177,245
Interest on total OPEB liability	260,315	-	260,315
Expected / actual experience differences	(12,486)	-	(12,486)
Changes in actuarial assumptions	(3,276,331)	-	(3,276,331)
Contributions - OPEB Trust	-	100,000	(100,000)
Contributions - Benefits Paid	-	262,592	(262,592)
Net investment income	-	33,398	(33,398)
Benefit payments	(262,592)	(262,592)	-
Administrative expense	-	(443)	443
<b>Net changes</b>	<u>(3,113,849)</u>	<u>132,955</u>	<u>(3,246,804)</u>
<b>Balances as December 31, 2019</b>	<u>\$ 5,516,427</u>	<u>\$ 339,465</u>	<u>\$ 5,176,962</u>

OPEB Expense and Deferred Outflows and Inflows of Resources Related to OPEB – During the year the Road Commission recognized a negative OPEB expense of (\$334,606). At year-end, the Road Commission reported deferred outflows and deferred inflows of resources related to OPEB from the following sources:

	<u>Deferred Outflows of Resources</u>	<u>Deferred Inflows of Resources</u>
Differences between expected and actual experience	\$ -	\$ 20,128
Changes of assumptions	49,313	1,371,487
Net difference between projected and actual earnings on OPEB plan investments	950	-
<b>Total</b>	<u>\$ 50,263</u>	<u>\$ 1,391,615</u>

The net amounts reported as deferred outflows and deferred inflows of resources will be recognized as OPEB expense as follows:

Year Ended December 31:

2020	\$ (1,340,954)
2021	1,348
2022	1,350
2023	<u>(3,096)</u>
<b>Total</b>	<u>\$ (1,341,352)</u>

**Gladwin County, Michigan**

**Required Supplementary Information  
Employee Retirement and Benefit Systems  
Schedule of Changes in the OPEB Liability and Related Ratios  
Year Ended December 31, 2019**

	Measurement Date 12/31/2017	Measurement Date 12/31/2018
<b>Total OPEB Liability - Beginning of Year</b>	\$ 7,663,633	\$ 8,034,417
Service cost	298,846	314,043
Interest	246,236	256,816
Assumption changes and differences between actual and expected experience	-	(535,055)
Difference between actual and expected investment income	-	(81,878)
Benefit payments	<u>(174,298)</u>	<u>(168,098)</u>
<b>OPEB Liability - End of Year</b>	<u>\$ 8,034,417</u>	<u>\$ 7,820,245</u>
<b>Plan fiduciary net position</b>		
Contributions - employer	\$ 168,098	\$ 168,098 #L
Benefit payments	<u>(168,098)</u>	<u>(168,098)</u>
<b>Net change in plan fiduciary net position</b>	-	-
<b>Plan fiduciary net position - Beginning of Year</b>	-	-
<b>Plan fiduciary net position - End of Year</b>	<u>\$ -</u>	<u>\$ -</u>
<b>Net OPEB liability - End of Year</b>	<u>\$ 8,034,417</u>	<u>\$ 7,820,245</u>
<b>Plan fiduciary net position as a percentage of the total OPEB liability</b>	0%	0%
<b>Covered Payroll</b>	\$ 3,298,735	\$ 4,223,630
<b>Net OPEB liability as a percentage of covered payroll</b>	243.56%	185.15%
<b>Schedule of Employer Contributions</b>		
Actuarially determined contribution	174,298	572,075 #7
Actual Contribution	<u>174,298</u>	<u>168,098</u>
<b>Contribution deficiency/(excess)</b>	<u>\$ -</u>	<u>\$ 403,977</u>
<b>Covered Payroll</b>	\$ 3,298,735	\$ 4,223,630
<b>ADC as a percentage of payroll</b>	5.28%	13.54%

**Key Assumptions:**

Census Collection Date	January 1, 2018
Discount rate	3.64%
Year 1 per 65 inflation rates (Medical/RX)	8.00%
Year 2 inflation rate	7.50%
Ultimate inflation rate	4.50%
Year Ultimate inflation rate is reached	2026
Actuarial Cost Method	Entry age normal (percent of salary)

**County of Gladwin, Michigan**

**Statement of Revenues, Expenditures, and  
Changes in Fund Balance - Governmental Funds  
For the Year Ended December 31, 2019**

	General	Emergency Medical Services	E-911 Millage	Wireless E-911 Fund	Senior Citizens Program	Nonmajor Governmental Funds	Totals Governmental Funds
<b>REVENUES:</b>							
Taxes	\$ 4,739,798	\$ 495,744	\$ 745,063	\$ -	\$ 742,662	\$ 198,614	\$ 6,921,881
Licenses and Permits	438,136	-	-	-	-	-	438,136
Federal	130,003	-	-	-	-	64,223	194,226
State	1,168,312	-	-	166,790	-	121,854	1,456,956
Local	9,000	-	-	-	-	23,550	32,550
Charges for Services	1,300,079	-	-	-	-	298,564	1,598,643
Fines and Forfeits	23,971	-	-	-	-	-	23,971
Interest and Rents	94,315	10,288	4,705	12,088	572	6,989	128,957
Reimbursements	234,196	-	-	-	-	-	234,196
Other Revenue	153,575	-	-	-	-	32,780	186,355
<b>TOTAL REVENUES</b>	<b>8,291,385</b>	<b>506,032</b>	<b>749,768</b>	<b>178,878</b>	<b>743,234</b>	<b>746,574</b>	<b>11,215,871</b>
<b>EXPENDITURES:</b>							
Legislative	198,198	-	-	-	-	-	198,198
Judicial	1,519,937	-	-	-	-	2,388	1,522,325
General Government	2,260,744	-	-	-	-	36,280	2,297,024
Public Safety	4,488,190	-	2,556	16,749	-	137,740	4,645,235
Public Works	14,421	-	-	-	-	-	14,421
Health and Welfare	498,591	754,094	-	-	687,069	284,760	2,224,514
Community and Economic Development	-	-	-	-	-	104,461	104,461
Recreation and Culture	2,668	-	-	-	-	762	3,430
Other	499,759	-	-	-	-	-	499,759
Capital Outlay	1,298,867	-	-	-	-	-	1,298,867
<b>TOTAL EXPENDITURES</b>	<b>10,781,375</b>	<b>754,094</b>	<b>2,556</b>	<b>16,749</b>	<b>687,069</b>	<b>566,391</b>	<b>12,808,234</b>
<b>EXCESS OF REVENUES OVER (UNDER) EXPENDITURES BEFORE OTHER FINANCING SOURCES (USES)</b>	<b>(2,489,990)</b>	<b>(248,062)</b>	<b>747,212</b>	<b>162,129</b>	<b>56,165</b>	<b>180,183</b>	<b>(1,592,363)</b>
<b>OTHER FINANCING SOURCES (USES):</b>							
Lease Proceeds	1,335,750	-	-	-	-	-	1,335,750
Transfers In	1,626,569	-	-	-	-	108,198	1,734,767
Transfers Out	(220,277)	-	(774,248)	-	-	(241,442)	(1,225,967)
<b>TOTAL OTHER FINANCING SOURCES (USES)</b>	<b>2,742,042</b>	<b>-</b>	<b>(774,248)</b>	<b>-</b>	<b>-</b>	<b>(133,244)</b>	<b>1,834,550</b>
<b>NET CHANGE IN FUND BALANCES</b>	<b>252,052</b>	<b>(248,062)</b>	<b>(27,036)</b>	<b>162,129</b>	<b>56,165</b>	<b>46,939</b>	<b>242,187</b>
<b>FUND BALANCES BEGINNING OF YEAR</b>	<b>659,752</b>	<b>2,076,147</b>	<b>696,876</b>	<b>955,773</b>	<b>7,806</b>	<b>963,516</b>	<b>5,359,870</b>
<b>FUND BALANCES END OF YEAR</b>	<b>\$ 911,804</b>	<b>\$ 1,828,085</b>	<b>\$ 669,840</b>	<b>\$ 1,117,902</b>	<b>\$ 63,971</b>	<b>\$ 1,010,455</b>	<b>\$ 5,602,057</b>

11,215,871  
186,355  
18

See accompanying notes to financial statements.

## State Reporting

The following information has been prepared to provide some of the information necessary to complete the pension reporting requirements for the State of Michigan's Local Government Retirement System Annual Report (Form No. 5572). Additional resources are available at [www.mersofmich.com](http://www.mersofmich.com) and on the State website.

Form 5572		
Line Reference	Description	Result
10	Membership as of December 31, 2019	
11	Indicate number of active members	92
12	Indicate number of inactive members (excluding pending refunds)	31
13	Indicate number of retirees and beneficiaries	97
14	Investment Performance for Calendar Year Ending December 31, 2019 <sup>1</sup>	
15	Enter actual rate of return - prior 1-year period	14.02%
16	Enter actual rate of return - prior 5-year period	6.39%
17	Enter actual rate of return - prior 10-year period	7.97%
18	Actuarial Assumptions	
19	Actuarial assumed rate of investment return <sup>2</sup>	7.35%
20	Amortization method utilized for funding the system's unfunded actuarial accrued liability, if any	Level Percent
21	Amortization period utilized for funding the system's unfunded actuarial accrued liability, if any <sup>3</sup>	19
22	Is each division within the system closed to new employees? <sup>4</sup>	No
23	Uniform Assumptions	
24	Enter retirement pension system's actuarial value of assets using uniform assumptions	\$17,045,035
25	Enter retirement pension system's actuarial accrued liabilities using uniform assumptions	\$29,618,064
27	Actuarially Determined Contribution (ADC) using uniform assumptions, Fiscal Year Ending December 31, 2020	\$1,302,216

- <sup>1</sup> The Municipal Employees' Retirement System's investment performance has been provided to GRS from MERS Investment Staff and included here for reporting purposes. This investment performance figures reported are net of investment expenses on a rolling calendar-year basis for the previous 1-, 5-, and 10-year periods as required under PA 530.
- <sup>2</sup> Net of administrative and investment expenses.
- <sup>3</sup> Populated with the longest amortization period remaining in the amortization schedule, across all divisions in the plan. This is when each division and the plan in total is expected to reach 100% funded if all assumptions are met.
- <sup>4</sup> If all divisions within the employer are closed, "yes." If at least one division is open (including shadow divisions) indicate "no."



Enter Local Unit Name	Gladwin County
Enter State/County Code	26000
Unit Type	County
Fiscal Year End Month	December
Fiscal Year End Month	December
Contact Name (Chief Administrative Officer)	Laura Brandon-Mawel
Contact Name (Chief Administrative Officer)	The Hon. CAO Gladwin County Clerk
CAO (or designee) Email Address	lbrandon@gladwincounty.mi.gov
Contact Telephone Number	989-426-7351 ext 66

Pension System Name (not division)	1 MERS
Pension System Name (not division)	2
Pension System Name (not division)	3
Pension System Name (not division)	4
Pension System Name (not division)	5

If your pension system is separated by divisions, you would only enter one system. For example, one could have different divisions of the same system for union and non-union employees. However, these would be only one system and should be reported as such on this form.

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1	Is this unit a primary unit (County, Township, City, Village)?	Calculated	YES	YES	YES	YES	YES
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3	Financial Information						
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24	Enter retirement pension system's actuarial value of assets using uniform assumptions	\$17,045,035
25	Enter retirement pension system's actuarial accrued liabilities using uniform assumptions	\$29,618,064
27	Actuarially Determined Contribution (ADC) using uniform assumptions, Fiscal Year Ending December 31, 2020	\$1,302,216

- <sup>1</sup> The Municipal Employees' Retirement System's investment performance has been provided to GRS from MERS Investment Staff and included here for reporting purposes. This investment performance figures reported are net of investment expenses on a rolling calendar-year basis for the previous 1-, 5-, and 10-year periods as required under PA 530.
- <sup>2</sup> Net of administrative and investment expenses.
- <sup>3</sup> Populated with the longest amortization period remaining in the amortization schedule, across all divisions in the plan. This is when each division and the plan in total is expected to reach 100% funded if all assumptions are met.
- <sup>4</sup> If all divisions within the employer are closed, "yes." If at least one division is open (including shadow divisions) indicate "no."





1134 Municipal Way  
Lansing, MI 48917  
(800) 767-6377

Laura Brandon-Maveal  
Gladwin County  
401 W Cedar  
Gladwin, MI 48624

Customer Number: 260201

Statement of Fiduciary Net Position  
For the Year Ending 12/31/2019

Reserve for Employee Contributions

Bargaining Unit	Balance as of 12/31/2018	Invoiced & Other Contributions	Transfers	EE Refunds	Interest on EE Balance	Balance as of 12/31/2019
26020101	\$299,949.17	\$16,846.43	(\$56,509.14)	\$0.00	\$3,870.68	\$264,157.14
26020102	\$193,395.83	\$4,013.70	(\$43,580.27)	\$0.00	\$2,406.82	\$156,236.08
26020110	\$156,208.57	\$5,226.72	(\$15,457.37)	\$0.00	\$2,237.95	\$148,215.87
26020111	\$187,156.78	\$22,794.96	(\$347.19)	\$0.00	\$2,969.45	\$212,574.00
26020112	\$156,308.87	\$14,152.70	(\$20,153.40)	\$0.00	\$2,169.26	\$152,477.43
26020113	\$150,415.62	\$74,461.57	\$0.00	(\$4,306.32)	\$2,381.76	\$222,952.63
26020120	\$242,181.42	\$23,155.71	\$0.00	\$0.00	\$3,850.67	\$269,187.80
26020121	\$352,359.23	\$25,113.15	\$10,640.14	(\$10,640.14)	\$5,602.53	\$383,074.91
26020122	\$176,169.43	\$8,955.11	\$0.00	\$0.00	\$2,801.10	\$187,925.64
<b>Total</b>	<b>\$1,914,144.92</b>	<b>\$194,720.05</b>	<b>(\$125,407.23)</b>	<b>(\$14,946.46)</b>	<b>\$28,290.22</b>	<b>\$1,996,801.50</b>

Reserve for Employer Contributions and Benefit Payments

Bargaining Unit	Balance as of 12/31/2018	Invoiced & Other Contributions	Transfers & Fees	Benefits Paid	Net Investment Income	Admin Expenses	Balance as of 12/31/2019
26020101	\$1,957,174.40	\$91,992.00	\$56,509.14	(\$216,521.58)	\$298,621.36	(\$5,209.75)	\$2,182,565.57
26020102	\$1,372,607.35	\$57,972.00	\$43,580.27	(\$146,307.12)	\$207,364.50	(\$3,615.04)	\$1,531,601.96
26020110	\$1,618,880.16	\$70,728.00	\$15,457.37	(\$220,767.03)	\$232,085.14	(\$4,033.33)	\$1,712,360.31
26020111	\$2,028,035.99	\$94,884.69	\$347.19	(\$248,832.84)	\$292,011.59	(\$5,078.57)	\$2,161,368.05
26020112	\$1,405,332.75	\$72,456.00	\$20,153.40	(\$153,033.29)	\$207,867.03	(\$3,618.57)	\$1,549,157.32
26020113	\$127,111.89	\$42,159.08	\$0.00	(\$2,378.28)	\$41,995.60	(\$770.70)	\$208,117.59
26020120	\$1,391,062.53	\$75,420.00	\$0.00	(\$96,352.20)	\$220,019.74	(\$3,859.82)	\$1,586,290.25
26020121	\$2,599,589.94	\$240,498.39	(\$10,640.14)	(\$254,196.60)	\$397,410.48	(\$6,940.94)	\$2,965,721.13
26020122	\$897,016.89	\$11,436.00	\$0.00	(\$22,809.12)	\$144,240.71	(\$2,534.79)	\$1,027,349.69
<b>Total</b>	<b>\$13,396,811.90</b>	<b>\$757,546.16</b>	<b>\$125,407.23</b>	<b>(\$1,361,198.06)</b>	<b>\$2,041,616.15</b>	<b>(\$35,661.51)</b>	<b>\$14,924,521.87</b>

Combined Reserves

	Balance as of 12/31/2018	Invoiced & Other Contributions	Transfers	Benefits Paid	Net Investment Income	Admin Expenses	Balance as of 12/31/2019
<b>Total</b>	<b>\$15,310,956.82</b>	<b>\$952,266.21</b>	<b>\$0.00</b>	<b>(\$1,376,144.52)</b>	<b>\$2,069,906.37</b>	<b>(\$35,661.51)</b>	<b>\$16,921,323.37</b>

Outstanding Accounts Receivable at 12/31/2019: \$78,750.78

*Handwritten initials/signature*

**NOTE 7 - EMPLOYEE RETIREMENT AND BENEFIT SYSTEMS (Continued)**

**Changes in the Net Pension Liability:**

	<b>Increases (Decreases)</b>		
	<b>Total Pension Liability</b>	<b>Plan Fiduciary Net Position</b>	<b>Net Pension Liability</b>
<b>Balances at December 31, 2018</b>	\$ 23,962,564	\$ 15,310,957	\$ 8,651,607
Service cost	418,496	-	418,496
Interest on total pension liability	1,878,699	-	1,878,699
Changes in benefits	-	-	-
Difference between expected and actual experience	188,417	-	188,417
Changes in assumptions	-	-	-
Employer contributions	-	757,546	(757,546)
Employee contributions	-	194,720	(194,720)
Net investment income	-	2,069,906	(2,069,906)
Benefit payments, including employee refunds	(1,376,145)	(1,376,145)	-
Administrative expense	-	(35,662)	35,662
Other charges	(110,246)	1	(110,247)
<b>Net changes</b>	<b>999,221</b>	<b>1,610,366</b>	<b>(611,145)</b>
<b>Balances as of December 31, 2019</b>	<b>\$ 24,961,785</b>	<b>\$ 16,921,323</b>	<b>\$ 8,040,462</b>

*Sensitivity of the Net Pension Liability to Changes in the Discount Rate.* The following presents the net pension liability of the employer, calculated using the discount rate of 8.00%, as well as what the employer's net pension liability would be using a discount rate that is 1 percentage point lower (7.00%) or 1% higher (9.00%) than the current rate.

