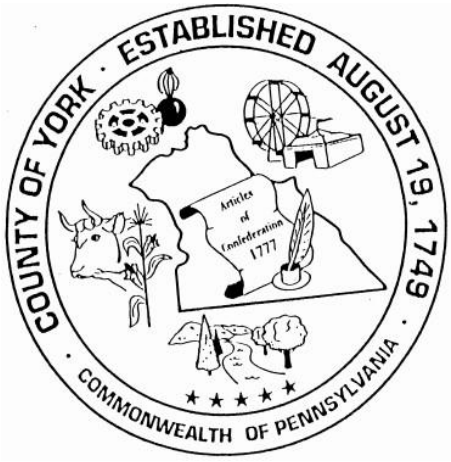
York County
Employees' Retirement System

Actuarial Valuation as of January 1, 2020
Actuarially Determined Contribution for 2020



BOOMERSHINE CONSULTING GROUP, L.L.C.
ACTUARIAL & RETIREMENT PLAN SOLUTIONS

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for

York County Employees' Retirement System

July, 2020

Contents

Executive Summary 2

Section 1: Plan Asset Information 9

1.1: Comparative Value of Net Assets 10
1.2: Comparative Income Statements 11
1.3: Computation of Actuarial Value of Assets 12
1.4: System Assets and Liabilities 13
1.5: Reconciliation of Reserve Balances 14
1.6: Historical Investment Returns 15

Section 2: Actuarial Computations 16

2.1: Development of Unfunded Actuarial Liability 17
2.2: Development of Experience Gain/Loss 18
2.3: Development of Employer Contribution 19
2.4: Schedule of Funding Progress 20

Section 3: Demographic Information 21

3.1: Participant Summary 22
3.2: Data Reconciliation 23
3.3: Distribution of Active Participants 24
3.4: Membership History 25

Section 4: Plan Benefits 26

Summary of Plan Provisions 27

Section 5: Outline of Actuarial Assumptions and Methods 31

5.1: Actuarial Methods 32
5.2: Actuarial Assumptions 33
5.3: Glossary of Actuarial Terms 35

Executive Summary

This report presents the results of an actuarial review and analysis of the York County Employees' Retirement System (the Plan) as of January 1, 2020. The required Employer contribution for Fiscal Year 2020 has been determined based on actual demographic and asset information as of December 31, 2019. All information for GASB Statements 67 and 68 is presented in a separate report. Information for prior years shown herein has been gathered from prior actuarial reports.

Purpose of the Report

The purposes of this Report are:

- To compute the employer contribution amount for 2020;
- To review the experience of the Plan over the past year and to discuss reasons for changes in contributions and funding progress; and
- To present and discuss other issues associated with funding progress and actuarial costs.

A comparative summary of the status of the Plan is as follows:

	1/1/2019	1/1/2020
Plan Membership		
Active	2,019	2,033
Terminated with Deferred Benefits	317	325
Receiving Benefits	1,445	1,487
Total Plan Participants	3,781	3,845
Average Valuation Salary (active employees)	$51,847	$48,241
Assets ($ millions)		
Market Value of Assets (MVA)	$ 371.7	$ 434.7
Actuarial Value of Assets (AVA)	$ 395.0	$ 416.4
Valuation Results ($ millions)		
Actuarial Accrued Liability (AAL)	$ 458.4	$ 481.0
Unfunded Actuarial Accrued Liability (UAAL)	$ 63.3	$ 64.6
Funding Ratio (MVA/AAL)	81.1%	90.4%
Funding Ratio (AVA/AAL)	86.2%	86.6%
Contributions ($ millions)		
Employer Normal Cost, with Interest	$ 6.2	$ 6.6
Amortization of Unfunded Liability	$ 5.8	$ 5.9
Total Employer Contribution	$ 12.0	$ 12.5
Employer Contribution as a percentage of payroll	11.46%	11.18%

Change in Plan Cost from Prior Valuation

The employer contribution determined based on actual demographic and asset information has increased since the prior report. The table and discussion below summarize the impact of actuarial experience and assumption changes on Plan cost. There were no changes in plan provisions since the prior valuation.

	Employer Contribution ($ millions)	Employer Contribution Rate (% of Pay)
County Contribution for 2019	$12.0	11.5%
Change in Cost Due to:		
Expected Change	0.3	0.2%
Investment Experience during 2019	(0.4)	(0.6%)
Other Experience during 2019	(0.5)	(0.7%)
Changes in Actuarial Assumptions/Methods	1.1	0.8%
Total Change	$0.5	(0.3%)
County Contribution for 2020	**$12.5**	**11.2%**

- Expected Increase

  The contribution for 2019 was expected to increase versus the prior year due to an increased payroll and resulting higher normal cost, as well as recognition of prior investment losses.

- Investment Experience

  Investment returns were favorable during 2019. This caused a decrease in the actuarial cost for 2020.

- Demographic Experience

  In the aggregate, demographic experience was favorable in 2019, and resulted in a decrease in the County contribution requirement.

The net effect of these factors was a decrease in actuarial cost versus the prior year.

- Changes in Methodology

  The method used to value the employee contribution balances was revised to include projections of interest credits and conversion to annuities.

- Changes in Assumptions

  The return assumption was decreased from 7.25% to 6.90%. The mortality assumption was also updated to reflect the most recently published tables.

  There were no changes in Plan provisions.

Risk Assessment

There are a number of risks inherent in managing a pension plan/trust. Some of the most substantial risks include (not an all-inclusive list):

- Investment Return Risk: Future investment returns may be unfavorable compared to what is assumed for Plan funding purposes.
- Investment Volatility Risk: Investment returns will vary from year to year and over time, with a possible single or multiple year significant drop in plan assets. This impacts contribution amounts as well as compound returns.
- Longevity Risk: Plan members and beneficiaries may live longer than projected, and thus be entitled to additional years of benefit payments versus what had been expected.
- Other Demographic Risks: Future demographic experience may be unfavorable compared to expected rates of retirement, termination, and disability. Future salary increases may also be higher than expected, thereby increasing the liability of pay-related benefits.

