



**City of Atlanta Police Officers'  
Pension Fund**

**Review of Demographic Actuarial Experience**

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

April 20, 2022

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# | Agenda

**Overview with Assumptions and Methods being Studied**

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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



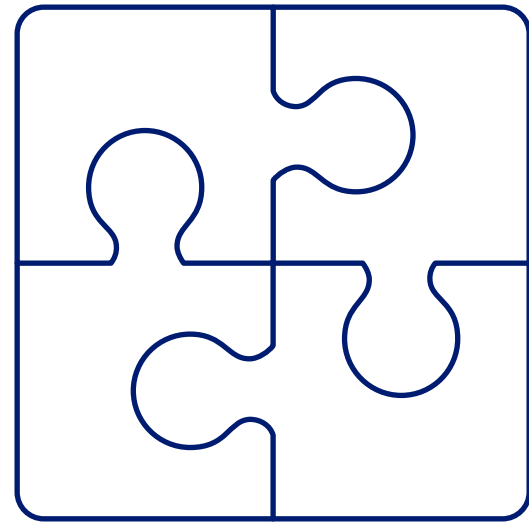
# Overview: Purpose of an Experience Study

- An experience study provides the basis for developing recommended assumptions to be used in the annual actuarial valuation:
  - Performed on a periodic basis
  - Last experience study was delivered in 2013 for the period January 1, 2003 through July 1, 2011, with several changes made as a result of the study and additional changes made on an ad-hoc basis in subsequent years
  - 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 for the remaining demographic assumptions 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 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.*

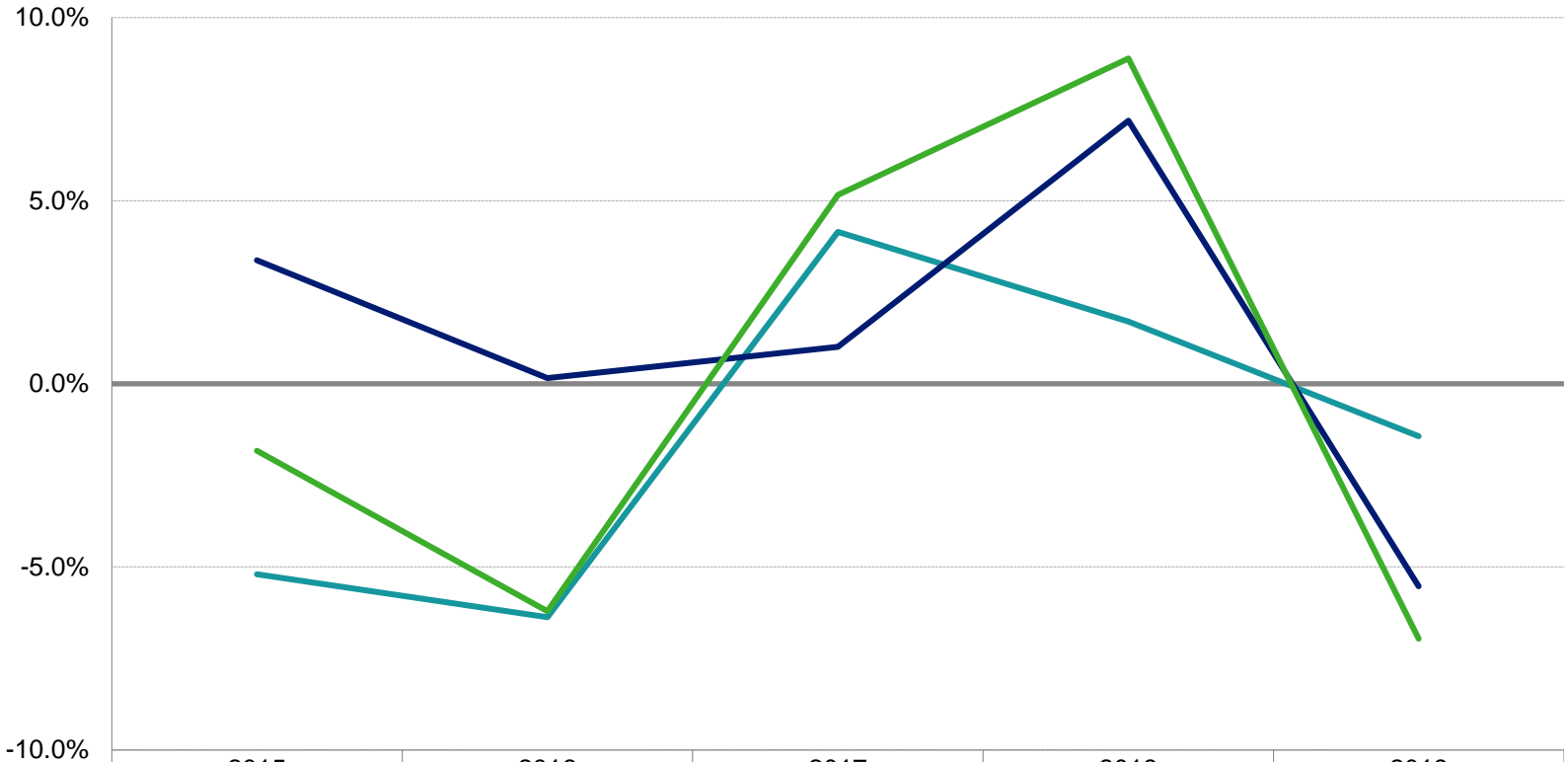
# Changes In Recent Years

## ***Changes With Last Experience Study***

- The last experience study covering the demographic assumptions under review was for the period January 1, 2003 through July 1, 2011. Based on that study, we do not know if any of the non-mortality demographic assumptions were updated. In subsequent years, there were no changes to any of the assumptions being reviewed in this demographic experience study.

