City of Atlanta General Employees' Pension Fund Employees of the Atlanta Board of Education

Review of Demographic Actuarial Experience

For the Period July 1, 2014 to June 30, 2019

April 20, 2022

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Overview: Purpose of an Experience Study

Why Conduct an Experience Study?

- Review funding and asset methods
- Review recent experience and trends; compare against current actuarial assumptions and methods
- Develop information to establish recommended assumptions and methods for use in future valuations
- Avoid unnecessary contribution and accounting volatility
- Mitigate chances of inadequate funding
- Meet current industry standards
- Fiduciary responsibilities

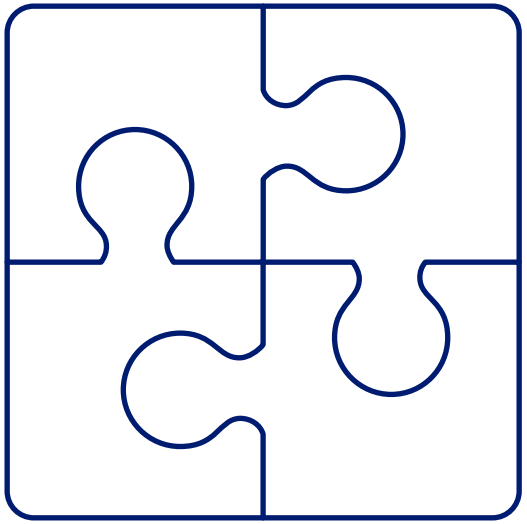
Overview: Purpose of an Experience Study

- An experience study provides the basis for developing recommended assumptions to be used in the annual actuarial valuation
  - Performed on a periodic basis
  - Last full experience study was conducted in 2017 for the five-year period ended June 30, 2016 with new assumptions implemented for the July 1, 2017 valuation
  - Partial study for actuarial methods and economic and mortality assumptions was conducted for the five-year period ended June 30, 2019 with new assumptions implemented for the July 1, 2020 valuation
  - Current study is based on the five-year period July 1, 2014 through June 30, 2019
- Actuarial Standards of Practice Statements 27 and 35 provide guidance on best practices for performing assumption-setting analysis
  - Each assumption should be the actuary's best estimate
- Segal's role is to make appropriate "best estimate" recommendations to the Investment Board for each assumption
- Any assumptions that are adopted as a result of this study will first be implemented with the July 1, 2021 valuation.

The assumptions are the Investment Board's assumptions, and the Investment Board can adopt all, none or some of the recommendations of the actuary.

Overview: How Demographic Assumptions Are Set

- Review past experience
- Compare past experience (“actual”) with assumptions (“expected”)
- Determine trends – make judgments about future
- Keep in mind
  - No “right” answer – best estimate
  - Assumptions are long-term



Overview of Assumptions being Studied

Demographic

- Withdrawal
- Disability
- Retirement
- Percent Married/Spouse Age
- Percent electing refund on employee contributions
- Unused sick leave
- Accumulated vacation pay

The mortality rates and improvement scales, economic assumptions, and actuarial methods were reviewed under the prior study (covering the same period) and are excluded from this review.

Changes In Recent Years

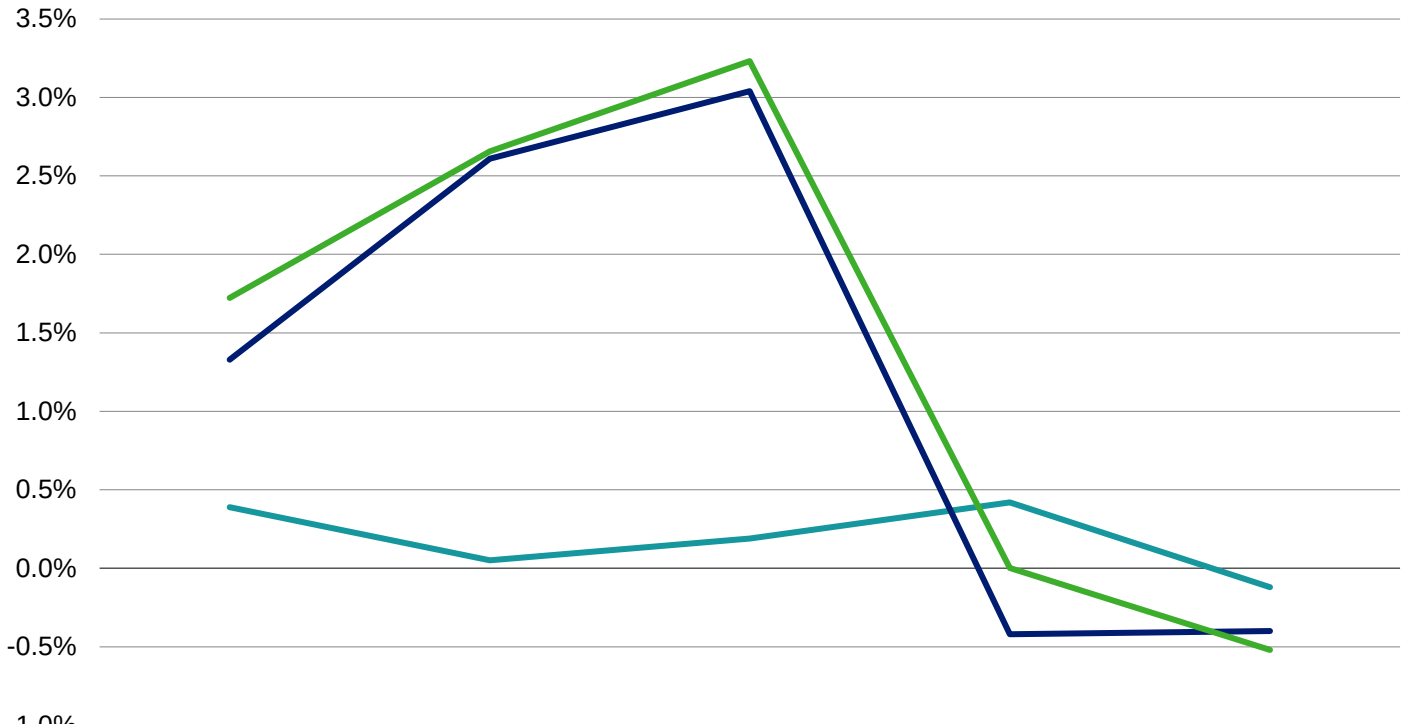
Changes With Last Experience Study

- The last experience study covering the demographic assumptions under review was for the period July 1, 2011 to June 30, 2016 and was dated June 7, 2017. Changes were approved by the Board in September 2017 and implemented in the July 1, 2017 valuation.