The following examples quantify several of these risks by showing the impact of alternate assumptions on the current valuation results. In the first table, we can see that a lower investment return would have a significant impact on funding and plan costs.

Investment Return Risk

As of 1/1/2020 ($ mm)	Current Return Assumption	1% Lower Per Year	2% Lower Per Year
Actuarial Liability	$481.0	$543.0	$612.9
Plan Assets (smoothed)	416.4	416.4	416.4
Unfunded Liability	$64.6	$126.6	$196.5
Funding Ratio	87%	77%	68%
Plan Cost	$12.5	$19.9	$27.4
Total Contribution Rate	11.2%	17.8%	24.5%

The following table illustrates the impact of plan participants living longer than expected. In general, a 10% lower rate of mortality entails one additional year of life expectancy.

Longevity Risk

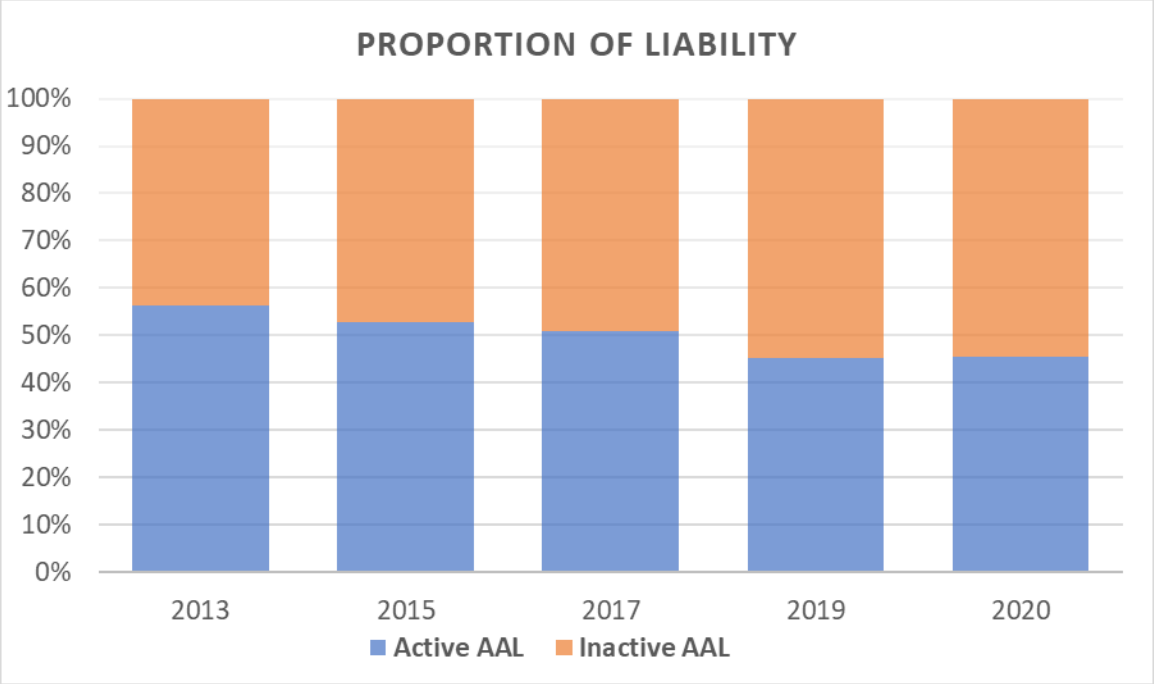
As of 1/1/2020 ($ mm)	Current Mortality Assumption	10% Lower Mortality Rates	20% Lower Mortality Rates
Actuarial Liability	$481.0	$490.1	$499.4
Plan Assets (smoothed)	416.4	416.4	416.4
Unfunded Liability	$64.6	$73.7	$83.0
Funding Ratio	87%	85%	83%
Plan Cost	$12.5	$13.6	$14.7
Total Contribution Rate	11.2%	12.2%	13.1%

Plan Maturity

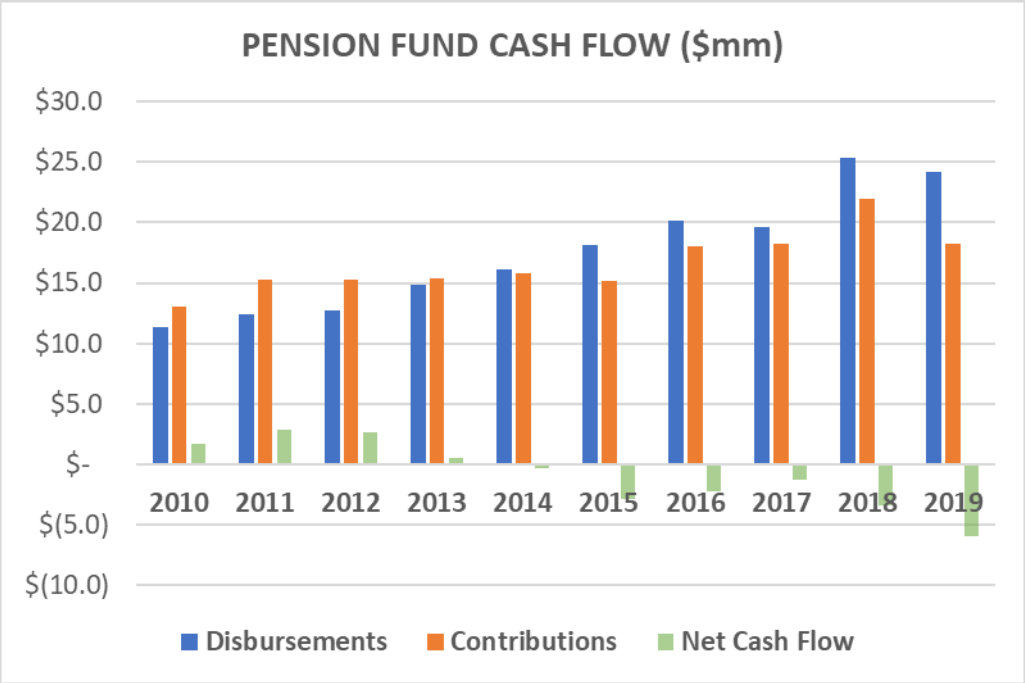
Another challenging risk faced by many pension plans is the maturing of the plan over time. This can be seen in the number of inactive (retirees, beneficiaries, etc.) versus the number of active employees in the plan population, as well as the liability of each group. As the plan matures, several risks emerge, including:

- Higher ratio of assets to payroll, which leads to a greater degree of contribution rate volatility.
- Negative cash flow (benefit payments exceeding contributions), which exacerbates the impact of an economic downturn.
- Greater degree of longevity risk (as illustrated above).
- Higher ratio of Actuarial Accrued Liability to Normal Cost, which causes more contribution volatility when demographic experience is unfavorable.

