CITY OF NAPERVILLE
FIREFIGHTERS' PENSION FUND

ACTUARIAL EXPERIENCE STUDY

June 25, 2019

Ms. Rachel Mayer
Finance Director
City of Naperville
Naperville, IL 60540

Re: Experience Study – City of Naperville Firefighters' Pension Fund

Dear Ms. Mayer:

As requested, we have performed an experience study determined as of January 1, 2018. In the course of the analysis, we compiled plan experience from May 1, 2012 through December 31, 2017. While we cannot verify the accuracy of all of the information provided, the supplied information was reviewed for consistency and reasonableness. As a result of this review, we have no reason to doubt the substantial accuracy of the information and believe it has produced appropriate results.

The purpose of this study is to review the current actuarial assumptions and methods to determine which changes, if any, are necessary in order to achieve the objective of developing costs that are stable, predictable, and represent our best estimate of anticipated experience.

It is important to remember that the ultimate cost of your retirement plan is independent of any actuarial assumptions or methods utilized throughout the valuation process. This cost will be the sum of the benefits paid from the fund and the administrative expenses incurred, less any net investment gains received.

The specific assumptions and methods investigated throughout the remainder of this study are as follows:

- Investment Return
- Salary Increases
- Payroll Growth
- Mortality Tables
- Retirement Rates
- Withdrawal Rates
- Disability Rates

The balance of this Report presents details of the experience analysis. In addition, the report also contains the corresponding actuarial impact on the City's funding requirements and Unfunded Actuarial Accrued Liability (UAAL) for any proposed changes.

The undersigned is familiar with the immediate and long-term aspects of pension valuations and meets the Qualification Standards of the American Academy of Actuaries necessary to render the actuarial opinions contained herein. All of the sections of this report are considered an integral part of the actuarial opinions.

To our knowledge, no associate of Foster & Foster, Inc. performing analysis on the program has any direct financial interest or indirect material interest in the City of Naperville, nor does anyone at Foster & Foster, Inc. act as a member of the Board of Trustees of the City of Naperville Firefighters' Pension Fund. Thus, there is no relationship existing that might affect our capacity to prepare and certify this report.

If there are any questions, concerns, or comments about any of the items contained in this report, please contact us at 630-620-0200.

Respectfully submitted,

Foster & Foster, Inc.

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By: 
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Enclosures

ACTUARIAL STANDARDS OF PRACTICE

Background

The Actuarial Standards Board has provided coordinated guidance through a series of Actuarial Standards of Practice (ASOP) for measuring pension obligations and determining pension plan costs or contributions. The ASOPs that apply specifically to valuing pensions are as follows:

- ASOP No. 4, *Measuring Pension Obligations and Determining Pension Plan Costs or Contributions*, which ties together the standards shown below, provides guidance on actuarial cost methods, and addresses overall considerations for measuring pension obligations and determining plan costs or contributions

- ASOP No. 27, *Selection of Economic Assumptions for Measuring Pension Obligations*

- ASOP No. 35, *Selection of Demographic and Other Noneconomic Assumptions for Measuring Pension Obligations*

- ASOP No. 44, *Selection and Use of Asset Valuation Methods for Pension Valuations*

- ASOP No. 51, *Assessment and Disclosure of Risk Associated with Measuring Pension Obligations and Determining Pension Plan Contributions*

Please note that the contents displayed throughout the remainder of this report are in compliance and consistent with the above-mentioned Actuarial Standards of Practice. When applicable, further details of the ASOP associated with the reviewed actuarial assumption will be provided in the experience analysis, which is the basis for the remainder of the report.

Additional Required Communications

Please keep in mind that future actuarial measurements may differ significantly from current measurements due to such factors as the following:

- Plan experience differing from that anticipated by the economic or demographic assumptions
- Changes in demographic assumptions
- Increases or decreases expected as part of the natural operation of the methodology used
- Changes in plan provisions or applicable law

The data used for purposes of this report was compiled from previous actuarial valuations, unless otherwise indicated.

ASOP No. 51, *Assessment and Disclosure of Risk Associated with Measuring Pension Obligations and Determining Pension Plan Contributions,* states that the actuary should identify risks that, in the actuary's professional judgment, may reasonably be anticipated to significantly affect the plan's future financial condition.

