



Monroe County Employees Retirement System

December 31, 2019 | Actuarial Valuation Report

Nyhart Actuary & Employee Benefits

Table of Contents

Actuarial Certification	2
Executive Summary	4
Summary Results	4
Changes Since Prior Valuation and Key Notes	5
Historical Valuation Results	6
Identification of Risks	7
Plan Maturity Measures	8
Assets and Liabilities	9
Present Value of Future Benefits	9
Accrued Liabilities	10
Asset Information	11
Reconciliation of Gain/Loss	13
Contribution Requirements	14
Development of Recommended Contribution	14
Michigan PA 202 Reporting Requirements	15
Demographic Information	17
Participant Reconciliation	19
Plan Provisions	21
Actuarial Assumptions	27
Other Measurements	31
Actuarial Liabilities and Normal Cost by Division	32
Asset Allocation by Division	33
Unfunded Actuarial Accrued Liability by Division	34
Reconciliation of Gain/Loss by Division	35
Schedule of Amortization Bases by Division	36
Development of Recommended Contribution by Division	37
Demographic Information by Division	38
Active Participant Schedules by Division	39

Actuarial Certification

At the request of the plan sponsor, this report summarizes Monroe County Employees Retirement System as of December 31, 2019. The purpose of this report is to communicate the following results of the valuation:

- Determine Funded Status; and
- Determine Recommended Contribution for the fiscal year January 1, 2021 through December 31, 2021;

This report has been prepared in accordance with the applicable Federal and State laws. Consequently, it may not be appropriate for other purposes. Please contact Nyhart prior to disclosing this report to any other party or relying on its content for any purpose other than that explained above. Failure to do so may result in misrepresentation or misinterpretation of this report.

The results in this report were prepared using information provided to us by other parties. The census information has been provided to us by the employer. Asset information has been provided to us by the trustee. We have reviewed the provided data for reasonableness when compared to prior information provided, but have not audited the data. Where relevant data may be missing, we have made assumptions we believe to be reasonable. We are not aware of any significant issues with and have relied on the data provided. Any errors in the data provided may result in a different result than those provided in this report. A summary of the data used in the valuation is included in this report.

The actuarial assumptions and methods were chosen by the Board. In our opinion, all actuarial assumptions and methods are individually reasonable and in combination represent our best estimate of anticipated experience of the plan. 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;
- 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); and
- changes in plan provisions or applicable law.

We did not perform an analysis of the potential range of future measurements due to the limited scope of our engagement. This report has been prepared in accordance with generally accepted actuarial principles and practice.

This actuarial valuation and/or cost determination was prepared and completed by me or under my direct supervision, and I acknowledge responsibility for the results. To the best of my knowledge, the results are complete and accurate, and in my opinion, the techniques and assumptions used are reasonable.

Actuarial Certification

Neither Nyhart nor any of its employees have any relationship with the plan or its sponsor which could impair or appear to impair the objectivity of this report. To the extent that this report or any attachment concerns tax matters, it is not intended to be used and cannot be used by a taxpayer for the purpose of avoiding penalties that may be imposed by law.

The undersigned are compliant with the continuing education requirements of the Qualification Standards for Actuaries Issuing Statements of Actuarial Opinion in the United States and are available for any questions.

Nyhart



Nick Meggos, EA, FCA
Enrolled Actuary No. 20-7406

August 12, 2020
Date



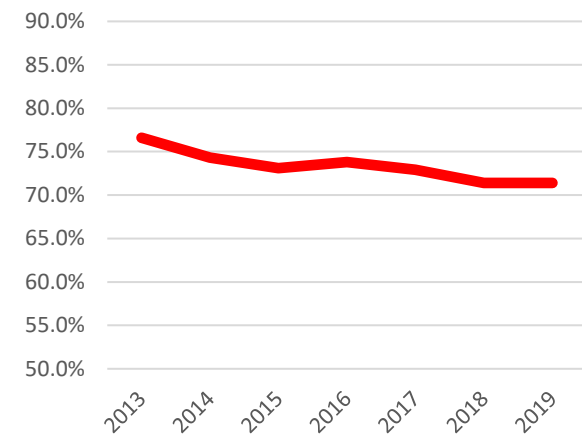
Danielle Winegardner, FSA, EA, MAAA
Enrolled Actuary No. 20-8260

Summary Results

The actuarial valuation's primary purpose is to produce a scorecard measure displaying the funding progress of the plan toward the ultimate goal of paying benefits at retirement. The accrued liability is based on an entry age level percentage of pay.

	December 31, 2018	December 31, 2019
Funded Status Measures		
Accrued Liability	\$293,602,703	\$301,296,084
Actuarial Value of Assets	\$209,672,672	\$215,267,546
Unfunded Accrued Liability	\$83,930,031	\$86,028,538
Funded Percentage (AVA)	71.4%	71.4%
Funded percentage (MVA)	64.1%	71.0%
Interest Rate	7.00%	7.00%
Cost Measures		
Recommended Total Contribution	\$10,565,680	\$11,226,227
Recommended Contribution (as a percentage of expected payroll)	28.3%	30.3%
Asset Performance		
Market Value of Assets	\$188,073,094	\$213,841,821
Actuarial Value of Assets	\$209,672,673	\$215,267,546
Actuarial Value/Market Value	111.5%	100.7%
Member Information		
Active Members	707	715
Terminated Vested Members	140	195
Retirees, Beneficiaries, and Disabled Members	798	816
Total	1,645	1,726
Covered Payroll	\$35,344,621	\$36,622,993
Expected Payroll (FY 2020/FY 2021)	\$37,311,605	\$37,073,709

History of Funded Ratio



Changes Since Prior Valuation and Key Notes

There have been no changes to the plan provisions since the last valuation.

At the February 19, 2020 Board meeting, the Board adopted a 20-year layered amortization with 2% annual payment increases (except for the Mental Health division for which the payments are level). Future unanticipated unfunded actuarial accrued liability will be amortized over a 20-year period from the point incurred, resulting in a schedule of UAAL payments. The amortization period was previously 25 years.

The mortality table has been updated from the RP-2014 Blue Collar mortality table (for all divisions) with generational improvements from 2006 based on Projection Scale MP-2014 to the Pub-2010 General Employees mortality table (for General County, County Agency, County Library, Road Commission, Mental Health, and Central Dispatch) and the Pub-2010 Public Safety mortality table (for Sheriff's Office) with generational improvements from 2010 based on Projection Scale MP-2019. This change resulted in an increase in the accrued liability and normal cost.

Effective December 31, 2019, assumptions for inflation, annual pay increases, retirement rates, disability rates, and termination rates were updated to reflect the recommended assumption updates from the Experience Study report dated February 19, 2020. These changes resulted in an increase in the accrued liability and a decrease in the normal cost.

Effective December 31, 2019, a 2% load is placed on the active retirement liability for divisions with employee contributions to account for participants electing an annuity withdrawal with employee contributions earned under the old actuarial equivalence definition. This change results in an increase in the accrued liability and an increase in the normal cost.

Historical Valuation Summary

	12/31/2015	12/31/2016	12/31/2017	12/31/2018	12/31/2019
Funding					
Actuarial Accrued Liability	\$273,288,937	\$274,544,403	\$284,313,525	\$293,602,703	\$301,296,084
Actuarial Value of Assets	\$199,696,082	\$202,718,040	\$207,191,203	\$209,672,672	\$215,267,546
Unfunded Actuarial Accrued Liability	\$73,592,855	\$71,826,363	\$77,122,322	\$83,930,031	\$86,028,538
Funded Percentage	73.1%	73.8%	72.9%	71.4%	71.4%
Total Normal Cost	\$4,330,058	\$4,152,772	\$4,008,790	\$4,074,075	\$4,362,926
Expense Load Assumption (% of Pay)	0.50%	0.50%	0.50%	0.50%	0.50%
Actual Contributions	\$8,836,515	\$8,895,675	\$9,351,433	\$9,132,452	\$9,853,368
Recommended Contribution	\$9,111,463	\$8,904,406	\$9,589,792	\$9,333,339	\$9,222,914
Interest Rate	7.00%	7.00%	7.00%	7.00%	7.00%
Rate of Return					
Actuarial Value of Assets	5.7%	5.0%	5.6%	5.1%	6.3%
Market Value of Assets	(0.6)%	6.9%	13.3%	(5.5)%	18.0%
Demographic Information					
Active Participants	717	713	725	707	715
Terminated Vested Participants	150	151	143	140	195
Retired Participants and Beneficiaries	736	752	768	798	816
Total Participants	1,603	1,616	1,636	1,645	1,726
Covered Payroll	\$35,914,410	\$34,786,368	\$35,292,710	\$35,344,621	\$36,622,993
Average Covered Pay	\$50,090	\$48,789	\$48,680	\$48,494	\$51,221

Identification of Risks

The results presented in this report are shown as single point values. However, these values are derived using assumptions about future markets and demographic behavior. If actual experience deviates from our assumptions, the actual results for the plan will consequently deviate from those presented in this report. Therefore, it is critical to understand the risks facing this pension plan. The following table shows the risks we believe are most relevant to the Monroe County Employees Retirement System. The risks are generally ordered with those we believe to have the most significance at the top. Also shown are possible methods by which a more detailed assessment of the risk can be performed.