Valuation	Assumption Changes
July 1, 2017	Decreased retirement rates for participants ages 52 to 69 with 30 or more years of service; increased retirement rates for participants ages 61 to 69 with less than 30 years of experience Decreased sex-distinct ordinary disability rates for males to 60% of prior rates; maintained occupational disability assumption of 10% of ordinary disability rates

Experience Gains and Losses in Study Period

Gain/(Loss) Experience as a Percentage of Actuarial Accrued Liability (AAL)
for Years Ending June 30, 2015 to June 30, 2019



	2015	2016	2017	2018*	2019*
Investment	0.39%	0.05%	0.19%	0.42%	-0.12%
Non-Investment	1.33%	2.61%	3.04%	-0.42%	-0.40%
Total	1.72%	2.66%	3.23%	0.00%	-0.52%

*Only 2018 and 2019 results reflect experience from current assumptions

Summary of Findings

- As part of this study, we reviewed our prior programming, City ordinances, Summary Plan Descriptions, and Strategic Benefit Advisors' understanding on how benefits are administered. As a result, we made programming changes to retirement eligibility, disability benefits, pre-retirement death benefits, and application of accumulated vacation pay. These changes increased Actuarial Accrued Liability by 0.6%, Employer Normal Cost by 8.0%, and the effective amortization period by 0.1 years.
- On an amount-weighted basis, withdrawal experience was lower than expected at key workforce ages 30-50, with higher rates for younger employees and late-career hires.
- Disability incidence for both males and females continues to be low. However, the incidence of male disabilities was higher than assumed while females were lower. Additionally, since the incidence of disability is low and the difference in benefits for ordinary disability vs. occupational disability is phasing out, we propose no longer tracking these categories separately.
- Retirement experience overall was fairly close to expected, with the actual number of retirements 10-15% different than expected. Rates were adjusted most heavily for younger participants with 30 or more years of service.
- Based on improved data quality, we can assume individual active marital status based on the employee contribution rate in the data. Previously, a 75% assumption had been used. We have also updated spousal age differences to reflect that female participants have male spouses closer in age.

Summary of Findings

- Since the prior study, we have found that terminated participants are more likely to elect a refund of their employee contributions.
- Loads for unused sick leave pay and service were introduced. The load for accumulated vacation pay was removed as School Board plan participants do not have this pay included in their pensionable earnings. These assumptions were informed by an analysis of 2021 retirements prepared earlier this year by Strategic Benefits Advisors. That assistance is gratefully acknowledged.
- Using 2020 valuation results, the total combined impact (including programming adjustments) is:
  - Actuarial Accrued Liability increases 1.0% from $523.7 million to $528.9 million
  - Employer Normal Cost increases 26.4% from $2.0 million to $2.6 million
  - The effective amortization period increases by 0.2 years from 6.9 years to 7.1 years. Note that under the current funding policy, the Recommended Contribution is fixed with 3% increases from the prior year until such time as the Plan becomes fully funded. Therefore, any assumption changes will only change the effective amortization period and not the contribution amount.
- The impact of the proposed changes is shown assuming changes were adopted with the July 1, 2020 valuation but any assumptions adopted by the Investment Board will be reflected for the first time in the July 1, 2021 valuation.