# 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	-5.20%	-6.37%	4.15%	1.70%	-1.43%
Non-Investment	3.37%	0.16%	1.01%	7.18%	-5.53%
Total	-1.83%	-6.21%	5.16%	8.88%	-6.96%

\*Results reflect the assumptions used in the prior valuation. Investment gain/loss based on average value asset return assuming mid-year cash flows. Total return from prior valuation reports with non-investment gain/loss calculated as total gain/loss less investment gain/loss.



# Summary of Findings

- As part of this study, we reviewed the provisions outlined in the January 1, 2020 valuation report, City ordinances, Summary Plan Descriptions, and Strategic Benefits Advisors understanding on how benefits are administered. As a result, we identified potential changes to retirement eligibility, disability benefits, pre-retirement death benefits, and application of unused sick leave and accumulated vacation pay. These changes may result in Southern Actuarial Services revising the valuation programming. We anticipate that these changes will have minimal impact on the valuation results.
- On an amount-weighted basis, overall withdrawal experience was lower than expected. The largest difference was for ages under 35. The proposed rates reflect this experience.
- Disability experience for both males and females was less than 25% of expected for both males and females. While this is a continuing trend, the data set is too small to be credible. 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.
- The current retirement assumption assumes all Police Officers will retire when they are first eligible for unreduced retirement. For Police Officers with less than 30 years of service, retirement rates varied by age, and the proposed rates reflect this experience. We recommend maintaining the assumption that Police Officers with 30 or more years of service retire immediately.
- The married assumption already reflects that for plans other than the 2011 plan, an active participant's marital status is based on the employee contribution rate in the data. We have also updated spousal age differences to reflect that both male and female participants have spouses closer in age.

# Summary of Findings

- Previously, participants were not assumed to elect a refund of their employee contributions. We recommend this assumption be updated to reflect that 95% of participants are assumed to elect a refund.
- Loads for unused sick leave pay and service were introduced, and the load for accumulated vacation pay was increased. Previously accumulated vacation pay was factored in by assuming 30 days of unused vacation. The new assumptions were informed by an analysis of 2021 retirements prepared earlier this year by Strategic Benefits Advisors. That assistance is gratefully acknowledged.
- The impact of the proposed assumption changes was estimated by Southern Actuarial Services. That assistance is gratefully acknowledged.
- Using 2020 valuation results, the total combined impact (without any programming adjustments) is:
  - Actuarial Accrued Liability increases 1.7% from \$1.546 billion to \$1.573 billion
  - Employer Normal Cost decreases 3.9% from \$14.65 million to \$14.08 million
  - Total Recommended Contribution increases 3.3% from \$41.0 million to \$42.4 million
  - Total Recommended Contribution as a percentage of projected payroll increases from 37.32% to 38.54%, an increase of 1.22% of projected payroll
- The impact was estimated assuming the changes were adopted with the July 1, 2020 valuation. Any assumption changes adopted by the Investment Board will be reflected for the first time with the July 1, 2021 valuation.

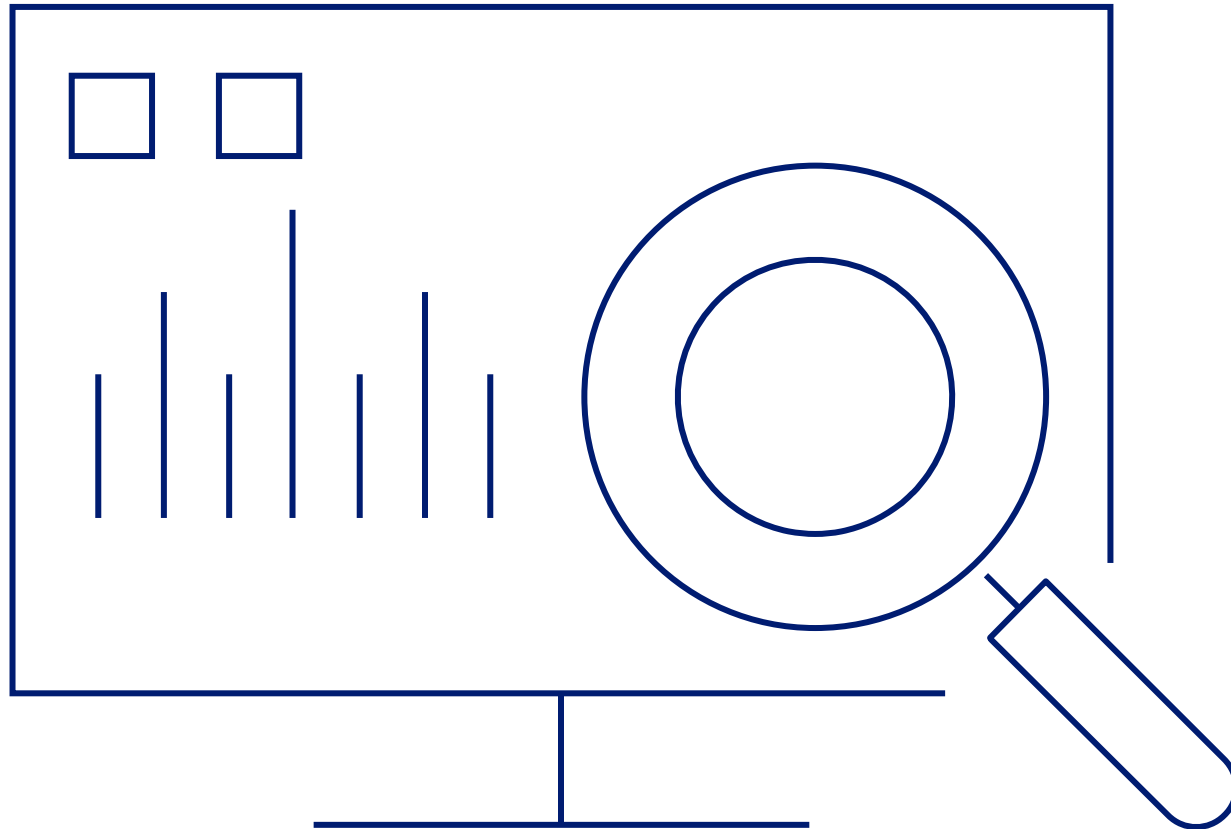
# Summary of Proposed Assumption Changes