Throughout this report, actuarial results are determined under various assumption scenarios. These results are based on the premise that all future plan experience will align with the plan's actuarial assumptions; however, there is no guarantee that actual plan experience will align with the plan's assumptions. Whenever possible, the recommended assumptions in this report reflect conservatism to allow for some margin of unfavorable future plan experience. However, it is still possible that actual plan experience will differ from anticipated experience in an unfavorable manner that will negatively impact the plan's funded position.

Below are examples of ways in which plan experience can deviate from assumptions and the potential impact of that deviation. Typically, this results in an actuarial gain or loss representing the current-year financial impact on the plan's unfunded liability of the experience differing from assumptions; this gain or loss is amortized over a period of time determined by the plan's amortization method. When assumptions are selected that adequately reflect plan experience, gains and losses typically offset one another in the long term, resulting in a relatively low impact on the plan's contribution requirements associated with plan experience. When assumptions are too optimistic, losses can accumulate over time and the plan's amortization payment could potentially grow to an unmanageable level.

- Investment Return: When the rate of return on the Actuarial Value of Assets falls short of the assumption, this produces a loss representing assumed investment earnings that were not realized.

- Salary Increases: When a plan participant experiences a salary increase that was greater than assumed, this produces a loss representing the cost of an increase in anticipated plan benefits for the participant as compared to the previous year. The total gain or loss associated with salary increases for the plan is the sum of salary gains and losses for all active participants.

- Payroll Growth: The plan's payroll growth assumption, if one is used, causes a predictable annual increase in the plan's amortization payment in order to produce an amortization payment that remains constant as a percentage of payroll if all assumptions are realized. If payroll does not increase according to the plan's payroll growth assumption, the plan's amortization payment can increase significantly as a percentage of payroll even if all assumptions other than the payroll growth assumption are realized.

- Demographic Assumptions: Actuarial results take into account various potential events that could happen to a plan participant, such as retirement, termination, disability, and death. Each of these potential events is assigned a liability based on the likelihood of the event and the financial consequence of the event for the plan. Accordingly, actuarial liabilities reflect a blend of financial consequences associated with various possible outcomes (such as retirement at one of various possible ages). Once the outcome is known (e.g. the participant retires) the liability is adjusted to reflect the known outcome. This adjustment produces a gain or loss depending on whether the outcome was more or less favorable than other outcomes that could have occurred.

Economic Assumptions

ASOP No. 27, *Selection of Economic Assumptions for Measuring Pension Obligations,* provides guidance to actuaries in selecting (including giving advice on selecting) economic assumptions – primarily investment return, discount rate, and salary scale – for measuring obligations under defined benefit pension plans.

Throughout the remainder of this section, we have used the standards set forth in ASOP No. 27 as a guideline for reviewing and if applicable, selecting proposed changes to the following economic actuarial assumptions:

- Investment Return
- Salary Increases
- Payroll Growth

Please keep in mind that ASOP No. 27 states that "the best an actuary can do is to use professional judgment to estimate possible future economic outcomes based on past experience and future expectations, and to select assumptions based upon that application of professional judgment."

Investment Return

The assumed rate of investment return is currently 7.00% per year compounded annually, net of investment related expenses. We believe that the decision to modify the investment return assumption shall be made based upon input from your investment consultant, reflecting any significant changes to the asset allocation, and their judgment of capital market returns. Keep in mind, however, that this assumption should reflect the best estimate of investment returns expected to be realized until the last participant in the plan dies, which could be more than 50 years from now.

In determining the investment return assumption, one determines the average rate of return the Fund expects to achieve based on the target allocation along with the corresponding capital market assumptions. Foster & Foster is an actuarial firm, and we do not have the required expertise to produce our own capital market assumptions. For purposes of illustrating this concept, we have included information disclosed in the GASB 67 report provided by your investment consultant, shown on the following page. Please keep in mind this return is net of investment related expenses, as well as the 2.30% inflation projected by the investment advisor, supporting an expected return of approximately 6.58% using a very simplistic weighted average calculation. This would suggest that the 7.00% assumption currently utilized may need to be revisited considering these long-term expectations.

Target Asset Allocation vs. Capital Market Assumptions [1]
December 31, 2017

Asset Class	Target Allocation	Long Term Expected Real Rate of Return	Expected Investment Return
Fixed Income	35%	2.10%	0.735%
U.S. Equity	35%	5.60%	1.960%
International Equity	15%	5.80%	0.870%
Real Estate-Core	10%	5.20%	0.520%
Global Tactical	5%	3.90%	0.195%
Total	**100%**		**4.28%**

[1] As provided by Marquette Associates for the December 31, 2017 GASB 67/68 disclosure.