	<b>1% Decrease (7.00%)</b>	<b>Current Discount Rate (8.00%)</b>	<b>1% Increase (9.00%)</b>
Net Pension Liability	\$ 11,096,359	\$ 8,040,462	\$ 5,489,938

**Pension Expense and Deferred Outflows of Resources and Deferred Inflows of Resources Related to Pensions**

For the year ended December 31, 2019 the County recognized pension expense of \$789,182. The County reported deferred outflows and inflows of resources related to pensions from the following sources:

	<b>Deferred Outflows of Resources</b>	<b>Deferred Inflows of Resources</b>
Differences in experience	\$ -	\$ 87,048
Differences in assumptions	-	-
Excess (deficit) investment returns	59,745	-
<b>Total</b>	<b>\$ 59,745</b>	<b>\$ 87,048</b>

**Gladwin County, Michigan**

**Required Supplementary Information  
Employee Retirement and Benefit Systems  
Schedule of Changes in the OPEB Liability and Related Ratios  
Year Ended December 31, 2019**

	Measurement Date 12/31/2017	Measurement Date 12/31/2018
<b>Total OPEB Liability - Beginning of Year</b>	\$ 7,663,633	\$ 8,034,417
Service cost	298,846	314,043
Interest	246,236	256,816
Assumption changes and differences between actual and expected experience	-	(535,055)
Difference between actual and expected investment income	-	(81,878)
Benefit payments	(174,298)	(168,098)
<b>OPEB Liability - End of Year</b>	<b>\$ 8,034,417</b>	<b>\$ 7,820,245</b>
<b>Plan fiduciary net position</b>		
Contributions - employer	\$ 168,098	\$ 168,098
Benefit payments	(168,098)	(168,098)
<b>Net change in plan fiduciary net position</b>	-	-
<b>Plan fiduciary net position - Beginning of Year</b>	-	-
<b>Plan fiduciary net position - End of Year</b>	<b>\$ -</b>	<b>\$ -</b>
<b>Net OPEB liability - End of Year</b>	<b>\$ 8,034,417</b>	<b>\$ 7,820,245</b>
<b>Plan fiduciary net position as a percentage of the total OPEB liability</b>	0%	0%
<b>Covered Payroll</b>	\$ 3,298,735	\$ 4,223,630
<b>Net OPEB liability as a percentage of covered payroll</b>	243.56%	185.15%
<b>Schedule of Employer Contributions</b>		
Actuarially determined contribution	174,298	572,075
Actual Contribution	174,298	168,098
<b>Contribution deficiency/(excess)</b>	<b>\$ -</b>	<b>\$ 403,977</b>
<b>Covered Payroll</b>	\$ 3,298,735	\$ 4,223,630
<b>ADC as a percentage of payroll</b>	5.28%	13.54%

**Key Assumptions:**

Census Collection Date	January 1, 2018
Discount rate	3.64%
Year 1 per 65 inflation rates (Medical/RX)	8.00%
Year 2 inflation rate	7.50%
Ultimate inflation rate	4.50%
Year Ultimate inflation rate is reached	2026
Actuarial Cost Method	Entry age normal (percent of salary)

**County of Gladwin, Michigan**

**Statement of Revenues, Expenditures, and  
Changes in Fund Balance - Governmental Funds  
For the Year Ended December 31, 2019**

	General	Emergency Medical Services	E-911 Millage	Wireless E-911 Fund	Senior Citizens Program	Nonmajor Governmental Funds	Totals Governmental Funds
<b>REVENUES:</b>							
Taxes	\$ 4,739,798	\$ 495,744	\$ 745,063	\$ -	\$ 742,662	\$ 198,614	\$ 6,921,881
Licenses and Permits	438,136	-	-	-	-	-	438,136
Federal	130,003	-	-	-	-	64,223	194,226
State	1,168,312	-	-	166,790	-	121,854	1,456,956
Local	9,000	-	-	-	-	23,550	32,550
Charges for Services	1,300,079	-	-	-	-	298,564	1,598,643
Fines and Forfeits	23,971	-	-	-	-	-	23,971
Interest and Rents	94,315	10,288	4,705	12,088	572	6,989	128,957
Reimbursements	234,196	-	-	-	-	-	234,196
Other Revenue	153,575	-	-	-	-	32,780	186,355
<b>TOTAL REVENUES</b>	<b>8,291,385</b>	<b>506,032</b>	<b>749,768</b>	<b>178,878</b>	<b>743,234</b>	<b>746,574</b>	<b>11,215,871</b>
<b>EXPENDITURES:</b>							
Legislative	198,198	-	-	-	-	-	198,198
Judicial	1,519,937	-	-	-	-	2,388	1,522,325
General Government	2,260,744	-	-	-	-	36,280	2,297,024
Public Safety	4,488,190	-	2,556	16,749	-	137,740	4,645,235
Public Works	14,421	-	-	-	-	-	14,421
Health and Welfare	498,591	754,094	-	-	687,069	284,760	2,224,514
Community and Economic Development	-	-	-	-	-	104,461	104,461
Recreation and Culture	2,668	-	-	-	-	762	3,430
Other	499,759	-	-	-	-	-	499,759
Capital Outlay	1,298,867	-	-	-	-	-	1,298,867
<b>TOTAL EXPENDITURES</b>	<b>10,781,375</b>	<b>754,094</b>	<b>2,556</b>	<b>16,749</b>	<b>687,069</b>	<b>566,391</b>	<b>12,808,234</b>
<b>EXCESS OF REVENUES OVER (UNDER) EXPENDITURES BEFORE OTHER FINANCING SOURCES (USES)</b>	<b>(2,489,990)</b>	<b>(248,062)</b>	<b>747,212</b>	<b>162,129</b>	<b>56,165</b>	<b>180,183</b>	<b>(1,592,363)</b>
<b>OTHER FINANCING SOURCES (USES):</b>							
Lease Proceeds	1,335,750	-	-	-	-	-	1,335,750
Transfers In	1,626,569	-	-	-	-	108,198	1,734,767
Transfers Out	(220,277)	-	(774,248)	-	-	(241,442)	(1,235,967)
<b>TOTAL OTHER FINANCING SOURCES (USES)</b>	<b>2,742,042</b>	<b>-</b>	<b>(774,248)</b>	<b>-</b>	<b>-</b>	<b>(133,244)</b>	<b>1,834,550</b>
<b>NET CHANGE IN FUND BALANCES</b>	<b>252,052</b>	<b>(248,062)</b>	<b>(27,036)</b>	<b>162,129</b>	<b>56,165</b>	<b>46,939</b>	<b>242,187</b>
<b>FUND BALANCES BEGINNING OF YEAR</b>	<b>659,752</b>	<b>2,076,147</b>	<b>696,876</b>	<b>955,773</b>	<b>7,806</b>	<b>963,516</b>	<b>5,359,870</b>
<b>FUND BALANCES END OF YEAR</b>	<b>\$ 911,804</b>	<b>\$ 1,828,085</b>	<b>\$ 669,840</b>	<b>\$ 1,117,902</b>	<b>\$ 63,971</b>	<b>\$ 1,010,455</b>	<b>\$ 5,602,057</b>

*[Handwritten signature]*

See accompanying notes to financial statements.



# Municipal Employees' Retirement System of Michigan

Annual Actuarial Valuation Report  
December 31, 2019 - Gladwin Co (2602)





Spring, 2020

Gladwin Co

In care of:  
Municipal Employees' Retirement System of Michigan  
1134 Municipal Way  
Lansing, Michigan 48917

This report presents the results of the Annual Actuarial Valuation, prepared for Gladwin Co (2602) as of December 31, 2019. The report includes the determination of liabilities and contribution rates resulting from the participation in the Municipal Employees' Retirement System of Michigan ("MERS"). This report contains the minimum actuarially determined contribution requirement, in alignment with the MERS Plan Document, Actuarial Policy, and the Michigan Constitution and governing statutes. Gladwin Co is responsible for the employer contributions needed to provide MERS benefits for its employees and former employees.

The purposes of this valuation are to:

- Measure funding progress as of December 31, 2019,
- Establish contribution requirements for the fiscal year beginning January 1, 2021,
- Provide information regarding the identification and assessment of risk,
- Provide actuarial information in connection with applicable Governmental Accounting Standards Board (GASB) statements, and
- Provide information to assist the local unit of government with state reporting requirements.

This valuation assumed the continuing ability of the plan sponsor to make the contributions necessary to fund this plan. A determination regarding whether or not the plan sponsor is actually able to do so is outside our scope of expertise and was not performed.

The findings in this report are based on data and other information through December 31, 2019. The valuation was based upon information furnished by MERS concerning Retirement System benefits, financial transactions, plan provisions and active members, terminated members, retirees and beneficiaries. We checked for internal reasonability and year-to-year consistency, but did not audit the data. We are not responsible for the accuracy or completeness of the information provided by MERS.

The Municipal Employees' Retirement Act, PA 427 of 1984 and the MERS' Plan Document Article VI sec. 71 (1)(d), provides the MERS Board with the authority to set actuarial assumptions and methods after consultation with the actuary. As the fiduciary of the plan, MERS Retirement Board sets certain assumptions for funding and GASB purposes. These assumptions are checked regularly through a comprehensive study, called an Experience Study. A study was completed in 2015, as prepared by the prior actuary, and is the basis of the demographic assumptions and methods currently in place. At the February 28, 2019 board meeting, the MERS Retirement Board adopted new economic assumptions effective with the December 31, 2019 annual actuarial valuation, which will impact contributions beginning in 2021. **At the February 27, 2020 board meeting, the MERS Retirement Board adopted demographic assumptions effective with the December 31, 2020 annual actuarial valuation, which will impact contributions beginning in 2022.** An illustration of the potential impact is found in this report.

The Michigan Department of Treasury provides required assumptions to be used for purposes of Public Act 202 reporting. These assumptions are for reporting purposes only and do not impact required contributions. Please refer to the State Reporting page found at the end of this report for information for this filing.

For a full list of all the assumptions used, please refer to the division-specific assumptions described in table(s) in this report, and to the Appendix on the MERS website at:  
<http://www.mersofmich.com/Portals/0/Assets/Resources/AAV-Appendix/MERS-2019AnnualActuarialValuation-Appendix.pdf>

**The actuarial assumptions used for this valuation are reasonable for purposes of the measurement.**

**This report does not reflect the recent and still developing impact of COVID-19, which is likely to influence demographic and economic experience, at least in the short-term. We will continue to monitor these developments and their impact on the MERS Defined Benefit and Hybrid plans. Actual experience will be reflected in each subsequent annual valuation, as experience emerges.**

This report has been prepared by actuaries who have substantial experience valuing public employee retirement systems. To the best of our knowledge the information contained in this report is accurate and fairly presents the actuarial position of Gladwin Co as of the valuation date. All calculations have been made in conformity with generally accepted actuarial principles and practices, with the Actuarial Standards of Practice issued by the Actuarial Standards Board, and with applicable statutes.

David T. Kausch, Rebecca L. Stouffer, and Mark Buis are members of the American Academy of Actuaries. These actuaries meet the Academy's Qualification Standards to render the actuarial opinions contained herein. The signing actuaries are independent of the plan sponsor. GRS maintains independent consulting agreements with certain local units of government for services unrelated to the actuarial consulting services provided in this report.

The Retirement Board of the Municipal Employees' Retirement System of Michigan confirms that the System provides for payment of the required employer contribution as described in Section 20m of Act No. 314 of 1965 (MCL 38.1140m).



This information is purely actuarial in nature. It is not intended to serve as a substitute for legal, accounting or investment advice.

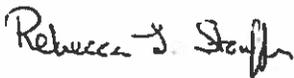
This report was prepared at the request of the MERS Retirement Board and may be provided only in its entirety by the municipality to other interested parties (MERS customarily provides the full report on request to associated third parties such as the auditor for the municipality). GRS is not responsible for the consequences of any unauthorized use. This report should not be relied on for any purpose other than the purposes described herein. Determinations of financial results, associated with the benefits described in this report, for purposes other than those identified above may be significantly different.

If you have reason to believe that the plan provisions are incorrectly described, that important plan provisions relevant to this valuation are not described, that conditions have changed since the calculations were made, that the information provided in this report is inaccurate or is in anyway incomplete, or if you need further information in order to make an informed decision on the subject matter in this report, please contact your Regional Manager at 1.800.767.MERS (6377).

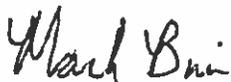
Sincerely,



David T. Kausch, FSA, FCA, EA, MAAA



Rebecca L. Stouffer, ASA, FCA, MAAA



Mark Buis, FSA, FCA, EA, MAAA



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# Executive Summary

## Funded Ratio

The funded ratio of a plan is the percentage of the dollar value of the actuarial accrued liability that is covered by the actuarial value of assets. While funding ratio may be a useful plan measurement, understanding a plan's funding trend may be more important than a particular point in time. Refer to Table 7 to find a history of this information.

	12/31/2019	12/31/2018
Funded Ratio*	63%	68%

\* Reflects assets from Surplus divisions, if any.

Throughout this report are references to valuation results generated prior to the 2018 valuation date. Results prior to 2018 were received directly from the prior actuary or extracted from the previous valuation system by MERS's technology service provider.

## Required Employer Contributions:

Your required employer contributions are shown in the following table. Employee contributions, if any, are in addition to the employer contributions. Changes to the actuarial assumptions and methods based on the 2015 Experience Study are fully phased-in with this valuation.

Effective this valuation, the MERS Retirement Board has adopted a reduction in the investment rate of return assumption from 7.75% to 7.35% and a reduction in the rate of wage inflation from 3.75% to 3.00%. Changes to these assumptions are effective for contributions beginning in 2021 and may be phased-in. This valuation reflects the first year of phase-in.

By default, MERS will invoice you based on the amount in the "No Phase-in" columns. This amount will be considered the minimum required contribution unless you request to be billed the "Phase-in" rates. If you wish to be billed using the phased-in rates, please contact MERS, at which point the alternate minimum required contribution will be the amount in the "Phase-in" columns. Please note that this approach is different than in years past.

	Percentage of Payroll				Monthly \$ Based on Projected Payroll			
	Phase-in	No Phase-in	Phase-in	No Phase-in	Phase-in	No Phase-in	Phase-in	No Phase-in
	Valuation Date: 12/31/2019	12/31/2019	12/31/2018	12/31/2018	12/31/2019	12/31/2019	12/31/2018	12/31/2018
Fiscal Year Beginning:	January 1, 2021	January 1, 2021	January 1, 2020	January 1, 2020	January 1, 2021	January 1, 2021	January 1, 2020	January 1, 2020
Division								
01 - Elctd&NonUnion	-	-	-	-	\$ 11,243	\$ 11,999	\$ 8,951	\$ 9,213
02 - Dispatchers	-	-	-	-	6,564	7,230	5,277	5,474
10 - UAW Unit 6&7	-	-	-	-	7,483	8,068	6,008	6,247
11 - UAW Unit 3,4,&5	23.59%	24.90%	21.00%	21.57%	12,564	13,263	10,417	10,701
12 - UAW #7	-	-	-	-	9,127	9,715	8,076	8,232
13 - New Hire div 01,02,10,12,20,22	2.60%	2.58%	2.57%	2.59%	3,751	3,718	3,405	3,430
20 - Sheriff COAM	-	-	-	-	8,487	8,982	7,486	7,655
21 - Cmd, Sher & Under	47.53%	50.40%	41.72%	42.69%	21,106	22,381	18,475	18,905
22 - Sheriff's Deputies POAM	-	-	-	-	1,201	1,516	435	527
Municipality Total					\$ 81,526	\$ 86,872	\$ 68,530	\$ 70,384

### Employee contribution rates:

Valuation Date:	Employee Contribution Rate	
	12/31/2019	12/31/2018
Division		
01 - Elctd&NonUnion	5.00%	5.00%
02 - Dispatchers	5.00%	5.00%
10 - UAW Unit 6&7	5.00%	5.00%
11 - UAW Unit 3,4,&5	3.80%	3.80%
12 - UAW #7	5.00%	5.00%
13 - New Hire div 01,02,10,12,20,22	5.00%	5.00%
20 - Sheriff COAM	5.00%	5.00%
21 - Cmd, Sher & Under	5.00%	5.00%
22 - Sheriff's Deputies POAM	5.00%	5.00%

The employer may contribute more than the minimum required contributions, as these additional contributions will earn investment income and may result in lower future contribution requirements. Employers making contributions in excess of the minimum requirements may elect to apply the excess contribution immediately to a particular division, or segregate the excess into one or more of what MERS calls "Surplus" divisions. An election in the first case would immediately reduce any unfunded accrued liability and lower the amortization payments throughout the remaining amortization period. An election to set up Surplus divisions would not immediately lower future contributions, however the assets from the Surplus division could be transferred to an unfunded division in the future to reduce the unfunded liability in future years, or to be used to pay all or a portion of the minimum required contribution in a future year. For purposes of this



report, the assets in any Surplus division have been included in the municipality's total assets, unfunded accrued liability and funded status, however, these assets are not used in calculating the minimum required contribution.