Assumption	Current Assumption	Proposed Assumption
Withdrawal	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 from the Wyatt 1985 Disability Study (Class 4)	25% of the current sex-distinct, age-based rates for both males and females
Service-connected Disability	75% of disabilities are assumed to be service-connected	Remove distinction between Ordinary and Service-connected disabilities
Retirement	100% at Normal Retirement	<b>Less than 30 Years of Service at Retirement:</b> Introduction of gender-neutral, age-based rates; see proposed rates on slide 29 <b>30 or More Years of Service at Retirement:</b> 100% at Normal Retirement (no change)
Percent Married	<b>Hired prior to September 1, 2011:</b> Assumption based on active participant contribution rate provided in valuation data <b>Hired after August 31, 2011:</b> Assume all participants are not married	No change
Spousal Age Difference	<b>Male Participants:</b> Three years older than female spouses <b>Female Participants:</b> Three years younger than male spouses	<b>Male Participants:</b> Two years older than female spouses <b>Female Participants:</b> One year younger than male spouses
Pre-retirement Survivor Annuity Death Benefit for Participants Hired after August 31, 2011	None (all participants were assumed to receive a refund of employee contributions)	75% are eligible for pre-retirement survivor annuity death benefits (with value not less than refund of employee contributions)

# Summary of Proposed Assumption Changes

Assumption	Current Assumption	Proposed Assumption
Refunds of Employee Contributions for Terminated Vested Participants	None	95% elect a refund of their employee contributions
Vacation Pay	90 days of vacation leave are included which then is used to adjust final average pay	<b>Hired prior to September 1, 2011:</b> Retirement benefits are increased by 7.50% <b>Hired after August 31, 2011:</b> Retirement benefits are increased by 2.25%
Sick Leave Pay	None	<b>Hired prior to September 1, 2011:</b> Retirement benefits are increased by 3.00% <b>Hired after August 31, 2011:</b> No adjustment
Additional Accumulated Unused Sick Leave Service at Retirement	None	<b>Hired prior to September 1, 2011:</b> Additional 0.50 years of service included in total service (prior to application of maximum caps) for calculation in retirement benefits <b>Hired after August 31, 2011:</b> No adjustment