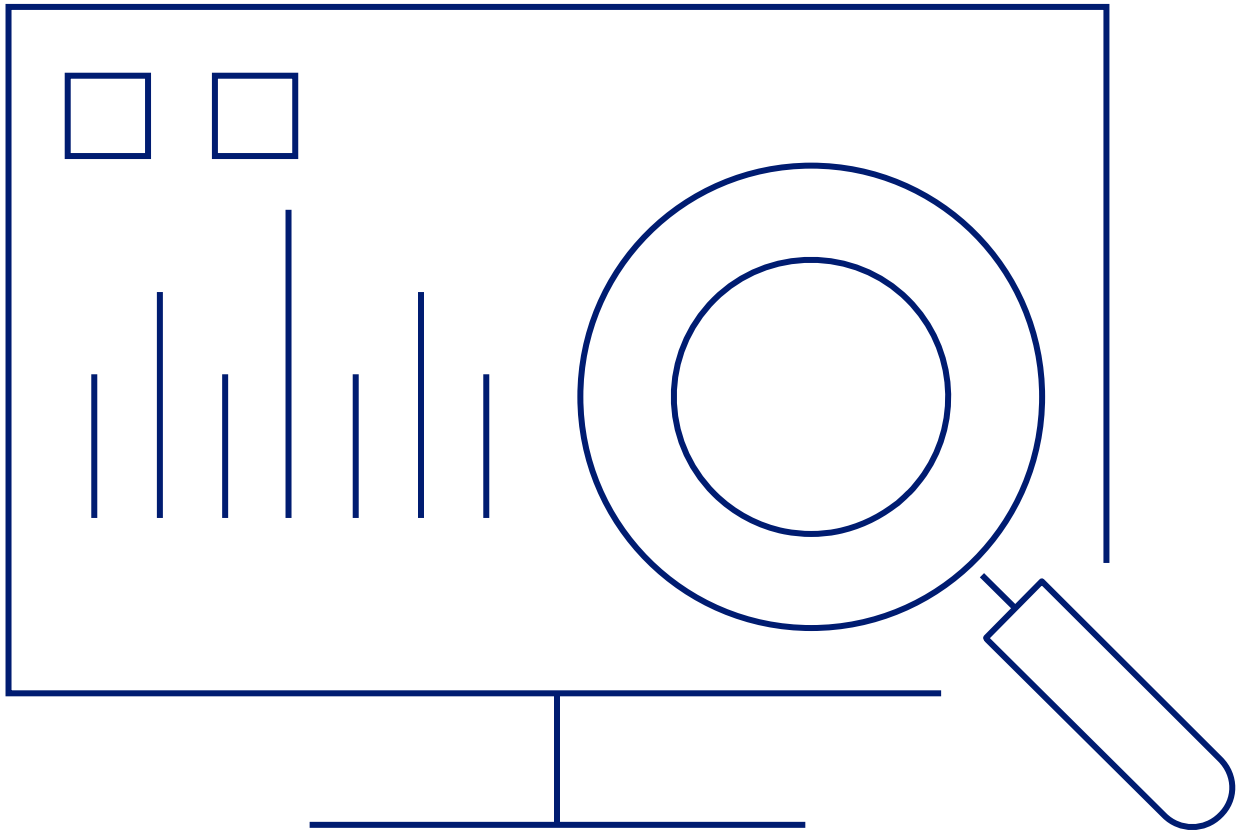
Summary of Proposed Assumption Changes

Assumption	Current Assumption	Proposed Assumption
Turnover	Headcount-weighted, age-based rates; see current rates listed on slide 20	Amount-weighted, age-based rates; see proposed rates listed on slide 20
Ordinary Disability	Sex-distinct, age-based rates grading upward from 0.01% to 0.39% for males and from 0.03% to 0.87% for females	Sex-distinct, age-based rates grading upward from 0.03% to 0.77% for males and from 0.01% to 0.43% for females
Occupational Disability	10% of Ordinary disability rates	Remove distinction between Ordinary and Occupational
Retirement	Separate age-based rates for participants with Less than 30 Years and 30 or More Years of Service at Retirement; see current rates listed on slide 29	Maintained current rate structure but modified individual rates to more closely match the observed experience; see proposed rates listed on slide 29
Percent Married	75%	Assumption based on active participant contribution rate provided with valuation data
Spousal Age Difference	**Male Participants:** Three years older than female spouses **Female Participants:** Three years younger than male spouses	**Male Participants:** Three years older than female spouses **Female Participants:** One year younger than male spouses
Refunds of Employee Contributions for Terminated Vested Participants	50% elect a refund of their employee contributions	90% elect a refund of their employee contributions
Vacation Pay	Retirement benefits are increased by 4.00%	No adjustment to retirement benefits from vacation pay (vacation pay not included in pensionable earnings)

Summary of Proposed Assumption Changes

Assumption	Current Assumption	Proposed Assumption
Sick Leave Pay	None	Retirement benefits are increased by 2.00%
Additional Accumulated Unused Sick Leave Service at Retirement	None	Additional 0.50 years of service included in total service (prior to application of maximum caps) for calculation in retirement benefits

Impact of Proposed Assumption Changes



Impact of Proposed Assumption Changes

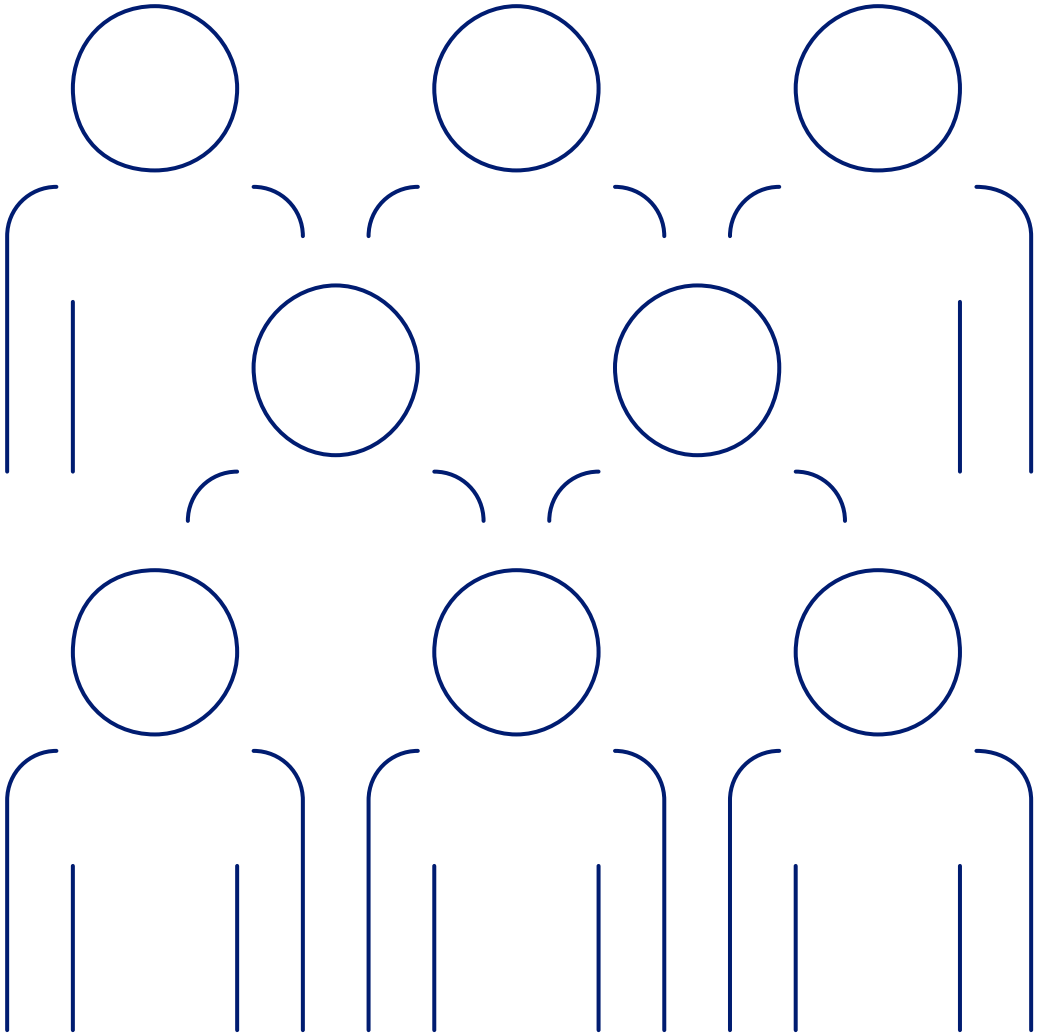
The following chart provides the estimated impact of the proposed assumption changes, based on the July 1, 2020 valuation results; changes will be implemented with the July 1, 2021 valuation.