**MERS strongly encourages employers to contribute more than the minimum contribution shown above.**

Assuming that experience of the plan meets actuarial assumptions:

- To accelerate to a 100% funding ratio in 10 years, estimated monthly employer contributions for the fiscal year beginning in 2021 for the entire employer would be \$126,361, instead of \$86,872.

### **How and Why Do These Numbers Change?**

In a defined benefit plan contributions vary from one annual actuarial valuation to the next as a result of the following:

- Changes in benefit provisions (see Table 2)
- Changes in actuarial assumptions and methods (see the Appendix)
- Experience of the plan (investment experience and demographic experience); this is the difference between actual experience of the plan and the actuarial assumptions.

### **Comments on Investment Rate of Return Assumption**

A defined benefit plan is funded by employer contributions, participant contributions, and investment earnings. Investment earnings have historically provided a significant portion of the funding. The larger the share of benefits being provided from investment returns, the smaller the required contributions, and vice versa. Determining the contributions required to prefund the promised retirement benefits requires an assumption of what investment earnings are expected to add to the fund over a long period of time. This is called the **Investment Return Assumption**.

The MERS Investment Return Assumption is 7.35% per year. This, along with all of our other actuarial assumptions, is reviewed at least every five years in an Experience Study that compares the assumptions used against actual experience and recommends adjustments if necessary. If your municipality would like to explore contributions at lower assumed investment return assumptions, please review the "what if" projection scenarios later in this report.

### **Assumption Change in 2019**

At the February 28, 2019 board meeting, the MERS Retirement Board adjusted key economic assumptions. These assumptions, in particular the investment return assumption, have a significant effect on a plan's required contribution and funding level. Historically low interest rates, along with high equity market valuations, have led to reductions in projected returns for most asset classes. This has resulted in a Board adopted reduction in the investment rate of return assumption from 7.75% to 7.35%, effective with the December 31, 2019 valuation, first impacting 2021 contributions. The Board also changed the assumed rate of wage inflation from 3.75% to 3.00%, with the same effective date.

### **Assumption Change in 2020**

A 5-year experience study analyzing historical experience from 2013 through 2018 was completed in February 2020. In addition to changes to the economic assumptions which will take effect with the Fiscal year 2021 contribution rates, the experience study recommends updated demographic assumptions, including



adjustments to the following actuarial assumptions: mortality, retirement, disability, and termination rates. A complete description of the proposed assumptions may be found in the Appendix to the valuation. Changes to the demographic assumptions resulting from the experience study have been approved by the MERS Retirement Board and are to be effective beginning with the December 31, 2020 actuarial valuation first impacting 2022 contributions. This report includes a "What If" scenario of the approved 2020 assumption changes in an effort to show employers the anticipated impact on contribution rates.

## Comments on Asset Smoothing

To avoid dramatic spikes and dips in annual contribution requirements due to short term fluctuations in asset markets, MERS applies a technique called **asset smoothing**. This spreads out each year's investment gains or losses over the prior year and the following four years. This smoothing method is used to determine your actuarial value of assets (valuation assets), which is then used to determine both your funded ratio and your required contributions. The (smoothed) actuarial rate of return for 2019 was 4.77%, while the actual market rate of return was 13.41%. To see historical details of the market rate of return, compared to the smoothed actuarial rate of return, refer to this report's Appendix, or view the "[How Smoothing Works](#)" video on the [Defined Benefit resource page](#) of the MERS website.

As of December 31, 2019, the actuarial value of assets is 101% of market value due to asset smoothing. This means that meeting the actuarial assumption in the next few years will require average annual market returns that exceed the 7.35% investment return assumption, or contribution requirements will continue to increase.

If the December 31, 2019 valuation results were based on market value instead of actuarial value:

- The funded percent of your entire municipality would be 62% (instead of 63%); and
- Your total employer contribution requirement for the fiscal year starting January 1, 2021 would be \$1,061,232 (instead of \$1,042,464).

## Alternate Scenarios to Estimate the Potential Volatility of Results ("What If Scenarios")

The calculations in this report are based on assumptions about long-term economic and demographic behavior. These assumptions will never materialize in a given year, except by coincidence. Therefore the results will vary from one year to the next. The volatility of the results depends upon the characteristics of the plan. For example:

- Open divisions that have substantial assets compared to their active employee payroll will have more volatile employer contribution rates due to investment return fluctuations.
- Open divisions that have substantial accrued liability compared to their active employee payroll will have more volatile employer contribution rates due to demographic experience fluctuations.
- Small divisions will have more volatile contribution patterns than larger divisions because statistical fluctuations are relatively larger among small populations.
- Shorter amortization periods result in more volatile contribution patterns.

Many assumptions are important in determining the required employer contributions. In the following table, we show the impact of varying the Investment Return assumption and the demographic assumptions. Lower investment returns would result in higher required employer contributions, and vice-versa. Alternate demographic assumptions may result in higher or lower employer contributions depending on the demographic characteristics of the plan participants.



The relative impact of the economic and demographic scenarios below will vary from year to year, as the participant demographics change. The impact of each scenario should be analyzed for a given year, not from year to year. The results in the table are based on the December 31, 2019 valuation, and are for the municipality in total, not by division. These results do not reflect a phase in of the impact of the new actuarial assumptions.

It is important to note that calculations in this report are mathematical estimates based upon assumptions regarding future events, which may or may not materialize. Actuarial calculations can and do vary from one valuation to the next, sometimes significantly depending on the group's size. Projections are not predictions. Future valuations will be based on actual future experience.

In addition to economic assumption changes effective with Fiscal Year 2021 contributions, the Retirement Board has also adopted a change to certain demographic and other assumptions effective for the December 31, 2020 valuation which will impact the Fiscal Year 2022 contributions. Please see the section labeled "Assumption Change in 2020" for more information. The scenario shown using these assumptions as of December 31, 2019 is illustrative only. The actual impact of this change when reflected in the 2020 Annual Actuarial Valuation report will be different.

12/31/2019 Valuation Results	Assumed Future Annual Smoothed Rate of Investment Return		
	Lower Future Annual Returns <sup>3</sup>	2020 Adopted Demographic Assumptions	Valuation Assumptions
Investment Return Assumption	5.35%	7.35%	7.35%
Wage Increase Assumption	3.00%	3.00%	3.00%
Accrued Liability	\$ 34,811,819	\$ 28,386,374	\$ 27,155,914
Valuation Assets <sup>1</sup>	\$ 17,144,329	\$ 17,144,329	\$ 17,144,329
Unfunded Accrued Liability	\$ 17,667,490	\$ 11,242,045	\$ 10,011,585
Funded Ratio	49%	60%	63%
Monthly Normal Cost	\$ 45,283	\$ 26,585	\$ 21,704
Monthly Amortization Payment	\$ 99,504	\$ 73,749	\$ 65,168
Total Employer Contribution <sup>2</sup>	\$ 144,787	\$ 100,334	\$ 86,872

<sup>1</sup> The Valuation Assets include assets from Surplus divisions, if any.

<sup>2</sup> If assets exceed accrued liabilities for a division, the division may have an overfunding credit to reduce the division's employer contribution requirement. If the overfunding credit is larger than the normal cost, the division's full credit is included in the municipality's amortization payment above but the division's total contribution requirement is zero. This can cause the displayed normal cost and amortization payment to not add up to the displayed total employer contribution.

<sup>3</sup> Based on current demographic assumptions.

## Projection Scenarios

The next two pages show projections of the plan's funded ratio and computed employer contributions under the actuarial assumptions used in the valuation and alternate economic and demographic assumption scenarios. All three projections take into account the past investment losses that will continue to affect the actuarial rate of return in the short term.

The 7.35%/3.00% scenario provides an estimate of computed employer contributions based on current actuarial assumptions, and a projected 7.35% market return. The other two scenarios may be useful if the

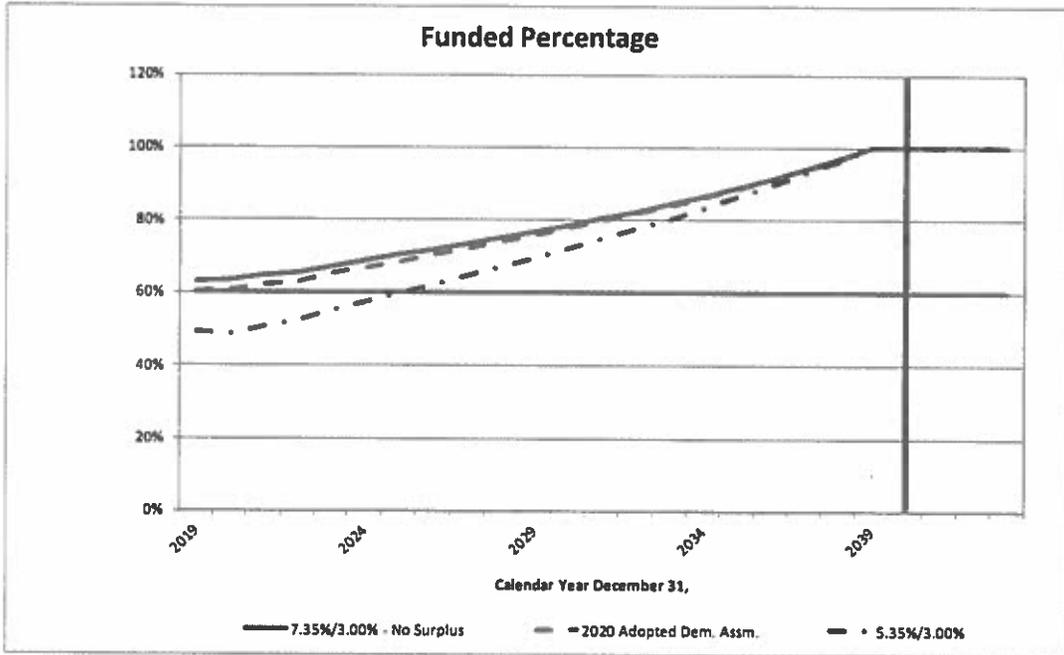


municipality chooses to budget more conservatively, and make contributions in addition to the minimum requirements. The 2020 adopted demographic assumption and 5.35%/3.00% projection scenarios provide an indication of the potential required employer contribution if these assumptions were met over the long-term.

Valuation Year Ending 12/31	Fiscal Year Beginning 1/1	Actuarial Accrued Liability	Valuation Assets <sup>2</sup>	Funded Percentage	Computed Annual Employer Contribution
<b>7.35%<sup>1</sup>/3.00% - Current Demographic Assumptions</b>					
<b>NO 5-YEAR PHASE-IN</b>					
2019	2021	\$ 27,155,914	\$ 17,144,329	63%	\$ 1,042,464
2020	2022	\$ 28,000,000	\$ 17,800,000	64%	\$ 1,070,000
2021	2023	\$ 28,900,000	\$ 18,700,000	65%	\$ 1,110,000
2022	2024	\$ 29,900,000	\$ 19,500,000	65%	\$ 1,160,000
2023	2025	\$ 30,900,000	\$ 20,800,000	67%	\$ 1,170,000
2024	2026	\$ 31,900,000	\$ 22,000,000	69%	\$ 1,200,000
<b>7.35%<sup>1</sup>/3.00% - Adopted 2020 Demographic Assumptions</b>					
<b>NO 5-YEAR PHASE-IN</b>					
2019	2021	\$ 28,386,374	\$ 17,144,329	60%	\$ 1,204,008
2020	2022	\$ 29,400,000	\$ 17,800,000	61%	\$ 1,240,000
2021	2023	\$ 30,500,000	\$ 18,900,000	62%	\$ 1,280,000
2022	2024	\$ 31,600,000	\$ 19,900,000	63%	\$ 1,340,000
2023	2025	\$ 32,800,000	\$ 21,300,000	65%	\$ 1,360,000
2024	2026	\$ 34,000,000	\$ 22,700,000	67%	\$ 1,390,000
<b>5.35%<sup>1</sup>/3.00% - Current Demographic Assumptions</b>					
<b>NO 5-YEAR PHASE-IN</b>					
2019	2021	\$ 34,811,819	\$ 17,144,329	49%	\$ 1,737,444
2020	2022	\$ 35,800,000	\$ 17,500,000	49%	\$ 1,800,000
2021	2023	\$ 36,900,000	\$ 18,700,000	51%	\$ 1,860,000
2022	2024	\$ 38,100,000	\$ 19,900,000	52%	\$ 1,920,000
2023	2025	\$ 39,200,000	\$ 21,600,000	55%	\$ 1,960,000
2024	2026	\$ 40,400,000	\$ 23,200,000	57%	\$ 2,000,000

<sup>1</sup> Represents both the interest rate for discounting liabilities and the future investment return assumption on the Market Value of assets.

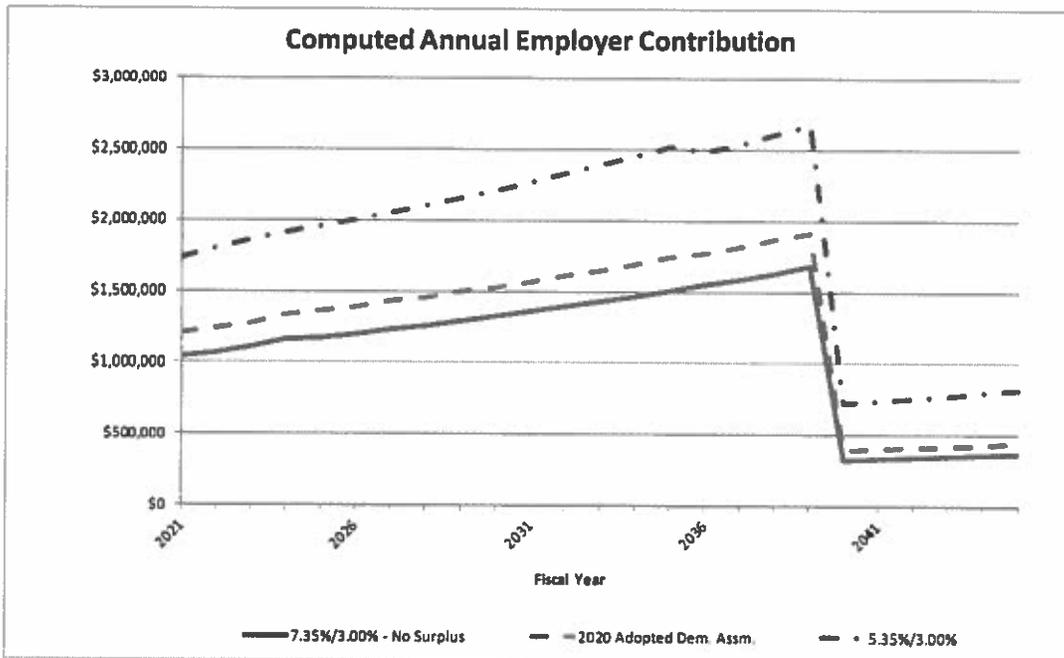
<sup>2</sup> Valuation Assets do not include assets from Surplus divisions, if any.



**Notes:**

All projected funded percentages are shown with no phase-in.

The green indicator lines have been added at 60% funded and 21 years following the valuation date for PA 202 purposes.



**Notes:**

All projected contributions are shown with no phase-in.