Type of Risk	Method to Assess Risk
Investment Return	Scenario Testing; Asset Liability Study
Demographic Risk	Scenario Testing; Stress Testing; Experience Study
Participant Longevity	Stress Testing; Experience Study
Salary Growth	Scenario Testing; Experience Study; Review Future Budgets
Interest Rates	Scenario Testing; Stochastic Modeling

Plan Maturity Measures - December 31, 2019

Each pension plan has a distinct life-cycle. New plans promise future benefits to active employees and then accumulate assets to pre-fund those benefits. As the plan matures, benefits are paid and the pre-funded assets begin to decumulate until ultimately, the plan pays out all benefits. A plan's maturity has a dramatic influence on how risks should be viewed. The following maturity measures illustrate where the Monroe County Employees Retirement System falls in its life-cycle.

Duration of Liabilities: 10.8%

Duration is the most common measure of plan maturity. It is defined as the sensitivity of the liabilities to a change in the interest rate assumption. The metric also approximates the weighted average length of time, in years, until benefits are expected to be paid. A plan with high duration is, by definition, more sensitive to changes in interest rates. A plan with low duration is more susceptible to risk if asset performance deviates from expectations as there would be less time to make up for market losses in adverse market environments while more favorable environments could result in trapped surplus from gains. Conversely, high duration plans can often take on more risk when investing, and low duration plans are less sensitive to interest rate fluctuations.

Demographic Distribution - Ratio of Actively Accruing Participants to All Participants: 41.4%

A plan with a high ratio is more sensitive to fluctuations in salary (if a salary-based plan) and statutory changes. A plan with a low ratio is at higher risk from demographic experience. Such a plan should pay close attention to valuation assumptions as there will be less opportunity to realize future offsetting gains or losses when current experience deviates from assumptions. Plans with a low ratio also have limited opportunities to make alterations to plan design to affect future funded status.

Asset Leverage - Ratio of Payroll for Plan Participants to Market Value of Assets: 17.1%

Younger plans typically have a large payroll base from which to draw in order to fund the plan while mature plans often have a large pool of assets dedicated to providing benefits to a population primarily consisting of members no longer on payroll. Plans with low asset leverage will find it more difficult to address underfunding, as the contributions needed to make up the deficit will represent a higher percentage of payroll than for a plan with high asset leverage.

Benefit Payment Percentage - Ratio of Annual Benefit Payments to Market Value of Assets: 8.4%

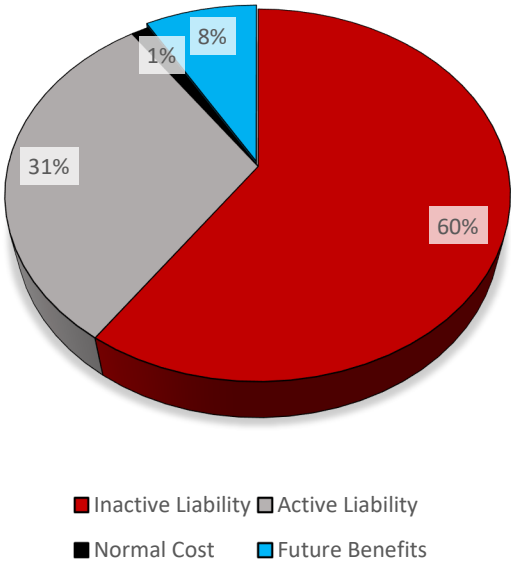
As a plan enters its decumulation phase, a larger percentage of the pre-funded assets are paid out each year to retirees. A high percentage is not cause for alarm as long as the plan is nearly fully funded. However, such a plan is more sensitive to negative asset performance, especially if cash contributions are not an option to make up for losses.

Present Value of Future Benefits

The Present Value of Future Benefits represents the discounted value of all future benefits expected to be payable to current members, considering future service and compensation not yet earned.

	December 31, 2019
Present Value of Future Benefits	
Active members	
Retirement	\$117,921,257
Disability	5,980,341
Death	1,598,107
Termination	9,115,097
Total active	\$134,614,802
Inactive members	
Retired and Disabled members	\$177,012,593
Beneficiaries	8,232,227
Terminated vested members	13,527,353
Total inactive	\$198,772,173
 Total	 \$333,386,975
 Present Value of Future Payrolls	 \$288,919,066
Present Value of Future Employee Contributions	\$7,134,351

Breakdown of Present Value of Future Benefits



Assets and Liabilities

Accrued Liability

The Accrued Liability measures the present value of benefits earned as of the valuation date, using a specified set of actuarial assumptions. It is not a long-term snapshot of the liabilities.

December 31, 2019

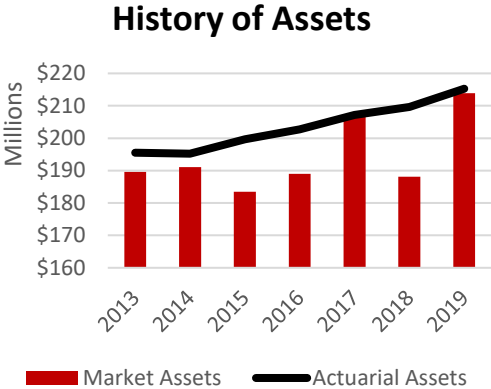
Accrued Liabilities	
Active members	
Retirement	\$93,886,047
Disability	3,873,310
Death	1,163,520
Termination	3,601,034
Total Active	\$102,523,911
Inactive members	
Retired and Disabled members	\$177,012,593
Beneficiaries	8,232,227
Terminated vested members	13,527,353
Total Inactive	\$198,772,173
Total	\$301,296,084
Total Normal Cost	\$4,362,926

Asset Information

The amount of assets backing the pension promise is the most significant driver of volatility and future costs within a pension plan. The investment performance of the assets directly offsets the ultimate cost.

**Market Value
December 31, 2019**

Asset Value Reconciliation	
Value of assets, beginning of year	\$188,073,094
Contributions	
Employer	\$9,853,368
Employee	916,775
Total	\$10,770,143
Investment income, net expenses	\$33,133,585
Benefit payments and refunds	(17,920,601)
Administrative expenses	(214,400)
Value of assets, end of year	\$213,841,821
Return on Market Value ¹	18.0%
 Actuarial Value of Plan Assets	 \$215,267,546



¹Return based on mid-year cash flows

Assets and Liabilities

Asset Information (continued)

Plan Assets are used to develop funded percentages and contribution requirements.