Actual plan returns over the past approximate 7 years have averaged 6.93% per year and 6.60% over the past 3 years. The actual plan returns since May 1, 2011 are illustrated below:

Investment Return History
May 1, 2011 through December 31, 2017

Year Ending	Market Investment Return
12/31/2017	13.31%
12/31/2016	8.32%
12/31/2015	-3.20%
4/30/2015	6.00%
4/30/2014 [1]	10.59%
4/30/2013 [1]	10.21%
4/30/2012 [1]	1.81%
3 Year Geometric Average	**6.60%**
7 Year Geometric Average	**6.93%**

[1] Market returns were collected from reports issued by the prior actuary, Timothy W. Sharpe.

However, actual historical experience is not always a great predictor for future expectations of economic assumptions. As previously mentioned, we believe that the decision to modify the investment return assumption shall be made based upon input from your investment consultant.

We have determined the impact on the City funding requirements if the investment return assumption was decreased from the current 7.00% assumption to 6.90% or 6.75% per year:

Investment Rate	City Requirement	UAAL	Funded Ratio
7.00% (Current)	$8,939,980	$60,411,723	73.3%
6.90%	$9,292,066	$63,479,183	72.3%
6.75%	$9,830,829	$68,201,029	70.8%

Salary Increases

The salary increase assumption is used to project a participant's salary from the valuation date until the assumed retirement age and plays an important role in measuring individual pension costs and obligations. Salary increase assumptions are typically represented as a flat salary scale assumption or a service-based assumption. A flat salary scale assumption assumes that a participant will get the same rate of salary increase for all years of service, whereas a service-based table may assume different rates based on the participant's longevity with the plan.

Salary growth is comprised of three basic components:

- Merit increases
- Longevity increases
- Inflation increases

It is important to point out that there are several factors that affect individual salary increases including promotions, step increases, cost of living adjustments, etc. Currently, the valuation assumes a service-based table that varies from 12.00% at lower service points to 4.00% at higher service points. This table was based on the aggregate study of all Article 4 funds in Illinois performed by the Illinois Department of Insurance in 2012.

We analyzed the actual plan experience from May 1, 2012 through December 31, 2017 utilizing actual salary increases based on completed service at the time of each annual valuation. The table on the following page provides you with a summary of the actual history over this time period. In addition, we reviewed the latest bargaining agreement to confirm that the long-term assumptions would be reasonable during the shorter-term duration of the contract. Therefore, we are proposing to change the assumed rates of individual salary increases to the service-based rates shown in the "Proposed Assumption" column.

Individual Salary Increase Experience

May 1, 2012 through December 31, 2017

Service	Exposures	Actual Increase	Current Assumption	Proposed Assumption
0	44	8.47%	12.00%	9.00%
1	40	7.16%	11.00%	8.00%
2	26	8.32%	10.00%	7.00%
3	29	6.54%	8.50%	7.00%
4	28	7.06%	7.50%	7.00%
5	29	7.47%	6.50%	7.00%
6	30	7.88%	5.00%	7.00%
7	39	4.95%	5.00%	5.00%
8	41	2.15%	5.00%	5.00%
9	44	4.18%	5.00%	5.00%
10	33	3.65%	5.00%	5.00%
11	40	2.97%	5.00%	5.00%
12	46	3.11%	5.00%	4.50%
13	38	6.25%	5.00%	4.50%
14	38	4.38%	5.00%	4.50%
15	35	2.86%	5.00%	4.50%
16	36	3.52%	5.00%	4.00%
17	34	4.25%	5.00%	4.00%
18	42	2.57%	5.00%	4.00%
19	48	4.50%	5.00%	3.50%
20	44	4.58%	5.00%	3.50%
21	54	3.28%	5.00%	3.50%
22	53	3.54%	5.00%	3.50%
23	46	4.39%	5.00%	3.50%
24	28	4.48%	5.00%	3.50%
25	36	2.62%	5.00%	3.00%
26	28	2.94%	4.50%	3.00%
27	21	4.67%	4.50%	3.00%
28	12	3.96%	4.50%	3.00%
29	7	0.56%	4.50%	3.00%
30+	14	3.62%	4.00%	3.00%
Total	**1,083**	**4.38%**		

The impact of adopting the proposed salary increase table is shown below:

Salary Increases	City Requirement	UAAL	Funded Ratio
Current	$8,939,980	$60,411,723	73.3%
Proposed	$7,932,077	$54,262,809	75.3%

Payroll Growth

This assumption determines how the pay for all active participants in the fund will increase year over year. It should be less than the salary increase assumption since higher paid members retire and are replaced by lower paid new hires. This assumption is utilized to determine the annual payment on the unfunded actuarial accrued liability. A lower assumption will mean a higher amortization payment in the short term and faster paydown of the unfunded actuarial accrued liability. The idea of this assumption is that the amortization payment will be the same percentage of payroll each year if total payroll increases at the same rate as this assumption.

