

Section III – Demographic Assumptions

General Employees Eligible for Rule of 80

Age+Service Points	NUMBER OF SERVICE RETIREMENTS		
	Actual	Expected	Ratio of Actual to Expected
80	4	10	0.400
81	7	7	1.000
82	6	4	1.500
83	2	4	0.500
84	2	3	0.667
85	4	2	2.000
86	1	3	0.333
87	0	2	0.000
88	2	2	1.000
89	5	2	2.500
90	3	2	1.500
SUBTOTAL	36	41	0.878
91 & Over	3	5	0.600
TOTAL	39	46	0.848



Section III – Demographic Assumptions

COMPARISON OF ACTUAL AND EXPECTED SERVICE RETIREMENTS

Uniformed Officers Not Eligible for Rule of 80

AGE	NUMBER OF SERVICE RETIREMENTS		
	Actual	Expected	Ratio of Actual to Expected
55	1	2	0.500
56	2	1	2.000
57	1	1	1.000
58	0	0	N/A
59	0	0	N/A
SUBTOTAL	4	4	1.000
60 & Over	3	10	0.300
TOTAL	7	14	0.500

Uniformed Officers Eligible for Rule of 80

Age+Service Points	NUMBER OF SERVICE RETIREMENTS		
	Actual	Expected	Ratio of Actual to Expected
80	5	2	2.500
81	1	2	0.500
82	0	0	N/A
83	0	0	N/A
84	0	0	N/A
85 & Over	1	0	N/A
TOTAL	7	4	1.750

For Uniformed Officers during the study period, there were only 14 service retirements observed. This is not sufficient experience to be relied upon as fully credible. Therefore **we recommend no changes to the rates of retirement for this group at this time.**

Because there are only a small number of active Plan 4022 members left in the Plan, **we recommend making no changes to the present rates of service retirement for this group.**



Section III – Demographic Assumptions

RATES OF MORTALITY

COMPARISON OF ACTUAL AND EXPECTED CASES OF POST-RETIREMENT DEATHS FOR SERVICE RETIREMENTS AND BENEFICIARIES

CENTRAL AGE OF GROUP	NUMBER OF POST-RETIREMENT DEATHS					
	MALES			FEMALES		
	Actual	Expected	Ratio of Actual to Expected	Actual	Expected	Ratio of Actual to Expected
	SERVICE RETIREMENTS AND BENEFICIARIES					
50	0	0	N/A	0	0	N/A
55	1	2	0.500	0	0	N/A
60	6	4	1.500	1	1	1.000
65	7	7	1.000	0	2	0.000
70	6	9	0.667	1	4	0.250
75	8	11	0.727	4	5	0.800
80	2	12	0.167	4	4	1.000
85	3	10	0.300	1	1	1.000
90	3	5	0.600	1	1	N/A
95+	1	1	1.000	0	0	N/A
TOTAL	37	61	0.607	12	18	0.667

The current basis for rates of post-retirement mortality for service retirements and beneficiaries is the RP-2000 Combined Mortality Table set forward four years. This is a static mortality table selected with the previous experience study to anticipate some margin for improved mortality. There have been significant improvements in longevity in the past, although there are different opinions about future expectations.

For service retirements and beneficiaries over the study period, the overall number of deaths was less than expected for both males and females. However, this data is not sufficiently large enough for the experience to be relied upon as fully credible.



Section III – Demographic Assumptions

Since Marietta’s data is not sufficiently large enough, we considered the mortality experience by the largest General Employees and Uniformed Officers Plan in the State, the Employees’ Retirement System of Georgia (ERS), in our analysis. This is a much larger retirement system with significantly more mortality experience and it is reasonable to think that the Consolidated Retirement Plan would have similar patterns of mortality. ERS currently uses the RP-2000 Combined Mortality Table projected to 2025 with projection scale BB set forward 2 years for both males and females. This is a static mortality table with a margin for future mortality improvements. We recommend using a similar approach, but use the updated family of mortality tables, the RP-2014 Mortality Tables, that were developed a few years ago.

After careful analysis of the State’s and City’s mortality experience, we recommend that the rates of post-retirement mortality for service retirements and beneficiaries be revised to the RP-2014 Total Mortality Table projected to 2022 with projection scale MP-2018. We further recommend that rates be set forward 2 years for males and 1 year for females. This is a static mortality table with a built in margin for improved mortality in the future.