**Table 1: Employer Contribution Details For the Fiscal Year Beginning January 1, 2021**

Division	Total Normal Cost	Employee Contribut. Rate	Employer Contributions <sup>1</sup>			Computed Employer Contribut. With Phase-In	Blended ER Rate No Phase-In <sup>5</sup>	Blended ER Rate With Phase-In <sup>5</sup>	Employee Contribut. Conversion Factor <sup>2</sup>
			Employer Normal Cost	Payment of the Unfunded Accrued Liability <sup>4</sup>	Computed Employer Contribut. No Phase-In				
Percentage of Payroll									
01 - Elctd&NonUnion	14.18%	5.00%					19.88%	18.57%	
02 - Dispatchers	14.43%	5.00%					19.88%	18.57%	
10 - UAW Unit 6&7	13.50%	5.00%					19.88%	18.57%	
11 - UAW Unit 3,4,&5	12.91%	3.80%	9.11%	15.79%	24.90%	23.59%			0.84%
12 - UAW #7	12.76%	5.00%					19.88%	18.57%	
13 - New Hire div 01,02,10,12,20,22	7.57%	5.00%	2.57%	0.01%	2.58%	2.60%	19.88%	18.57%	0.77%
20 - Sheriff COAM	12.38%	5.00%					19.88%	18.57%	
21 - Cmd, Sher & Under	13.56%	5.00%	8.56%	41.84%	50.40%	47.53%	19.88%	18.57%	0.82%
22 - Sheriff's Deputies POAM	13.94%	5.00%					19.88%	18.57%	
Estimated Monthly Contribution <sup>3</sup>			\$ 2,389	\$ 9,610	\$ 11,999	\$ 11,243			
01 - Elctd&NonUnion			385	6,845	7,230	6,564			
02 - Dispatchers			706	7,362	8,068	7,483			
10 - UAW Unit 6&7			4,853	8,410	13,263	12,564			
11 - UAW Unit 3,4,&5			1,702	8,013	9,715	9,127			
12 - UAW #7			3,708	10	3,718	3,751			
13 - New Hire div 01,02,10,12,20,22			2,802	6,180	8,982	8,487			
20 - Sheriff COAM			3,801	18,580	22,381	21,106			
21 - Cmd, Sher & Under			1,358	158	1,516	1,201			
22 - Sheriff's Deputies POAM									
Total Municipality			\$ 21,704	\$ 65,168	\$ 86,872	\$ 81,526			
Estimated Annual Contribution <sup>3</sup>			\$ 260,448	\$ 782,016	\$ 1,042,464	\$ 978,312			

<sup>1</sup> The above employer contribution requirements are in addition to the employee contributions, if any.

<sup>2</sup> If employee contributions are increased/decreased by 1.00% of pay, the employer contribution requirement will decrease/increase by the Employee Contribution Conversion Factor. The conversion factor is usually under 1%, because employee contributions may be refunded at termination of employment, and not used to fund retirement pensions. Employer contributions will all be used to fund pensions.

<sup>3</sup> For divisions that are open to new hires, estimated contributions are based on projected fiscal year payroll. Actual contributions will be based on actual reported monthly pays, and will be different from the above amounts. For divisions that will have no new hires (i.e., closed divisions), invoices will be based on the above dollar amounts which are based on projected fiscal year payroll. See description of Open Divisions and Closed Divisions in the Appendix.

<sup>4</sup> Note that if the overfunding credit is larger than the normal cost, the full credit is shown above but the total contribution requirement is zero. This will cause the displayed normal cost and unfunded accrued liability contributions to not add across.



<sup>5</sup> For linked divisions, the employer will be invoiced the Computed Employer Contribution No Phase-in rate shown above for each linked division (a contribution rate for the open division; a contribution dollar for the closed-but-linked division), unless the employer elects to contribute the Blended Employer Contribution rate shown above, by contacting MERS at 800-767-MERS (6377).

**Please see the Comments on Asset Smoothing in the Executive Summary of this report.**



## Table 2: Benefit Provisions

### 01 - Elctd&NonUnion: Closed to new hires, linked to Division 13

	2019 Valuation	2018 Valuation
Benefit Multiplier:	2.25% Multiplier (80% max)	2.25% Multiplier (80% max)
Normal Retirement Age:	60	60
Vesting:	10 years	10 years
Early Retirement (Unreduced):	55/20	55/20
Early Retirement (Reduced):	50/25 55/15	50/25 55/15
Final Average Compensation:	3 years	3 years
COLA for Future Retirees:	2.50% (Non-Compound)	2.50% (Non-Compound)
COLA for Current Retirees:	2.50% (Non-Compound)	2.50% (Non-Compound)
Employee Contributions:	5.00%	5.00%
Act 88:	Yes (Adopted 12/14/1970)	Yes (Adopted 12/14/1970)

### 02 - Dispatchers: Closed to new hires, linked to Division 13

	2019 Valuation	2018 Valuation
Benefit Multiplier:	2.50% Multiplier (80% max)	2.50% Multiplier (80% max)
Normal Retirement Age:	60	60
Vesting:	10 years	10 years
Early Retirement (Unreduced):	55/20	55/20
Early Retirement (Reduced):	50/25 55/15	50/25 55/15
Final Average Compensation:	3 years	3 years
COLA for Future Retirees:	2.50% (Non-Compound)	2.50% (Non-Compound)
COLA for Current Retirees:	2.50% (Non-Compound)	2.50% (Non-Compound)
Employee Contributions:	5.00%	5.00%
Act 88:	Yes (Adopted 12/14/1970)	Yes (Adopted 12/14/1970)

### 10 - UAW Unit 6&7: Closed to new hires, linked to Division 13

	2019 Valuation	2018 Valuation
Benefit Multiplier:	2.25% Multiplier (80% max)	2.25% Multiplier (80% max)
Normal Retirement Age:	60	60
Vesting:	10 years	10 years
Early Retirement (Unreduced):	55/20	55/20
Early Retirement (Reduced):	50/25 55/15	50/25 55/15
Final Average Compensation:	3 years	3 years
COLA for Future Retirees:	2.50% (Non-Compound)	2.50% (Non-Compound)
COLA for Current Retirees:	2.50% (Non-Compound)	2.50% (Non-Compound)
Employee Contributions:	5.00%	5.00%
Act 88:	Yes (Adopted 12/14/1970)	Yes (Adopted 12/14/1970)



**11 - UAW Unit 3,4,&5: Open Division**

	2019 Valuation	2018 Valuation
Benefit Multiplier:	2.25% Multiplier (80% max)	2.25% Multiplier (80% max)
Normal Retirement Age:	60	60
Vesting:	10 years	10 years
Early Retirement (Unreduced):	55/20	55/20
Early Retirement (Reduced):	50/25 55/15	50/25 55/15
Final Average Compensation:	3 years	3 years
COLA for Future Retirees:	2.50% (Non-Compound)	2.50% (Non-Compound)
COLA for Current Retirees:	2.50% (Non-Compound)	2.50% (Non-Compound)
Employee Contributions:	3.80%	3.80%
Act 88:	Yes (Adopted 12/14/1970)	Yes (Adopted 12/14/1970)

**12 - UAW #7: Closed to new hires, linked to Division 13**

	2019 Valuation	2018 Valuation
Benefit Multiplier:	2.25% Multiplier (80% max)	2.25% Multiplier (80% max)
Normal Retirement Age:	60	60
Vesting:	10 years	10 years
Early Retirement (Unreduced):	55/20	55/20
Early Retirement (Reduced):	50/25 55/15	50/25 55/15
Final Average Compensation:	3 years	3 years
COLA for Future Retirees:	2.50% (Non-Compound)	2.50% (Non-Compound)
Employee Contributions:	5.00%	5.00%
Act 88:	Yes (Adopted 12/14/1970)	Yes (Adopted 12/14/1970)

**13 - New Hire div 01,02,10,12,20,22: Open Division, linked to Division 01, 02, 10, 12, 20, 22**

	2019 Valuation	2018 Valuation
Benefit Multiplier:	1.50% Multiplier (no max)	1.50% Multiplier (no max)
Normal Retirement Age:	60	60
Vesting:	10 years	10 years
Early Retirement (Unreduced):	55/20	55/20
Early Retirement (Reduced):	50/25 55/15	50/25 55/15
Final Average Compensation:	3 years	3 years
Employee Contributions:	5.00%	5.00%
Act 88:	Yes (Adopted 12/14/1970)	Yes (Adopted 12/14/1970)



**20 - Sheriff COAM: Closed to new hires, linked to Division 13**

	<b>2019 Valuation</b>	<b>2018 Valuation</b>
<b>Benefit Multiplier:</b>	2.25% Multiplier (80% max)	2.25% Multiplier (80% max)
<b>Normal Retirement Age:</b>	60	60
<b>Vesting:</b>	10 years	10 years
<b>Early Retirement (Unreduced):</b>	55/20	55/20
<b>Early Retirement (Reduced):</b>	50/25 55/15	50/25 55/15
<b>Final Average Compensation:</b>	3 years	3 years
<b>COLA for Future Retirees:</b>	2.50% (Non-Compound)	2.50% (Non-Compound)
<b>COLA for Current Retirees:</b>	2.50% (Non-Compound)	2.50% (Non-Compound)
<b>Employee Contributions:</b>	5.00%	5.00%
<b>Act 88:</b>	Yes (Adopted 12/14/1970)	Yes (Adopted 12/14/1970)

**21 - Cmd, Sher & Under: Open Division**

	<b>2019 Valuation</b>	<b>2018 Valuation</b>
<b>Benefit Multiplier:</b>	2.50% Multiplier (80% max)	2.50% Multiplier (80% max)
<b>Normal Retirement Age:</b>	60	60
<b>Vesting:</b>	10 years	10 years
<b>Early Retirement (Unreduced):</b>	55/20	55/20
<b>Early Retirement (Reduced):</b>	50/25 55/15	50/25 55/15
<b>Final Average Compensation:</b>	3 years	3 years
<b>COLA for Future Retirees:</b>	2.50% (Non-Compound)	2.50% (Non-Compound)
<b>Employee Contributions:</b>	5.00%	5.00%
<b>Act 88:</b>	Yes (Adopted 12/14/1970)	Yes (Adopted 12/14/1970)

**22 - Sheriff's Deputies POAM: Closed to new hires, linked to Division 13**

	<b>2019 Valuation</b>	<b>2018 Valuation</b>
<b>Benefit Multiplier:</b>	2.50% Multiplier (80% max)	2.50% Multiplier (80% max)
<b>Normal Retirement Age:</b>	60	60
<b>Vesting:</b>	10 years	10 years
<b>Early Retirement (Unreduced):</b>	50/25	50/25
<b>Early Retirement (Reduced):</b>	55/15	55/15
<b>Final Average Compensation:</b>	3 years	3 years
<b>COLA for Future Retirees:</b>	2.50% (Non-Compound)	2.50% (Non-Compound)
<b>Employee Contributions:</b>	5.00%	5.00%
<b>Act 88:</b>	Yes (Adopted 12/14/1970)	Yes (Adopted 12/14/1970)



### Table 3: Participant Summary

Division	2019 Valuation		2018 Valuation		2019 Valuation		
	Number	Annual Payroll <sup>1</sup>	Number	Annual Payroll <sup>1</sup>	Average Age	Average Benefit Service <sup>2</sup>	Average Eligibility Service <sup>2</sup>
<b>01 - Elctd&amp;NonUnion</b>							
Active Employees	5	\$ 336,926	5	\$ 302,203	52.4	17.3	20.3
Vested Former Employees	2	14,423	3	23,221	55.8	13.7	15.7
Retirees and Beneficiaries	20	220,021	20	210,690	74.0		
Pending Refunds	9		9				
<b>02 - Dispatchers</b>							
Active Employees	1	\$ 49,141	2	\$ 86,377	46.6	13.0	13.0
Vested Former Employees	9	68,765	10	70,423	48.5	7.9	16.0
Retirees and Beneficiaries	10	166,661	9	133,747	67.0		
Pending Refunds	7		6				
<b>10 - UAW Unit 6&amp;7</b>							
Active Employees	3	\$ 104,529	3	\$ 88,195	55.3	17.5	17.5
Vested Former Employees	4	32,664	5	40,089	48.5	11.8	12.5
Retirees and Beneficiaries	17	230,484	16	218,912	74.1		
Pending Refunds	5		5				
<b>11 - UAW Unit 3,4,&amp;5</b>							
Active Employees	16	\$ 602,534	16	\$ 553,107	42.6	5.1	5.7
Vested Former Employees	7	46,605	7	48,984	45.8	8.1	12.1
Retirees and Beneficiaries	19	253,704	19	248,830	71.1		
Pending Refunds	7		6				
<b>12 - UAW #7</b>							
Active Employees	6	\$ 277,533	7	\$ 307,217	45.4	14.6	14.6
Vested Former Employees	0	0	0	0	0.0	0.0	0.0
Retirees and Beneficiaries	9	161,333	8	142,965	64.9		
Pending Refunds	0		0				
<b>13 - New Hire div 01,02,10,12,20,22</b>							
Active Employees	40	\$ 1,505,082	37	\$ 1,332,056	38.7	2.3	2.7
Vested Former Employees	3	4,957	2	2,433	45.7	2.3	12.9
Retirees and Beneficiaries	1	2,378	1	2,378	61.0		
Pending Refunds	19		13				
<b>20 - Sheriff COAM</b>							
Active Employees	10	\$ 463,114	10	\$ 484,122	44.4	13.6	13.6
Vested Former Employees	1	3,090	1	3,090	53.6	10.8	10.8
Retirees and Beneficiaries	8	98,273	8	96,352	70.1		
Pending Refunds	8		8				

**Table 3 (continued)**

Division	2019 Valuation		2018 Valuation		2019 Valuation		
	Number	Annual Payroll <sup>1</sup>	Number	Annual Payroll <sup>1</sup>	Average Age	Average Benefit Service <sup>2</sup>	Average Eligibility Service <sup>2</sup>
<b>21 - Cmd, Sher &amp; Under</b>							
Active Employees	8	\$ 502,263	8	\$ 493,638	47.9	20.7	21.7
Vested Former Employees	1	12,375	1	12,375	49.1	10.8	10.8
Retirees and Beneficiaries	11	258,941	10	254,196	61.5		
Pending Refunds	0		0				
<b>22 - Sheriff's Deputies POAM</b>							
Active Employees	3	\$ 179,102	3	\$ 168,833	42.3	16.2	16.2
Vested Former Employees	4	49,433	4	49,434	39.9	8.9	12.4
Retirees and Beneficiaries	2	23,352	2	22,809	62.2		
Pending Refunds	0		0				
<b>Total Municipality</b>							
Active Employees	92	\$ 4,020,224	91	\$ 3,815,748	42.7	8.3	8.8
Vested Former Employees	31	232,311	33	250,049	47.2	8.6	13.5
Retirees and Beneficiaries	97	1,415,149	93	1,330,879	69.8		
Pending Refunds	55		47				
<b>Total Participants</b>	<b>275</b>		<b>264</b>				

<sup>1</sup> Annual payroll for active employees; annual deferred benefits payable for vested former employees; annual benefits being paid for retirees and beneficiaries.

<sup>2</sup> Descriptions can be found under Miscellaneous and Technical Assumptions in the Appendix.

**Table 4: Reported Assets (Market Value)**

Division	2019 Valuation		2018 Valuation	
	Employer and Retiree <sup>1</sup>	Employee <sup>2</sup>	Employer and Retiree <sup>1</sup>	Employee <sup>2</sup>
01 - Elctd&NonUnion	\$ 2,182,566	\$ 264,157	\$ 1,957,174	\$ 299,949
02 - Dispatchers	1,531,602	156,236	1,372,607	193,396
10 - UAW Unit 6&7	1,712,350	148,216	1,618,880	156,209
11 - UAW Unit 3,4,&5	2,161,368	212,574	2,028,036	187,157
12 - UAW #7	1,549,157	152,477	1,405,333	156,309
13 - New Hire div 01,02,10,12,20,22	208,118	222,953	127,112	150,416
20 - Sheriff COAM	1,586,290	269,188	1,391,063	242,181
21 - Cmd, Sher & Under	2,965,721	383,075	2,599,590	352,359
22 - Sheriff's Deputies POAM	1,027,350	187,926	897,017	176,169
<b>Municipality Total<sup>3</sup></b>	<b>\$ 14,924,522</b>	<b>\$ 1,996,802</b>	<b>\$ 13,396,812</b>	<b>\$ 1,914,145</b>
<b>Combined Assets<sup>3</sup></b>	<b>\$16,921,323</b>		<b>\$15,310,957</b>	

<sup>1</sup> Reserve for Employer Contributions and Benefit Payments.

<sup>2</sup> Reserve for Employee Contributions.

<sup>3</sup> Totals may not add due to rounding.

The December 31, 2019 valuation assets (actuarial value of assets) are equal to 1.013179 times the reported market value of assets (compared to 1.095342 as of December 31, 2018). Refer to the Appendix for a description of the valuation asset derivation and a detailed calculation of valuation assets.