	December 31, 2019
1. Market value of assets, beginning of year	\$188,073,094
2. Contributions	\$10,770,143
3. Admin Expenses	(214,400)
4. Benefit Payments and Refunds	(17,920,601)
5. Expected Total Investment Income	14,419,317
6. Actual Market Value of Assets, end of year	213,841,821
7. Investment Income, net expenses	33,133,585
8. Amount of Phased-In Recognition (7 – 5)	18,714,268
9. Investment Gain/Loss changes recognized (1/7 over seven years)	
a. From current year (\$18,714,268 * (6/7))	16,040,801
b. From 1 year prior (\$(25,310,196) * (5/7))	(18,078,711)
c. From 2 years prior (\$10,753,594 * (4/7))	6,144,911
d. From 3 years prior (\$(1,329,851) * (3/7))	(569,936)
e. From 4 years prior (\$(14,571,648) * (2/7))	(4,163,328)
f. From 5 years prior (\$(5,596,234) * (1/7))	(799,462)
g. Total	(1,425,725)
10. Preliminary Actuarial value of assets, end of year (6 – 9(g))	\$215,267,546
11. 80% of Market value of assets	\$171,073,457
12. 120% of Market value of assets	\$256,610,185
13. Final Actuarial value of assets	\$215,267,546
14. Return on Actuarial Value	6.3%

Assets and Liabilities

Reconciliation of Gain/Loss

December 31, 2019

Liability (gain)/loss

Actuarial liability (12/31/2018)	\$293,602,703
Normal cost	4,074,075
Benefit payments	(17,920,601)
Expected Interest	20,220,762
Assumption changes	4,393,577
Plan provision changes	0
Expected actuarial liability (12/31/2019)	\$304,370,516
Actual actuarial liability (12/31/2019)	<u>\$301,296,084</u>
Liability (gain)/loss	\$(3,074,432)

Asset (gain)/loss

Actuarial value of assets (12/31/2018)	\$209,672,672
Contributions	10,770,143
Benefit payments and expenses	(18,135,001)
Expected Investment return	14,423,677
Change in actuarial value of assets method	0
Expected actuarial value of assets (12/31/2019)	\$216,731,491
Actual actuarial value of assets (12/31/2019)	<u>\$215,267,546</u>
Asset (gain)/loss	\$1,463,945

Total (gain)/loss

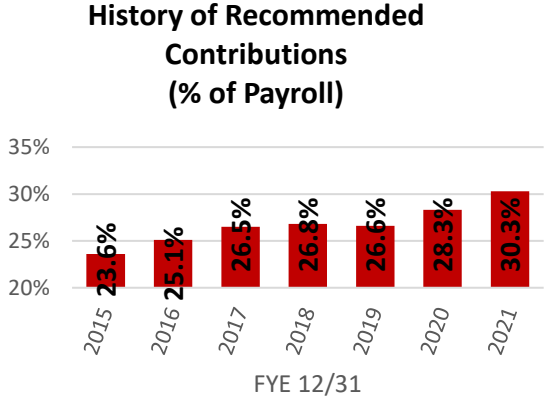
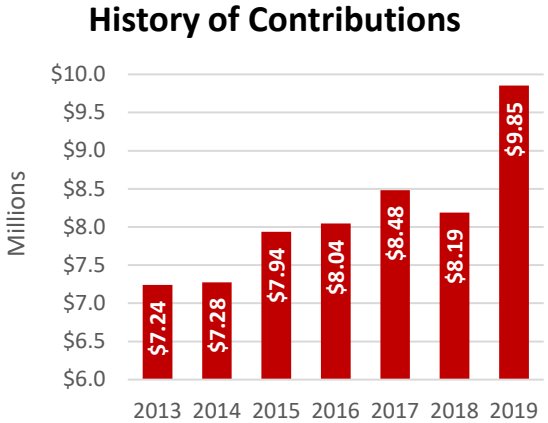
\$(1,610,487)

Contribution Requirements

Development of Recommended Contribution

The minimum recommended contribution is the annual amount necessary to fund the plan according to funding policies and/or applicable laws. The recommended contribution is composed of the normal cost, administrative expenses, plus an amortization charge.

	December 31, 2019
Funded Position	
1. Entry age accrued liability	\$301,296,084
2. Actuarial value of assets	215,267,546
3. Unfunded actuarial accrued liability (UAAL)	\$86,028,538
Employer Contributions¹	
1. Normal Cost	
(a) Total normal cost	\$4,362,926
(b) Expected participant contributions	908,790
(c) Net normal cost	\$3,454,136
2. Administrative expenses	183,115
3. Amortization of UAAL	6,505,556
4. Interest	1,083,420
5. Total recommended contribution for 2021	\$11,226,227
6. Expected covered payroll	\$37,073,709
As a percentage of covered payroll	30.28%



¹Contribution by division is shown on page 37



Michigan PA 202 Reporting Requirements

Reporting of Assets and Liabilities under Plan Assumptions follows what is reported in the audited financial statements, and will therefore follow the Proportionate Share required under GASB 67/68.

Funding Assumptions	Plan Assumptions	PA 202 Uniform Assumptions
Interest Rate	7.00%	7.00%
Mortality	Pub-2010 with Scale MP 2019 projected generationally	Version of RP-2014
Salary Scale	Ranges from 2.75% to 5.00%	Minimum of 3.00%
Amortization of UAAL	Layered amortization with 20-year periods for all future layers	20-year closed

Employer	2019 Employer Contributions	Proportionate Share
General County	\$3,931,331	39.8984%
County Agency	591,055	5.9985%
Sheriff's Office	2,854,794	28.9728%
County Library	748,562	7.5970%
Road Commission	922,624	9.3635%
Mental Health	537,351	5.4535%
Central Dispatch	<u>267,651</u>	<u>2.7163%</u>
Total	\$9,853,368	100.0000%

Funding Results

Michigan PA 202 Reporting Requirements (continued)

The following table shows the values that will be reported on the Local Government Retirement System Annual Report (Form 5572).

	General, Sheriff, & Central Dispatch	County Agency	County Library	Road Commission	Mental Health	Total
Plan Assumptions: GASB 67/68 Reporting						
Proportionate Share	71.5875%	5.9985%	7.5970%	9.3635%	5.4535%	100.0000%
Assets	\$153,084,013	\$12,827,302	\$16,245,563	\$20,023,079	\$11,661,864	\$213,841,821
Liabilities	<u>219,150,389</u>	<u>18,363,172</u>	<u>23,256,651</u>	<u>28,664,427</u>	<u>16,694,767</u>	<u>306,129,406</u>
Unfunded	\$66,066,376	\$5,535,870	\$7,011,088	\$8,641,348	\$5,032,903	\$92,287,585
Funded Ratio	69.85%	69.85%	69.85%	69.85%	69.85%	69.85%
Annual Required Contribution	\$6,494,974	\$540,108	\$849,383	\$629,979	\$708,470	\$9,222,914
Uniform Assumptions						
Assets	\$153,084,013	\$12,827,302	\$16,245,563	\$20,023,079	\$11,661,864	\$213,841,821
Liabilities	<u>216,827,346</u>	<u>18,168,519</u>	<u>23,010,125</u>	<u>28,360,578</u>	<u>16,517,799</u>	<u>302,884,366</u>
Unfunded	\$63,743,333	\$5,341,217	\$6,764,562	\$8,337,499	\$4,855,935	\$89,042,545
Funded Ratio	70.60%	70.60%	70.60%	70.60%	70.60%	70.60%
Annual Required Contribution	\$7,234,080	\$606,754	\$912,426	\$682,310	\$724,496	\$10,160,066

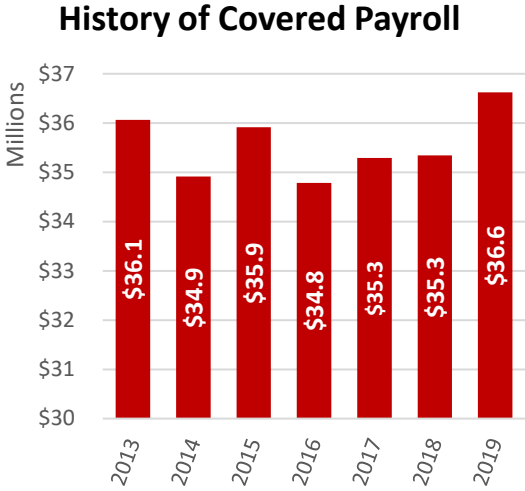
The Actuarially Determined Contribution payable during 2019 is calculated as of December 31, 2017 and based on data, assumptions, and plan provisions summarized in the December 31, 2017 Actuarial Valuation Report. The Actuarially Determined Contribution under Uniform Assumptions is calculated using a 20-year closed amortization period.

Demographic Information

Demographic Information

The foundation of a reliable actuarial report is the participant information provided by the plan sponsor. Monitoring trends in demographic information is crucial for long-term pension planning.