The following graph illustrates how the plan is maturing over time. The current population is about 54% inactive members, as measured by the actuarial liability. This has increased from about 45% in 2013.



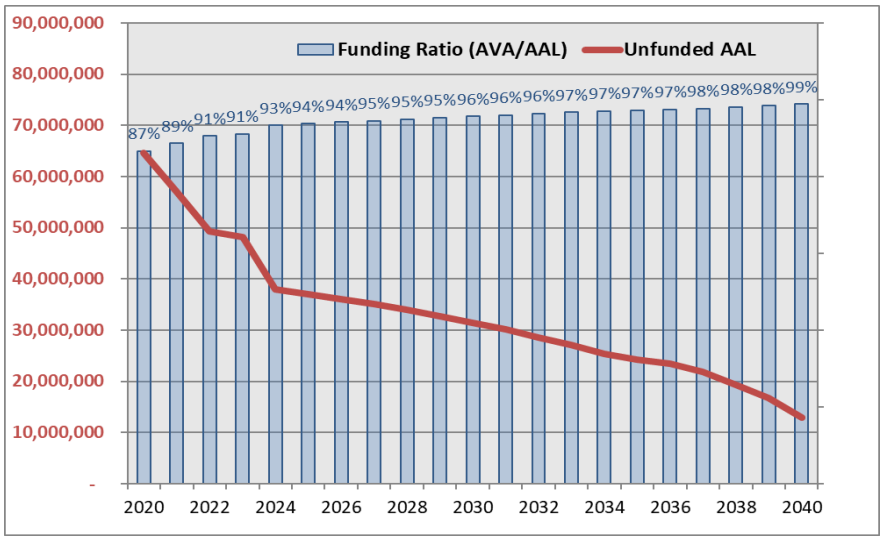
As shown below, the fund has gone from positive cash flow in 2010 – 2013 to negative cash flow (disbursements greater than contributions) in recent years. The level of negative cash flow has increased somewhat since 2015.



Future Costs and Funding

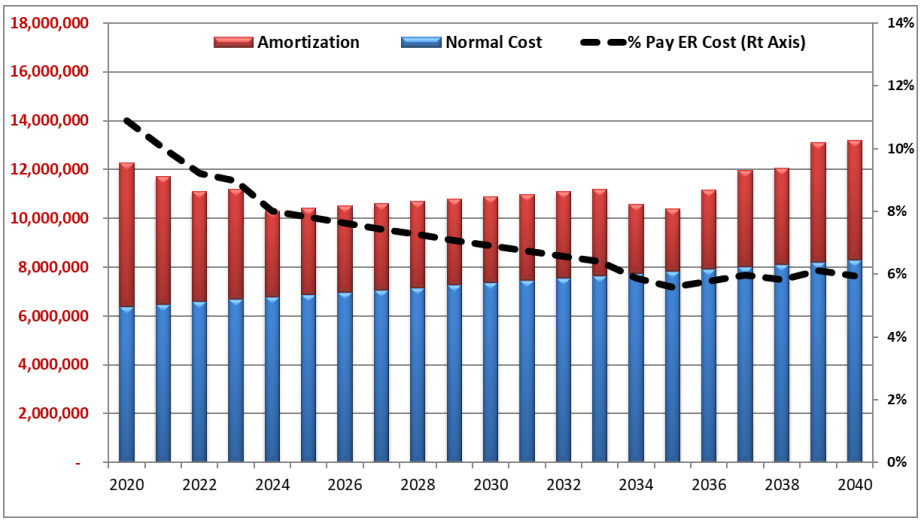
The two graphs below represent the projected funding progress and required contributions over the next two decades. In each projection, only one scenario is shown – that all experience will be exactly as predicted by actuarial assumptions, including 6.90% investment returns each year. **While this precise scenario is impossible, it does provide a general sense of the expected trends.**

Projected Funding Progress



In the first graph, we can see that the current amortization schedule will lead to improved funding within a few years. However, this does not account for any deviations in experience (e.g., investment losses).

Projected County Contributions



In the second graph, the expected employer contributions are shown. The amounts are expected to remain near $10 million to $12 million per year, as the current unfunded amount is fully amortized (by 2043). The actual funding progress and contributions going forward will not match what is shown above, but instead will be affected by the actual experience of the System over that time frame.

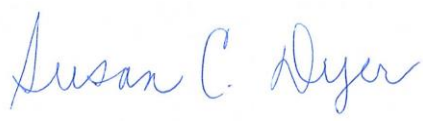
Actuarial Certification

In this study, we conducted an examination of all participant data for reasonableness and consistency, but did not audit such data. Actuarial funding is based on the Entry Age Normal Cost Method. Under this method, the employer contribution provides for current cost (normal cost) plus an amount to amortize the unfunded actuarial accrued liability (UAAL). For actuarial valuation purposes, Plan assets are valued at Actuarial Value, using a method that gradually recognizes investment gains and losses. The plan provisions are the same as those used in the prior valuation. Actuarial assumptions and methods were updated as described herein.

We certify that the valuation was performed in accordance with generally accepted actuarial principles and practices. The undersigned are members of the American Academy of Actuaries, and meet the Qualification Standards to provide the actuarial opinions herein.