	Description	(A) July 1, 2020 Valuation Results	(B) July 1, 2020 Results with Revised Programming Changes Only	(C) July 1, 2020 Results with Recommended Retirement Assumption Change Only	(D) July 1, 2020 Results with Recommended Retirement and Turnover Assumption Changes Only	(E) July 1, 2020 Results with Recommended Retirement, Turnover and Vacation/Sick Leave Load Assumption Changes Only	(F) July 1, 2020 Results with All Recommended Assumption Changes*
1	Actuarial Accrued Liability (AAL)	$523,721,088	$526,964,670	$528,929,594	$529,076,179	$528,945,922	$528,935,611
2	Actuarial Value of Assets (AVA)	186,720,491	186,720,491	186,720,491	186,720,491	186,720,491	186,720,491
3	Unfunded Actuarial Accrued Liability (UAAL) [(1) - (2)]	337,000,597	340,244,179	342,209,103	342,355,688	342,225,431	342,215,120
4	Employer Normal Cost	2,019,093	2,180,651	2,213,805	2,547,683	2,578,134	2,551,141
5	Payment on UAAL	54,483,370	54,321,812	54,288,658	53,954,780	53,924,329	53,951,322
6	**Total Recommended Contribution adjusted for Timing [(4) + (5) + Interest]**	**$60,200,000**	**$60,200,000**	**$60,200,000**	**$60,200,000**	**$60,200,000**	**$60,200,000**
7	Effective Amortization Period - AVA Basis	6.902 years	7.002 years	7.053 years	7.107 years	7.108 years	7.104 years
8	Funded Ratio – AVA Basis	35.65%	35.43%	35.30%	35.29%	35.30%	35.30%
9	Funded Ratio – MVA Basis**	34.71%	34.50%	34.37%	34.36%	34.37%	34.37%

*Does not reflect proposed percent married assumption

**Based on market value of assets of $181,808,000 as of July 1, 2020

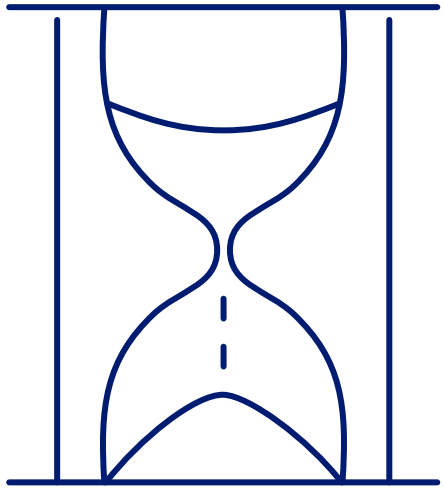
Demographic Assumptions



Withdrawal Assumption

Current Assumption

- Age-based with rates decreasing at later ages
- Headcount-weighted rates range from 18.0% for employees under age 30, grading down to 5.0% for participants age 56 or older.
- Rates do not apply once participants meet early retirement eligibility at age 50 with 5 years of service.



Withdrawal Assumption

Findings

- Experience was reviewed on both a headcount-weighted and amount-weighted basis. There was a significant difference between amount-weighted and headcount-weighted experience that demonstrated that low-benefit participants were much more likely to terminate. We reviewed experience on a years of service basis to determine whether a service-based select and ultimate set of rates would better fit the experience but found that the age-based framework using amount-weighted rates provided the best fit.
- Under the amount-weighted basis, exposures are based on every $1,000 of annual benefit amount rather than on headcount. Essentially, this weights higher-service and higher-paid participants more heavily than lower-service and lower-paid participants to more closely approximate the impact on liabilities.
- Actual withdrawal experience was lower than expected at key workforce ages 32-48, with higher rates for younger employees and late-career hires.
- No major differences between males and females
- Refer to the charts on the next 3 slides for details on exposures and experience.

Withdrawal: Amount-Weighted Experience for the Period July 1, 2014 through June 30, 2019 All Participants				
Age	**Exposures**	**Actual**	**Actual Rate**	**Proposed Rate**
20 – 29	$72.06	$10.77	2.25%	18.00%
30	24.51	5.66	23.09%	15.00%
31	43.20	7.65	17.71%	13.00%
32	54.99	7.12	12.95%	11.00%
33	65.17	4.50	6.91%	9.00%
34	110.55	4.53	4.09%	7.00%
35	143.23	8.04	5.61%	5.00%
36 – 39	737.56	36.85	5.00%	4.00%
40 – 44	2,416.44	73.24	3.03%	3.00%
45 – 48	4,023.03	74.71	1.86%	2.00%
49 – 50	1,724.00	153.91	8.93%	9.00%
51 – 59	1,011.90	53.77	5.31%	6.00%
60+	160.54	16.98	10.58%	10.00%
Total	**$10,587.17**	**$457.72**	**4.32%**	**4.38%**

Withdrawal: Amount-Weighted Experience for the Period July 1, 2014 through June 30, 2019 All Participants