	December 31, 2018	December 31, 2019
Participant Counts		
Active Participants	707	715
Retired Participants	664	718
Disabled Participants	58	26
Beneficiaries	76	72
Terminated Vested Participants	140	195
Total Participants	1,645	1,726
Active Participant Demographics		
Average Age	45.5	44.9
Average Service	13.0	13.2
Average Compensation	\$49,992	\$51,221
Covered Payroll	\$35,344,621	\$36,622,993



Demographic Information

Demographic Information (continued)

	December 31, 2018	December 31, 2019
Retiree Statistics		
Count	664	718
Average Age	69.3	69.3
Average Monthly Benefit	\$1,829	\$1,858
Disabled Participant Statistics		
Count	58	26
Average Age	61.3	55.1
Average Monthly Benefit	\$1,436	\$1,533
Beneficiary Statistics		
Count	76	72
Average Age	74.9	74.6
Average Monthly Benefit	\$1,046	\$1,068
Terminated Vested Participant Statistics		
Count	140	195*
Average Age	50.0	45.6
Average Monthly Benefit	\$1,180	\$1,205*

Monitoring the average age of the population is important due to the relationship of actuarial cost to age. Generally speaking, an older population generates a higher actuarial cost.

Changes in the ratio of active to retired participants can be a significant driver of costs in a volatile asset market.

*Includes 139 deferred vested participants and 56 participants vested only in a return of their employee contributions.

*The Average Monthly Benefit shown is the average deferred monthly benefit of those 139 deferred vested participants.

Participant Reconciliation

Participant Reconciliation

	Active	Terminated Vested	Retired	Disabled	Beneficiaries	Totals
Prior Year	707	140	664	58	76	1,645
Active						
To Terminated Vested	(23)	23				0
To Disabled	(2)			2		0
To Retired	(30)		30			0
To Terminated Non-Vested	(8)					(8)
To Lump Sum Cash-Out	(7)					(7)
To Death	(1)					(1)
Terminated Vested						
To Active	1	(1)				0
To Retired		(8)	8			0
To Death		(1)				(1)
Disabled						
To Retired (Status Corrections)			34	(34)		0
Retired						
To Death			(19)			(19)
Survivor						
To Death					(7)	(7)
Additions	78	42	1		3	124
Removed						
Current Year	715	195	718	26	72	1,726

Participant Reconciliation

Active Participant Schedule

Active participant information grouped based on age and service.
 Based on reported pay from January 1, 2019 to December 31, 2019.

Age Group	Years of Service										Total	Average Pay ¹
	Under 1	1 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39	40 & Up		
Under 25	32	28	1								61	\$30,431
25 to 29	17	42	5								64	\$39,484
30 to 34	12	14	13	5							44	\$40,956
35 to 39	7	14	13	24	10	1					69	\$50,367
40 to 44	4	9	10	11	38	13					85	\$54,722
45 to 49	5	13	18	16	24	23	10	1			110	\$55,561
50 to 54	4	16	16	7	20	13	21	13	1		111	\$52,808
55 to 59	3	16	14	5	21	17	15	8	1		100	\$50,228
60 to 64	6	6	8	11	7	4	6	2	3	1	54	\$52,425
65 to 69		6	2		1	2	2	1	1		15	\$47,275
70 & up		1	1								2	\$72,627
Total	90	165	101	79	121	73	54	25	6	1	715	\$48,924

¹Part-time employees that did not earn a year of service in 2019 are excluded from the average pay shown



Plan Effective Date

The plan was effective July 1, 1965.

Plan Status

The plan provides ongoing benefit accruals and participation is open to new entrants in all divisions except Mental Health. Mental Health employees hired after 6/1/2012 are not eligible for participation.

Accrual of Benefits

A participant shall accumulate a benefit payable at normal retirement date based upon compensation and credited service earned as of the date of determination.

Benefits

Normal Retirement

Eligibility	See the Plan Provision by Division table for details.
Benefit	Benefit Multiplier (outlined in the Plan Provision by Division table) multiplied by Final Average Compensation multiplied by Credited Service Maximum Benefit: 75% of final average earnings

Deferred Retirement

Eligibility	8 or more years of service
Benefit	Computed as a normal retirement but based upon service and final average earnings at termination date.

Non-Duty Death-In-Service

Eligibility	15 years of service or age 60 with 10 years of service
Benefit	Computed as a normal retirement but actuarially reduced in accordance with a 100% joint and survivor election.

Duty Death-In-Service

Eligibility	No age or service requirements
Benefit	Computed as a normal retirement but computed as if the member had at least 15 years of service.

Plan Provisions

Non-Duty Disability

Eligibility	10 or more years of service
Benefit	Computed as a normal retirement.

Duty Disability

Eligibility	No age or service requirements
Benefit	Computed as a normal retirement benefit but computed as if the member had at least 10 years of service.

Compensation

Salary or wages paid a member for personal services rendered the County while a member of the retirement system.
Salary and wages shall include longevity pay, overtime pay, shift differentials, pay for periods of absence from work by reason of employer approved vacation, holiday, and sickness

Final Average Compensation

Highest 3 consecutive years out of last 10

Credited Service

Exact fractional service

Employee Contributions

See the table below for details

Payment Forms

Normal Form	Single Life Annuity
Optional Forms	Life Annuity with 5 and 10 years certain, 50% and 100% Joint and Survivor Annuity

The participant may also elect a combination of a Return of Employee Contributions with a residual annuity in any of the forms listed.

Optional Form Factors and Actuarial Equivalence

100% Joint and Survivor Annuity	The retired member is paid 80% of the single life annuity pension amount if the retired member and named survivor beneficiary are the same age on the retired member's retirement date. The percent shall be increased by 0.5% for each year the named survivor beneficiary's age is more than the retired member's age, to a maximum of 90%. The percent shall be decreased by 0.5% for each year the named survivor beneficiary's age is less than the retired member's age, to a minimum of 50%.
50% Joint and Survivor Annuity	The retired member is paid 90% of the single life annuity pension amount if the retired member and named survivor beneficiary are the same age on the retired member's retirement date. The percent shall be increased by 0.5% for each year the named survivor beneficiary's age is more than the retired member's age, to a maximum of 95%. The percent shall be decreased by 0.5% for each year the named survivor beneficiary's age is less than the retired member's age, to a minimum of 60%.
Life Annuity with Years Certain	Actuarial Equivalence will be computed using 7% interest and the GAM 71 Mortality table
Annuity Withdrawal Factor	The reduction in the single life annuity amount resulting from a participant electing to receive a return of employee contributions is computed using the interest rate and mortality table with a 50% unisex blend used in the most recent annual actuarial valuation for the year in which the participant's contributions are withdrawn. For contributions earned prior to the date negotiated by each union, the return of employee contributions is computed using 1971 GAM Mortality and the PBGC rate.

Plan Provisions Not Included

We are not aware of any plan provisions not included in the valuation

Adjustments Made for Subsequent Events

We are not aware of any event following the measurement date and prior to the date of this report that would materially impact the results of this report

Plan Provisions

Plan Provisions by Division

Valuation Group	Union Name	TIER 1					TIER 2				
		Numeric Code	Benefit Multiplier	FAC	EE Contribution	Normal Retirement Eligibility	Effective Date	Benefit Multiplier	FAC	EE Contribution	Normal Retirement Eligibility
General	Non-Union Other	99	2.50%	3 yr.	3.00%	55/30 or 60/8	1/1/2011	1.50%	3 yr.	3.00%	60/8
General	TPOAM Nurses	3	2.50%	3 yr.	3.00%	55/30 or 60/8	1/1/2011	1.50%	3 yr.	3.00%	60/8
General	TPOAM General	4	2.50%	3 yr.	3.00%	55/30 or 60/8	10/26/2010	1.50%	3 yr.	3.00%	60/8
General	UAW/Friend of the Court	6	2.50%	3 yr.	3.00%	55/30 or 60/8	1/1/2011	1.50%	3 yr.	3.00%	60/8
General	POAM/District Court	7	2.50%	3 yr.	3.00%	55/30 or 60/8	1/1/2011	1.50%	3 yr.	3.00%	60/8
General	TPOAM District Court	26	2.50%	3 yr.	3.00%	55/30 or 60/8	1/1/2011	1.50%	3 yr.	3.00%	60/8
General	POAM Youth Center	8	2.50%	3 yr.	3.00%	55/30 or 60/8	1/1/2011	1.50%	3 yr.	3.00%	60/8
General	TPOAM Youth Center Supervisors	28	2.50%	3 yr.	3.00%	55/30 or 60/8	1/1/2011	1.50%	3 yr.	3.00%	60/8
General	POAM/Youth Center	29	2.50%	3 yr.	3.00%	55/30 or 60/8	1/1/2011	1.50%	3 yr.	3.00%	60/8
General	TPOAM Family Court	11	2.50%	3 yr.	3.00%	55/30 or 60/8	1/1/2011	1.50%	3 yr.	3.00%	60/8
General	POAM/Assistant Prosecutor's	14	2.50%	3 yr.	3.00%	55/30 or 60/8	4/3/2012	1.50%	3 yr.	3.00%	60/8
General	Non-Union Management	20	2.50%	3 yr.	3.00%	55/30 or 60/8	1/1/2011	1.50%	3 yr.	3.00%	60/8
General	Elected Officials – Non-Union	22	2.50%	3 yr.	3.00%	55/30 or 60/8	1/1/2011	1.50%	3 yr.	3.00%	60/8
General	County (Non-Union) Part-time	25	2.50%	3 yr.	3.00%	55/30 or 60/8	1/1/2011	1.50%	3 yr.	3.00%	60/8
County Agency	AFLCIO/County Agency	2	2.50%	3 yr.	3.00%	55/30 or 60/8	12/1/2014	1.50%	3 yr.	3.00%	60/8
County Agency	Non-Union/County Agency	15	2.50%	3 yr.	0.00%	55/30 or 60/8					