Respectfully Submitted,

Gregory M. Stump, FSA, EA, FCA, MAAA
Chief Actuary



Susan C. Dyer, EA, FCA, MAAA
Senior Actuary

Section 1: Plan Asset Information

1.1: Comparative Value of Net Assets

	12/31/2018	12/31/2019
ASSETS		
Cash and Short-Term Investments	$ 5,924,404	$ 10,100,549
Receivables and Prepaids	0	0
Investments, at fair market value:		
Government Obligations	47,091,488	32,061,356
Corporate Bonds	51,596,923	42,248,091
Common Stocks	46,692,120	54,411,212
Mutual Funds	220,366,476	295,829,818
Total Investments	365,747,007	424,550,477
Total Assets	371,671,411	434,651,025
LIABILITIES		
Accounts Payable	0	0
Net Assets Held in Trust For Plan Benefits	**$ 371,671,411**	**$ 434,651,025**

The information above was provided by the County, and was not audited by BCG.

1.2: Comparative Income Statements

		2018		2019
Net Plan Assets, as of January 1	$	391,818,535	$	371,671,411
ADDITIONS				
Member Contributions		6,347,246		5,798,126
Member Contributions (County Share)		0		127,199
County Contributions		15,619,704		12,400,000
Investment Income:				
Interest		2,523,439		2,027,643
Dividends		1,016,060		1,004,055
Realized Gain/(Loss)		7,094,036		(60,335,600)
Unrealized Gain/(Loss)		(55,893,711)		38,713,859
Net Accrued Interest		0		513,783
Miscellaneous		28,493,423		86,950,699
Total Additions	+$	5,200,197	+$	87,199,764
DEDUCTIONS				
Retirement Allowances		22,742,439		22,181,988
Refunds of member contributions		2,313,581		1,629,616
Death Benefits		291,301		408,546
Administrative Expenses		0		0
Investment Expenses				
Total Deductions	-$	25,347,321	-$	24,220,150
NET INCREASE IN NET PLAN ASSETS		-20,147,124		62,979,614
Net Plan Assets, as of December 31	**$**	**371,671,411**	**$**	**434,651,025**

1.3: Computation of Actuarial Value of Assets

(1)	Market Value 1/1/2019	$	371,671,411
(2)	Actuarial Value 1/1/2019		395,032,061
(3)	Total Contributions		18,198,126
(4)	Total Disbursements		(24,220,150)
(5)	Expected Return on Market Value*		26,727,879
(6)	Expected Market Value 12/31/2019: [(1)+(3)+(4)+(5)]		392,377,266
(7)	Market Value 12/31/2019		434,651,025
(8)	Investment Gain/(Loss): [(7)-(6)]		42,273,759
(9)	Deferral of Gain/(Loss), 2019 (80%)		33,819,007
	Deferral of Gain/(Loss), 2018 (60%)		(27,030,635)
	Deferral of Gain/(Loss), 2017 (40%)		12,064,137
	Deferral of Gain/(Loss), 2016 (20%)		(584,226)
(10)	Preliminary Actuarial Value: [(7)-(9)]		416,382,742
(11)	**Final Actuarial Value** **(not less than 80% nor more than 120% of Market Value)**	**$**	**416,382,742**
(12)	Ratio of Actuarial Value to Market Value		95.8%
	Unrecognized Gain/(Loss): (7) - (11)	$	18,268,283

Approximate Annual Investment Return – AVA basis	7.0%
Approximate Annual Investment Return – MVA basis	18.7%
MVA/Actuarial Accrued Liability	90.4%
AVA/Actuarial Accrued Liability	86.6%

* Employee contributions and benefits assumed to be paid throughout the year.

1.4: System Assets and Liabilities

ASSETS	
Member Annuity Reserve Account (MARA)	$ 71,893,033
County Annuity Reserve Account (CARA)	87,104,891
Retired Members Reserve Account (RMRA)	236,939,241
Unrealized Appreciation of Assets	38,713,860
Current Assets (Market Value) of the Plan	$ 434,651,025
Present Value of Future Employer Contributions	129,690,601
Total Assets	**$564,341,626**
LIABILITIES	
Actuarial Present Value of:	
Accumulated Plan Benefits (Unit Credit Basis)	
Vested Participants	$ 129,648,031
Nonvested Participants	7,014,663
Terminated Vested Benefits	23,667,555
Retired Benefits	236,939,241
Total Present Value of Accumulated Benefits	$ 397,269,490
Future Benefit Accruals	
	167,072,136
Total Liability of the York County Employees' Retirement Fund (Present Value of Future Benefits)	**$564,341,626**

Solvency Test

(a) Accumulated Deductions	(b) Retired Benefit Liability	(c) Remaining Liability	Market Value of Assets	Percent of (a) Covered by Assets	Percent of (b) Covered by Assets	Percent of (c) Covered by Assets
$71,893,033	$236,939,241	$172,136,711	$434,651,025	100%	100%	73%

1.5: Reconciliation of Reserve Balances

	M.A.R.A.	C.A.R.A.	R.M.R.A.	TOTAL
Balance as of January 1, 2019	$69,172,796	$56,587,374	$212,539,492	$338,299,662
County Appropriations		12,400,000		12,400,000
Member Contributions	5,798,126	12,400,000		18,198,126
Member Purchases				-
Net Investment Income		51,259,527		51,259,527
Investment Expenses		-		-
Member Contribution Refunds	(1,629,616)			(1,629,616)
Pension Payments			(22,181,988)	(22,181,988)
Death Benefits			(408,546)	(408,546)
Retiree and Death Benefit Transfers	(4,031,438)	(12,826,221)	16,857,659	-
Cost of Living Funding Requirement				-
Administrative Expenses		-		-
Miscellaneous				-
Balance Before Interest	69,309,868	119,820,680	206,806,617	395,937,165
Interest Allocated During Year	2,583,165	(17,784,461)	15,201,296	-
Balance Before Actuarial Adjustments	71,893,033	102,036,219	222,007,913	395,937,165
Actuarial Adjustments[1]		(14,931,328)	14,931,328	-
Balance as of December 31, 2019 (Cost Value)	$71,893,033	$87,104,891	$236,939,241	$395,937,165
Unrealized Appreciation/(Depreciation)				38,713,860
Market Value as of December 31, 2019				$434,651,025

M.A.R.A.: Member Annuity Reserve Account

C.A.R.A.: County Annuity Reserve Account

R.M.R.A.: Retired Members Reserve Account

[1] The actuarial adjustment represents an amount that should be transferred between the C.A.R.A. and the R.M.R.A.