**Table 5: Flow of Valuation Assets**

Year Ended 12/31	Employer Contributions		Employee Contributions	Investment Income (Valuation Assets)	Benefit Payments	Employee Contribution Refunds	Net Transfers	Valuation Asset Balance
	Required	Additional						
2009	\$ 486,029		\$ 138,637	\$ 598,834	\$ (582,484)	\$ (19,459)	\$ 1	\$ 11,695,225
2010	496,445		138,600	686,864	(636,912)	(35,901)	1	12,344,322
2011	497,469	\$ 168,000	137,410	706,638	(658,738)	(17,690)	0	13,177,411
2012	500,348	30,000	138,678	641,368	(749,943)	(10,713)	0	13,727,149
2013	527,213	2,180	142,414	836,854	(871,187)	(5,636)	0	14,358,987
2014	520,294	33,466	159,821	827,889	(959,232)	(18,583)	0	14,922,642
2015	579,169	30,000	164,714	754,700	(1,013,677)	(4,313)	0	15,433,235
2016	577,523	0	174,133	807,689	(1,086,523)	(9,742)	0	15,896,315
2017	649,331	30,000	177,721	961,579	(1,179,111)	(34,223)	0	16,501,612
2018	719,545	30,000	188,271	607,034	(1,261,326)	(14,401)	0	16,770,735
2019	727,546	30,000	194,721	797,471	(1,361,198)	(14,946)	0	17,144,329

**Notes:**

Transfers in and out are usually related to the transfer of participants between municipalities, and to employer and employee payments for service credit purchases (if any) that the governing body has approved.

Additional employer contributions, if any, are shown separately starting in 2011. Prior to 2011, additional contributions are combined with the required employer contributions.

The investment income column reflects the recognized investment income based on Valuation Assets. It does not reflect the market value investment return in any given year.

The Valuation Asset balance includes assets from Surplus divisions, if any.

Years where historical information is not available, will be displayed with zero values.



**Table 6: Actuarial Accrued Liabilities and Valuation Assets  
as of December 31, 2019**

Division	Actuarial Accrued Liability						Valuation Assets	Percent Funded	Unfunded (Overfunded) Accrued Liabilities
	Active Employees	Vested Former Employees	Retirees and Beneficiaries	Pending Refunds	Total				
01 - Elctd&NonUnion	\$ 1,550,812	\$ 148,755	\$ 2,230,029	\$ 23,111	\$ 3,952,707	\$ 2,478,968	62.7%	\$ 1,473,739	
02 - Dispatchers	173,341	521,945	2,055,860	8,375	2,759,521	1,710,082	62.0%	1,049,439	
10 - UAW Unit 6&7	466,804	249,219	2,277,076	24,248	3,017,347	1,885,087	62.5%	1,132,260	
11 - UAW Unit 3,4,&5	707,480	313,310	2,654,512	21,799	3,697,101	2,405,228	65.1%	1,291,873	
12 - UAW #7	1,016,585	0	1,941,381	0	2,957,966	1,724,061	58.3%	1,233,905	
13 - New Hire div 01,02,10,12,20,22	334,797	34,744	29,143	39,628	438,312	436,751	99.6%	1,561	
20 - Sheriff COAM	1,623,334	23,947	1,169,172	13,267	2,829,720	1,879,931	66.4%	949,789	
21 - Cmd, Sher & Under	3,033,678	74,321	3,153,372	0	6,261,371	3,392,930	54.2%	2,868,441	
22 - Sheriff's Deputies POAM	795,187	155,166	291,516	0	1,241,869	1,231,291	99.2%	10,578	
<b>Total</b>	<b>\$ 9,702,018</b>	<b>\$ 1,521,407</b>	<b>\$ 15,802,061</b>	<b>\$ 130,428</b>	<b>\$ 27,155,914</b>	<b>\$ 17,144,329</b>	<b>63.1%</b>	<b>\$ 10,011,585</b>	



The following results show the combined accrued liabilities and assets for each set of linked divisions. These results are already shown in the table on the prior page(s).

**Table 6 (continued)**

Division	Actuarial Accrued Liability					Valuation Assets	Percent Funded	Unfunded (Overfunded) Accrued Liabilities
	Active Employees	Vested Former Employees	Retirees and Beneficiaries	Pending Refunds	Total			
Linked Divisions 13, 01, 02, 10, 12, 20, 22	\$ 5,960,860	\$ 1,133,776	\$ 9,994,177	\$ 108,629	\$ 17,197,442	\$ 11,346,171	66.0%	\$ 5,851,271

Please see the Comments on Asset Smoothing in the Executive Summary of this report.



**Table 7: Actuarial Accrued Liabilities - Comparative Schedule**

Valuation Date December 31	Actuarial Accrued Liability	Valuation Assets	Percent Funded	Unfunded (Overfunded) Accrued Liabilities
2005	\$ 11,810,044	\$ 9,336,162	79%	\$ 2,473,882
2006	12,274,517	9,633,750	78%	2,640,767
2007	13,186,000	10,480,689	79%	2,705,311
2008	14,412,994	11,073,667	77%	3,339,327
2009	14,790,653	11,695,225	79%	3,095,428
2010	15,318,783	12,344,322	81%	2,974,461
2011	16,398,988	13,177,411	80%	3,221,577
2012	17,548,995	13,727,149	78%	3,821,846
2013	19,116,274	14,358,987	75%	4,757,287
2014	19,905,135	14,922,642	75%	4,982,493
2015	22,132,390	15,433,235	70%	6,699,155
2016	23,083,022	15,896,315	69%	7,186,707
2017	23,698,653	16,501,612	70%	7,197,041
2018	24,830,561	16,770,735	68%	8,059,826
2019	27,155,914	17,144,329	63%	10,011,585

Notes: Actuarial assumptions were revised for the 2008, 2009, 2010, 2011, 2012, 2015 and 2019 actuarial valuations.

The Valuation Assets include assets from Surplus divisions, if any.

Years where historical information is not available will be displayed with zero values.

Throughout this report are references to valuation results generated prior to the 2018 valuation date. Results prior to 2018 were received directly from the prior actuary or extracted from the previous valuation system by MERS's technology service provider.

# Tables 8 and 9: Division-Based Comparative Schedules

## Division 01 - Elctd&NonUnion

**Table 8-01: Actuarial Accrued Liabilities - Comparative Schedule**

Valuation Date December 31	Actuarial Accrued Liability	Valuation Assets	Percent Funded	Unfunded (Overfunded) Accrued Liabilities
2009	\$ 2,876,272	\$ 2,176,057	76%	\$ 700,215
2010	2,540,108	2,187,742	86%	352,366
2011	2,685,891	2,306,003	86%	379,888
2012	2,805,280	2,370,487	85%	434,793
2013	2,935,646	2,406,742	82%	528,904
2014	3,036,685	2,432,902	80%	603,783
2015	3,314,838	2,429,815	73%	885,023
2016	3,418,913	2,430,783	71%	988,130
2017	3,489,363	2,472,342	71%	1,017,021
2018	3,613,073	2,472,322	68%	1,140,751
2019	3,952,707	2,478,968	63%	1,473,739

Notes: Actuarial assumptions were revised for the 2009, 2010, 2011, 2012, 2015 and 2019 actuarial valuations.

**Table 9-01: Computed Employer Contributions - Comparative Schedule**

Valuation Date December 31	Active Employees		Computed Employer Contribution <sup>1</sup>	Employee Contribution Rate <sup>2</sup>
	Number	Annual Payroll		
2009	10	\$ 449,064	18.13%	3.80%
2010	8	379,184	14.54%	3.80%
2011	8	386,321	14.68%	3.80%
2012	8	393,476	15.87%	3.80%
2013	6	324,646	\$ 5,106	3.80%
2014	5	299,045	\$ 5,198	5.00%
2015	5	299,022	\$ 7,256	5.00%
2016	5	299,250	\$ 7,876	5.00%
2017	5	298,965	\$ 8,190	5.00%
2018	5	302,203	\$ 9,213	5.00%
2019	5	336,926	\$ 11,999	5.00%

1 For open divisions, a percent of pay contribution is shown. For closed divisions, a monthly dollar contribution is shown.

2 For each valuation year, the computed employer contribution is based on the employee rate. If the employee rate changes during the applicable fiscal year, the computed employer contribution will be adjusted.

Note: The contributions shown in Table 9 for the 12/31/2015 through 12/31/2019 valuations do not reflect the phase-in of the increased contribution requirements associated with the new actuarial assumptions. The full contribution without phase-in is shown in Table 9 above.

See the Benefit Provision History, later in this report, for past benefit provision changes.

Years where historical information is not available, will be displayed with zero values.



## Division 02 - Dispatchers

**Table 8-02: Actuarial Accrued Liabilities - Comparative Schedule**

Valuation Date December 31	Actuarial Accrued Liability	Valuation Assets	Percent Funded	Unfunded (Overfunded) Accrued Liabilities
2009	\$ 1,265,775	\$ 1,008,578	80%	\$ 257,197
2010	1,406,431	1,155,861	82%	250,570
2011	1,555,332	1,265,681	81%	289,651
2012	1,738,553	1,347,634	78%	390,919
2013	1,916,268	1,440,249	75%	476,019
2014	2,031,533	1,479,065	73%	552,468
2015	2,222,436	1,560,890	70%	661,546
2016	2,384,066	1,643,929	69%	740,137
2017	2,438,729	1,707,487	70%	731,242
2018	2,525,225	1,715,309	68%	809,916
2019	2,759,521	1,710,082	62%	1,049,439

Notes: Actuarial assumptions were revised for the 2009, 2010, 2011, 2012, 2015 and 2019 actuarial valuations.

**Table 9-02: Computed Employer Contributions - Comparative Schedule**

Valuation Date December 31	Active Employees		Computed Employer Contribution <sup>1</sup>	Employee Contribution Rate <sup>2</sup>
	Number	Annual Payroll		
2009	8	\$ 305,645	14.55%	3.80%
2010	9	352,740	13.74%	3.80%
2011	8	314,835	14.70%	3.80%
2012	8	311,139	17.16%	3.80%
2013	8	336,788	\$ 4,877	3.80%
2014	6	280,962	\$ 4,767	5.00%
2015	6	264,337	\$ 5,628	5.00%
2016	5	231,490	\$ 5,908	5.00%
2017	3	143,700	\$ 5,225	5.00%
2018	2	86,377	\$ 5,474	5.00%
2019	1	49,141	\$ 7,230	5.00%

1 For open divisions, a percent of pay contribution is shown. For closed divisions, a monthly dollar contribution is shown.

2 For each valuation year, the computed employer contribution is based on the employee rate. If the employee rate changes during the applicable fiscal year, the computed employer contribution will be adjusted.

Note: The contributions shown in Table 9 for the 12/31/2015 through 12/31/2019 valuations do not reflect the phase-in of the increased contribution requirements associated with the new actuarial assumptions. The full contribution without phase-in is shown in Table 9 above.

See the Benefit Provision History, later in this report, for past benefit provision changes.

Years where historical information is not available, will be displayed with zero values.

## Division 10 - UAW Unit 6&7

**Table 8-10: Actuarial Accrued Liabilities - Comparative Schedule**

Valuation Date December 31	Actuarial Accrued Liability	Valuation Assets	Percent Funded	Unfunded (Overfunded) Accrued Liabilities
2009	\$ 2,531,538	\$ 2,210,114	87%	\$ 321,424
2010	2,727,050	2,229,989	82%	497,061
2011	2,612,513	2,170,460	83%	442,053
2012	2,673,027	2,167,866	81%	505,161
2013	2,780,777	2,194,044	79%	586,733
2014	2,802,210	2,216,347	79%	585,863
2015	2,989,034	2,156,206	72%	832,828
2016	3,023,177	2,136,868	71%	886,309
2017	3,023,225	2,124,745	70%	898,480
2018	2,869,593	1,944,329	68%	925,264
2019	3,017,347	1,885,087	62%	1,132,260

Notes: Actuarial assumptions were revised for the 2009, 2010, 2011, 2012, 2015 and 2019 actuarial valuations.

**Table 9-10: Computed Employer Contributions - Comparative Schedule**

Valuation Date December 31	Active Employees		Computed Employer Contribution <sup>1</sup>	Employee Contribution Rate <sup>2</sup>
	Number	Annual Payroll		
2009	18	\$ 490,123	12.68%	3.80%
2010	17	473,005	14.97%	3.80%
2011	16	439,615	14.59%	3.80%
2012	15	418,946	16.44%	3.80%
2013	11	335,807	\$ 5,441	3.80%
2014	11	322,457	\$ 5,217	5.00%
2015	9	263,684	\$ 6,398	5.00%
2016	8	249,725	\$ 6,701	5.00%
2017	5	160,011	\$ 6,372	5.00%
2018	3	88,195	\$ 6,247	5.00%
2019	3	104,529	\$ 8,068	5.00%

1 For open divisions, a percent of pay contribution is shown. For closed divisions, a monthly dollar contribution is shown.

2 For each valuation year, the computed employer contribution is based on the employee rate. If the employee rate changes during the applicable fiscal year, the computed employer contribution will be adjusted.

Note: The contributions shown in Table 9 for the 12/31/2015 through 12/31/2019 valuations do not reflect the phase-in of the increased contribution requirements associated with the new actuarial assumptions. The full contribution without phase-in is shown in Table 9 above.

See the Benefit Provision History, later in this report, for past benefit provision changes.

Years where historical information is not available, will be displayed with zero values.



## Division 11 - UAW Unit 3,4,&5

**Table 8-11: Actuarial Accrued Liabilities - Comparative Schedule**

Valuation Date December 31	Actuarial Accrued Liability	Valuation Assets	Percent Funded	Unfunded (Overfunded) Accrued Liabilities
2009	\$ 1,908,652	\$ 1,763,586	92%	\$ 145,066
2010	2,093,145	1,910,533	91%	182,612
2011	2,318,662	2,029,625	88%	289,037
2012	2,450,285	2,127,296	87%	322,989
2013	2,688,311	2,202,115	82%	486,196
2014	2,829,894	2,265,456	80%	564,438
2015	3,109,899	2,320,304	75%	789,595
2016	3,195,220	2,384,504	75%	810,716
2017	3,168,096	2,448,235	77%	719,861
2018	3,439,362	2,426,394	71%	1,012,968
2019	3,697,101	2,405,228	65%	1,291,873

Notes: Actuarial assumptions were revised for the 2009, 2010, 2011, 2012, 2015 and 2019 actuarial valuations.

**Table 9-11: Computed Employer Contributions - Comparative Schedule**

Valuation Date December 31	Active Employees		Computed Employer Contribution <sup>1</sup>	Employee Contribution Rate <sup>2</sup>
	Number	Annual Payroll		
2009	19	\$ 667,138	10.23%	3.80%
2010	19	692,206	10.53%	3.80%
2011	18	661,055	11.14%	3.80%
2012	18	631,372	12.06%	3.80%
2013	18	636,289	13.69%	3.80%
2014	18	646,973	14.30%	3.80%
2015	18	634,361	17.46%	3.80%
2016	18	642,339	17.70%	3.80%
2017	17	592,582	17.03%	3.80%
2018	16	553,107	21.57%	3.80%
2019	16	602,534	24.90%	3.80%

<sup>1</sup> For open divisions, a percent of pay contribution is shown. For closed divisions, a monthly dollar contribution is shown.

<sup>2</sup> For each valuation year, the computed employer contribution is based on the employee rate. If the employee rate changes during the applicable fiscal year, the computed employer contribution will be adjusted.

Note: The contributions shown in Table 9 for the 12/31/2015 through 12/31/2019 valuations do not reflect the phase-in of the increased contribution requirements associated with the new actuarial assumptions. The full contribution without phase-in is shown in Table 9 above.

See the Benefit Provision History, later in this report, for past benefit provision changes.

Years where historical information is not available, will be displayed with zero values.

## Division 12 - UAW #7

**Table 8-12: Actuarial Accrued Liabilities - Comparative Schedule**

Valuation Date December 31	Actuarial Accrued Liability	Valuation Assets	Percent Funded	Unfunded (Overfunded) Accrued Liabilities
2009	\$ 1,155,818	\$ 861,098	75%	\$ 294,720
2010	1,230,575	952,554	77%	278,021
2011	1,416,431	1,172,478	83%	243,953
2012	1,471,030	1,269,027	86%	202,003
2013	1,783,616	1,375,734	77%	407,882
2014	1,862,818	1,438,186	77%	424,632
2015	2,269,191	1,534,109	68%	735,082
2016	2,362,723	1,546,749	66%	815,974
2017	2,434,099	1,589,557	65%	844,542
2018	2,728,053	1,710,532	63%	1,017,521
2019	2,957,966	1,724,061	58%	1,233,905

Notes: Actuarial assumptions were revised for the 2009, 2010, 2011, 2012, 2015 and 2019 actuarial valuations.