# Impact of Proposed Assumption Changes



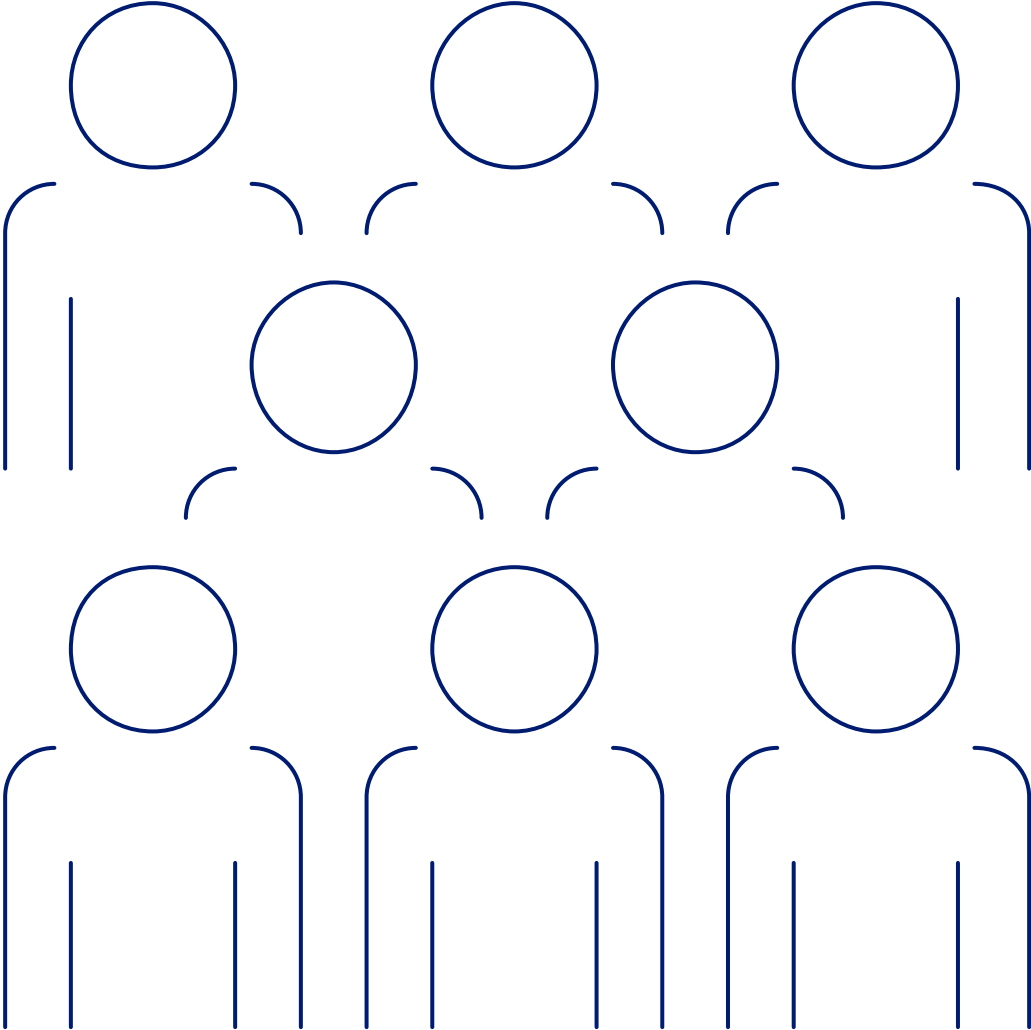
# Impact of Proposed Assumption Changes - Preliminary Results

The following chart provides the estimated impact of the assumption and method changes, based on the July 1, 2020 valuation results; changes will be implemented with the July 1, 2021 valuation. The numbers in this chart were provided by Southern Actuarial Services. That assistance is gratefully acknowledged.

Description	(A) July 1, 2020 Valuation Results	(B) July 1, 2020 Results with Recommended Retirement Changes	(C) July 1, 2020 Results with Recommended Retirement and Turnover Changes	(D) July 1, 2020 Results with All Recommended Assumptions other than Accumulated Vacation and Unused Sick Leave Pay Changes	(E) July 1, 2020 Results and All Recommended Assumption Changes
1 Actuarial Accrued Liability (AAL)	\$1,546,121,100	\$1,555,317,609	\$1,555,067,637	\$1,537,665,216	\$1,573,140,139
2 Actuarial Value of Assets (AVA)	<u>1,194,588,537</u>	<u>1,194,588,537</u>	<u>1,194,588,537</u>	<u>1,194,588,537</u>	<u>1,194,588,537</u>
3 Unfunded Actuarial Accrued Liability (UAAL) [(1) - (2)]	351,532,563	360,729,072	360,479,100	343,076,679	378,551,602
4 Employer Normal Cost	14,654,352	14,277,495	14,410,732	12,759,320	14,082,623
5 Payment on UAAL	23,862,462	24,486,732	24,469,764	23,288,466	25,696,548
6 <b>Total Recommended Contribution adjusted for Timing [(4) + (5) + Interest]</b>	<b>\$41,037,365</b>	<b>\$41,300,969</b>	<b>\$41,424,847</b>	<b>\$38,406,763</b>	<b>\$42,382,331</b>
7 Recommended Contribution as a % of Projected Payroll	37.32%	37.56%	37.67%	34.93%	38.54%
8 Projected Payroll	\$109,961,706	\$109,961,706	\$109,961,706	\$109,961,706	\$109,961,706
9 Funded Ratio – AVA Basis	77.26%	76.81%	76.82%	77.69%	75.94%
10 Funded Ratio – MVA Basis*	74.41%	73.97%	73.98%	74.82%	73.13%

\*Based on market value of assets of \$1,150,481,000 as of July 1, 2020

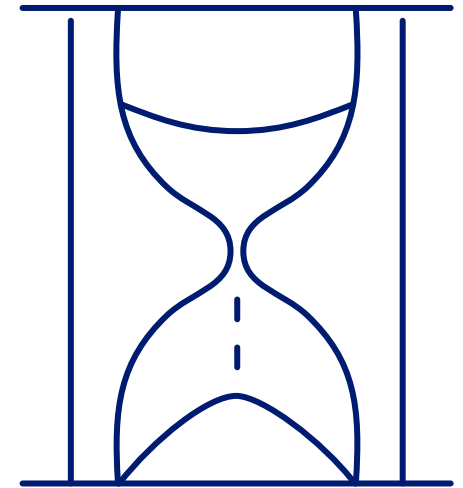
# Demographic Assumptions



# Withdrawal Assumption

## ***Current Assumption***

- Age-based with rates decreasing at older ages
- Headcount-weighted rates range from 15.00% at age 20 down to 7.8% at age 30, 2.3% at age 40, and fully phase out at age 55.
- Rates do not apply upon earlier of early retirement eligibility and age 55.