1.6: Historical Investment Returns

Year	Market Value Return	Actuarial Value Return
2010	12.6%	6.3%
2011	1.6%	6.3%
2012	12.0%	6.3%
2013	18.9%	15.1%
2014	6.5%	6.5%
2015	0.8%	2.5%
2016	6.6%	8.1%
2017	16.5%	9.1%
2018	-4.3%	5.3%
2019	18.7%	7.0%
5 Year Compound Return	7.3%	6.4%
10 Year Compound Return	8.7%	7.2%

Section 2: Actuarial Computations

2.1: Development of Unfunded Actuarial Liability

	1/1/2019	1/1/2020	
		Before Changes	After Changes
Actuarial Accrued Liability			
Active Members	$161,982,612	$161,167,058	$220,362,189
Inactive Members:			
Retirees/Beneficiaries	$208,386,453	$218,924,802	$232,357,143
Retiree Cost-of-Living	4,153,039	4,317,211	4,582,098
Terminated	14,672,008	13,843,653	14,996,541
Total Inactive	$227,211,500	$237,085,666	$251,935,782
Accumulated Account Balances	$69,172,796	$68,086,597	N/A[2]
Total Actuarial Accrued Liability	**$458,366,908**	**$466,339,321**	**$480,968,985**
Actuarial Value of Assets	395,032,061	416,382,742	416,382,742
Unfunded Actuarial Accrued Liability	63,334,847	49,956,579	64,586,243
Ratio of Assets to Liability	86.2%	89.3%	86.6%
Total Normal Cost (Beginning of Year)	**$5,777,127**	**$6,489,926**	**$11,333,631**

[2] The change in methods includes projecting account balances and converting to annuities.

2.2: Development of Experience Gain/Loss

1.	Unfunded actuarial accrued liability as of December 31, 2018		$63,334,847
	Change due to contributions:		
	Normal Cost	$5,777,127	
	Prior Year ADEC (EOY)	(11,982,885)	
	Interest	5,010,618	
2.	Net Change Expected	($1,195,140)	
3.	Expected unfunded actuarial accrued liability as of December 31, 2019 [(1) + (2)]		$62,139,707
4.	Change due to experience:		
	(a) (Gain)/loss from demographic experience	($6,372,388)	
	(b) (Gain)/loss from assets/contributions	(5,810,740)	
	(c) Net change [(a) + (b)]	($12,183,128)	
5.	Unfunded actuarial accrued liability before changes [(3) + (4c)]		$49,956,579
6.	Change in actuarial assumptions		35,618,905
7.	Changes in plan provisions		-
8.	Change in actuarial methods		(20,989,241)
9.	**Unfunded actuarial accrued liability as of December 31, 2019**		**$64,586,243**
	[(5) + (6) + (7) + (8)]		

2.3: Development of Employer Contribution

Normal Cost	
Gross Normal Cost	$11,333,632
Expected Employee Contributions	(5,359,382)
Interest to End of Year	600,206
End of Year Employer Normal Cost	$6,574,455
Employer Normal Cost Rate (% of Pay)	5.90%

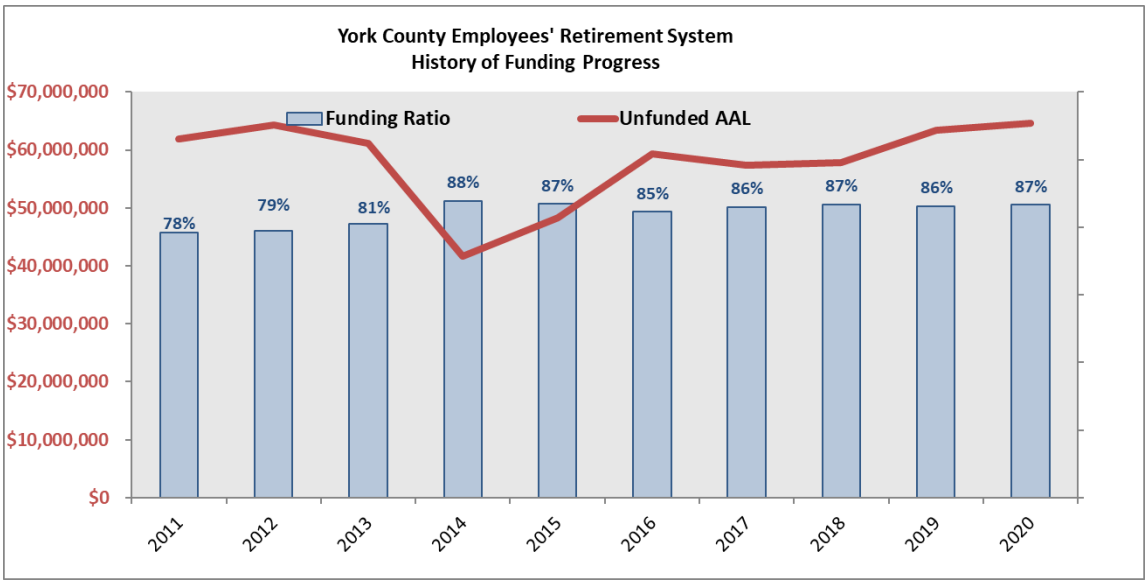
Amortization of Unfunded AAL

Base	Initial Amount	Date Established	Years Remaining	Remaining Balance	Annual Payment
Combined Bases	$57,836,037	1/1/2018	23	$56,007,866	$4,926,326
Experience Loss	6,380,919	1/1/2019	14	6,131,842	696,946
Experience Gain	(12,183,128)	1/1/2020	15	(12,183,128)	(1,329,206)
Assumption Change	(20,989,241)	1/1/2020	15	(20,989,241)	(2,289,972)
Method Change	35,618,905	1/1/2020	15	35,618,905	3,886,099
			Total	$64,586,243	$5,890,193
Weighted Average Years:			23		

