

CITY OF NORTH PORT  
FIREFIGHTERS' PENSION - LOCAL OPTION TRUST FUND

ACTUARIAL EXPERIENCE STUDY  
June 13, 2022



**FOSTER & FOSTER**  
ACTUARIES AND CONSULTANTS

June 10, 2022

Board of Trustees  
City of North Port  
Firefighters' Pension - Local Option Trust Fund

*Re: Actuarial Experience Study*

Dear Board:

The following report presents the results of an actuarial experience study of the actuarial assumptions and methods used for actuarial valuation purposes for the City of North Port Firefighters' Pension - Local Option Trust Fund. In the course of the analysis, we compiled plan experience from October 1, 2011 through September 30, 2021. While we cannot verify the accuracy of all the information provided, the supplied information used for performance of the annual actuarial valuations or compiled from prior year annual reports 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 report includes a review of demographic and economic experience, a comparison of this experience to current actuarial assumptions, our recommendations for consideration regarding changes in assumptions or methods to be effective for the October 1, 2022 actuarial valuation, and the estimated actuarial impact of these suggested changes. We believe implementing the recommend changes will assist in achieving 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 used 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. Future actuarial measurements may differ significantly from current measurements due to such factors as: plan experience differing from that anticipated by assumptions; changes in assumptions; increases or decreases expected as part of the natural operation of the methodology used (such as the end of an amortization period); changes in plan provisions or applicable law.

Please note the contents of this analysis and the October 1, 2021 actuarial valuation report are considered integral parts of the actuarial opinions. In reviewing the results presented in this study, it should be noted there are risks that may not be inherently apparent to the reader that should be carefully considered. For key risks, please see the Discussion of Risk section of the October 1, 2021 actuarial valuation report.

The actuarial measurements included in this report are based on actuarial asset values as of September 30, 2021 and would be different if market asset values were used instead of actuarial asset values.

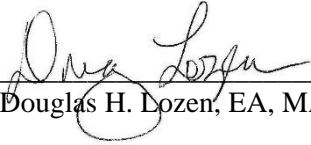
In performing the analysis, we used third-party software to model (calculate) the underlying liabilities and costs. These results are reviewed in the aggregate and for individual sample lives. The output from the software is either used directly or input into internally developed models to generate the costs. All internally developed models are reviewed as part of the process. As a result of this review, we believe that the models have produced reasonable results. We do not believe there are any material inconsistencies among assumptions or unreasonable output produced due to the aggregation of assumptions.

Foster & Foster does not provide legal, investment or accounting advice. Thus, the information in this report is not intended to supersede or supplant the advice or the interpretations of the plan or its affiliated legal, investing or accounting partners.

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

Respectfully submitted,

FOSTER & FOSTER INC.

  
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Douglas H. Dozen, EA, MAAA

  
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Kevin Peng, ASA, EA, MAAA

## ACTUARIAL STANDARDS OF PRACTICE

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The Actuarial Standards Board (ASB) is responsible for determining which actuarial activities are the best representations of generally accepted actuarial principles, and is also responsible for issuing guidance in the form of Actuarial Standards of Practice (ASOPs) to help actuaries in various practice areas deliver results and recommendations that are consistent with those representations. Generally speaking, ASOPs identify what the actuary should consider, document, and disclose when performing actuarial assignments.

The experience study and related measurements of benefit obligations for the plan are subject to the “coordinated guidance” provided in various ASOPs, including but not limited to:

- ❖ 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. 23, *Data Quality*
- ❖ ASOP No. 25, *Credibility Procedures*
- ❖ 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*
- ❖ ASOP No. 56, *Modeling*

This report refers to ASOPs by number (e.g. ASOP No. 4) throughout. It is important to keep in mind that this experience study report only reflects the guidance provided in the final releases of the above-mentioned ASOPs issued by the ASB on or before the date of this report. The results provided in this report reflect the requirements of, and are consistent with, the applicable above-mentioned Actuarial Standards of Practice. When applicable, details from the relevant ASOP will be provided in the report section associated with a particular analysis or topic.