**Table 9-12: Computed Employer Contributions - Comparative Schedule**

Valuation Date December 31	Active Employees		Computed Employer Contribution <sup>1</sup>	Employee Contribution Rate <sup>2</sup>
	Number	Annual Payroll		
2009	8	\$ 289,545	13.88%	3.80%
2010	8	302,161	13.39%	3.80%
2011	9	333,765	12.10%	3.80%
2012	8	302,041	12.24%	3.80%
2013	8	316,764	\$ 3,903	3.80%
2014	8	305,922	\$ 3,742	5.00%
2015	6	243,059	\$ 5,674	5.00%
2016	6	259,498	\$ 6,218	5.00%
2017	6	252,968	\$ 6,350	5.00%
2018	7	307,217	\$ 8,232	5.00%
2019	6	277,533	\$ 9,715	5.00%

<sup>1</sup> For open divisions, a percent of pay contribution is shown. For closed divisions, a monthly dollar contribution is shown.

<sup>2</sup> For each valuation year, the computed employer contribution is based on the employee rate. If the employee rate changes during the applicable fiscal year, the computed employer contribution will be adjusted.

Note: The contributions shown in Table 9 for the 12/31/2015 through 12/31/2019 valuations do not reflect the phase-in of the increased contribution requirements associated with the new actuarial assumptions. The full contribution without phase-in is shown in Table 9 above.

See the Benefit Provision History, later in this report, for past benefit provision changes.

Years where historical information is not available, will be displayed with zero values.



## Division 13 - New Hire div 01,02,10,12,20,22

**Table 8-13: Actuarial Accrued Liabilities - Comparative Schedule**

Valuation Date December 31	Actuarial Accrued Liability	Valuation Assets	Percent Funded	Unfunded (Overfunded) Accrued Liabilities
2009	\$ 0	\$ 0	0%	\$ 0
2010	0	0	0%	0
2011	0	0	0%	0
2012	0	0	0%	0
2013	6,866	8,918	130%	(2,052)
2014	18,486	23,550	127%	(5,064)
2015	46,058	52,287	114%	(6,229)
2016	108,967	106,810	98%	2,157
2017	185,326	189,247	102%	(3,921)
2018	310,392	303,988	98%	6,404
2019	438,312	436,751	100%	1,561

Notes: Actuarial assumptions were revised for the 2009, 2010, 2011, 2012, 2015 and 2019 actuarial valuations.

**Table 9-13: Computed Employer Contributions - Comparative Schedule**

Valuation Date December 31	Active Employees		Computed Employer Contribution <sup>1</sup>	Employee Contribution Rate <sup>2</sup>
	Number	Annual Payroll		
2009	0	\$ 0	\$ 0	0.00%
2010	0	0	\$ 0	0.00%
2011	0	0	\$ 0	0.00%
2012	0	0	\$ 0	0.00%
2013	3	102,464	4.99%	3.80%
2014	5	166,424	2.90%	5.00%
2015	9	304,170	3.45%	5.00%
2016	22	714,699	3.16%	5.00%
2017	30	1,046,276	2.89%	5.00%
2018	37	1,332,056	2.59%	5.00%
2019	40	1,505,082	2.58%	5.00%

1 For open divisions, a percent of pay contribution is shown. For closed divisions, a monthly dollar contribution is shown.

2 For each valuation year, the computed employer contribution is based on the employee rate. If the employee rate changes during the applicable fiscal year, the computed employer contribution will be adjusted.

Note: The contributions shown in Table 9 for the 12/31/2015 through 12/31/2019 valuations do not reflect the phase-in of the increased contribution requirements associated with the new actuarial assumptions. The full contribution without phase-in is shown in Table 9 above.

See the Benefit Provision History, later in this report, for past benefit provision changes.

Years where historical information is not available, will be displayed with zero values.



## Division 20 - Sheriff COAM

**Table 8-20: Actuarial Accrued Liabilities - Comparative Schedule**

Valuation Date December 31	Actuarial Accrued Liability	Valuation Assets	Percent Funded	Unfunded (Overfunded) Accrued Liabilities
2009	\$ 945,220	\$ 911,597	96%	\$ 33,623
2010	1,044,319	1,025,454	98%	18,865
2011	1,237,349	1,158,118	94%	79,231
2012	1,467,670	1,232,612	84%	235,058
2013	1,630,297	1,325,304	81%	304,993
2014	1,734,578	1,422,584	82%	311,994
2015	1,994,622	1,521,679	76%	472,943
2016	2,208,009	1,621,419	73%	586,590
2017	2,363,832	1,717,574	73%	646,258
2018	2,548,262	1,788,961	70%	759,301
2019	2,829,720	1,879,931	66%	949,789

Notes: Actuarial assumptions were revised for the 2009, 2010, 2011, 2012, 2015 and 2019 actuarial valuations.

**Table 9-20: Computed Employer Contributions - Comparative Schedule**

Valuation Date December 31	Active Employees		Computed Employer Contribution <sup>1</sup>	Employee Contribution Rate <sup>2</sup>
	Number	Annual Payroll		
2009	16	\$ 541,220	8.80%	3.80%
2010	16	569,055	8.66%	3.80%
2011	15	544,257	8.84%	3.80%
2012	16	543,220	10.80%	3.80%
2013	16	616,631	\$ 5,406	3.80%
2014	14	545,766	\$ 4,706	5.00%
2015	14	568,169	\$ 6,211	5.00%
2016	13	579,356	\$ 6,872	5.00%
2017	10	460,263	\$ 6,623	5.00%
2018	10	484,122	\$ 7,655	5.00%
2019	10	463,114	\$ 8,982	5.00%

<sup>1</sup> For open divisions, a percent of pay contribution is shown. For closed divisions, a monthly dollar contribution is shown.

<sup>2</sup> For each valuation year, the computed employer contribution is based on the employee rate. If the employee rate changes during the applicable fiscal year, the computed employer contribution will be adjusted.

Note: The contributions shown in Table 9 for the 12/31/2015 through 12/31/2019 valuations do not reflect the phase-in of the increased contribution requirements associated with the new actuarial assumptions. The full contribution without phase-in is shown in Table 9 above.

See the Benefit Provision History, later in this report, for past benefit provision changes.

Years where historical information is not available, will be displayed with zero values.

## Division 21 - Cmd, Sher & Under

**Table 8-21: Actuarial Accrued Liabilities - Comparative Schedule**

Valuation Date December 31	Actuarial Accrued Liability	Valuation Assets	Percent Funded	Unfunded (Overfunded) Accrued Liabilities
2009	\$ 3,796,898	\$ 2,575,843	68%	\$ 1,221,055
2010	3,877,561	2,596,403	67%	1,281,158
2011	4,067,578	2,623,865	65%	1,443,713
2012	4,301,009	2,648,344	62%	1,652,665
2013	4,544,483	2,722,321	60%	1,822,162
2014	4,754,405	2,856,166	60%	1,898,239
2015	5,186,264	2,946,372	57%	2,239,892
2016	5,344,890	3,004,120	56%	2,340,770
2017	5,533,552	3,132,712	57%	2,400,840
2018	5,718,911	3,233,394	57%	2,485,517
2019	6,261,371	3,392,930	54%	2,868,441

Notes: Actuarial assumptions were revised for the 2009, 2010, 2011, 2012, 2015 and 2019 actuarial valuations.

**Table 9-21: Computed Employer Contributions - Comparative Schedule**

Valuation Date December 31	Active Employees		Computed Employer Contribution <sup>1</sup>	Employee Contribution Rate <sup>2</sup>
	Number	Annual Payroll		
2009	8	\$ 380,735	26.01%	3.80%
2010	8	384,631	26.57%	3.80%
2011	8	392,049	28.96%	3.80%
2012	8	428,678	31.84%	3.80%
2013	7	407,084	35.93%	3.80%
2014	8	439,373	33.96%	5.00%
2015	8	433,012	41.10%	5.00%
2016	8	436,246	42.80%	5.00%
2017	8	443,731	44.07%	5.00%
2018	8	493,638	42.69%	5.00%
2019	8	502,263	50.40%	5.00%

1 For open divisions, a percent of pay contribution is shown. For closed divisions, a monthly dollar contribution is shown.

2 For each valuation year, the computed employer contribution is based on the employee rate. If the employee rate changes during the applicable fiscal year, the computed employer contribution will be adjusted.

Note: The contributions shown in Table 9 for the 12/31/2015 through 12/31/2019 valuations do not reflect the phase-in of the increased contribution requirements associated with the new actuarial assumptions. The full contribution without phase-in is shown in Table 9 above.

See the Benefit Provision History, later in this report, for past benefit provision changes.

Years where historical information is not available, will be displayed with zero values.



## Division 22 - Sheriff's Deputies POAM

**Table 8-22: Actuarial Accrued Liabilities - Comparative Schedule**

Valuation Date December 31	Actuarial Accrued Liability	Valuation Assets	Percent Funded	Unfunded (Overfunded) Accrued Liabilities
2009	\$ 310,480	\$ 188,352	61%	\$ 122,128
2010	399,594	285,786	72%	113,808
2011	505,232	451,181	89%	54,051
2012	642,141	563,883	88%	78,258
2013	830,010	683,560	82%	146,450
2014	834,526	788,386	95%	46,140
2015	1,000,048	911,573	91%	88,475
2016	1,037,057	1,021,133	99%	15,924
2017	1,062,431	1,119,713	105%	(57,282)
2018	1,077,690	1,175,506	109%	(97,816)
2019	1,241,869	1,231,291	99%	10,578

Notes: Actuarial assumptions were revised for the 2009, 2010, 2011, 2012, 2015 and 2019 actuarial valuations.

**Table 9-22: Computed Employer Contributions - Comparative Schedule**

Valuation Date December 31	Active Employees		Computed Employer Contribution <sup>1</sup>	Employee Contribution Rate <sup>2</sup>
	Number	Annual Payroll		
2009	10	\$ 414,113	11.83%	3.80%
2010	10	443,491	11.61%	3.80%
2011	10	456,988	10.64%	3.80%
2012	10	493,601	10.94%	3.80%
2013	10	529,565	\$ 5,078	3.80%
2014	7	380,436	\$ 2,984	5.00%
2015	7	372,957	\$ 3,495	5.00%
2016	6	297,805	\$ 2,292	5.00%
2017	4	214,067	\$ 1,137	5.00%
2018	3	168,833	\$ 527	5.00%
2019	3	179,102	\$ 1,516	5.00%

<sup>1</sup> For open divisions, a percent of pay contribution is shown. For closed divisions, a monthly dollar contribution is shown.

<sup>2</sup> For each valuation year, the computed employer contribution is based on the employee rate. If the employee rate changes during the applicable fiscal year, the computed employer contribution will be adjusted.

Note: The contributions shown in Table 9 for the 12/31/2015 through 12/31/2019 valuations do not reflect the phase-in of the increased contribution requirements associated with the new actuarial assumptions. The full contribution without phase-in is shown in Table 9 above.

See the Benefit Provision History, later in this report, for past benefit provision changes.

Years where historical information is not available, will be displayed with zero values.

## Table 10: Division-Based Layered Amortization Schedule

### Division 01 - Elctd&NonUnion

**Table 10-01: Layered Amortization Schedule**

Type of UAL	Date Established	Original Balance <sup>1</sup>	Original Amortization Period <sup>2</sup>	Amounts for Fiscal Year Beginning 1/1/2021		
				Outstanding UAL Balance <sup>3</sup>	Remaining Amortization Period <sup>2</sup>	Annual Amortization Payment
Initial	12/31/2015	\$ 885,023	23	\$ 937,352	19	\$ 72,288
(Gain)/Loss	12/31/2016	71,104	22	77,640	19	5,988
(Gain)/Loss	12/31/2017	15,459	21	16,765	19	1,296
(Gain)/Loss	12/31/2018	115,832	20	125,075	19	9,648
(Gain)/Loss	12/31/2019	202,213	19	217,076	19	16,740
Assumption	12/31/2019	117,924	19	121,330	19	9,360
<b>Total</b>				<b>\$ 1,495,238</b>		<b>\$ 115,320</b>

<sup>1</sup> For each type of UAL (layer), this is the original balance as of the date the layer was established.

<sup>2</sup> According to the MERS amortization policy, each type of UAL (layer) is amortized over a specific period (see Appendix on MERS website).

<sup>3</sup> This is the remaining balance as of the valuation date, projected to the beginning of the fiscal year shown above.

The unfunded accrued liability (UAL) as of December 31, 2019 (see Table 6) is projected to the beginning of the fiscal year for which the contributions are being calculated. This allows the 2019 valuation to take into account the expected future contributions that are based on past valuations. Each type of UAL (layer) is amortized over the appropriate period. Please see the Appendix on the MERS website for a detailed description of the amortization policy.

Note: The original balance and original amortization periods prior to 12/31/2018 were received from the prior actuary.

## Division 02 - Dispatchers

**Table 10-02: Layered Amortization Schedule**

Type of UAL	Date Established	Original Balance <sup>1</sup>	Original Amortization Period <sup>2</sup>	Amounts for Fiscal Year Beginning 1/1/2021		
				Outstanding UAL Balance <sup>3</sup>	Remaining Amortization Period <sup>2</sup>	Annual Amortization Payment
Initial	12/31/2015	\$ 661,546	23	\$ 693,485	19	\$ 53,484
(Gain)/Loss	12/31/2016	61,685	22	67,347	19	5,196
(Gain)/Loss	12/31/2017	(19,537)	21	(21,194)	19	(1,632)
(Gain)/Loss	12/31/2018	75,178	20	81,177	19	6,264
(Gain)/Loss	12/31/2019	121,000	19	129,893	19	10,020
Assumption	12/31/2019	109,830	19	114,258	19	8,808
<b>Total</b>				<b>\$ 1,064,966</b>		<b>\$ 82,140</b>

<sup>1</sup> For each type of UAL (layer), this is the original balance as of the date the layer was established.

<sup>2</sup> According to the MERS amortization policy, each type of UAL (layer) is amortized over a specific period (see Appendix on MERS website).

<sup>3</sup> This is the remaining balance as of the valuation date, projected to the beginning of the fiscal year shown above.

The unfunded accrued liability (UAL) as of December 31, 2019 (see Table 6) is projected to the beginning of the fiscal year for which the contributions are being calculated. This allows the 2019 valuation to take into account the expected future contributions that are based on past valuations. Each type of UAL (layer) is amortized over the appropriate period. Please see the Appendix on the MERS website for a detailed description of the amortization policy.

Note: The original balance and original amortization periods prior to 12/31/2018 were received from the prior actuary.

## Division 10 - UAW Unit 6&7

**Table 10-10: Layered Amortization Schedule**

Type of UAL	Date Established	Original Balance <sup>1</sup>	Original Amortization Period <sup>2</sup>	Amounts for Fiscal Year Beginning 1/1/2021		
				Outstanding UAL Balance <sup>3</sup>	Remaining Amortization Period <sup>2</sup>	Annual Amortization Payment
Initial	12/31/2015	\$ 832,828	23	\$ 873,036	19	\$ 67,332
(Gain)/Loss	12/31/2016	32,197	22	35,156	19	2,712
(Gain)/Loss	12/31/2017	2,303	21	2,493	19	192
(Gain)/Loss	12/31/2018	20,622	20	22,273	19	1,716
(Gain)/Loss	12/31/2019	109,576	19	117,630	19	9,072
Assumption	12/31/2019	92,140	19	94,882	19	7,320
<b>Total</b>				<b>\$ 1,145,470</b>		<b>\$ 88,344</b>

<sup>1</sup> For each type of UAL (layer), this is the original balance as of the date the layer was established.

<sup>2</sup> According to the MERS amortization policy, each type of UAL (layer) is amortized over a specific period (see Appendix on MERS website).

<sup>3</sup> This is the remaining balance as of the valuation date, projected to the beginning of the fiscal year shown above.

The unfunded accrued liability (UAL) as of December 31, 2019 (see Table 6) is projected to the beginning of the fiscal year for which the contributions are being calculated. This allows the 2019 valuation to take into account the expected future contributions that are based on past valuations. Each type of UAL (layer) is amortized over the appropriate period. Please see the Appendix on the MERS website for a detailed description of the amortization policy.

Note: The original balance and original amortization periods prior to 12/31/2018 were received from the prior actuary.



## Division 11 - UAW Unit 3,4,&5

**Table 10-11: Layered Amortization Schedule**

Type of UAL	Date Established	Original Balance <sup>1</sup>	Original Amortization Period <sup>2</sup>	Amounts for Fiscal Year Beginning 1/1/2021		
				Outstanding UAL Balance <sup>3</sup>	Remaining Amortization Period <sup>2</sup>	Annual Amortization Payment
Initial	12/31/2015	\$ 789,595	23	\$ 836,281	19	\$ 64,488
(Gain)/Loss	12/31/2016	(7,419)	22	(8,109)	19	(624)
(Gain)/Loss	12/31/2017	(97,369)	21	(105,601)	19	(8,148)
(Gain)/Loss	12/31/2018	295,203	20	318,761	19	24,588
(Gain)/Loss	12/31/2019	138,393	19	148,565	19	11,460
Assumption	12/31/2019	114,903	19	118,786	19	9,156
<b>Total</b>				<b>\$ 1,308,683</b>		<b>\$ 100,920</b>

<sup>1</sup> For each type of UAL (layer), this is the original balance as of the date the layer was established.