Total Required Employer Contribution as of December 31, 2020	**$12,464,648**
Expected Payroll	$111,475,155
Percentage of Expected Payroll	11.18%

2.4: Schedule of Funding Progress

Actuarial Valuation Date	Actuarial Value of Assets	Actuarial Accrued Liability	Unfunded Actuarial Accrued Liability	Funded Ratio
1/1/2011	$225,346,700	$287,309,457	$61,962,757	78.4%
1/1/2012	242,460,283	306,718,599	64,258,316	79.0%
1/1/2013	260,440,177	321,582,762	61,142,585	81.0%
1/1/2014	300,240,867	341,941,645	41,700,778	87.8%
1/1/2015	319,247,056	367,518,802	48,271,746	86.9%
1/1/2016	324,331,723	383,663,530	59,331,807	84.5%
1/1/2017	348,268,061	405,618,333	57,350,272	85.9%
1/1/2018	378,565,281	436,401,318	57,836,037	86.7%
1/1/2019	395,032,061	458,366,908	63,334,847	86.2%
1/1/2020	416,382,742	480,968,985	64,586,243	86.6%



Section 3: Demographic Information

3.1: Participant Summary

	1/1/2019			1/1/2020		
Active Participants	**Males**	**Females**	**Total**	**Males**	**Females**	**Total**
Active Participants	874	1,145	2,019	879	1,154	2,033
Average Compensation	$60,512	$45,233	$51,847	$55,856	$42,440	$48,241
Average Age	42.4	42.9	42.7	42.3	42.8	42.6
Average Service	10.3	10.0	10.2	9.3	9.1	9.2
Percent male / female	43%	57%	100%	43%	57%	100%

	1/1/2019			1/1/2020		
Inactive Participants	**Males**	**Females**	**Total**	**Males**	**Females**	**Total**
Retired Participants and Beneficiaries	442	1,003	1,445	459	1,028	1,487
Average Benefit	$1,352	$1,152	$1,213	$1,379	$1,131	$1,207
Average Age	68.9	67.9	68.2	69.1	68.6	68.8
Vested Partcipants	102	215	317	104	221	325
Average Benefit	$836	$651	$710	$848	$678	$731
Average Age	47.3	46.0	46.4	46.7	46.7	46.7

3.2: Data Reconciliation

	Active	Terminated Deferred	Terminated Due Refund	Disabled	Retired	Beneficiary	Total
Number as of 1/1/2019	2,019	317		0	1,376	69	3,781
Additions							
New entrants/rehired	279	(4)					275
Changes in Status							
Terminated Non-Vested/Refund	(185)						(185)
Terminated Vested	(33)	33					0
Death without Beneficiary		(2)			(18)	(1)	(21)
Death with Beneficiary					(5)	5	0
Death with Cashout							
Retired	(47)	(14)			61		0
Disabled				1	(1)		0
Data changes		(5)	6				1
Number as of 1/1/2020	2,033	325	6	1	1,413	73	3,851

3.3: Distribution of Active Participants

BY AGE AND SERVICE AS OF JANUARY 1, 2020

Nearest	-----Completed Years of Service from Date of Hire-----											
Age	0-1	2	3 - 4	5 - 6	7 - 9	10 - 14	15 - 19	20 - 24	25 - 29	30 - 34	35+	Total
<20	2											2
avg sal.	717											717
20 – 24	105	11	3									119
avg sal.	24,157	50,502	50,928									27,267
25 – 29	136	51	69	27	8							291
avg sal.	32,363	45,765	48,583	47,991	49,581							40,481
30 – 34	61	24	56	40	51	29						261
avg sal.	29,684	42,959	48,753	49,068	55,422	51,331						45,402
35 – 39	38	9	25	33	43	82	17	1				248
avg sal.	31,964	42,635	47,946	49,065	52,108	57,375	52,645	45,724				49,606
40 – 44	28	10	21	19	29	47	58	22				234
avg sal.	32,971	40,348	46,769	42,272	62,003	59,499	60,800	64,584				54,076
45 – 49	24	18	19	14	27	38	33	55	14	1		243
avg sal.	28,144	38,459	48,018	55,621	48,285	59,477	59,829	68,198	56,974	48,409		54,296
50 – 54	31	10	20	17	24	34	40	29	27	12		244
avg sal.	30,214	43,639	44,276	55,612	54,775	54,621	57,139	60,439	71,156	76,866		54,334
55 – 59	15	9	15	11	23	35	33	23	9	14	2	189
avg sal.	28,376	42,101	41,697	41,455	40,192	58,628	58,322	67,370	59,858	75,124	44,817	52,998
60 – 64	9	5	9	16	13	32	29	9	12	6	3	143
avg sal.	18,092	41,361	45,031	38,513	41,593	44,581	53,672	54,336	65,107	74,139	59,963	47,622
>64	3	3	3	6	7	10	12	9	1	2	3	59
avg sal.	29,237	49,665	53,803	39,700	42,748	50,175	54,647	52,894	50,852	57,380	76,110	50,221
Total	452	150	240	183	225	307	222	148	63	35	8	2,033
avg sal.	$29,151	$43,807	$47,525	$47,625	$51,754	$55,659	$57,740	$64,087	$64,916	$73,775	$62,232	$48,241

Average salary based on actual 2019 compensation.

3.4: Membership History

Actuarial Valuation Date	Active and Terminated Vested Members			Retired Members and Beneficiaries		
	Male	Female	Total	Male	Female	Total
1/1/2011	930	1,602	2,532	278	614	892
1/1/2012	931	1,613	2,544	291	635	926
1/1/2013	940	1,640	2,580	313	672	985
1/1/2014	948	1,650	2,598	333	716	1,049
1/1/2015	959	1,694	2,653	345	752	1,097
1/1/2016	968	1,662	2,630	352	785	1,137
1/1/2017	972	1,673	2,645	372	813	1,185
1/1/2018	998	1,646	2,644	397	845	1,242
1/1/2019	976	1,360	2,336	442	1,003	1,445
1/1/2020	983	1,375	2,358	459	1,028	1,487

Section 4: Plan Benefits

Summary of Plan Provisions

Effective Date and Membership

The effective date of this plan is January 1, 1960. An employee shall be eligible to become a participant immediately upon becoming an employee.