# Withdrawal Assumption

## *Findings*

- Experience was reviewed on both a headcount-weighted and amount-weighted basis. The amount-weighted experience produced a smoother pattern and less volatility, so we used that as the basis for the proposed assumptions.
- 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 through mid-career (around age 40), with slightly higher (1-2%) experience for ages 50 and greater.
- Our proposed assumptions reflect the actual amount-weighted experience.
- 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**

<b>Age</b>	<b>Exposures</b>	<b>Actual</b>	<b>Actual Rate</b>	<b>Proposed Rate</b>
20 – 23	\$115.72	\$14.03	12.12%	12.00%
24	224.30	17.07	7.61%	7.00%
25 – 32	10,882.50	482.55	4.43%	4.50%
33 – 39	9,116.17	267.36	2.93%	3.00%
40 – 57	5,656.75	150.96	2.67%	2.00%
58 – 59	28.99	0.00	0.00%	1.00%
60+	28.12	0.00	0.00%	1.00%
<b>Total</b>	<b>\$26,052.54</b>	<b>\$931.96</b>	<b>3.58%</b>	<b>3.48%</b>

**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%	12.00%	37	\$1,232.39	\$34.12	2.77%	3.00%
21	3.20	0.51	15.98%	12.00%	38	978.78	38.93	3.98%	3.00%
22	23.24	2.47	10.62%	12.00%	39	836.49	18.76	2.24%	3.00%
23	89.27	11.05	12.38%	12.00%	40	666.06	4.01	0.60%	2.00%
24	224.30	17.07	7.61%	7.00%	41	605.14	17.30	2.86%	2.00%
25	469.09	22.75	4.85%	4.50%	42	458.10	0.00	0.00%	2.00%
26	700.68	22.10	3.15%	4.50%	43	513.02	16.83	3.28%	2.00%
27	1,013.28	54.59	5.39%	4.50%	44	497.72	19.45	3.91%	2.00%
28	1,364.29	45.44	3.33%	4.50%	45	446.70	5.98	1.34%	2.00%
29	1,720.02	87.82	5.11%	4.50%	46	336.95	0.80	0.24%	2.00%
30	1,806.17	86.60	4.79%	4.50%	47	444.33	53.30	12.00%	2.00%
31	1,899.19	71.34	3.76%	4.50%	48	310.76	0.00	0.00%	2.00%
32	1,909.77	91.91	4.81%	4.50%	49	283.51	6.20	2.19%	2.00%
33	1,765.88	46.60	2.64%	3.00%	50	213.88	14.83	6.94%	2.00%
34	1,671.52	59.89	3.58%	3.00%	51	243.35	4.02	1.65%	2.00%
35	1,379.21	28.09	2.04%	3.00%	52	189.07	2.48	1.31%	2.00%
36	1,251.90	40.97	3.27%	3.00%	53	167.25	0.00	0.00%	2.00%

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

<b>Age</b>	<b>Exposures</b>	<b>Actual</b>	<b>Actual Rate</b>	<b>Proposed Rate</b>	<b>Age</b>	<b>Exposures</b>	<b>Actual</b>	<b>Actual Rate</b>	<b>Proposed Rate</b>
54	\$148.54	\$0.56	0.38%	2.00%	63	\$6.13	\$0.00	0.00%	1.00%
55	62.76	0.00	0.00%	2.00%	64	7.01	0.00	0.00%	1.00%
56	29.33	0.00	0.00%	2.00%	65	0.00	0.00	0.00%	1.00%
57	40.28	5.17	12.84%	2.00%	66	0.00	0.00	0.00%	1.00%
58	18.08	0.00	0.00%	1.00%	67	0.00	0.00	0.00%	1.00%
59	10.90	0.00	0.00%	1.00%	68	0.00	0.00	0.00%	1.00%
60	14.98	0.00	0.00%	1.00%	69	0.00	0.00	0.00%	1.00%
61	0.00	0.00	0.00%	1.00%	70	0.00	0.00	0.00%	1.00%
62	0.00	0.00	0.00%	1.00%					
					<b>Total</b>	<b>\$26,052.54</b>	<b>\$931.96</b>	<b>3.58%</b>	<b>3.48%</b>

# Withdrawal Assumption

## Recommendations

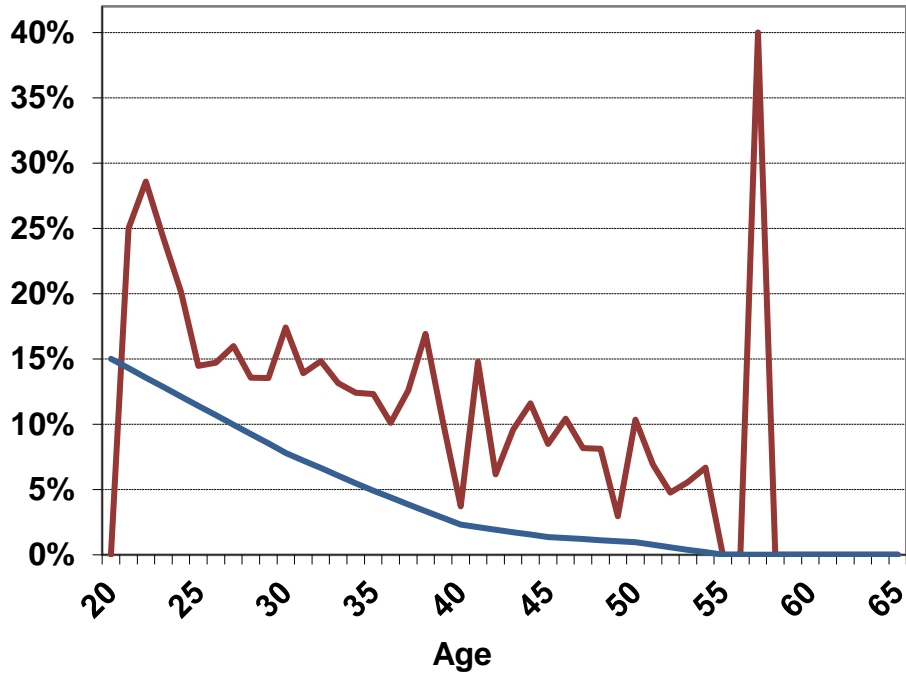
- Maintain age-based table with same rates for males and females
- Change from headcount-weighted to amount-weighted rates
- Flatten overall rate structure, with lower rates through age 35 and then slightly higher rates above age 45, with rates continuing through age 70
- The following graphs show actual and expected rates on both on a headcount-weighted (HCW) and an amount-weighted (AW) basis. and the proposed rates on an AW basis.