Plan Provisions

Plan Provisions by Division

Valuation Group	Union Name	Numeric Code	TIER 1				TIER 2				
			Benefit Multiplier	FAC	EE Contribution	Normal Retirement Eligibility	Effective Date	Benefit Multiplier	FAC	EE Contribution	Normal Retirement Eligibility
Sheriff	POAM/Sheriff Deputies	1	2.50%	3 yr.	3.00%	50/25 or 60/8	7/1/2013	1.50%	3 yr.	3.00%	50/25 or 60/8
Sheriff	POAM/Correctional Officers	10	2.50%	3 yr.	3.00%	50/25 or 60/8	1/1/2011	1.50%	3 yr.	3.00%	50/25 or 60/8
Sheriff	COAM/Corrections Supv	17	2.50%	3 yr.	3.00%	50/25 or 60/8	1/1/2011	1.50%	3 yr.	3.00%	50/25 or 60/8
Sheriff	COAM/Command Officers	9	2.75%	3 yr.	4.53%	50/25 or 60/8	4/25/2013	Retirement Benefits provided in previous position (Deputies Unit)			
Sheriff	Non-Union Command	30	2.75%	3 yr.	4.53%	50/25 or 60/8	4/25/2013				
Library	Library (Non-Union)	73	2.00%	3 yr.	0.00%	55/30 or 60/8					
Library	Library (Non-Union) Part-Time	74	2.00%	3 yr.	0.00%	55/30 or 60/8					
Road Commission	Local 543 Utility Workers Union of America	44	2.25%	3 yr.	3.25%	55/30 or 60/8	12/1/2014	2.00%	3 yr.	3.25%	55/30 or 60/8
Road Commission	AFSCME Local 839	45	2.25%	3 yr.	3.25%	55/30 or 60/8	12/1/2014	2.00%	3 yr.	3.25%	55/30 or 60/8
Road Commission	Road Commission - Management	46	2.25%	3 yr.	3.25%	55/30 or 60/8					
Mental Health	AFSCME Mental Health	5	2.25%	3 yr.	0.00%	55/30 or 60/8	6/1/2012	None			
Mental Health	Non-Union Mental Health	23	2.25%	3 yr.	0.00%	55/30 or 60/8	6/1/2012	None			
Mental Health	Mental Health Management	24	2.25%	3 yr.	0.00%	55/30 or 60/8	6/1/2012	None			
Dispatchers	COAM/Communication Supervisors	16	2.50%	3 yr.	3% to \$7,800 plus 5% over	50/25 or 60/8	1/1/2011	1.50%	3 yr.	3% to \$7,800 plus 5% over	60/8
Dispatchers	POAM/Communication Spec	50	2.50%	3 yr.	3.00%	50/25 or 60/8	1/1/2011	1.50%	3 yr.	3.00%	60/8

Plan Provisions

13th Check Provisions by Division

	General County	County Agency	Sheriff's Office	County Library	Road Commission*	Mental Health	Central Dispatch
Source of 13th Check Payments	Employer	Employer	Employer	Employer	Employer	N/A	Employer
13th Check Excess Reserve Fund	Closed	Closed	Closed	N/A	Closed	N/A	Closed
Supplemental Pension Benefit Contribution for 2019	\$28,947	\$5,921	\$13,158	\$0	\$50,000	N/A	\$1,974

*The Road Commission Excess Earnings Reserve Fund is no longer in existence and the Road Commission is now using general funds to fund the distribution of these benefits. Under Policy No. 2016-04, \$50,000 is to be taken each year from the general funds to fund the Post-Retirement Supplemental Benefits Distribution Program and evenly distributed to all Monroe County Road Commission retirees, regardless of the year they retired, their age, or how long they have been retired.

Actuarial Assumptions

Except where otherwise indicated, the following assumptions were selected by the plan sponsor with the concurrence of the actuary.

Actuarial Assumptions, Methods and Additional Information for Funding

Valuation Date	December 31, 2019
Participant and Asset Information Collected as of	December 31, 2019
Cost Method	Entry Age Normal Cost Method
Amortization Method	Level percent of payroll, closed Effective for the 12/31/2012 valuation, the Mental Health division is closed to new hires. In this case, a level dollar amortization is being used.
Remaining amortization period	20 At the February 19, 2020 Board meeting, the Board adopted a 20-year layered amortization with 2% annual payment increases (except for the Mental Health division for which the payments are level). Future unanticipated unfunded actuarial accrued liability will be amortized over a 20-year period from the point incurred, resulting in a schedule of UAAL payments.
Asset Valuation Method	7-year adjusted market value
Interest Rates	
Investment Rate of Return	7.00%
Amortization payments increase assumption	2.00%
Inflation Assumption	2.25%
Expense Loading	0.5% of Payroll

Actuarial Assumptions

Marital Status and Ages

100% of males and 100% of females are assumed to be married. Male spouses are assumed to be 3 years older than female spouses.

Annual Pay Increases

Salary increases based on an inflation component of 2.25% and merit and longevity rates based on age. Representative values of the total annual rates of pay increases:

Years of Service	Merit and Longevity				Total		
	Base (Economic)	General, Library, County Agency, Sheriff's Office, Central Dispatch	Road Commission	Mental Health	General, Library, County Agency, Sheriff's Office, Central Dispatch	Road Commission	Mental Health
1	2.25%	2.50%	2.50%	2.75%	4.75%	4.75%	5.00%
2	2.25%	2.50%	2.50%	2.75%	4.75%	4.75%	5.00%
3	2.25%	2.50%	2.50%	2.75%	4.75%	4.75%	5.00%
4	2.25%	2.50%	2.50%	2.75%	4.75%	4.75%	5.00%
5	2.25%	2.50%	2.00%	2.75%	4.75%	4.25%	5.00%
6	2.25%	2.50%	2.00%	2.75%	4.75%	4.25%	5.00%
7	2.25%	2.50%	2.00%	2.25%	4.75%	4.25%	4.50%
8	2.25%	2.50%	2.00%	2.25%	4.75%	4.25%	4.50%
9+	2.25%	0.50%	0.50%	1.25%	2.75%	2.75%	3.50%

Mortality Rates

Healthy

For General County, County Agency, County Library, Road Commission, Mental Health, and Central Dispatch: The Fully Generational Pub-2010 General Employees Mortality Table, using Projection Scale MP-2019.
For Sheriff's Office: The Fully Generational Pub-2010 Public Safety Mortality Table, using Projection Scale MP-2019.

Disabled

For General County, County Agency, County Library, Road Commission, Mental Health, and Central Dispatch: The Fully Generational Pub-2010 Non-Public Safety Disabled Retiree Mortality Table, using Projection Scale MP-2019.
For Sheriff's Office: The Fully Generational Pub-2010 Public Safety Disabled Retiree Mortality Table, using Projection Scale MP-2019.

It is assumed that all deaths are non-duty related deaths.

As the plan is not large enough to have credible experience, mortality assumptions are set to reflect general population trends

Actuarial Assumptions

Retirement Rates

Retirement rates vary by age, service, and division. The assumed retirement rates are based on a study of actual experience for the plan during 2015-2018. See the experience study report dated February 2020.