To prudently pay off the unfunded actuarial accrued liability, a lower assumption is desirable. This also avoids the potential of negative amortization where the unfunded actuarial accrued liability will increase in the short term because the amortization payment is not enough to cover the interest that accumulates on the unfunded each year.

Looking back at the historical payroll, we observe the following:

Payroll Growth History

May 1, 2012 through December 31, 2017

Year Ending	Payroll	Annualized Increase	Annualized Increase Over Time Period
12/31/2017	18,440,772	1.54%	2.31%
12/31/2016	18,160,302	-0.85%	
12/31/2015	18,315,408	0.65%	
4/30/2015	18,236,961	7.30%	
4/30/2014	16,996,274	2.80%	
4/30/2013	16,532,857	2.03%	
4/30/2012	16,204,588		

The current payroll growth assumption is 4.50%. While the immediate history suggests that a payroll growth assumption of something closer to 2.50% would be appropriate, we also must consider the inflation environment in which the payroll was determined. Our long-term inflation assumption is 2.50%, but lower rates of inflation were observed during the period considered in this study, based on changes in

the Consumer Price Index. Therefore, we suggest reducing the payroll growth assumption to no greater than 3.50%, which considers actual payroll growth experience and anticipated future inflation.

The City may wish to "phase in" this assumption change or reduce the payroll growth assumption in incremental steps over a period of years, e.g. 0.25% per year for 4 years. Under that approach, the impact of the incremental change can be approximated by dividing the full impact by the number of years that the assumption is being phased in. For example, if reducing the payroll growth assumption by 1.00% results in a $100,000 increase in City contribution requirement, then phasing in the 1.00% decrease over 4 years will result in an increase of approximately $25,000 in each of the 4 years ($100,000 divided by 4).

The impact of adopting the proposed payroll growth assumption is shown below:

Payroll Growth	City Requirement	UAAL	Funded Ratio
Current	$8,939,980	$60,411,723	73.3%
Proposed	$9,264,707	$60,411,723	73.3%

Demographic Assumptions

ASOP No. 35, Selection of Demographic and Other Noneconomic Assumptions for Measuring Pension Obligations, provides guidance to actuaries in selecting (including giving advice on selecting) demographic and other noneconomic assumptions for measuring obligations under defined benefit pension plans.

The following applicable assumptions will be reviewed:

- Mortality Tables
- Retirement Rates
- Withdrawal Rates
- Disability Rates

Generally, demographic assumptions are based on actual plan experience with additional considerations for current trends. ASOP No. 35 states "the actuary should use professional judgment to estimate possible future outcomes based on past experience and future expectations, and select assumptions based upon application of that professional judgment." ASOP No. 35 also states that "a reasonable assumption is one that is expected to approximately model the contingency being measured and is not anticipated to produce significant cumulative actuarial gains or losses…the actuary should not give undue weight to past experience when selecting demographic assumptions."

Demographic assumptions generally remain consistent over time, absent significant changes in plan provisions. Therefore, the best true indicator of future experience is past experience. For each assumption, this analysis compares actual experience for the studied time period to the current assumptions utilized for purpose of the annual valuation.

Note that actuarial assumptions reflect average experience over long periods of time. A change in actuarial assumptions generally results when experience over a period of years indicates a consistent pattern. Proposed changes to the demographic assumptions better reflect actual plan experience over the studied time period. The proposed changes also meet the objective of developing costs that are stable, predictable, and represent our best estimate of anticipated future experience.

Mortality Tables

The rate of mortality is the probability of death at a given age. While mortality is a contingency for both the active and retiree populations, it has the greatest cost implications for retirees. If retirees live longer than anticipated by the assumptions, benefits will be paid longer than expected and experience losses will develop. If retirees do not live as long as anticipated by the assumptions, experience gains will develop.