Current Rates at Sample Ages		Proposed Rates	
Age	Rate (Headcount-weighted)	Age	Rate (Amount-weighted)
20	15.00%	20 – 23	12.00%
25	11.40%	24	7.00%
30	7.80%	25 – 32	4.50%
35	4.90%	33 – 39	3.00%
40	2.30%	40 – 57	2.00%
45	1.35%	58 and over	1.00%
50	0.96%		
55 & over	0.00%		

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

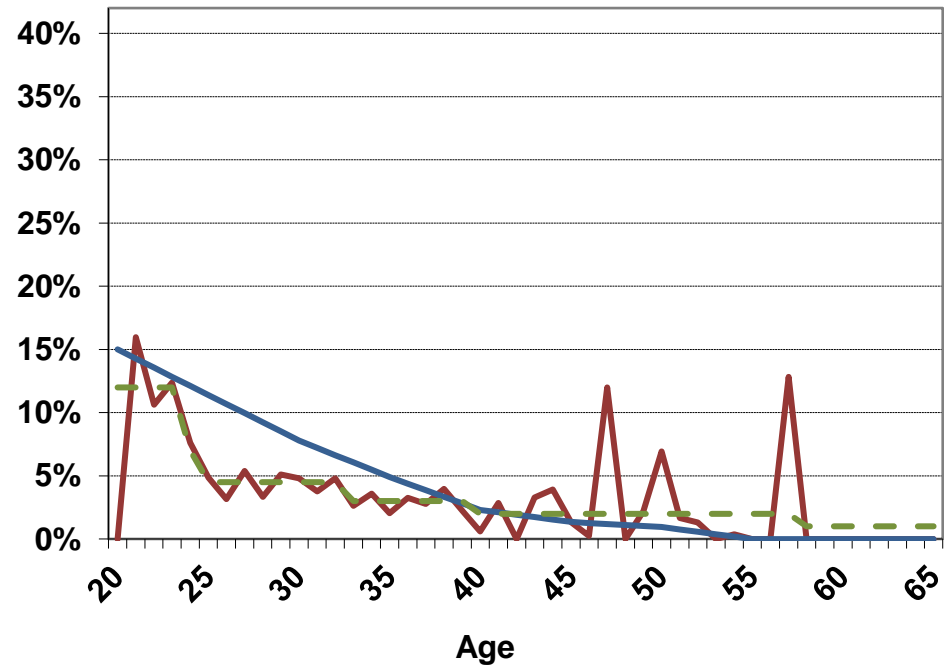
## Headcount-Weighted

— Actual — Expected



## Amount-Weighted

— Actual — Expected — Proposed



# Disability Assumption

## **Current Assumptions**

- Current rate are age-based
- Rates are gender specific
- Headcount-weighted rates range from 0.18% at age 20 to 4.36% by age 64 for males and from 0.10% at age 20 to 2.72% at age 64 for females
- Service-connected disability rates are 75% of the ordinary disability rates

## **Findings**

- Actual disability lower than expected for both males and females.
- Data is too limited to be fully credible but actual incidence of disability has consistently been less than expected.

<b>Group</b>	<b>Exposures</b>	<b>Actual</b>	<b>Expected</b>	<b>% of Expected</b>
Total	9,284	4	65.34	6%
Males	8,425	3	61.41	5%
Females	859	1	3.93	25%

# Disability Assumption

## Recommendations

- Maintain distinct rates for males and females
- Maintain age-based patterns
- Set proposed rates for males and females equal to 25% of current rates
- Remove distinction for service-connected disability

Age	Current Rates for Males	Proposed Rates for Males	Current Rates for Females	Proposed Rates for Females
20	0.18%	0.04%	0.10%	0.03%
25	0.26%	0.06%	0.18%	0.04%
30	0.37%	0.09%	0.30%	0.07%
35	0.51%	0.13%	0.46%	0.11%
40	0.69%	0.17%	0.64%	0.16%
45	0.94%	0.24%	0.88%	0.22%
50	1.35%	0.34%	1.33%	0.33%
55	2.29%	0.57%	2.12%	0.53%
60	3.43%	0.86%	2.47%	0.62%



# Retirement Assumption

## ***Current Assumptions***

- 100% at unreduced retirement
- Headcount-weighted
- Unreduced retirement changes from age 55 with 15 years of service to age 57 with 15 years of service if hired after August 31, 2011 (30 years of service remains in place)
- New plan provisions for participants hired after August 31, 2011 may impact future retirement patterns
  - Participants hired after August 31, 2011 had not reached retirement eligibility during the experience period for this study
  - Future studies will evaluate whether separate rates are needed for these participants

# 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.
- The current retirement assumption assumes all Police Officers will retire when they are first eligible for unreduced retirement.
- For participants with less than 30 years of service, actual retirement rates were less than the current 100% assumption. Nearly all participants had retired by age 62.
- Actual rates for participants with 30 or more years of service support retaining the 100% assumption for all ages
- The tables on the next two slides show the expected and actual retirements during the study period, split by those with and without 30 or more years of service.