Age	Exposures	Actual	Actual Rate	Proposed Rate	Age	Exposures	Actual	Actual Rate	Proposed Rate
20	$0.00	$0.00	0.00%	18.00%	37	$145.35	$9.51	6.54%	4.00%
21	0.60	0.00	0.00%	18.00%	38	216.69	14.62	6.75%	4.00%
22	2.29	0.17	7.31%	18.00%	39	224.55	6.59	2.93%	4.00%
23	2.32	0.26	11.27%	18.00%	40	341.90	13.29	3.89%	3.00%
24	2.65	1.19	45.03%	18.00%	41	413.20	6.28	1.52%	3.00%
25	4.56	2.06	45.13%	18.00%	42	496.55	22.60	4.55%	3.00%
26	7.47	0.93	12.49%	18.00%	43	560.96	24.60	4.38%	3.00%
27	9.61	0.67	6.93%	18.00%	44	603.82	6.49	1.07%	3.00%
28	17.89	1.96	10.93%	18.00%	45	632.40	3.91	0.62%	2.00%
29	24.67	3.54	14.34%	18.00%	46	821.69	17.87	2.17%	2.00%
30	24.51	5.66	23.09%	15.00%	47	1210.01	39.81	3.29%	2.00%
31	43.20	7.65	17.71%	13.00%	48	1358.93	13.12	0.97%	2.00%
32	54.99	7.12	12.95%	11.00%	49	1510.20	128.50	8.51%	9.00%
33	65.17	4.50	6.91%	9.00%	50	213.79	25.41	11.89%	9.00%
34	110.55	4.53	4.09%	7.00%	51	152.43	6.27	4.12%	6.00%
35	143.23	8.04	5.61%	5.00%	52	97.82	7.94	8.12%	6.00%
36	150.97	6.12	4.06%	4.00%	53	96.55	4.68	4.85%	6.00%

Withdrawal: Amount-Weighted Experience for the Period July 1, 2014 through June 30, 2019 All Participants (continued)

Age	Exposures	Actual	Actual Rate	Proposed Rate	Age	Exposures	Actual	Actual Rate	Proposed Rate
54	$131.94	$1.71	1.29%	6.00%	63	$26.07	$2.26	8.67%	10.00%
55	120.85	2.46	2.04%	6.00%	64	27.84	0.93	3.34%	10.00%
56	128.70	7.78	6.04%	6.00%	65	5.80	0.00	0.00%	10.00%
57	113.39	3.92	3.46%	6.00%	66	4.54	0.76	16.66%	10.00%
58	95.91	15.27	15.92%	6.00%	67	4.71	0.00	0.00%	10.00%
59	74.30	3.73	5.02%	6.00%	68	2.94	2.06	70.09%	10.00%
60	15.04	1.20	7.97%	10.00%	69	2.29	0.34	15.03%	10.00%
61	25.68	4.38	17.05%	10.00%	70	24.25	1.87	7.72%	10.00%
62	21.38	3.18	14.87%	10.00%					
					Total	**$10,587.17**	**$457.72**	**4.32%**	**4.38%**