Retirement Ages	General County, County Agency, Mental Health, and County Library	Road Commission	Sheriff's Office, County Dispatch Years of Service: 20-24	Sheriff's Office, County Dispatch Years of Service: 25	Sheriff's Office, County Dispatch Years of Service: 26-29	Sheriff's Office, County Dispatch Years of Service: 30+
50			20.00%	60.00%	50.00%	100.00%
51			20.00%	60.00%	50.00%	100.00%
52			20.00%	60.00%	50.00%	100.00%
53			20.00%	60.00%	50.00%	100.00%
54			20.00%	60.00%	50.00%	100.00%
55	37.50%	50.00%	20.00%	60.00%	50.00%	100.00%
56	12.50%	50.00%	20.00%	60.00%	50.00%	100.00%
57	12.50%	50.00%	20.00%	60.00%	50.00%	100.00%
58	12.50%	50.00%	20.00%	60.00%	50.00%	100.00%
59	12.50%	50.00%	20.00%	60.00%	50.00%	100.00%
60	20.00%	50.00%	20.00%	60.00%	50.00%	100.00%
61	20.00%	50.00%	20.00%	60.00%	50.00%	100.00%
62	20.00%	50.00%	20.00%	60.00%	50.00%	100.00%
63	25.00%	50.00%	20.00%	60.00%	50.00%	100.00%
64	25.00%	50.00%	20.00%	60.00%	50.00%	100.00%
65	25.00%	100.00%	100.00%	100.00%	100.00%	100.00%
66	30.00%					
67	30.00%					
68	30.00%					
69	30.00%					
70	100.00%					

Actuarial Assumptions

Disability Rates

Disability rates vary by age and gender. The assumed disability rates are based on a study of actual experience for the plan during 2015-2018. See the experience study report dated February 2020. Sample rates are shown below.

For the Sheriffs Office and Road Commission, 50% of disability incidence is assumed to be duty-related. For all other divisions, 85% of disability incidence is assumed to be non-duty related.

Age	Male	Female
20	0.0702%	0.0612%
25	0.0702%	0.0612%
30	0.0702%	0.0612%
35	0.0702%	0.0612%
40	0.1809%	0.3936%
45	0.2385%	0.2430%
50	0.4428%	0.3582%
55	0.8037%	0.4596%
60	1.2726%	0.6102%

Withdrawal Rates

Withdrawal rates vary by both age and service. Service related rates for the first five years of employment. Once participants earn five years of service, age-related rates apply. The assumed termination rates are based on a study of actual experience for the plan during 2015-2018. See the experience study report dated February 2020. Sample rates of termination are shown below for each division.

Member Ages	Service	General County, County Agency, Mental Health and County Library		
		Sheriff's Office Central Dispatch	Road Commission	
ALL	0	15.00%	22.50%	15.00%
	1	13.00%	13.50%	12.00%
	2	12.00%	10.50%	10.50%
	3	10.00%	10.50%	9.00%
	4	8.00%	10.50%	9.00%
25	5+	6.12%	3.00%	6.00%
30		6.12%	3.00%	3.00%
35		5.44%	2.00%	3.00%
40		5.10%	2.00%	3.00%
45		3.40%	1.75%	2.00%
50		3.40%	1.00%	2.00%
55		0.85%	0.50%	1.00%
60		0.85%	0.00%	1.00%

Other Measurements

The actuarial report also shows the necessary items required for plan reporting by division.

- ✓ Actuarial Liabilities and Normal Cost by Division
- ✓ Asset Allocation by Division
- ✓ Unfunded Actuarial Accrued Liability by Division
- ✓ Reconciliation of Gain/Loss by Division
- ✓ Schedule of Amortization Bases by Division
- ✓ Development of Recommended Contribution by Division
- ✓ Demographic Information by Division
- ✓ Active Participant Schedules by Division

Actuarial Liabilities and Normal Cost by Division

	General County	County Agency	Sheriff's Office	County Library	Road Commission	Mental Health	Central Dispatch	Total
Present Value of Future Benefits	\$126,089,467	\$14,802,890	\$88,846,450	\$25,365,089	\$35,679,458	\$35,676,084	\$6,927,537	\$333,386,975
Actuarial Accrued Liability								
Active Members	\$36,423,723	\$4,933,135	\$26,399,395	\$9,203,457	\$15,619,359	\$7,648,452	\$2,296,390	\$102,523,911
Terminated Vested	5,224,724	226,821	1,891,745	177,791	1,534,974	4,449,839	21,459	13,527,353
Retired and Disabled	70,980,531	8,027,980	49,647,213	11,619,451	12,896,523	20,533,010	3,307,885	177,012,593
Beneficiaries	<u>2,892,646</u>	<u>337,192</u>	<u>2,401,725</u>	<u>112,919</u>	<u>1,942,546</u>	<u>404,946</u>	<u>140,253</u>	<u>8,232,227</u>
Total Actuarial Accrued Liability	\$115,521,624	\$13,525,128	\$80,340,078	\$21,113,618	\$31,993,402	\$33,036,247	\$5,765,987	\$301,296,084
Total Normal Cost	\$1,463,974	\$168,354	\$1,098,760	\$612,548	\$571,508	\$326,164	\$121,618	\$4,362,926

Other Measurements

Asset Allocation by Division

The table below shows how the assets changed by division since the last valuation. Employer contributions, employee contributions, and benefit payments are tracked by division. The expenses and investment income are allocated by the Actuarial Value of Assets at the beginning of the year and the Average Valuation Assets, respectively.

	General County	County Agency	Sheriff's Office	County Library	Road Commission	Mental Health	Central Dispatch	Total
1 Actuarial Value of Assets, 12/31/2018 (BOY)	\$78,349,306	\$7,139,362	\$51,437,361	\$16,404,531	\$25,886,641	\$26,936,622	\$3,518,849	\$209,672,672
2 Employer Contributions	3,931,331	591,055	2,854,794	748,562	922,624	537,351	267,651	9,853,368
3 Employee Contributions	378,907	47,966	301,436	0	149,926	0	38,540	916,775
4 Benefit Payments	7,092,805	730,630	4,319,818	1,181,639	1,566,301	1,851,419	326,724	17,069,336
5 Refund of Contributions	50,454	0	491,455	0	278,827	0	30,529	851,265
6 Administrative Expenses ¹	80,117	7,300	52,597	16,774	26,470	27,544	3,598	214,400
7 Average Valuation Assets ²	78,858,403	7,089,908	52,010,938	16,179,606	25,487,117	26,265,816	3,625,345	209,517,133
8 Investment Income Allocation ³	4,877,805	438,548	3,217,149	1,000,793	1,576,512	1,624,678	224,247	12,959,732
Actuarial Value of Assets, 12/31/2019 (EOY) (1)+(2)+(3)-(4)-(5)-(6)+(8)	\$80,313,973	\$7,479,001	\$52,946,870	\$16,955,473	\$26,664,105	\$27,219,688	\$3,688,436	\$215,267,546

¹Administrative expenses allocation based on BOY Asset Value

²For General County, Sheriff's Office, and Central Dispatch: $\{(1)+(2)+0.5 \times [(3)-(4)-(5)-(6)]\}$

²For County Agency, County Library, Road Commission, and Mental Health: $\{(1)+0.5 \times [(2)+(3)-(4)-(5)-(6)]\}$

³Investment income allocation based on average valuation assets

Other Measurements

Unfunded Actuarial Accrued Liability by Division

	General County	County Agency	Sheriff's Office	County Library	Road Commission	Mental Health	Central Dispatch	Total
Actuarial Accrued Liability	\$115,521,624	\$13,525,128	\$80,340,078	\$21,113,618	\$31,993,402	\$33,036,247	\$5,765,987	\$301,296,084
Actuarial Value of Assets	<u>80,313,973</u>	<u>7,479,001</u>	<u>52,946,870</u>	<u>16,955,473</u>	<u>26,664,105</u>	<u>27,219,688</u>	<u>3,688,436</u>	<u>215,267,546</u>
Unfunded Actuarial Accrued Liabilities	\$35,207,651	\$6,046,127	\$27,393,208	\$4,158,145	\$5,329,297	\$5,816,559	\$2,077,551	\$86,028,538
Funded Ratio	69.5%	55.3%	65.9%	80.3%	83.3%	82.4%	64.0%	71.4%