The actuarial profession has increasingly become more focused on the issue of future mortality improvement. Mortality rates have declined over time as advances in medical care have evolved. The extent of future mortality improvement will impact the magnitude of pension costs and liabilities for future benefit commitments. ASOP No. 35 discusses the importance of actuaries considering mortality improvements when measuring pension obligations. Specifically, an actuary should make and disclose a specific recommendation with respect to future mortality improvement after the measurement date. Mortality improvement can be accounted for with static or generational mortality tables. A static table includes a projection of the base mortality rates to a specific date or equivalently for a specific number of years. The same mortality rates at any given age apply to everyone. A generational table anticipates future improvements in mortality by using a different static mortality table for each year of birth, with the tables for later years of birth assuming lower mortality than the tables of earlier years of birth.

The current mortality assumption is:

- **Healthy Lives:** RP-2000 Combined Healthy Mortality with a blue-collar adjustment, projected to the valuation date with Scale BB.
- **Disabled Lives:** RP-2000 Disabled Retiree Mortality, projected to the valuation date with Scale BB.

It is assumed that 5% of active deaths are in the line of duty.

For a plan to develop a mortality table based solely on its own experience it must have hundreds of thousands of lives and thousands of deaths at each age and gender. During the time period observed, there have only been 5 deaths across both the active and inactive statuses. Therefore, adopting a standard publicly available mortality table will be necessary.

Given the recent release of a report by the Society of Actuaries on public pension mortality, we feel that these tables are the most representative of the population in question. The tables are referred to as Pub-2010 with a base year of mortality in 2010. These tables are the first to consider only public plan mortality experience, analyzing the data from over 78 public pension plans which included 46 million life-years of exposure and around 580,000 deaths. These tables are broken down into categories to better fit a given population, including Teachers, Public Safety and General Employees, all gender specific and

with various subgroups available. It is the Public Safety tables that we will focus on for this plan, specifically the following tables:

- **PubS-2010:** These tables include active employees, healthy retirees and contingent survivors, with gender specific rates for each category. They are amount-weighted mortality tables.
- **PubS-2010 for Disabled Retirees:** These tables are also amount-weighted observations of mortality, but only on the disabled population.

To address expected future mortality improvement, we recommend adjusting the above base tables using the MP-2018 projection table which is the most recent table available for mortality projection. We have examined the impact of projecting the table 5 years past the valuation date to incorporate some future improvement into the liabilities.

The impact of these changes to the assumed mortality is shown below:

Mortality Rates	City Requirement	UAAL	Funded Ratio
Current	$8,939,980	$60,411,723	73.3%
Proposed	$9,897,657	$69,024,112	70.6%

Retirement Rates

A retirement rate is the associated probability at a specific point in time that a participant will retire, given that they have attained the eligibility requirements for retirement. The associated cost due to retirement experience is determined by the age at which participants actually retire.

The current provisions for Normal Retirement are:

Tier 1: Age 50 and 20 years of Credited Service.
Tier 2: Age 55 and 10 years of Credited Service.

The eligibility provisions for Early Retirement are:

Tier 1: Age 60 and 10 years of Credited Service.
Tier 2: Age 50 and 10 years of Credited Service.

The valuation currently assumes the same retirement rates for both Tier 1 and Tier 2. The proposed rates for Tier 1 are developed looking at actual plan experience from May 1, 2012 to December 31, 2017. Since we have no retirement experience from Tier 2 to observe yet, we modified the proposed Tier 1 rates based on retirement eligibility differences to come up with a reasonable set of rates for Tier 2.

Note, we found that Naperville firefighters are retiring much earlier than the current retirement rates would suggest, with no firefighter working past the age of 62 during the timeframe observed. We assumed this pattern would continue in the future and assumed no retirements beyond the age of 62 in the valuation.