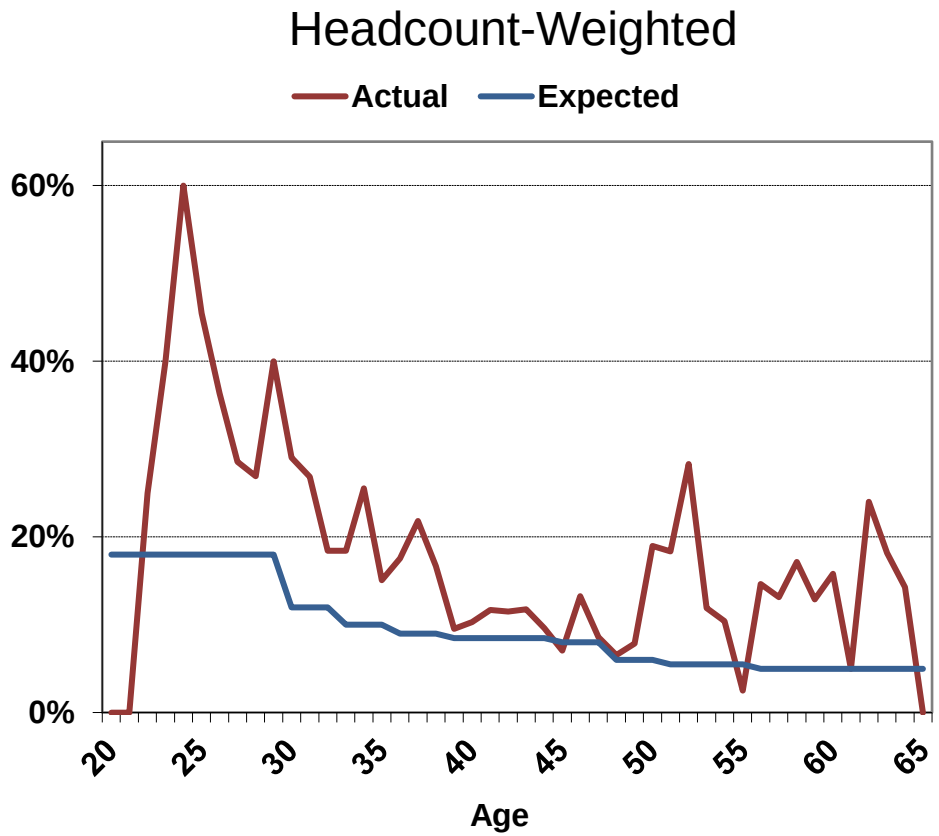
Withdrawal Assumption

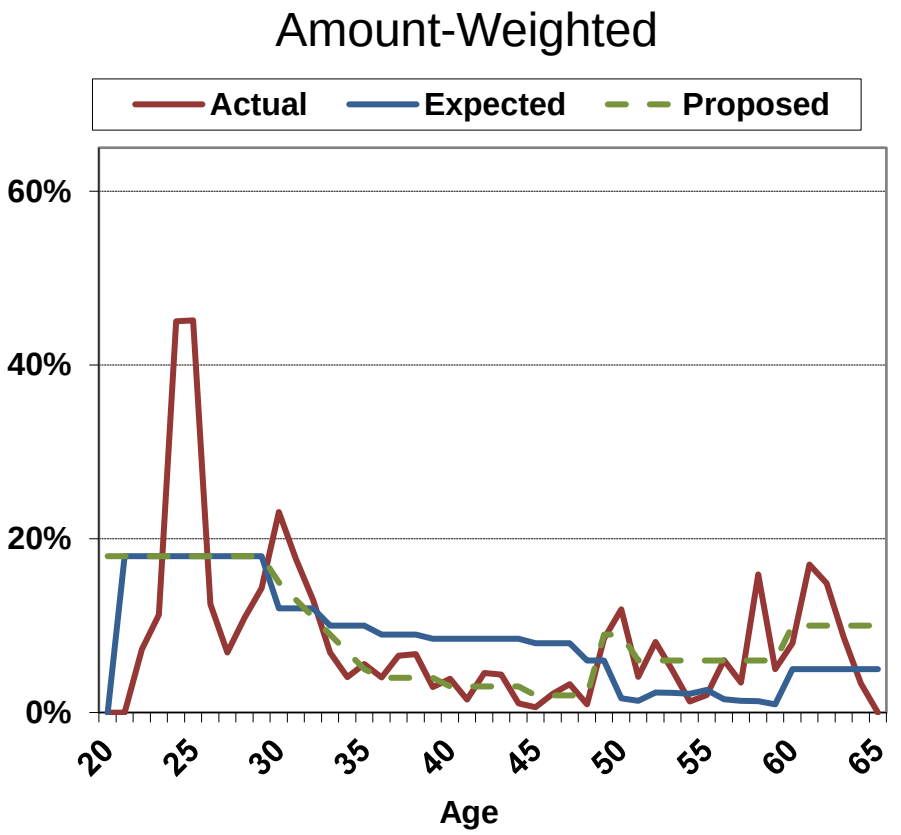
Recommendations

- Maintain age-based table with same rates for males and females
- Change from headcount-weighted to amount-weighted rates
- Rates no longer apply when participant reaches early retirement eligibility at 10 years of service.
- Decrease the rates for ages 32 to 48, then higher expected withdrawals
- The following graphs show actual and expected rates on both on a headcount-weighted (HCW) and an amount-weighted (AW) basis and the proposed rates on an AW basis.

Age	Current Rates (Headcount-weighted)	Proposed Rates (Amount-weighted)
20 – 29	18.00%	18.00%
30	12.00%	15.00%
31	12.00%	13.00%
32	12.00%	11.00%
33	10.00%	9.00%
34	10.00%	7.00%
35	10.00%	5.00%
36-38	9.00%	4.00%
39	8.50%	4.00%
40-44	8.50%	3.00%
45-47	8.00%	2.00%
48	6.00%	2.00%
49-50	6.00%	9.00%
51-55	5.50%	6.00%
56-59	5.00%	6.00%
60+	5.00%	10.00%

Withdrawal Assumption – Graphs of Actual, Expected, and Proposed Assumptions





Disability Assumption

Current Assumptions

- Current rate are age-based
- Rates are gender specific
- Headcount-weighted rates range from 0.01% at age 20 to 0.39% by age 64 for males and from 0.03% at age 20 to 0.87% at age 64 for females
- Occupational disability rates are 10% of the ordinary disability rates

Findings

- Actual disability incidence is close to expected overall but is higher than expected for male participants and lower than expected for female participants.
- The following table summarizes the disability experience.

Group	Exposures	Actual	Expected	% of Expected
Total	3,631	8	9.59	83%
Males	1,595	4	2.13	188%
Females	2,036	4	7.46	54%

Disability Assumption

Recommendations

- Maintain distinct rates for males and females.
- Maintain age-based patterns.
- Set proposed rates for males to 200% of current rates. Set proposed rates for females equal to 50% of current rates.
- Remove distinction for occupational disability.
- Sample rates are shown below.

Age	Current Rates for Males	Proposed Rates for Males	Current Rates for Females	Proposed Rates for Females
20	0.01%	0.03%	0.03%	0.01%
25	0.02%	0.03%	0.04%	0.02%
30	0.02%	0.04%	0.07%	0.03%
35	0.03%	0.06%	0.12%	0.06%
40	0.04%	0.09%	0.17%	0.09%
45	0.07%	0.14%	0.26%	0.13%
50	0.12%	0.23%	0.41%	0.21%
55	0.20%	0.41%	0.69%	0.34%
60	0.31%	0.61%	0.84%	0.42%

Retirement Assumption

Current Assumptions

- Age-based, unisex rates
- Headcount-weighted
- Unreduced early retirement at 30 years of service
- Separate sets of assumed rates for those with and without 30 or more years of service at retirement

Retirement Assumption

Findings

- The data was analyzed on a headcount-weighted and an amount-weighted basis. The case for an amount-weighted approach was not as strong as for turnover with less difference between the headcount-weighted and amount-weighted results. Additional factors impact retirement including general health, other sources of income, the overall economic environment, and personal choice. As a result, the proposed assumptions were based on the headcount-weighted results.
- Ignoring participants under age 50 and over age 70, actual rates for participants with less than 30 years of service were more than expected
  - About 110% of expected
- Ignoring participants under age 50 and over age 70, actual rates for participants with 30 or more years of service were less than expected although there was a high degree of volatility
  - About 87% of expected
- The tables on the next 2 slides show the expected and actual retirements during the study period, split by those with and without 30 or more years of service.

Retirement Assumption

Retirement: Headcount-Weighted Employees with Less than 30 Years of Service at Retirement for the Period July 1, 2014 through June 30, 2019									
Age	**Exposures**	**Actual**	**Actual Rate**	**Proposed Rate**	**Age**	**Exposures**	**Actual**	**Actual Rate**	**Proposed Rate**
<50	3	3	100.00%	0.00%	60	77	19	24.68%	25.00%
50	91	1	1.10%	2.00%	61	58	12	20.69%	25.00%
51	101	2	1.98%	2.00%	62	60	14	23.33%	25.00%
52	99	1	1.01%	2.00%	63	48	8	16.67%	15.00%
53	97	3	3.09%	3.00%	64	41	4	9.76%	15.00%
54	96	6	6.25%	3.00%	65	39	12	30.77%	30.00%
55	79	3	3.80%	5.00%	66	28	8	28.57%	30.00%
56	70	1	1.43%	5.00%	67	12	4	33.33%	30.00%
57	69	0	0.00%	5.00%	68	11	3	27.27%	30.00%
58	85	5	5.88%	5.00%	69	7	3	42.86%	30.00%
59	76	5	6.58%	5.00%	70+	42	9	21.43%	100.00%
					Total*	**1,244**	**114**	**9.16%**	**9.79%**

*Total excludes ages less than 50 and ages 70 or more.