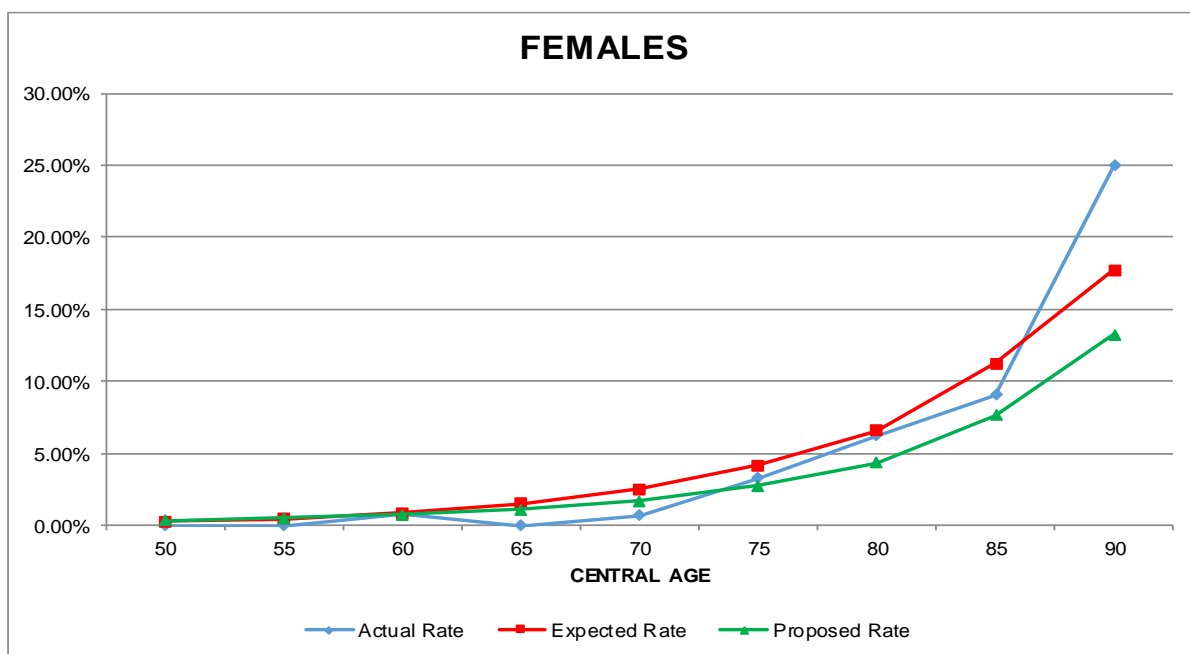
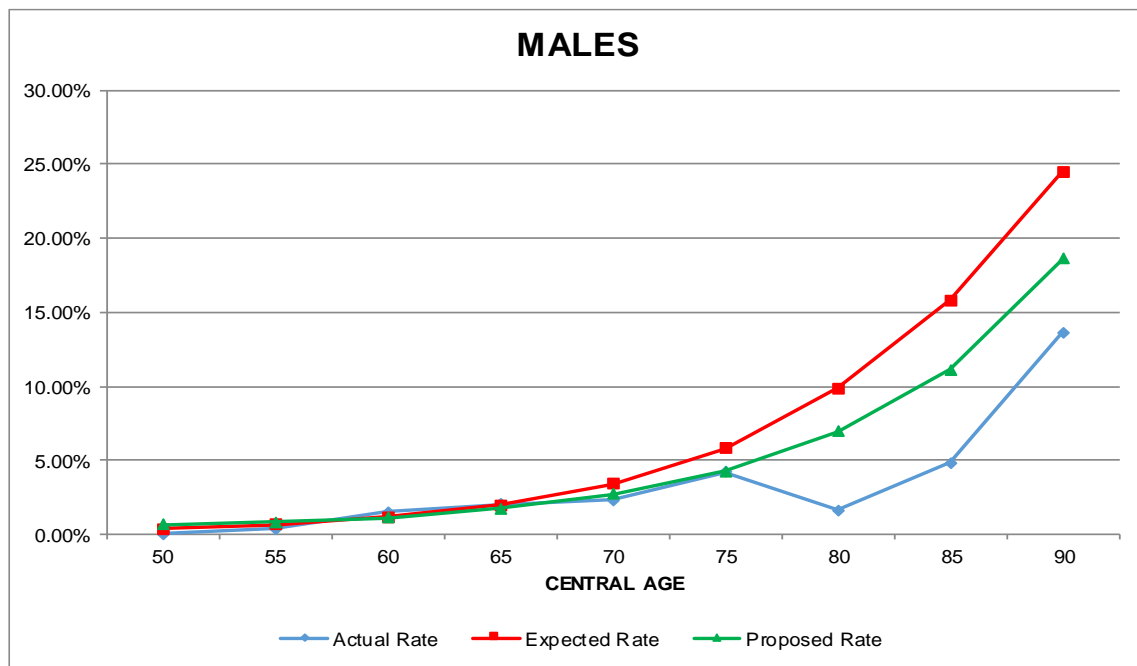
This new mortality table increases life expectancy for members of the Consolidated Retirement Plan by over 2 years from the prior mortality table. The chart below compares the life expectancy of a retired member at age 65:

Age 65 Member	Male	Female
Current Mortality Assumption	79.6 years	82.0 years
Proposed Mortality Assumption	81.6 years	84.8 years



Section III – Demographic Assumptions

The following graphs show a comparison of the present, actual and proposed rates of post-retirement deaths for service retirements and beneficiaries.