## EXPERIENCE REVIEW SUMMARY

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Below is a summary of our key findings and suggested changes for your consideration. The remainder of the document provides details of our analysis, documents our suggestions, and determines the estimated corresponding actuarial impact.

- ❖ **Investment Return** – Based on the plan’s asset allocation and long-term expected rates of investment return by asset class provided by the plan’s investment advisor, we feel the long-term investment return assumption is currently supported and do not recommend any particular change to the assumed rate. In the summary section of this report, we have illustrated the impact of lowering the investment return assumption from 7.00% to 6.75% for informational purposes.
- ❖ **Salary Increases** – We recommend lowering the assumed salary increase for members with less than 10 years of Credited Service, while increasing the assumption for members with 20 or more years of Credited Service.
- ❖ **Mortality Rates** – Chapter 2015-157, Laws of Florida, mandates the Board to employ the mortality tables used in either of the two most recently published actuarial valuation reports of the Florida Retirement System (FRS). Given that the mortality assumption utilized in the October 1, 2021 actuarial valuation matches the rates for the July 1, 2021 FRS valuation, no change to the mortality assumption is recommended at this time.
- ❖ **Retirement Rates** – We recommend adjustments to normal retirement rates, generally lower than previously assumed. Additionally, we recommend a 0% assumption for Early Retirements with less than 15 years of Credited Service and a slight increase in the assumed rates for Early Retirements with 20 or more years of Credited Service.
- ❖ **Withdrawal Rates** – We recommend adjustments to the assumed rates of withdrawal, resulting in generally fewer assumed terminations for members with more than 10 years of Credited Service. We additionally recommend changing to a strict service-based table.
- ❖ **Disability Rates** – We recommend no change to the current disability rates.

## REVIEW OF ECONOMIC ASSUMPTIONS

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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, post-retirement benefit increases, inflation, and compensation increases – 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 recommended changes to the following economic actuarial assumptions and methods:

- ❖ Investment Return
- ❖ Salary Increases

Please keep in mind that ASOP No. 27 (and ASOP No. 35) recognizes a range of reasonable assumptions and states “the actuary should recognize the uncertain nature of the items for which assumptions are selected and, as a result, may consider several different assumptions reasonable for a given measurement. The actuary should also recognize that different actuaries will apply different professional judgment and may choose different reasonable assumptions. As a result, a range of reasonable assumptions may develop both for an individual actuary and across actuarial practice.”

### **Investment Return**

The investment return assumption is critical in the actuarial valuation since it determines the portion of assets that will come from investment income rather than contributions from the plan sponsor and its participants. The investment return assumption should be determined based on the long-term rate of return (net of investment-related fees) the plan expects to earn over the life of the plan. 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 professionals, 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 50+ years from now.

ASOP No. 27 provides that in developing a reasonable assumption, the actuary may consider a broad range of data and other inputs, including the judgment of investment professionals. The data that may be considered includes: current yields to maturity of fixed income securities; forecasts of inflation, GDP growth, and total returns for each asset class; historical and current investment data (including real and nominal returns); the inflation and inflation risk components implicit in the yield of inflation-protected securities; dividend yields, earnings yields, real estate capitalization rates; and historical plan performance.

For purposes of reviewing the investment return assumption, a building block approach is often used, whereby the actuary determines the weighted average expected real rate of return for the plan’s target investment portfolio and then adjusts for inflation and expenses not reflected in the real rates of return. Foster & Foster is an actuarial firm, and we do not have the required expertise to produce our own capital market assumptions. For this reason, ASOP No. 27 addresses that the actuary will often collect capital market assumptions from external sources in order to determine the forward-looking expected arithmetic and/or geometric returns. The capital market assumptions can be broadly classified into the following categories: expected returns by asset class; standard deviation by asset class; and correlation coefficients between asset classes.

ASOP No. 27 states “to determine the forward-looking expected geometric return for an entire portfolio, the actuary should take the weighted average of the forward-looking expected arithmetic return for each of the asset classes and adjust such determination to reflect the variance of the entire portfolio...in general, a forward-looking expected geometric return for an asset class can be approximated by taking the forward-looking expected arithmetic return and subtracting one-half of the variance of the asset class”. Below, we have employed this technique in order to review the current investment return assumption used in actuarial valuations.