Retirement Assumption

Retirement: Headcount-Weighted Employees with 30 or More Years of Service at Retirement for the Period July 1, 2014 through June 30, 2019									
Age	**Exposures**	**Actual**	**Actual Rate**	**Proposed Rate**	**Age**	**Exposures**	**Actual**	**Actual Rate**	**Proposed Rate**
<50	1	1	100.00%	0.00%	60	8	3	37.50%	35.00%
50	2	1	50.00%	30.00%	61	6	0	0.00%	25.00%
51	1	1	100.00%	30.00%	62	7	3	42.86%	25.00%
52	2	1	50.00%	30.00%	63	4	0	0.00%	25.00%
53	2	1	50.00%	30.00%	64	3	1	33.33%	25.00%
54	1	0	0.00%	30.00%	65	5	1	20.00%	25.00%
55	4	0	0.00%	25.00%	66	5	2	40.00%	25.00%
56	6	3	50.00%	25.00%	67	3	0	0.00%	25.00%
57	2	1	50.00%	25.00%	68	4	1	25.00%	25.00%
58	2	0	0.00%	25.00%	69	3	0	0.00%	25.00%
59	1	1	100.00%	0.00%	70+	15	6	40.00%	100.00%
					Total*	**77**	**20**	**25.97%**	**26.56%**

*Total excludes ages less than 50 and ages 70 or more.

Retirement Assumption

Recommendations

- Maintain service-based table with same rates for males and females
- Maintain headcount-weighted rates
- Participants with less than 30 years of service:

  -Increase rates at ages 60 to 62 and 65 to 69 to more closely match the observed experience
- Participants with 30 or more years of service:

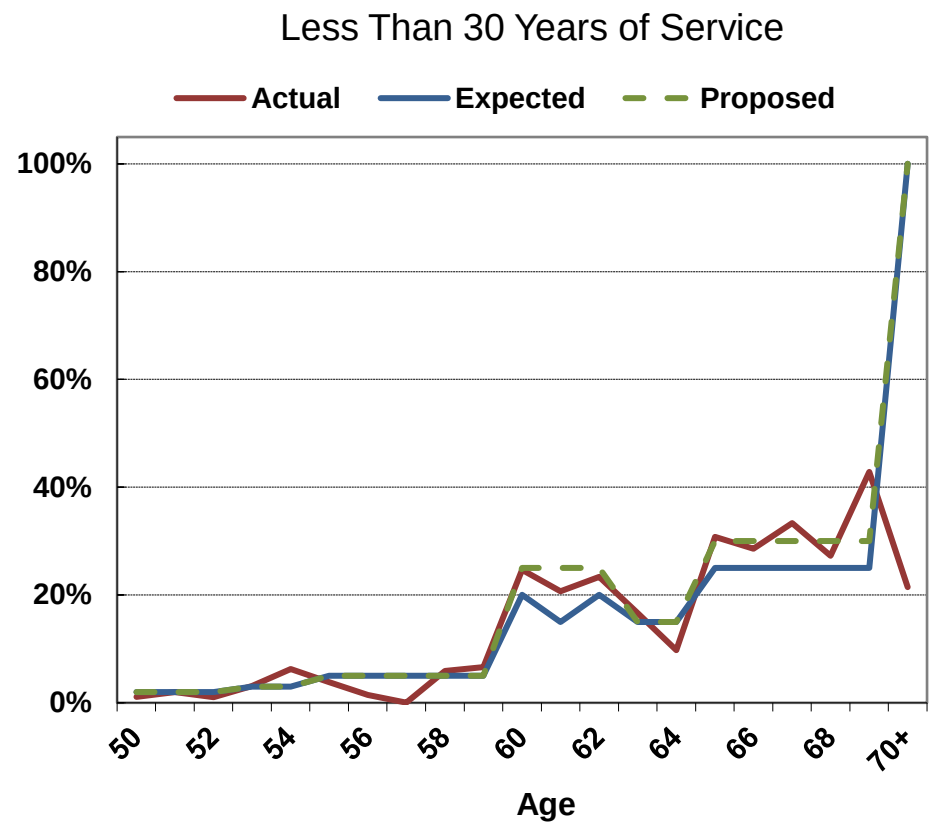
  -Increase rates at all ages but except age 60 and ages 70 and over to more closely match the observed experience. Largest increases for youngest ages (50 to 54).
- Changes in current and proposed assumed retirement rates are shown on slide 29.
- A graph depicting current actual, assumed and proposed rates for the Plan in total during the study period is shown on slide 30.