**Retirement: Headcount-Weighted  
Employees with Less than 30 Years of Service at Retirement  
for the Period July 1, 2014 through June 30, 2019**

<b>Age</b>	<b>Exposures</b>	<b>Actual</b>	<b>Actual Rate</b>	<b>Proposed Rate</b>
<50	2,926	66	2.26%	2.00%
50	243	8	3.29%	3.00%
51	212	9	4.25%	4.00%
52	186	11	5.91%	6.00%
53	160	28	17.50%	15.00%
54	103	33	32.04%	30.00%
55	64	33	51.56%	50.00%
56	29	10	34.48%	30.00%
57	17	3	17.65%	15.00%
58	13	3	23.08%	15.00%
59	8	1	12.50%	15.00%
60	9	1	11.11%	15.00%
61	7	2	28.57%	25.00%
62	4	3	75.00%	75.00%
63	1	0	0.00%	100.00%
64	1	0	0.00%	100.00%
65	2	0	0.00%	100.00%
<b>Total*</b>	<b>1,061</b>	<b>145</b>	<b>13.67%</b>	<b>13.04%</b>

\*Total excludes ages less than 50 and ages over 65.

**Retirement: Headcount-Weighted  
Employees with 30 or More Years of Service at Retirement  
for the Period July 1, 2014 through June 30, 2019**

<b>Age</b>	<b>Exposures</b>	<b>Actual</b>	<b>Actual Rate</b>	<b>Proposed Rate</b>
<50	1	1	100.00%	100.00%
50	9	9	100.00%	100.00%
51	18	18	100.00%	100.00%
52	20	20	100.00%	100.00%
53	19	18	94.74%	100.00%
54	17	17	100.00%	100.00%
55	3	1	33.33%	100.00%
56	3	2	66.67%	100.00%
57	2	1	50.00%	100.00%
58	1	0	0.00%	100.00%
59	1	1	100.00%	100.00%
60	1	0	0.00%	100.00%
61	2	0	0.00%	100.00%
62	2	2	100.00%	100.00%
63	0	0	0.00%	100.00%
64	0	0	0.00%	100.00%
65	0	0	0.00%	100.00%
<b>Total*</b>	<b>98</b>	<b>89</b>	<b>90.82%</b>	<b>100.00%</b>

\*Total excludes ages less than 50 and ages over 65.

# Retirement Assumption

## *Recommendations*

- Participants with less than 30 years of service:
  - Introduce age-based table with same rates for males and females
- Participants with 30 or more years of service:
  - Maintain 100% assumption at unreduced retirement
- Changes in current and proposed assumed retirement rates are shown on slide 29.
- Graphs 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 proposed retirement rates. Previously, all participants were assumed to retire upon reaching unreduced retirement eligibility.

Proposed Rate	
Age	Less than 30 Years of Service
Under 50	2%
50	3%
51	4%
52	6%
53	15%
54	30%
55	50%
56	30%
57 – 60	15%
61	25%
62	75%
63 – 70	100%