Definitions

Compensation

Pick-up contributions plus remuneration received as a county employee excluding refunds for expenses, contingency and accountable expense allowances and excluding severance payments or payments for unused vacation or sick leave.

Final Average Salary

Final Average Salary is determined as the average of the member's compensation for the three years which produces the highest average.

Membership Service Retirement Eligibility

Members are eligible for Normal Retirement (Superannuation) at age 60, or at age 55 with 20 years of service. Early Retirement (reduced benefit) eligibility is at 20 years of service (voluntary) or 8 years of service (involuntary).

Benefit Amount

Benefit amounts are determined as portions of Final Average Salary, and based on years and months of service in each Class, as defined below.

Class	Percentage	Effective Date
1/50	2.00%	1/1/1960
1/80	1.25%	1/1/2017*

In addition to this benefit, a monthly annuity is provided; equal to the actuarial equivalent of the member's accumulated contributions with credited interest. Benefits paid before eligibility for Normal Retirement are actuarially reduced from age 60, using the Plan's actuarial equivalence basis.

* Date varies by unit.

Form of Benefit

The Service Retirement Benefit will be paid monthly beginning at retirement and for the life of the member. If the member selects a Joint and Survivor Option, in the event of the member's death a percentage of the benefit will continue for the life of the member's beneficiary. Other optional benefit forms are also available, as described below.

Disability

Eligibility

Members are eligible for Disability Retirement benefits at any age if they are permanently disabled after rendering five years of County service.

Benefit Amount

The Disability Retirement Benefit payable to members is equal to 25% of their Final Average Pay, plus an annuity based on the actuarial equivalent of accumulated member contributions.

Form of Benefit

The Disability Retirement Benefit will be paid monthly beginning at the effective date of disability retirement and for the life of the member.

Pre-Retirement Death

Eligibility

Age 60 or after ten years of service.

Benefit Amount

A payment, equal to the actuarial present value of the member's County paid retirement benefit, is made to the beneficiary. Additionally, the member's accumulated contributions with interest are refunded to the beneficiary.

Form of Benefit

The benefit is paid as a one-time lump sum payment.

Withdrawal Benefit

Eligibility

A member is eligible for a Withdrawal Benefit upon termination of employment.

Benefit Amount

The Withdrawal Benefit is a refund of the member's accumulated contributions with interest. Upon receipt of the Withdrawal Benefit the member forfeits all credited service.

Form of Benefit

The Withdrawal Benefit is paid in a lump sum upon election by the member.

Deferred Vested Benefit

Eligibility

A member is eligible for a Deferred Vested Benefit upon termination of employment after earning five years of credited service. The member must leave his or her member Contributions with interest on deposit with the Plan.

Benefit Amount

The Deferred Vested Benefit is computed in the same manner as the Normal Retirement Benefit, but it is based on credited service and Final Average Pay on the date of termination.

Form of Benefit

The Deferred Vested Benefit will be paid monthly beginning at age 60 (55 if service is at least 20 years), and for the life of the member.

Optional Benefit Forms

Prior to retirement, a member may elect to convert his retirement allowance into a benefit of equivalent actuarial value in accordance with one of the optional forms described below.

- No Option: Benefit paid as a single life annuity with a refund of unused member contributions payable to designated beneficiary(ies) at the time of death.
- Option 1: Reduced benefit paid for the life of the retiree with the guarantee that if the full present value (at time of retirement) has not been paid, then the remaining balance will be paid to designated beneficiary(ies).
- Option 2: Reduced benefit paid for the life of the member, with the same amount continuing to the beneficiary for their remaining lifetime after the retiree's death.
- Option 3: Reduced benefit paid for the life of the member, with half of that amount continuing to the beneficiary for their remaining lifetime after the retiree's death.
- Option 4: Withdrawal of member contributions at the time of retirement, and the County provided benefit payable for the life of the retiree.

Option 4 may also be combined with any of the other options.

Member Contributions

Each member contributes a percentage of Compensation to the Plan through payroll deduction. The percentage contributed ranges from 5% to 15% of Compensation, determined by individual election. The minimum amount is 5%, and additional optional amounts are contributed on an after- tax basis.

Interest is credited annually to each member's accumulated contributions. The crediting rate is set by the Board; the current annual rate is 5.5%.

Cost-of-Living Adjustments (COLA)

The cost-of-living adjustments shall be reviewed at least once every three years by the Retirement Board. There have been ten cost-of-living adjustments in the past from January, 1972 through January, 1998 and since then as follows:

PERCENTAGE CHANGE IN CPI	EFFECTIVE DATE OF INCREASE
100%	1/1/1999
100%	1/1/2000
100%	1/1/2001
100%	1/1/2003
100%	1/1/2004
100%	1/1/2005
100%	1/1/2006
100%	1/1/2007
100%	1/1/2008

Change in Plan Provisions since Prior Valuation

There have been no changes in plan provisions since the prior valuation.

Section 5: Outline of Actuarial Assumptions and Methods
Glossary of Actuarial Terms

5.1: Actuarial Methods

Actuarial Cost Method

Annual contributions to the York County Employees' Retirement System are computed under the Entry Age Normal Actuarial Cost Method. Under this Cost Method, the Normal Cost is calculated as the amount necessary to fund members' benefits as a level percentage of total payroll over their projected working lives. This rate is multiplied by the expected payroll to determine the Employer Normal Cost contribution.

At each valuation date, the Actuarial Accrued Liability is equal to the difference between the liability for the members' total projected benefit and the present value of future Normal Cost contributions. The excess of the Actuarial Accrued Liability (AAL) over Plan assets is the Unfunded Actuarial Accrued Liability (UAAL), and the liability for each change in UAAL is amortized as a level dollar amount according to the amortization table below.