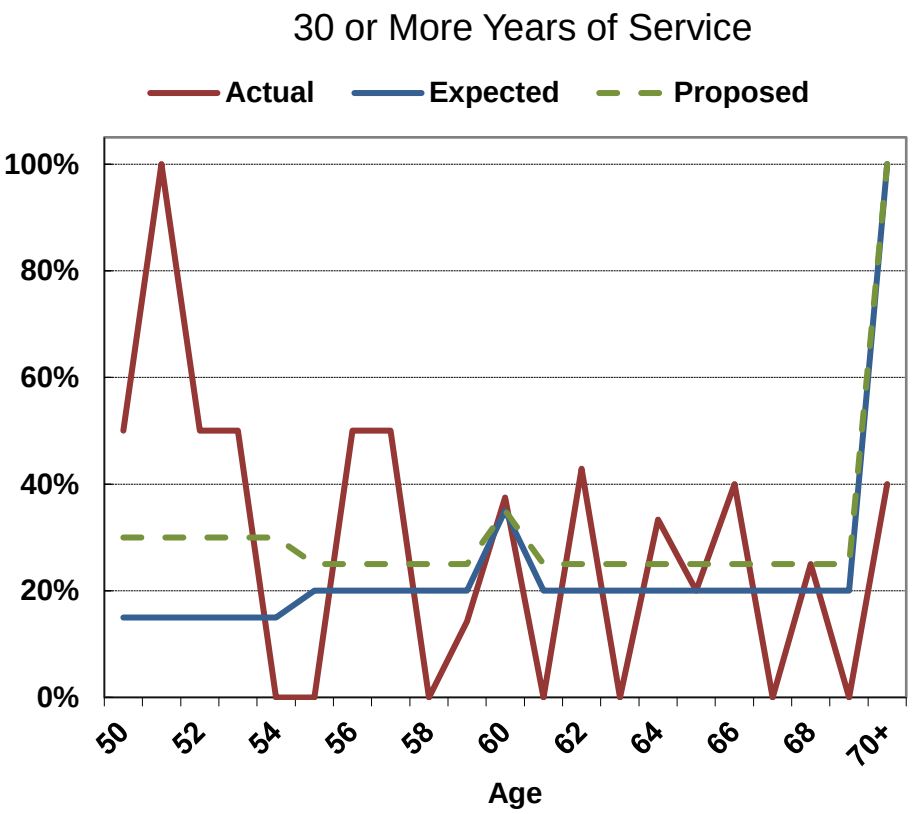
Retirement Assumption

The chart below shows the current and proposed retirement rates:

Age	Less than 30 Years of Service		Age	30 or More Years of Service	
	Current Rate	Proposed Rate		Current Rate	Proposed Rate
50 – 52	2%	2%	50 – 54	15%	30%
53 – 54	3%	3%	55 – 59	20%	25%
55 – 59	5%	5%	60	35%	35%
60	20%	25%	61-69	20%	25%
61	15%	25%	70+	100%	100%
62	20%	25%			
63 – 64	15%	15%			
65 – 69	25%	30%			
70+	100%	100%			

Retirement Assumption – Graphs of Actual, Expected, and Proposed Assumptions





Spousal Assumptions

Current Assumption

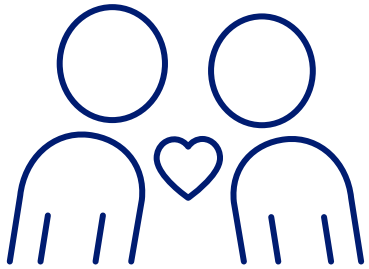
- 75% of participants are assumed to have a spouse upon retirement or death from active status
- Males are assumed to be three years older than their female spouses

Findings

- Improved data quality will allow us to directly base this assumption on individual employee contribution rates for future valuations.
- The beneficiaries of male participants were about three years younger, while the beneficiaries of female participants were about one year older.

Recommendations

- Percent Married Assumption: Base assumption on active participant contribution rate provided in valuation data. Assume 75% of terminated vested participants are married if contribution rate prior to termination not available.
- Modify the age of spouse assumption for female participants only to assume a one-year age difference. No change for males.



Refund of Employee Contributions Assumption

Current Assumption

- 50% of participants who terminate before retirement eligibility are assumed to elect a refund of their employee contributions.

Findings

- 89% of participants took a refund of their employee contributions.

Recommendations

- Increase percentage of terminated employees assumed to elect refunds of their contribution balances from 50% to 90%.

Unused Sick Leave Assumption

Current Assumption

- No adjustments are made to retirement benefits with regard to sick leave pay
- No adjustment for unused sick leave service at retirement

Findings

- Analysis prepared by Strategic Benefits Advisors
- Warrants adjustments to benefits

Recommendations

- Sick leave pay:
  Introduce load of 2.00% to retirement benefits
- Unused sick leave service at retirement:
  Introduce assumption of including an additional 0.50 years of service in total service (prior to application of maximum caps) for calculation in retirement benefits

Accumulated Vacation Pay Assumption

Current Assumption

- Retirement benefits are increased by 4.00%

Findings

- Review of plan provisions and administrative practice shows that accumulated vacation pay is not included in pensionable earnings for School Board participants

Recommendations

- Remove 4.00% load

Actuarial Certification

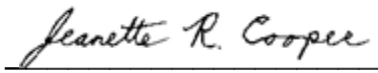
The actuarial experience review of demographic assumptions other than mortality for the City of Atlanta General Employees' Pension Fund Employees of the Atlanta Board of Education and the resulting cost estimates were performed under the supervision of Jeanette R. Cooper, FSA, FCA, MAAA, EA, with the assistance of Ben Kirkland and Jody Martin.

The study was based on data provided by the System for the July 1, 2014 through July 1, 2019 valuations. Our analysis was conducted in accordance with generally accepted actuarial principles as prescribed by the Actuarial Standards Board (ASB) and the American Academy of Actuaries. Additionally, the development of all assumptions contained herein is in accordance with ASOP No. 35 (*Selection of Demographic and Other Non-Economic Assumptions for Measuring Pension Obligations*). Ms. Cooper is experienced with performing experience studies for large public-sector pension plans and is qualified to render the opinions contained in this presentation.

Assumptions for loads on accumulated vacation pay and unused sick leave were informed by an analysis of retirements in 2021 prepared by Strategic Benefits Advisors.

Segal valuation results are based on proprietary modeling software. The actuarial valuation models generate a comprehensive set of liability and cost calculations that are presented to meet regulatory, legislative and client requirements. Our Actuarial Technology and Systems unit, comprised of both actuaries and programmers, is responsible for the initial development and maintenance of these models. The models have a modular structure that allows for a high degree of accuracy, flexibility and user control. The client team programs the assumptions and the plan provisions, validates the models, and reviews test lives and results, under the supervision of the responsible actuary.

Certified by:



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Thank You!

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