Retirement Experience
May 1, 2012 through December 31, 2017

Age	Exposed	Actual Retirements	Actual Retirement Rate	Current Retirement Rate	Proposed Retirement Rate (Tier 1)	Proposed Retirement Rate (Tier 2)
50	16	7	43.8%	14.0%	40.0%	5.0%
51	31	2	6.5%	14.0%	5.0%	5.0%
52	32	2	6.2%	14.0%	5.0%	5.0%
53	31	6	19.4%	14.0%	20.0%	10.0%
54	26	8	30.8%	20.0%	30.0%	10.0%
55	21	6	29.0%	20.0%	30.0%	40.0%
56	17	3	17.3%	20.0%	20.0%	20.0%
57	16	6	37.5%	20.0%	30.0%	30.0%
58	9	2	23.1%	20.0%	30.0%	30.0%
59	3	1	33.3%	20.0%	30.0%	30.0%
60	4	2	54.5%	25.0%	50.0%	50.0%
61	1	0	0.0%	25.0%	50.0%	50.0%
62	1	0	0.0%	25.0%	100.0%	100.0%
63	0	0	0.0%	33.0%	100.0%	100.0%
64	0	0	0.0%	33.0%	100.0%	100.0%
65	0	0	0.0%	50.0%	100.0%	100.0%
66	0	0	0.0%	50.0%	100.0%	100.0%
67	0	0	0.0%	50.0%	100.0%	100.0%
68	0	0	0.0%	50.0%	100.0%	100.0%
69	0	0	0.0%	50.0%	100.0%	100.0%
70	0	0	0.0%	100.0%	100.0%	100.0%
Total	**208**	**45**	**21.7%**			

The impact of this change to the assumed retirement age is shown below:

Retirement Rates	City Requirement	UAAL	Funded Ratio
Current	$8,939,980	$60,411,723	73.3%
Proposed	$9,534,223	$65,588,778	71.6%

Withdrawal Rates

The withdrawal rate, or termination rate, is the probability that a participant will separate employment from a cause other than disability, death, or retirement. Currently, the valuation utilizes an age-based table for termination rates. This table was based on the aggregate study of all Article 4 funds in Illinois performed by the Illinois Department of Insurance in 2012.

Overall, the actual incidence of withdrawal was lower than expected. Since May 1, 2012, there were 10 non-retirement terminations while approximately 16 were expected. Given this experience, we propose changing to the table in the updated Illinois Department of Insurance study issued in 2017, which also showed a lower level of termination experience in Article 4 funds.

The proposed changes to the withdrawal rates, if adopted, has the following funding impact:

Withdrawal Rates	City Requirement	UAAL	Funded Ratio
Current	$8,939,980	$60,411,723	73.3%
Proposed	$8,948,697	$60,265,433	73.3%

Disability Rates

The disability rate assumption is the probability that a member will become disabled while an active member in the plan. Currently, the valuation utilizes an age-based assumption for predicting the occurrence of future disabilities. Additionally, it is assumed that 90% of disablements are service related.

There have been 4 disabilities since May 1, 2012, while approximately 8 disablements were expected. Based on this experience, we propose changing to the table in the updated Illinois Department of Insurance study issued in 2017, which also showed a lower level of disability experience in Article 4 funds. In addition, we propose updating the percentage of disablements that are service related from 90% down to 80%, also consistent with the updated Illinois Department of Insurance study.

The proposed changes to the disability rates, if adopted, has the following funding impact:

Disability Rates	City Requirement	UAAL	Funded Ratio
Current	$8,939,980	$60,411,723	73.3%
Proposed	$8,870,208	$61,057,049	73.1%

Conclusion

As stated throughout the content of this report, we have recommended several changes to the actuarial assumptions utilized for purposes of completing the annual valuations. It is our belief that these changes reflect sound actuarial principles, are our best estimate of anticipated future experience, and will assist in achieving the objective of developing costs that are stable and predictable. Summarized below are the results with the changes in combination:

Combination	City Requirement	UAAL	Funded Ratio
Current	$8,939,980	$60,411,723	73.3%
Combination (7.00%)	$9,728,968	$68,305,933	70.8%
Combination (6.90%)	$10,105,804	$71,551,282	69.8%
Combination (6.75%)	$10,682,845	$76,551,344	68.4%

Below we have provided a summary of the impact on the City's funding requirements and the plan's UAAL for each of the proposed changes, if made independently of one another and if made in combination.

Description	City Requirement Increase/(Decrease)	UAAL Increase/(Decrease)	Funded Ratio
Current Assumptions	n/a	n/a	73.3%
6.90% Interest Rate	352,086	3,067,460	72.3%
6.75% Interest Rate	890,849	7,789,306	70.8%
Salary Scale	(1,007,903)	(6,148,914)	75.3%
Payroll Growth	324,727	0	73.3%
Mortality Tables	957,677	8,612,389	70.6%
Retirement Rates	594,243	5,177,055	71.6%
Withdrawal Rates	8,717	(146,290)	73.3%
Disability Rates	(69,772)	645,326	73.1%
Combination (7.00%)	788,988	7,894,210	70.8%
Combination (6.90%)	1,165,824	11,139,559	69.8%
Combination (6.75%)	1,742,865	16,139,621	68.4%