Section III – Demographic Assumptions

Other Mortality Tables

For disability retirements during the study period, there were only 8 deaths observed. This is not sufficient experience to be relied upon as fully credible. **We recommend adopting the RP-2014 Disabled Mortality Table projected to 2022 with Scale MP-2018.**

During the study period, only 7 pre-retirement deaths were observed. This is also not sufficient experience to be relied upon as fully credible. **We recommend adopting the RP-2014 Total Mortality Table and projected to 2022 with projection MP-2018 with rates set forward 2 years for males and 1 year for females.**



Section III – Demographic Assumptions

RATES OF SALARY INCREASE

**COMPARISON OF ACTUAL AND EXPECTED SALARIES
OF ACTIVE MEMBERS**

General Employees

YEARS OF SERVICE	SALARIES AT END OF YEAR		
	Actual	Expected	Ratio of Actual to Expected
Less than 1	\$ 3,394,061	\$ 3,414,438	0.994
1-5	20,128,484	20,277,706	0.993
6-10	21,296,627	21,613,564	0.985
11-15	16,885,053	17,149,083	0.985
16-20	12,905,020	13,097,681	0.985
21-25	6,281,666	6,385,342	0.984
26-30	6,407,425	6,526,685	0.982
31-35	2,347,634	2,380,767	0.986
36 & Over	778,149	784,195	0.992
TOTAL	\$ 90,424,119	\$ 91,629,461	0.987

Uniformed Officers

YEARS OF SERVICE	SALARIES AT END OF YEAR		
	Actual	Expected	Ratio of Actual to Expected
Less than 1	\$ 1,244,493	\$ 1,254,419	0.992
1-5	13,445,794	13,592,264	0.989
6-10	14,781,921	14,847,976	0.996
11-15	11,209,348	11,321,774	0.990
16-20	9,190,422	9,210,368	0.998
21-25	5,979,039	6,043,809	0.989
26 & Over	2,710,610	2,731,684	0.992
TOTAL	\$ 58,561,627	\$ 59,002,294	0.993



Section III – Demographic Assumptions

Over the study period, actual rates of salary increase were in general lower than expected at all levels of service. In general, across many retirement Plans, the recent trend has been lower rates of salary increases. However, increases for the Plan in the most recent three years were significantly higher than increases in the first two years of the study period. This suggests that, while lower assumed rates of salary increases are justified, we should be cautious about over-reacting. **We recommend that the Plan slightly lower the rates of salary increases at this time and if the trend continues in the next experience study, we will make further adjustments.**

The following table shows a comparison between the present and proposed rates of salary increases.

COMPARATIVE RATES OF SALARY INCREASES **General Employees**

SALARY INCREASE RATES			
AGE	Present	YEARS OF SERVICE	Proposed
20	12.62%	Less than 1	6.50%
25	8.62%	1-5	6.00%
30	7.27%	6-10	5.00%
35	6.44%	11-15	4.60%
40	5.83%	16-20	4.25%
45	5.35%	21-25	4.00%
50	4.96%	26 & Over	4.00%

Uniformed Officers

SALARY INCREASE RATES			
AGE	Present	YEARS OF SERVICE	Proposed
20	6.50%	Less than 1	5.00%
25	5.25%	1-5	4.50%
30	4.75%	6-10	4.25%
35	4.50%	11-15	4.00%
40	4.27%	16-20	3.80%
45	4.10%	21-25	3.50%
50	4.00%	26 & Over	3.50%



Section III – Demographic Assumptions

**COMPARISON OF ACTUAL AND EXPECTED SALARIES OF ACTIVE MEMBERS
BASED ON PROPOSED RATES**

General Employees

YEARS OF SERVICE	SALARIES AT END OF YEAR		
	Actual	Expected	Ratio of Actual to Expected
Less than 1	\$ 3,394,061	\$ 3,403,629	0.997
1-5	20,128,484	20,191,362	0.997
6-10	21,296,627	21,508,535	0.990
11-15	16,885,053	17,039,777	0.991
16-20	12,905,020	13,015,682	0.991
21-25	6,281,666	6,338,433	0.991
26-30	6,407,425	6,473,750	0.990
31-35	2,347,634	2,367,639	0.992
36 & Over	778,149	781,153	0.996
TOTAL	\$ 90,424,119	\$ 91,119,960	0.992