<sup>2</sup> According to the MERS amortization policy, each type of UAL (layer) is amortized over a specific period (see Appendix on MERS website).

<sup>3</sup> This is the remaining balance as of the valuation date, projected to the beginning of the fiscal year shown above.

The unfunded accrued liability (UAL) as of December 31, 2019 (see Table 6) is projected to the beginning of the fiscal year for which the contributions are being calculated. This allows the 2019 valuation to take into account the expected future contributions that are based on past valuations. Each type of UAL (layer) is amortized over the appropriate period. Please see the Appendix on the MERS website for a detailed description of the amortization policy.

Note: The original balance and original amortization periods prior to 12/31/2018 were received from the prior actuary.

## Division 12 - UAW #7

**Table 10-12: Layered Amortization Schedule**

Type of UAL	Date Established	Original Balance <sup>1</sup>	Original Amortization Period <sup>2</sup>	Amounts for Fiscal Year Beginning 1/1/2021		
				Outstanding UAL Balance <sup>3</sup>	Remaining Amortization Period <sup>2</sup>	Annual Amortization Payment
Initial	12/31/2015	\$ 735,082	23	\$ 782,121	19	\$ 60,312
(Gain)/Loss	12/31/2016	50,817	22	55,489	19	4,284
(Gain)/Loss	12/31/2017	18,019	21	19,541	19	1,512
(Gain)/Loss	12/31/2018	166,061	20	179,317	19	13,824
(Gain)/Loss	12/31/2019	107,788	19	115,710	19	8,928
Assumption	12/31/2019	92,276	19	94,637	19	7,296
<b>Total</b>				<b>\$ 1,246,815</b>		<b>\$ 96,156</b>

<sup>1</sup> For each type of UAL (layer), this is the original balance as of the date the layer was established.

<sup>2</sup> According to the MERS amortization policy, each type of UAL (layer) is amortized over a specific period (see Appendix on MERS website).

<sup>3</sup> This is the remaining balance as of the valuation date, projected to the beginning of the fiscal year shown above.

The unfunded accrued liability (UAL) as of December 31, 2019 (see Table 6) is projected to the beginning of the fiscal year for which the contributions are being calculated. This allows the 2019 valuation to take into account the expected future contributions that are based on past valuations. Each type of UAL (layer) is amortized over the appropriate period. Please see the Appendix on the MERS website for a detailed description of the amortization policy.

Note: The original balance and original amortization periods prior to 12/31/2018 were received from the prior actuary.

**Division 13 - New Hire div 01,02,10,12,20,22**

**Table 10-13: Layered Amortization Schedule**

Type of UAL	Date Established	Original Balance <sup>1</sup>	Original Amortization Period <sup>2</sup>	Amounts for Fiscal Year Beginning 1/1/2021		
				Outstanding UAL Balance <sup>3</sup>	Remaining Amortization Period <sup>2</sup>	Annual Amortization Payment
(Gain)/Loss	12/31/2018	\$ 6,785	15	\$ 7,205	14	\$ 684
(Gain)/Loss	12/31/2019	(9,911)	15	(10,639)	15	(972)
Assumption	12/31/2019	4,124	15	4,438	15	408
<b>Total</b>				<b>\$ 1,004</b>		<b>\$ 120</b>

<sup>1</sup> For each type of UAL (layer), this is the original balance as of the date the layer was established.  
<sup>2</sup> According to the MERS amortization policy, each type of UAL (layer) is amortized over a specific period (see Appendix on MERS website).  
<sup>3</sup> This is the remaining balance as of the valuation date, projected to the beginning of the fiscal year shown above.

The unfunded accrued liability (UAL) as of December 31, 2019 (see Table 6) is projected to the beginning of the fiscal year for which the contributions are being calculated. This allows the 2019 valuation to take into account the expected future contributions that are based on past valuations. Each type of UAL (layer) is amortized over the appropriate period. Please see the Appendix on the MERS website for a detailed description of the amortization policy.

Note: The original balance and original amortization periods prior to 12/31/2018 were received from the prior actuary.



## Division 20 - Sheriff COAM

**Table 10-20: Layered Amortization Schedule**

Type of UAL	Date Established	Original Balance <sup>1</sup>	Original Amortization Period <sup>2</sup>	Amounts for Fiscal Year Beginning 1/1/2021		
				Outstanding UAL Balance <sup>3</sup>	Remaining Amortization Period <sup>2</sup>	Annual Amortization Payment
Initial	12/31/2015	\$ 472,943	23	\$ 506,840	19	\$ 39,084
(Gain)/Loss	12/31/2016	90,747	22	99,082	19	7,644
(Gain)/Loss	12/31/2017	48,349	21	52,439	19	4,044
(Gain)/Loss	12/31/2018	105,306	20	113,714	19	8,772
(Gain)/Loss	12/31/2019	96,290	19	103,367	19	7,968
Assumption	12/31/2019	83,442	19	86,218	19	6,648
<b>Total</b>				<b>\$ 961,660</b>		<b>\$ 74,160</b>

<sup>1</sup> For each type of UAL (layer), this is the original balance as of the date the layer was established.

<sup>2</sup> According to the MERS amortization policy, each type of UAL (layer) is amortized over a specific period (see Appendix on MERS website).

<sup>3</sup> This is the remaining balance as of the valuation date, projected to the beginning of the fiscal year shown above.

The unfunded accrued liability (UAL) as of December 31, 2019 (see Table 6) is projected to the beginning of the fiscal year for which the contributions are being calculated. This allows the 2019 valuation to take into account the expected future contributions that are based on past valuations. Each type of UAL (layer) is amortized over the appropriate period. Please see the Appendix on the MERS website for a detailed description of the amortization policy.

Note: The original balance and original amortization periods prior to 12/31/2018 were received from the prior actuary.

## Division 21 - Cmd, Sher & Under

**Table 10-21: Layered Amortization Schedule**

Type of UAL	Date Established	Original Balance <sup>1</sup>	Original Amortization Period <sup>2</sup>	Amounts for Fiscal Year Beginning 1/1/2021		
				Outstanding UAL Balance <sup>3</sup>	Remaining Amortization Period <sup>2</sup>	Annual Amortization Payment
Initial	12/31/2015	\$ 2,239,892	23	\$ 2,345,392	19	\$ 180,876
(Gain)/Loss	12/31/2016	46,214	22	50,453	19	3,888
(Gain)/Loss	12/31/2017	36,692	21	39,797	19	3,072
(Gain)/Loss	12/31/2018	66,039	20	71,314	19	5,496
(Gain)/Loss	12/31/2019	167,908	19	180,249	19	13,896
Assumption	12/31/2019	199,583	19	203,928	19	15,732
<b>Total</b>				<b>\$ 2,891,133</b>		<b>\$ 222,960</b>

<sup>1</sup> For each type of UAL (layer), this is the original balance as of the date the layer was established.

<sup>2</sup> According to the MERS amortization policy, each type of UAL (layer) is amortized over a specific period (see Appendix on MERS website).

<sup>3</sup> This is the remaining balance as of the valuation date, projected to the beginning of the fiscal year shown above.

The unfunded accrued liability (UAL) as of December 31, 2019 (see Table 6) is projected to the beginning of the fiscal year for which the contributions are being calculated. This allows the 2019 valuation to take into account the expected future contributions that are based on past valuations. Each type of UAL (layer) is amortized over the appropriate period. Please see the Appendix on the MERS website for a detailed description of the amortization policy.

Note: The original balance and original amortization periods prior to 12/31/2018 were received from the prior actuary.

## Division 22 - Sheriff's Deputies POAM

**Table 10-22: Layered Amortization Schedule**

Type of UAL	Date Established	Original Balance <sup>1</sup>	Original Amortization Period <sup>2</sup>	Amounts for Fiscal Year Beginning 1/1/2021		
				Outstanding UAL Balance <sup>3</sup>	Remaining Amortization Period <sup>2</sup>	Annual Amortization Payment
(Gain)/Loss	12/31/2019	\$ 19,415	15	\$ 20,842	15	\$ 1,896
<b>Total</b>				<b>\$ 20,842</b>		<b>\$ 1,896</b>

<sup>1</sup> For each type of UAL (layer), this is the original balance as of the date the layer was established.

<sup>2</sup> According to the MERS amortization policy, each type of UAL (layer) is amortized over a specific period (see Appendix on MERS website).

<sup>3</sup> This is the remaining balance as of the valuation date, projected to the beginning of the fiscal year shown above.

The unfunded accrued liability (UAL) as of December 31, 2019 (see Table 6) is projected to the beginning of the fiscal year for which the contributions are being calculated. This allows the 2019 valuation to take into account the expected future contributions that are based on past valuations. Each type of UAL (layer) is amortized over the appropriate period. Please see the Appendix on the MERS website for a detailed description of the amortization policy.

Note: The original balance and original amortization periods prior to 12/31/2018 were received from the prior actuary.

## GASB 68 Information

The following information has been prepared to provide some of the information necessary to complete GASB Statement No. 68 disclosures. Statement 68 is effective for fiscal years beginning after June 15, 2014. Additional resources, including an Implementation Guide, are available at <http://www.mersofmich.com/>.

Actuarial Valuation Date:		12/31/2019	
Measurement Date of the Total Pension Liability (TPL):		12/31/2019	
At 12/31/2019, the following employees were covered by the benefit terms:			
Inactive employees or beneficiaries currently receiving benefits:		97	
Inactive employees entitled to but not yet receiving benefits (including refunds):		86	
Active employees:		<u>92</u>	
		275	
Total Pension Liability as of 12/31/2018 measurement date:	\$	24,137,025	
Total Pension Liability as of 12/31/2019 measurement date:	\$	26,385,193	
Service Cost for the year ending on the 12/31/2019 measurement date:	\$	422,429	
Change in the Total Pension Liability due to:			
- Benefit changes <sup>1</sup> :	\$	0	
- Differences between expected and actual experience <sup>2</sup> :	\$	490,879	
- Changes in assumptions <sup>2</sup> :	\$	818,191	
Average expected remaining service lives of all employees (active and inactive):		3	
<sup>1</sup> A change in liability due to benefit changes is immediately recognized when calculating pension expense for the year.			
<sup>2</sup> Changes in liability due to differences between actual and expected experience, and changes in assumptions, are recognized in pension expense over the average remaining service lives of all employees.			
Covered employee payroll: (Needed for Required Supplementary Information)	\$	4,020,224	
Sensitivity of the Net Pension Liability to changes in the discount rate:			
	1% Decrease	Current Discount	1% Increase
	<u>(6.60%)</u>	<u>Rate (7.60%)</u>	<u>(8.60%)</u>
Change in Net Pension Liability as of 12/31/2019:	\$ 3,305,864	\$ -	\$ (2,757,417)

Note: The current discount rate shown for GASB 68 purposes is higher than the MERS assumed rate of return. This is because for GASB 68 purposes, the discount rate must be gross of administrative expenses, whereas for funding purposes it is net of administrative expenses.



## GASB 68 Information

This page is for those municipalities who need to "roll-forward" their total pension liability due to the timing of completion of the actuarial valuation in relation to their fiscal year-end.

The following information has been prepared to provide some of the information necessary to complete GASB Statement No. 68 disclosures. Statement 68 is effective for fiscal years beginning after June 15, 2014. Additional resources, including an Implementation Guide, are available at [www.mersofmich.com](http://www.mersofmich.com).

Actuarial Valuation Date:	12/31/2019
Measurement Date of the Total Pension Liability (TPL):	12/31/2020
At 12/31/2019, the following employees were covered by the benefit terms:	
Inactive employees or beneficiaries currently receiving benefits:	97
Inactive employees entitled to but not yet receiving benefits (including refunds):	86
Active employees:	<u>92</u>
	275
Total Pension Liability as of 12/31/2019 measurement date:	\$ 24,961,785
Total Pension Liability as of 12/31/2020 measurement date:	\$ 27,181,458
Service Cost for the year ending on the 12/31/2020 measurement date:	\$ 435,333
Change in the Total Pension Liability due to:	
- Benefit changes <sup>1</sup> :	\$ 0
- Differences between expected and actual experience <sup>2</sup> :	\$ 653,636
- Changes in assumptions <sup>2</sup> :	\$ 778,145
Average expected remaining service lives of all employees (active and inactive):	3

<sup>1</sup> A change in liability due to benefit changes is immediately recognized when calculating pension expense for the year.

<sup>2</sup> Changes in liability due to differences between actual and expected experience, and changes in assumptions, are recognized in pension expense over the average remaining service lives of all employees.

Covered employee payroll: (Needed for Required Supplementary Information)	\$ 4,020,224
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Sensitivity of the Net Pension Liability to changes in the discount rate:

	1% Decrease <u>(6.60%)</u>	Current Discount Rate <u>(7.60%)</u>	1% Increase <u>(8.60%)</u>
Change in Net Pension Liability as of 12/31/2020:	\$ 3,380,226	\$ -	\$ (2,822,421)

Note: The current discount rate shown for GASB 68 purposes is higher than the MERS assumed rate of return. This is because for GASB 68 purposes, the discount rate must be gross of administrative expenses, whereas for funding purposes it is net of administrative expenses.



## Benefit Provision History

The following benefit provision history is provided by MERS. Any corrections to this history or discrepancies between this information and information displayed elsewhere in the valuation report should be reported to MERS. All provisions are listed by date of adoption.

### 01 - Elctd&NonUnion

12/1/2016	Service Credit Purchase Estimates - No
2/1/2014	Member Contribution Rate 5.00%
1/1/2001	E1 2.5% COLA for past retirees (01/01/1996)
1/1/2000	E1 2.4% COLA for past retirees (01/01/1996)
1/1/1998	Flexible E \$120.00 Monthly COLA Adopted (01/01/1998)
10/1/1996	Benefit B-3 (80% max)
1/1/1996	Benefit FAC-3 (3 Year Final Average Compensation)
1/1/1996	2.25% Multiplier (no max)
1/1/1996	Benefit F55 (With 20 Years of Service)
1/1/1996	Member Contribution Rate 3.80%
1/1/1996	E1 2.5% COLA for past retirees (01/01/1996)
1/1/1996	E2 2.5% COLA for future retirees (01/01/1996)
1/1/1995	Flexible E 2% COLA Adopted (01/01/1995)
1/1/1994	Flexible E 2% COLA Adopted (01/01/1994)
7/1/1993	Member Contribution Rate 3.00%
4/29/1993	Day of work defined as 7 Hours a Day for All employees.
4/29/1993	Exclude Temporary Employees
1/1/1993	Flexible E 2% COLA Adopted (01/01/1993)
1/1/1991	E1 2.5% COLA for past retirees (01/01/1991)
11/1/1972	Benefit C-1 (Old)
12/14/1970	Covered by Act 88
1/1/1969	Member Contribution Rate 3.00% Under \$4,200.00 - Then 5.00%
11/1/1967	Benefit FAC-5 (5 Year Final Average Compensation)
11/1/1967	10 Year Vesting
11/1/1967	Benefit C (Old)
11/1/1967	Fiscal Month - January
	Defined Benefit Normal Retirement Age - 60
	Early Reduced (.5%) at Age 50 with 25 Years or Age 55 with 15 Years

### 02 - Dispatchers

12/1/2016	Service Credit Purchase Estimates - No
2/1/2014	Member Contribution Rate 5.00%
11/1/2008	Benefit B-4 (80% max)
1/1/2002	E1 2.5% COLA for past retirees (01/01/1996)
1/1/2000	E1 2.4% COLA for past retirees (01/01/1996)
1/1/1999	E2 2.5% COLA for future retirees (01/01/1998)
1/1/1998	Benefit FAC-3 (3 Year Final Average Compensation)
1/1/1998	Benefit B-3 (80% max)
1/1/1998	Member Contribution Rate 3.80%
1/1/1998	Flexible E \$120.00 Monthly COLA Adopted (01/01/1998)
1/1/1996	E1 2.5% COLA for past retirees (01/01/1996)
1/1/1995	Flexible E 2% COLA Adopted (01/01/1995)



## 02 - Dispatchers

4/29/1993	Day of work defined as 7 Hours a Day for All employees.
4/29/1993	Exclude Temporary Employees
1/1/1993	Benefit C-2/Base B-1
1/1/1993	Benefit F55 (With 20 Years of Service)
1/1/1993	Flexible E 2% COLA Adopted (01/01/1993)
1/1/1991	E1 2.5% COLA for past retirees (01/01/1991)
5/1/1989	Member Contribution Rate 3.00%
4/1/1976	Benefit C-1 (Old)
12/14/1970	Covered by Act 88
1/1/1969	Benefit FAC-5 (5 Year Final Average Compensation)
1/1/1969	10 Year Vesting
1/1/1969	Benefit C (Old)
1/1/1969	Member Contribution Rate 3.00% Under \$4,200.00 - Then 5.00%
11/1/1967	Fiscal Month - January
	Defined Benefit Normal Retirement Age - 60
	Early Reduced (.5%) at Age 50 with 25 Years or Age 55 with 15 Years