Type of Change	Amortization Period
Outstanding UAAL from experience prior to 12/31/2017	23 years remaining
Actuarial Gains/Losses or Assumption Changes after 12/31/2017	15 year layers

The total Plan cost is the sum of the Normal Cost and the amortization of the Unfunded Actuarial Accrued Liability.

Actuarial Value of Plan Assets

The valuation assets are equal to the market value of assets plus a portion of the deferred asset gains and losses for the current and four prior years, limited to no less than 80% and no more than 120% of the market value. Asset gains and losses are equal to the difference between the actual market value and the expected market value, and are spread out over five years. The detailed calculation of the Actuarial Value of Assets is shown in Section 1.3.

Changes in Actuarial Methods since Prior Valuation

There was one change in methods, relating to the projecting and converting of account balances.

5.2: Actuarial Assumptions

Valuation Date — All assets and liabilities are computed as of January 1, 2020.

The actuarial assumptions below are based on an experience study covering 2008 to 2012, done by the prior actuary. The next study will cover experience through 2020.

Rate of Investment Return/ Discount Rate — The annual rate of return on all Plan assets is assumed to be 6.90%, net of investment and administrative expenses. (Prior rate: 7.25%)

Inflation — The cost of living as measured by the Consumer Price Index (CPI) will increase at the rate of 3.00% per year.

Increases in Pay — Salaries are assumed to increase by 4.00% per year

Member Mortality — Rates of mortality, including projected improvements for Plan members are specified by the Pub2010 tables for General annuitants (below median), with 50% of these rates assumed for pre-retirement deaths (prior assumption: IRS 2013 Annuitant and Non-Annuitant Mortality Tables) for males and females.

Service Retirement — Eligible members are assumed to retire in accordance with the rates shown in the table below.

Age	Rate
55-59	7%
60-61	8%
62-64	15%
65	34%
66-70	23%
71-79	21%
80+	100%

Disability — No disabilities are assumed among Plan members.

Termination/Withdrawal — Rates of termination vary based on the service and age of the member as shown in the table below.

Less than Five Years of Service					
	Years of Service				
Age at Hire	0	1	2	3	4
20	29.8%	27.2%	24.6%	22.0%	19.5%
30	27.9%	25.3%	22.8%	20.2%	17.7%
40	23.3%	20.7%	18.1%	15.7%	13.4%
50	12.7%	10.1%	7.8%	5.8%	4.1%
59	0.9%	0.0%	0.0%	0.0%	0.0%

For Members who meet the requirements for vesting prior to termination, it is assumed a percentage will elect to receive a refund of their employee contributions with interest and forfeit the County provided benefit. Prior to age 30 this percentage is 100%, and for ages past 30 it is defined as 100% less (age – 30) x 3⅓%, as shown in the table below (representative rates).

Five or More Years of Service				
Withdrawal Rates				
Age	Total Withdrawal	Forfeit County Benefits	Retain County Benefits	Forfeit Percentage 100%-(age-30)x3 1/3%
30	9.3%	9.3%	-	100%
40	7.8%	5.2%	2.6%	66.7%
50	4.2%	1.4%	2.8%	33.3%
59	0.29%	0.01%	0.28%	3.3%

Family Composition

85% of Plan members are assumed to be married. Male spouses are assumed to be three years older than their wives.

Change in Actuarial Assumptions since Prior Valuation

There were two changes in assumptions (investment return and mortality), as noted above.

5.3: Glossary of Actuarial Terms

Actuarial Accrued Liability

A plan's Actuarial Accrued Liability is the level of assets estimated by the Plan actuary to be needed as of the valuation date to finance the sum of

- All previously earned benefits for actively employed members of the plan (and potential beneficiaries) for when they eventually retire, die or terminate with deferred vested benefits.
- All currently payable benefits of current pensioners and their beneficiaries (if applicable).

It is important to note that the Actuarial Accrued Liability is not a debt; instead, it is an asset target set by the actuarial cost method to produce an orderly accumulation of assets to pay for the plan's obligations.

Actuarial Assumptions

The actuarial assumptions are the actuary's anticipated rates of future termination, death, disability and retirement for each member of the plan as well as the actuary's anticipated rate of investment return on underlying assets. Because these assumptions will not be in exact accord with actual events, actuarial gains and losses will materialize.

Actuarial Value of Assets

The Actuarial Value of Assets, used for funding purposes, is computed using an asset smoothing technique in which investment gains and losses are not fully recognized in the year they occur, but are spread out over time, typically a specified number of years. Use of an Actuarial Value of Assets (as opposed to market value) helps avoid large fluctuations in the recognized value of the underlying assets and, as a result, avoids large fluctuations in required contribution rates.

Actuarial Present Value of Benefits

The actuarial present value of benefits is the Actuarial Accrued Liability plus actuarial present value of future Normal Costs. The actuarial present value of benefits can also be explained as the actuarial present value of all future benefits expected to be paid to the Plan's current members, whether based on current or future service.

Actuarial Funding Policy

The plan's actuarial funding policy is the scheduled program of accumulating assets to finance the plan's obligations. The funding policy includes:

- The Normal Cost, and
- Amortization of the Unfunded or Overfunded Actuarial Accrued Liability (whichever is applicable).

Investment Gains and Losses

When the investment return on assets exceeds the assumed rate of return (the actuarial assumption as to investment return), this difference is identified as an investment gain. Correspondingly, when the returns are less than expected, this difference is identified as an investment loss. These investment gains and losses are either recognized immediately to produce the market value of assets or are spread out to produce the Actuarial Value of Assets.

Normal Cost

The Normal Cost is calculated as the annual amount necessary to fund each member's benefits from that member's Plan entry date to the end of his or her projected service.

Unfunded Actuarial Accrued Liability

When the Actuarial Value of Assets is below the Actuarial Accrued Liability, there is an Unfunded Actuarial Accrued Liability which must be paid off or amortized on a schedule. When the actuarial value of assets is in excess of the Actuarial Accrued Liability, this can lead to a reduction in future contributions on an amortization schedule.