Other Measurements

Reconciliation of Gain/Loss by Division

	General County	County Agency	Sheriff's Office	County Library	Road Commission	Mental Health	Central Dispatch	Total
Liability (gain)/loss								
Actuarial liability, 12/31/2018	\$115,235,501	\$13,449,066	\$77,084,664	\$20,019,373	\$30,458,181	\$32,146,130	\$5,209,788	\$293,602,703
Normal cost	1,386,078	163,716	1,079,747	484,030	507,160	327,346	125,998	4,074,075
Benefit payments	(7,143,259)	(730,630)	(4,811,273)	(1,181,639)	(1,845,128)	(1,851,419)	(357,253)	(17,920,601)
Expected Interest	7,917,725	927,755	5,305,962	1,394,580	2,104,087	2,209,440	361,213	20,220,762
Assumption Changes	384,234	59,460	2,722,072	(71,018)	849,940	285,679	163,210	4,393,577
Plan Provision Changes	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
Expected actuarial liability, 12/31/2019	\$117,780,279	\$13,869,367	\$81,381,172	\$20,645,326	\$32,074,240	\$33,117,176	\$5,502,956	\$304,370,516
Actual actuarial liability, 12/31/2019	<u>\$115,521,624</u>	<u>\$13,525,128</u>	<u>\$80,340,078</u>	<u>\$21,113,618</u>	<u>\$31,993,402</u>	<u>\$33,036,247</u>	<u>\$5,765,987</u>	<u>\$301,296,084</u>
Liability (gain)/loss	\$(2,258,655)	\$(344,239)	\$(1,041,094)	\$468,292	\$(80,838)	\$(80,929)	\$263,031	\$(3,074,432)
Asset (gain)/loss								
Actuarial value of assets, 12/31/2018	\$78,349,306	\$7,139,362	\$51,437,361	\$16,404,531	\$25,886,641	\$26,936,622	\$3,518,849	\$209,672,672
Contributions	4,310,238	639,021	3,156,230	748,562	1,072,550	537,351	306,191	10,770,143
Benefit payments and expenses	(7,223,376)	(737,930)	(4,863,870)	(1,198,413)	(1,871,598)	(1,878,963)	(360,851)	(18,135,001)
Expected Investment return	<u>5,384,216</u>	<u>496,352</u>	<u>3,541,859</u>	<u>1,132,839</u>	<u>1,784,571</u>	<u>1,839,401</u>	<u>244,439</u>	<u>14,423,677</u>
Expected actuarial value of assets	\$80,820,384	\$7,536,805	\$53,271,580	\$17,087,519	\$26,872,164	\$27,434,411	\$3,708,628	\$216,731,491
Actual actuarial value of assets	<u>\$80,313,973</u>	<u>\$7,479,001</u>	<u>\$52,946,870</u>	<u>\$16,955,473</u>	<u>\$26,664,105</u>	<u>\$27,219,688</u>	<u>\$3,688,436</u>	<u>\$215,267,546</u>
Asset (gain)/loss	\$506,411	\$57,804	\$324,710	\$132,046	\$208,059	\$214,723	\$20,192	\$1,463,945
Total (gain)/loss	\$(1,752,244)	\$(286,435)	\$(716,384)	\$600,337	\$127,221	\$133,794	\$283,224	\$(1,610,487)

Other Measurements

Schedule of Amortization Bases by Division

		General County	County Agency	Sheriff's Office	County Library	Road Commission	Mental Health	Central Dispatch
Remaining Balances:								
<u>Date</u>	<u>Remaining</u>							
<u>Established</u>	<u>Period</u>							
12/31/2014	20	\$31,893,129	\$5,086,409	\$19,440,003	\$1,947,924	\$4,656,868	\$953,097	\$1,484,513
12/31/2015	21	\$2,064,742	\$321,002	\$2,176,474	\$869,998	\$93,549	\$916,124	\$402,729
12/31/2016	22	\$(460,004)	\$(85,936)	\$(823,360)	\$255,689	\$(1,253,897)	\$28,689	\$(256,565)
12/31/2017	23	\$1,705,687	\$361,242	\$2,091,789	\$406,505	\$46,359	\$1,363,897	\$214,335
12/31/2018	24	\$1,377,529	\$577,562	\$2,566,552	\$108,578	\$990,744	\$1,852,720	\$(169,257)
12/31/2019	20	\$(1,373,432)	\$(214,152)	\$1,941,750	\$569,451	\$795,674	\$702,032	\$401,796
Amortization Payments:								
<u>Date</u>								
<u>Established</u>								
12/31/2014		\$2,419,360	\$385,847	\$1,474,687	\$147,766	\$353,262	\$84,080	\$112,613
12/31/2015		\$152,195	\$23,661	\$160,430	\$64,129	\$6,896	\$79,017	\$29,686
12/31/2016		\$(33,017)	\$(6,168)	\$(59,096)	\$18,352	\$(89,998)	\$2,424	\$(18,415)
12/31/2017		\$119,434	\$25,294	\$146,469	\$28,464	\$3,246	\$113,081	\$15,008
12/31/2018		\$94,260	\$39,521	\$175,622	\$7,430	\$67,794	\$150,969	\$(11,582)
12/31/2019		\$(104,186)	\$(16,245)	\$147,298	\$43,198	\$60,358	\$61,932	\$30,480
Total								
Payments		\$2,648,046	\$451,910	\$2,045,410	\$309,339	\$401,558	\$491,503	\$157,790

Other Measurements

Development of Recommended Contribution by Division

Contributions are expected to be made throughout 2021 as a percentage of payroll. The interest adjustment includes 1 and ½ years of interest from January 1, 2020 to Mid-2021. However, if divisions contribute early on January 1, 2021, their contribution requirement would be reduced by ½ year of interest. The adjusted contribution rates and value are shown at the bottom of the chart below.

	General County	County Agency	Sheriff's Office	County Library	Road Commission	Mental Health	Central Dispatch	Total
Expected 2021 Payroll	\$13,722,487	\$1,699,574	\$8,924,106	\$4,340,732	\$4,706,750	\$2,586,001	\$1,094,059	\$37,073,709
Normal Cost								
(a) Total normal cost	\$1,463,974	\$168,354	\$1,098,760	\$612,548	\$571,508	\$326,164	\$121,618	\$4,362,926
(b) Expected member	<u>(407,720)</u>	<u>(45,400)</u>	<u>(264,478)</u>	<u>(0)</u>	<u>(151,312)</u>	<u>(0)</u>	<u>(39,880)</u>	<u>(908,790)</u>
(c) Net normal cost	\$1,056,254	\$122,954	\$834,282	\$612,548	\$420,196	\$326,164	\$81,738	\$3,454,136
Administrative Expenses	67,953	8,350	43,384	21,445	23,279	13,406	5,298	183,115
Amortization of UAAL	2,648,046	451,910	2,045,410	309,339	401,558	491,503	157,790	6,505,556
Interest	<u>402,939</u>	<u>62,297</u>	<u>312,233</u>	<u>100,764</u>	<u>90,264</u>	<u>88,772</u>	<u>26,151</u>	<u>1,083,420</u>
Total Employer Recommended Contribution FY 2021	\$4,175,192	\$645,511	\$3,235,309	\$1,044,096	\$935,297	\$919,845	\$270,977	\$11,226,227
As a percentage of Payroll	30.43%	37.98%	36.25%	24.05%	19.87%	35.57%	24.77%	30.28%
FY 2021								
Total Contribution Rate	33.43%	40.70%	39.30%	24.05%	23.12%	35.57%	28.53%	32.76%
Employee Contribution Rate	3.00%	2.72%	3.05%	0.00%	3.25%	0.00%	3.76%	2.48%
Employer Contribution Rate	30.43%	37.98%	36.25%	24.05%	19.87%	35.57%	24.77%	30.28%
Employer Normal Cost	9.07%	8.55%	10.88%	16.16%	10.43%	14.53%	8.81%	10.86%
Amortization of UAAL	21.36%	29.43%	25.37%	7.89%	9.44%	21.04%	15.96%	19.42%
Total Employer Recommended Contribution if Made January 1, 2021	\$4,036,310	\$624,039	\$3,127,691	\$1,009,366	\$904,186	\$889,248	\$261,963	\$10,852,803
As a percentage of Payroll	29.41%	36.72%	35.05%	23.25%	19.21%	34.39%	23.94%	29.27%
Value of Contributing Early	\$138,882	\$21,472	\$107,618	\$34,730	\$31,111	\$30,597	\$9,014	\$373,424