## 10 - UAW Unit 6&7

12/1/2016	Service Credit Purchase Estimates - No
2/1/2014	Member Contribution Rate 5.00%
1/1/2001	E1 2.5% COLA for past retirees (01/01/1996)
1/1/2000	E1 2.4% COLA for past retirees (01/01/1996)
1/1/1998	Flexible E \$120.00 Monthly COLA Adopted (01/01/1998)
1/1/1996	Benefit FAC-3 (3 Year Final Average Compensation)
1/1/1996	Benefit B-3 (80% max)
1/1/1996	Benefit F55 (With 20 Years of Service)
1/1/1996	Member Contribution Rate 3.80%
1/1/1996	E2 2.5% COLA for future retirees (01/01/1996)
1/1/1996	E1 2.5% COLA for past retirees (01/01/1996)
12/31/1995	Member Contribution Rate 0.00%
1/1/1995	Flexible E 2% COLA Adopted (01/01/1995)
1/1/1994	Flexible E 2% COLA Adopted (01/01/1994)
8/1/1993	Member Contribution Rate 3.00%
4/29/1993	Day of work defined as 7 Hours a Day for All employees.
4/29/1993	Exclude Temporary Employees
1/1/1993	Flexible E 2% COLA Adopted (01/01/1993)
1/1/1991	E1 2.5% COLA for past retirees (01/01/1991)
4/1/1976	Benefit FAC-5 (5 Year Final Average Compensation)
4/1/1976	10 Year Vesting
4/1/1976	Benefit C-1 (Old)
12/14/1970	Covered by Act 88
11/1/1967	Fiscal Month - January
	Defined Benefit Normal Retirement Age - 60
	Early Reduced (.5%) at Age 50 with 25 Years or Age 55 with 15 Years

## 11 - UAW Unit 3,4,&5

12/1/2016	Service Credit Purchase Estimates - No
1/1/2001	E1 2.5% COLA for past retirees (01/01/1996)
1/1/2000	E1 2.4% COLA for past retirees (01/01/1996)



## 11 - UAW Unit 3,4,&5

1/1/1998	Flexible E \$120.00 Monthly COLA Adopted (01/01/1998)
1/1/1997	Benefit FAC-3 (3 Year Final Average Compensation)
1/1/1997	Benefit B-3 (80% max)
1/1/1997	Benefit F55 (With 20 Years of Service)
1/1/1997	Member Contribution Rate 3.80%
1/1/1997	E2 2.5% COLA for future retirees (01/01/1997)
1/1/1996	E1 2.5% COLA for past retirees (01/01/1996)
1/1/1995	Benefit C-2/Base B-1
1/1/1995	Flexible E 2% COLA Adopted (01/01/1995)
1/1/1994	Flexible E 2% COLA Adopted (01/01/1994)
8/1/1993	Member Contribution Rate 3.00%
4/29/1993	Day of work defined as 7 Hours a Day for All employees.
4/29/1993	Exclude Temporary Employees
1/1/1993	Flexible E 2% COLA Adopted (01/01/1993)
1/1/1991	E1 2.5% COLA for past retirees (01/01/1991)
4/1/1976	Benefit FAC-5 (5 Year Final Average Compensation)
4/1/1976	10 Year Vesting
4/1/1976	Benefit C-1 (Old)
12/14/1970	Covered by Act 88
11/1/1967	Fiscal Month - January
	Defined Benefit Normal Retirement Age - 60
	Early Reduced (.5%) at Age 50 with 25 Years or Age 55 with 15 Years

## 12 - UAW #7

12/1/2016	Service Credit Purchase Estimates - No
2/1/2014	Member Contribution Rate 5.00%
1/1/2004	E2 2.5% COLA for future retirees (07/01/2003)
9/1/2003	Temporary 20 Years & Out (09/01/2003 - 11/03/2003)
7/1/2003	Benefit FAC-3 (3 Year Final Average Compensation)
7/1/2003	10 Year Vesting
7/1/2003	Benefit B-3 (80% max)
7/1/2003	Benefit F55 (With 20 Years of Service)
7/1/2003	Member Contribution Rate 3.80%
4/29/1993	Exclude Temporary Employees
12/14/1970	Covered by Act 88
11/1/1967	Fiscal Month - January
	Defined Benefit Normal Retirement Age - 60
	Early Reduced (.5%) at Age 50 with 25 Years or Age 55 with 15 Years

## 13 - New Hire div 01,02,10,12,20,22

12/1/2016	Service Credit Purchase Estimates - No
2/1/2014	Member Contribution Rate 5.00%
1/1/2013	Day of work defined as 7 Hours a Day for All employees.
1/1/2013	Benefit FAC-3 (3 Year Final Average Compensation)
1/1/2013	Exclude Temporary Employees
1/1/2013	10 Year Vesting
1/1/2013	Benefit C-1 (New)
1/1/2013	Benefit F55 (With 20 Years of Service)
1/1/2013	Member Contribution Rate 3.80%



### 13 - New Hire div 01,02,10,12,20,22

12/14/1970 Covered by Act 88  
11/1/1967 Fiscal Month - January  
Defined Benefit Normal Retirement Age - 60  
Early Reduced (.5%) at Age 50 with 25 Years or Age 55 with 15 Years

### 20 - Sheriff COAM

12/1/2016 Service Credit Purchase Estimates - No  
2/1/2014 Member Contribution Rate 5.00%  
1/1/2012 Temporary 20 Years & Out (01/01/2012 - 03/30/2012)  
1/1/2004 Benefit FAC-3 (3 Year Final Average Compensation)  
1/1/2004 Benefit B-3 (80% max)  
1/1/2004 Benefit F55 (With 20 Years of Service)  
1/1/2004 Member Contribution Rate 3.80%  
1/1/2004 E2 2.5% COLA for future retirees (01/01/2004)  
1/1/2002 E1 2.5% COLA for past retirees (01/01/1996)  
1/1/2000 Benefit C-2/Base B-1  
1/1/2000 E1 2.4% COLA for past retirees (01/01/1996)  
1/1/1998 Flexible E \$10.00 Monthly COLA Adopted (01/01/1998)  
1/1/1996 E1 2.5% COLA for past retirees (01/01/1996)  
1/1/1995 Flexible E \$2.00 Monthly COLA Adopted (01/01/1995)  
1/1/1994 Flexible E 2% COLA Adopted (01/01/1994)  
7/1/1993 Benefit FAC-5 (5 Year Final Average Compensation)  
7/1/1993 10 Year Vesting  
7/1/1993 Benefit C-1 (Old)  
7/1/1993 Member Contribution Rate 3.00%  
4/29/1993 Day of work defined as 7 Hours a Day for All employees.  
4/29/1993 Exclude Temporary Employees  
1/1/1993 Flexible E 2% COLA Adopted (01/01/1993)  
1/1/1991 E1 2.5% COLA for past retirees (01/01/1991)  
12/14/1970 Covered by Act 88  
11/1/1967 Fiscal Month - January  
Defined Benefit Normal Retirement Age - 60  
Early Reduced (.5%) at Age 50 with 25 Years or Age 55 with 15 Years

### 21 - Cmd, Sher & Under

12/1/2016 Service Credit Purchase Estimates - No  
2/1/2014 Member Contribution Rate 5.00%  
6/1/2008 Benefit B-4 (80% max)  
1/1/2004 Temporary 20 Years & Out (01/01/2004 - 03/03/2004)  
1/1/2004 Temporary Benefit B-4 (80% max) (01/01/2004 - 03/03/2004)  
1/1/2003 E2 2.5% COLA for future retirees (07/01/2002)  
7/1/2002 Temporary 20 Years & Out (07/01/2002 - 10/03/2002)  
7/1/2002 Temporary Benefit B-4 (80% max) (07/01/2002 - 10/03/2002)  
7/1/2002 Benefit FAC-3 (3 Year Final Average Compensation)  
7/1/2002 10 Year Vesting  
7/1/2002 Benefit B-3 (80% max)  
7/1/2002 Benefit F55 (With 20 Years of Service)  
7/1/2002 Member Contribution Rate 3.80%  
4/29/1993 Day of work defined as 7 Hours a Day for All employees.



## 21 - Cmd, Sher & Under

4/29/1993	Exclude Temporary Employees
12/14/1970	Covered by Act 88
11/1/1967	Fiscal Month - January
	Defined Benefit Normal Retirement Age - 60
	Early Reduced (.5%) at Age 50 with 25 Years or Age 55 with 15 Years

## 22 - Sheriff's Deputies POAM

12/1/2016	Service Credit Purchase Estimates - No
2/1/2014	Member Contribution Rate 5.00%
1/1/2010	E2 2.5% COLA for future retirees (07/01/2009)
7/1/2009	Day of work defined as 8 Hours a Day for All employees.
7/1/2009	Benefit FAC-3 (3 Year Final Average Compensation)
7/1/2009	10 Year Vesting
7/1/2009	Benefit B-4 (80% max)
7/1/2009	Benefit F50 (With 25 Years of Service)
7/1/2009	Member Contribution Rate 3.80%
12/14/1970	Covered by Act 88
11/1/1967	Fiscal Month - January
	Defined Benefit Normal Retirement Age - 60
	Early Reduced (.5%) at Age 50 with 25 Years or Age 55 with 15 Years

# Plan Provisions, Actuarial Assumptions, and Actuarial Funding Method

Details on MERS plan provisions, actuarial assumptions, and actuarial methodology can be found in the Appendix. Some actuarial assumptions are specific to this municipality and its divisions. These are listed below.

## Increase in Final Average Compensation

Division	FAC Increase Assumption
All Divisions	2.00%

## Withdrawal Rate Scaling Factor

Division	Withdrawal Rate Scaling Factor
All Divisions	120%

## Miscellaneous and Technical Assumptions

Loads – None.

## Risk Commentary

Determination of the accrued liability, the employer contribution, and the funded ratio requires the use of assumptions regarding future economic and demographic experience. Risk measures, as illustrated in this report, are intended to aid in the understanding of the effects of future experience differing from the assumptions used in the course of the actuarial valuation. Risk measures may also help with illustrating the potential volatility in the accrued liability, the actuarially determined contribution and the funded ratio that result from the differences between actual experience and the actuarial assumptions.

Future actuarial measurements may differ significantly from the current measurements presented in this report due to such factors as the following: plan experience differing from that anticipated by the economic or demographic assumptions; changes in economic or demographic assumptions due to changing conditions; increases or decreases expected as part of the natural operation of the methodology used for these measurements (such as the end of an amortization period, or additional cost or contribution requirements based on the Plan's funded status); and changes in plan provisions or applicable law. The scope of an actuarial valuation does not include an analysis of the potential range of such future measurements.

Examples of risk that may reasonably be anticipated to significantly affect the plan's future financial condition include:

- **Investment Risk** – actual investment returns may differ from the expected returns;
- **Asset/Liability Mismatch** – changes in asset values may not match changes in liabilities, thereby altering the gap between the accrued liability and assets and consequently altering the funded status and contribution requirements;
- **Salary and Payroll Risk** – actual salaries and total payroll may differ from expected, resulting in actual future accrued liability and contributions differing from expected;
- **Longevity Risk** – members may live longer or shorter than expected and receive pensions for a period of time other than assumed; and
- **Other Demographic Risks** – members may terminate, retire or become disabled at times or with benefits other than assumed resulting in actual future accrued liability and contributions differing from expected.

The effects of certain trends in experience can generally be anticipated. For example, if the investment return since the most recent actuarial valuation is less (or more) than the assumed rate, the cost of the plan can be expected to increase (or decrease). Likewise, if longevity is improving (or worsening), increases (or decreases) in cost can be anticipated.

## PLAN MATURITY MEASURES

Risks facing a pension plan evolve over time. A young plan with virtually no investments and paying few benefits may experience little investment risk. An older plan with a large number of members in pay status and a significant trust may be much more exposed to investment risk. Generally accepted plan maturity measures include the following:

	<u>12/31/2019</u>	<u>12/31/2018</u>
1. Ratio of the market value of assets to total payroll	4.2	4.0
2. Ratio of actuarial accrued liability to payroll	6.8	6.5
3. Ratio of actives to retirees and beneficiaries	0.9	1.0
4. Ratio of market value of assets to benefit payments	12.3	12.0
5. Ratio of net cash flow to market value of assets (boy)	-2.8%	-2.1%

### RATIO OF MARKET VALUE OF ASSETS TO TOTAL PAYROLL

The relationship between assets and payroll is a useful indicator of the potential volatility of contributions. For example, if the market value of assets is 2.0 times the payroll, a return on assets 5% different than assumed would equal 10% of payroll. A higher (lower) or increasing (decreasing) level of this maturity measure generally indicates a higher (lower) or increasing (decreasing) volatility in plan sponsor contributions as a percentage of payroll.

### RATIO OF ACTUARIAL ACCRUED LIABILITY TO PAYROLL

The relationship between actuarial accrued liability and payroll is a useful indicator of the potential volatility of contributions for a fully funded plan. A funding policy that targets a funded ratio of 100% is expected to result in the ratio of assets to payroll and the ratio of liability to payroll converging over time.

### RATIO OF ACTIVES TO RETIREES AND BENEFICIARIES

A young plan with many active members and few retirees will have a high ratio of active to retirees. A mature open plan may have close to the same number of actives to retirees resulting in a ratio near 1.0. A super-mature or closed plan may have significantly more retirees than actives resulting in a ratio below 1.0.

### RATIO OF MARKET VALUE OF ASSETS TO BENEFIT PAYMENTS

The MERS' Actuarial Policy requires a total minimum contribution equal to the excess (if any) of three times the expected annual benefit payments over the projected market value of assets as of the participating municipality or court's Fiscal Year for which the contribution applies. The ratio of market value of assets to benefit payments as of the valuation date provides an indication of whether the division is at risk for triggering the minimum contribution rule in the near term. If the division triggers this minimum contribution rule, the required employer contributions could increase dramatically relative to previous valuations.

### RATIO OF NET CASH FLOW TO MARKET VALUE OF ASSETS

A positive net cash flow means contributions exceed benefits and expenses. A negative cash flow means existing funds are being used to make payments. A certain amount of negative net cash flow is generally expected to occur when benefits are prefunded through a qualified trust. Large negative net cash flows as a percent of assets may indicate a super-mature plan or a need for additional contributions.



## State Reporting

The following information has been prepared to provide some of the information necessary to complete the pension reporting requirements for the State of Michigan's Local Government Retirement System Annual Report (Form No. 5572). Additional resources are available at [www.mersofmich.com](http://www.mersofmich.com) and on the State website.

Form 5572		
Line Reference	Description	Result
10	Membership as of December 31, 2019	
11	Indicate number of active members	92
12	Indicate number of inactive members (excluding pending refunds)	31
13	Indicate number of retirees and beneficiaries	97
14	Investment Performance for Calendar Year Ending December 31, 2019 <sup>1</sup>	
15	Enter actual rate of return - prior 1-year period	14.02%
16	Enter actual rate of return - prior 5-year period	6.39%
17	Enter actual rate of return - prior 10-year period	7.97%
18	Actuarial Assumptions	
19	Actuarial assumed rate of investment return <sup>2</sup>	7.35%
20	Amortization method utilized for funding the system's unfunded actuarial accrued liability, if any	Level Percent
21	Amortization period utilized for funding the system's unfunded actuarial accrued liability, if any <sup>3</sup>	19
22	Is each division within the system closed to new employees? <sup>4</sup>	No
23	Uniform Assumptions	
24	Enter retirement pension system's actuarial value of assets using uniform assumptions	\$17,045,035
25	Enter retirement pension system's actuarial accrued liabilities using uniform assumptions	\$29,618,064
27	Actuarially Determined Contribution (ADC) using uniform assumptions, Fiscal Year Ending December 31, 2020	\$1,302,216

- <sup>1</sup> The Municipal Employees' Retirement System's investment performance has been provided to GRS from MERS Investment Staff and included here for reporting purposes. This investment performance figures reported are net of investment expenses on a rolling calendar-year basis for the previous 1-, 5-, and 10-year periods as required under PA 530.
- <sup>2</sup> Net of administrative and investment expenses.
- <sup>3</sup> Populated with the longest amortization period remaining in the amortization schedule, across all divisions in the plan. This is when each division and the plan in total is expected to reach 100% funded if all assumptions are met.
- <sup>4</sup> If all divisions within the employer are closed, "yes." If at least one division is open (including shadow divisions) indicate "no."