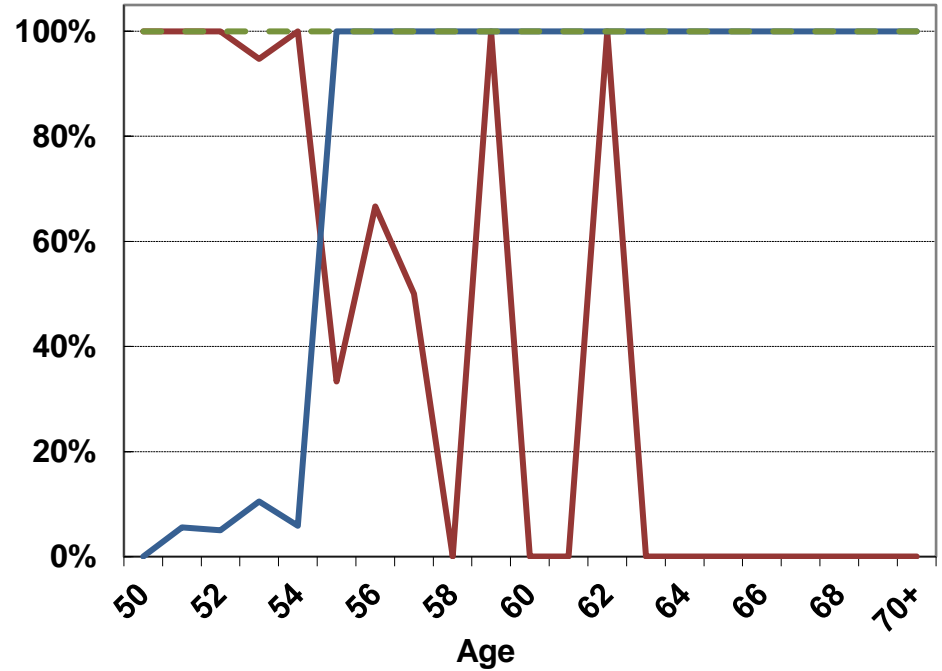
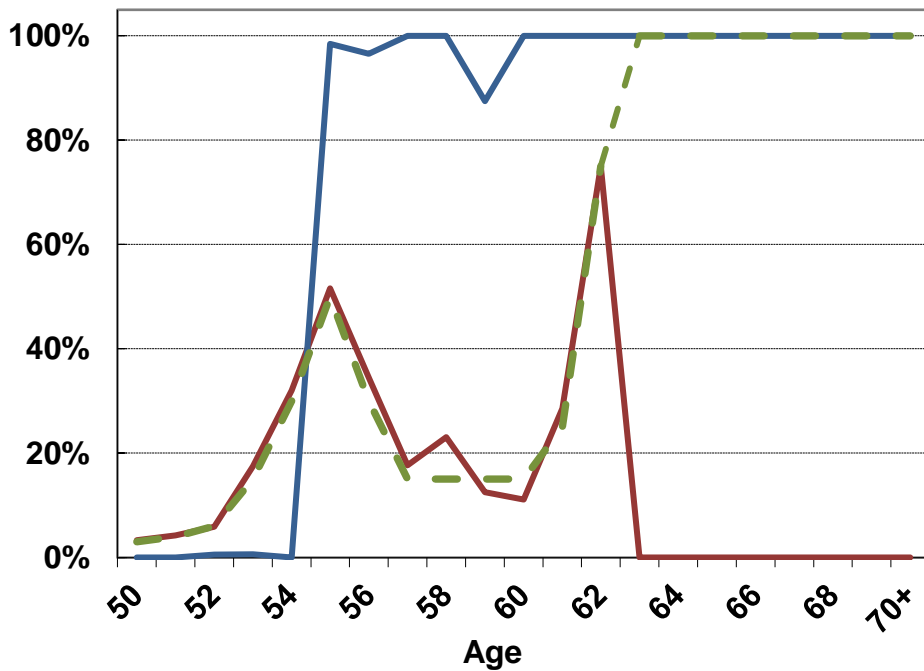
# Retirement Assumption – Graphs of Actual, Expected, and Proposed Assumptions

Less Than 30 Years of Service

30 or More Years of Service

Actual Expected Proposed

Actual Expected Proposed



# Spousal Assumptions

## *Current Assumption*

- The marital status of active participants hired prior to September 1, 2011 is based on their contribution rate. Participants hired after August 31, 2011 are assumed to be unmarried.
- Males are assumed to be three years older than their female spouses.

## *Findings*

- The beneficiaries of male participants were about two years younger, while the beneficiaries of female participants were about one year older.

## *Recommendations*

- **Hired prior to September 1, 2011:** No change – continue to base assumption on active participant contribution rate. Assume 75% of terminated vested participants are married if contribution rate prior to termination not available.
- **Hired after August 31, 2011:** No change - assume all participants are not married
- Modify the spousal age assumption for male participants to assume female spouses are two years younger.
- Modify the spousal age assumption for female participants to assume male spouses are one year older.





# Refund of Employee Contributions Assumption

## ***Current Assumption***

- No participants are assumed to elect a refund of their employee contributions

## ***Findings***

- 94.5% of participants took a refund of their employee contributions

## ***Recommendations***

- Assume 95% of terminated participants will take a refund of their employee contributions.



# 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***

- **Hired prior to September 1, 2011:**
  - Sick Leave Pay: Introduce load of 3.00% to retirement benefits.
  - Unused Sick Leave Service at Retirement: Introduce assumption to add an additional 0.50 years of service to total service (prior to application of maximum caps) for calculation in retirement benefits.
- **Hired after August 31, 2011:** No adjustment for sick leave pay or unused sick leave service is reflected in calculation of retirement benefits.

# Accumulated Vacation Pay Assumption

## ***Current Assumption***

- 90 days of vacation leave are included which then is used to adjust final average pay

## ***Findings***

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

## ***Recommendations***

- **Hired prior to September 1, 2011:** Increase retirement benefits by a 7.50% load
- **Hired after August 31, 2011:** Increase retirement benefits by a 2.25% load

# Actuarial Certification

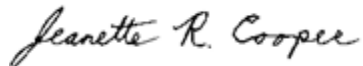
The actuarial experience review of demographic assumptions other than mortality for the City of Atlanta Police Officers' Pension Fund was performed under the supervision of Jeanette R. Cooper, FSA, FCA, MAAA, EA, with the assistance of Ben Kirkland and Jody Martin.

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.

Segal developed the proposed assumptions. The liability and cost results under the current and proposed assumptions were provided by Southern Actuarial Services. Segal reviewed these results and determined that they are reasonable. 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 models generate a comprehensive set of results 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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Jeanette R. Cooper, FSA, FCA, MAAA, EA  
Vice President and Consulting Actuary

# Thank You!

**Jeanette R. Cooper, FSA, FCA, MAAA, EA**

Vice President and Actuary

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