Other Measurements

Demographic Information by Division

	General County	County Agency	Sheriff's Office	County Library	Road Commission	Mental Health	Central Dispatch	Total
Active Participants								
Number accruing benefits	297	31	146	104	79	38	20	715
Average age	46.5	42.9	37.9	48.7	46.9	49.2	40.9	44.9
Average years of employment	12.9	15.0	11.0	14.3	15.5	16.0	9.4	13.2
Average pay	\$45,760	\$53,871	\$59,431	\$41,240	\$58,933	\$70,558	\$52,979	\$51,221
Terminated Vested								
Number of Terminated Vested*	74	5	40	5	16	52	3	195
Average age	45.6	39.1	37.7	45.4	52.2	51.0	30.3	45.6
Total deferred annual benefits*	\$770,433	\$60,571	\$299,331	\$40,002	\$203,822	\$624,154	\$11,182	\$2,009,495
Average deferred monthly benefit	\$1,259	\$1,262	\$1,663	\$667	\$1,544	\$1,000	\$932	\$1,205
Participants Receiving Benefits								
Number Receiving Benefits	363	29	151	62	81	116	14	816
Average age	70.4	69.3	65.4	71.2	73.8	67.5	63.9	69.3
Total annual benefits	\$7,134,080	\$763,018	\$4,571,998	\$1,145,716	\$1,546,667	\$1,930,424	\$316,129	\$17,408,032
Average monthly benefit	\$1,638	\$2,193	\$2,523	\$1,540	\$1,591	\$1,387	\$1,882	\$1,778

*Includes both deferred vested participants and participants vested only in a return of their employee contributions

*The total deferred annual benefits and average deferred monthly benefits shown above reflect only the benefits of the deferred vested participants

Active Participant Schedules by Division

Active participant information grouped based on age and service.
Based on reported pay from January 1, 2019 to December 31, 2019.

General County

Age Group	Years of Service										Total	Average Pay ¹
	Under 1	1 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39	40 & Up		
Under 25	10	9									19	\$25,698
25 to 29	7	14	2								23	\$34,611
30 to 34	7	2	4	3							16	\$36,778
35 to 39	5	8	6	7	3	1					30	\$38,795
40 to 44		6	7	1	15	3					32	\$47,786
45 to 49	3	7	11	8	6	4	3	1			43	\$46,131
50 to 54	2	10	8	1	5	7	9	6	1		49	\$45,894
55 to 59		5	8	4	8	9	9	4			47	\$50,098
60 to 64	3	3	3	6	4	3	1	1	2	1	27	\$44,895
65 to 69		2	2		1	2	1	1	1		10	\$46,163
70 & up			1								1	\$72,627
Total	37	66	52	30	42	29	23	13	4	1	297	\$43,503

¹Part-time employees that did not earn a year of service in 2019 are excluded from the average pay shown

Active Participant Schedules by Division

Active participant information grouped based on age and service.
 Based on reported pay from January 1, 2019 to December 31, 2019.

County Agency

Age Group	Years of Service										Total	Average Pay ¹
	Under 1	1 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39	40 & Up		
Under 25	2	3									5	\$31,881
25 to 29		2	1								3	\$45,773
30 to 34		1	2	1							4	\$49,877
35 to 39											0	\$0
40 to 44			1		1	1					3	\$55,731
45 to 49		1	1		1	1					4	\$69,265
50 to 54					1		1	2			4	\$55,434
55 to 59					2	2	2	1			7	\$54,211
60 to 64								1			1	\$48,099
65 to 69											0	\$0
70 & up											0	\$0
Total	2	7	5	1	5	4	3	4	0	0	31	\$51,284

¹Part-time employees that did not earn a year of service in 2019 are excluded from the average pay shown

Active Participant Schedules by Division

Active participant information grouped based on age and service.
 Based on reported pay from January 1, 2019 to December 31, 2019.

Sheriff's Office

Age Group	Years of Service										Total	Average Pay ¹
	Under 1	1 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39	40 & Up		
Under 25	15	12	1								28	\$33,901
25 to 29	5	12	2								19	\$44,959
30 to 34	2	2	3								7	\$47,136
35 to 39	2	3	2	6	7						20	\$63,402
40 to 44	2	2	1	3	15	6					29	\$63,818
45 to 49			3	2	5	15	4				29	\$67,923
50 to 54					3	3	2				8	\$72,253
55 to 59	1				2	2					5	\$42,388
60 to 64	1										1	\$3,838
65 to 69											0	\$0
70 & up											0	\$0
Total	28	31	12	11	32	26	6	0	0	0	146	\$54,902

¹Part-time employees that did not earn a year of service in 2019 are excluded from the average pay shown

Active Participant Schedules by Division

Active participant information grouped based on age and service.
Based on reported pay from January 1, 2019 to December 31, 2019.

County Library

Age Group	Years of Service										Total	Average Pay ¹
	Under 1	1 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39	40 & Up		
Under 25		2									2	\$27,768
25 to 29	2	7									9	\$30,732
30 to 34	2	6	1	1							10	\$29,099
35 to 39		1	2	7							10	\$52,023
40 to 44			1		2						3	\$52,871
45 to 49		4	2	3		1					10	\$48,288
50 to 54	2	5	5	1	4	1	2				20	\$39,269
55 to 59	1	9	4		1		1	3	1		20	\$43,578
60 to 64	1	3	5	2	1		1		1		14	\$45,333
65 to 69		4					1				5	\$58,389
70 & up		1									1	\$0
Total	8	42	20	14	8	2	5	3	2	0	104	\$41,829

¹Part-time employees that did not earn a year of service in 2019 are excluded from the average pay shown

Active Participant Schedules by Division

Active participant information grouped based on age and service.
 Based on reported pay from January 1, 2019 to December 31, 2019.

Road Commission

Age Group	Years of Service										Total	Average Pay ¹
	Under 1	1 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39	40 & Up		
Under 25	4	2									6	\$27,841
25 to 29	3	6									9	\$44,117
30 to 34	1	1									2	\$66,392
35 to 39											0	\$0
40 to 44	2	1		1	4						8	\$51,218
45 to 49	1	1		2	6	1	3				14	\$57,671
50 to 54			1	1	2	2	6	5			17	\$60,201
55 to 59	1	2			7	4	2				16	\$53,515
60 to 64	1			1	2	1	2				7	\$76,286
65 to 69											0	\$0
70 & up											0	\$0
Total	13	13	1	5	21	8	13	5	0	0	79	\$54,781

¹Part-time employees that did not earn a year of service in 2019 are excluded from the average pay shown

Active Participant Schedules by Division

Active participant information grouped based on age and service.
 Based on reported pay from January 1, 2019 to December 31, 2019.

Mental Health

Age Group	Years of Service										Total	Average Pay ¹
	Under 1	1 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39	40 & Up		
Under 25											0	\$0
25 to 29											0	\$0
30 to 34			1								1	\$56,484
35 to 39			2	3							5	\$61,591
40 to 44				5	1	2					8	\$52,284
45 to 49			1		4						5	\$66,739
50 to 54			1	4	4		1				10	\$78,451
55 to 59			2	1	1		1				5	\$67,079
60 to 64				2			2				4	\$86,922
65 to 69											0	\$0
70 & up											0	\$0
Total	0	0	7	15	10	2	4	0	0	0	38	\$68,000

¹Part-time employees that did not earn a year of service in 2019 are excluded from the average pay shown

Active Participant Schedules by Division

Active participant information grouped based on age and service.
 Based on reported pay from January 1, 2019 to December 31, 2019.

Central Dispatch

Age Group	Years of Service										Total	Average Pay ¹
	Under 1	1 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39	40 & Up		
Under 25	1										1	\$27,349
25 to 29		1									1	\$43,334
30 to 34		2	2								4	\$50,973
35 to 39		2	1	1							4	\$50,915
40 to 44				1		1					2	\$58,842
45 to 49	1			1	2	1					5	\$49,568
50 to 54		1	1		1						3	\$55,029
55 to 59											0	\$0
60 to 64											0	\$0
65 to 69											0	\$0
70 & up											0	\$0
Total	2	6	4	3	3	2	0	0	0	0	20	\$50,442

¹Part-time employees that did not earn a year of service in 2019 are excluded from the average pay shown