Uniformed Officers

YEARS OF SERVICE	SALARIES AT END OF YEAR		
	Actual	Expected	Ratio of Actual to Expected
Less than 1	\$ 1,244,493	\$ 1,251,078	0.995
1-5	13,445,794	13,546,131	0.993
6-10	14,781,921	14,814,632	0.998
11-15	11,209,348	11,303,138	0.992
16-20	9,190,422	9,197,198	0.999
21-25	5,979,039	6,022,065	0.993
26 & Over	2,710,610	2,723,572	0.995
TOTAL	\$ 58,561,627	\$ 58,857,814	0.995



Section III – Demographic Assumptions

OTHER ASSUMPTIONS

ADMINISTRATIVE EXPENSE LOAD: Currently, estimated budgeted administrative expenses of 0.37% of payroll are added to the normal cost rate. Over the study period actual administrative expenses as a percentage of payroll have averaged about 0.67% of payroll. **We recommend increasing the administrative expense load added to the normal cost rate from 0.37% to 0.50% of payroll.**

OPTION FACTORS: Per statute, optional payment forms are to be actuarially equivalent to the normal form of payment based on the mortality tables and investment rate of return (discount rate) used in the valuation. **We recommend that the factors be revised to be based on the proposed mortality table and recommended for the valuation.**



Appendix A – Recommended Rates

Table 1

RATES OF WITHDRAWAL FROM ACTIVE SERVICE

General Employees

YEARS OF SERVICE	RATE
0	24.0%
1	21.0%
2	16.5%
3	13.5%
4	12.5%
5	11.0%
6	9.0%
7	9.0%
8	9.0%
9	9.0%
10+	4.0%

Table 2

RATES OF WITHDRAWAL FROM ACTIVE SERVICE

Uniformed Officers

YEARS OF SERVICE	RATE
0	22.0%
1	10.0%
2	10.0%
3	9.0%
4	8.0%
5	8.0%
6	5.0%
7	5.0%
8	5.0%
9	5.0%
10+	3.0%



Appendix A – Recommended Rates

Table 3

RATES OF DISABILITY RETIREMENT FROM ACTIVE SERVICE

AGE	DISABILITY
26	0.00025
27	0.00025
28	0.00025
29	0.00025
30	0.00025
31	0.00025
32	0.00025
33	0.00030
34	0.00030
35	0.00035
36	0.00040
37	0.00050
38	0.00055
39	0.00060
40	0.00070
41	0.00075
42	0.00085
43	0.00095
44	0.00105
45	0.00115
46	0.00125
47	0.00135
48	0.00150
49	0.00170
50	0.00185
51	0.00200
52	0.00215
53	0.00245
54	0.00275
55	0.00300
56	0.00330
57	0.00360
58	0.00390
59	0.00420
60	0.00450
61	0.00480
62	0.00515



Appendix A – Recommended Rates

Table 4

RATES OF SERVICE RETIREMENT FROM ACTIVE SERVICE

General Employees Not Eligible for Rule of 80

AGE	RATE
55	0.1000
56	0.0500
57	0.0500
58	0.0500
59	0.0500
60	0.1000
61	0.1000
62	0.2500
63	0.2500
64	0.2500
65	0.2500
66	0.2500
67	0.2500
68	0.2500
69	0.2500
70	1.0000
71	1.0000
72	1.0000
73	1.0000
74	1.0000
75	1.0000



Appendix A – Recommended Rates

Table 5

RATES OF SERVICE RETIREMENT FROM ACTIVE SERVICE

General Employees Eligible for Rule of 80

AGE+ SERVICE	RATE
80	0.3500
81	0.3500
82-90	0.2000

Table 6

RATES OF SERVICE RETIREMENT FROM ACTIVE SERVICE

Uniformed Officers Not Eligible for Rule of 80

AGE	STANDARD RATE
55	0.2000
56	0.1000
57	0.1000
58	0.1000
59	0.1000
60	1.0000

Table 7

RATES OF SERVICE RETIREMENT FROM ACTIVE SERVICE

Uniformed Officers Eligible for Rule of 80

AGE+ SERVICE	RATE
80	0.4000
81	0.3000
82-90	0.3000



Appendix A – Recommended Rates

Table 8
RATES OF ANTICIPATED SALARY INCREASES
General Employees

YEARS OF SERVICE	RATES OF INCREASE
< 1	6.50%
1-5	6.00%
6-10	5.00%
11-15	4.60%
16-20	4.25%
21-25	4.00%
26+	4.00%

Table 9
RATES OF ANTICIPATED SALARY INCREASES
Uniformed Officers

YEARS OF SERVICE	RATES OF INCREASE
< 1	5.00%
1-5	4.50%
6-10	4.25%
11-15	4.00%
16-20	3.80%
21-25	3.50%
26+	3.50%