*Capital Market Assumptions – Board Investment Advisor*

In order to complete the GASB 67/68 disclosures each year, the Board’s investment advisor provides our firm with a broad target asset allocation (based on guidance from GASB) along with their corresponding forward-looking expected arithmetic returns by asset class. Below is the excerpt from the most recent GASB 67/68 disclosures, based on a September 30, 2021 measurement date.

Asset Class	(1) Target Allocation	(2) Expected Arithmetic Return by Asset Class (Long-Term)	(3) = (1) x (2) Expected Portfolio Arithmetic Return (Long-Term)
Domestic Equity	47.50%	7.50%	3.56%
International Equity	10.00%	8.50%	0.85%
Broad Market Fixed Income	22.50%	2.50%	0.56%
Global Fixed Income	5.00%	3.50%	0.18%
Real Estate	10.00%	4.50%	0.45%
GTAA	<u>5.00%</u>	3.50%	<u>0.18%</u>
Total Real	100.00%		5.78%
Assumed Inflation			<u>2.50%</u>
Total Nominal			8.28%

As noted above, the expected long-term geometric return can be approximated by subtracting one-half of the variance (volatility). Since GASB does not require inclusion of the expected risk by asset class, we are not able to determine the portfolio variance without requesting additional information from the investment advisor. However, you can see that the expected long-term arithmetic return of 8.28% is 1.28% greater than the current investment return of assumption of 7.00%, leaving room for portfolio variance of around 2.56%.

Based on the relevant data discussed in this section, we believe that the current 7.00% investment return assumption is reasonable and do not recommend any change at this time. However, it should be noted that many plans across the State are considering lowering their investment return assumption. In the summary section of this report, we have illustrated the impact of lowering the investment return assumption from 7.00% to 6.75% per year for informational purposes.

## **Salary Increases**

The salary increase assumption is used to project a participant's compensation while actively employed, from the valuation date until the assumed retirement age. This allows the actuary to estimate the pension benefit the member will be entitled to at retirement. Generally, a participant's compensation will increase over the long term in accordance with inflation, productivity growth, and merit adjustments. Currently, the valuation utilizes a service-based salary scale assumption.

We recommend amending the assumed rates of salary increases to better align with actual plan experience over the last ten years as provided below:

Age	Count	Salary (Prior Year)	Actual Salary	Expected Salary	Actual Increase	Expected Increase	Proposed Increase
<10	289	18,520,325	19,305,755	19,816,747	4.24%	7.00%	5.50%
10-14	145	12,256,617	12,895,474	12,930,731	5.21%	5.50%	5.50%
15-19	68	6,125,445	6,336,123	6,431,717	3.44%	5.00%	5.00%
20+	47	4,522,256	4,773,298	4,725,757	5.55%	4.50%	5.00%
<Total>	549	41,424,643	43,310,650	43,904,952	4.55%	5.99%	5.37%

The impact of only the recommended changes to the salary increase assumption is an increase in the funding requirements and UAAL, due solely to the recommended increase in the assumption from 4.50% to 5.00% per year for members with at least 20 years of Credited Service.

Salary Increases	Required City/State Contribution	Increase / (Decrease)	UAAL	Funded Ratio
Current	862,550		1,759,969	97.1%
Proposed	877,004	14,454	2,282,802	96.3%



## REVIEW OF 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.

Throughout the remainder of this section, we have used the standards set forth in ASOP No. 35 as a guideline for reviewing and if applicable, selecting recommended changes to the following demographic and other noneconomic actuarial assumptions:

- ❖ Retirement Rates
- ❖ Withdrawal Rates
- ❖ Disability Rates

Generally, demographic assumptions are based on actual plan experience with additional consideration 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. For any given measurement, the actuary will typically be able to identify two or more reasonable assumptions for the same contingency.”

Demographic trends 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 used for purposes of the actuarial valuations. Note that actuarial assumptions reflect average experience over long periods of time. A change in actuarial assumptions generally occurs when experience over a period of years indicates a consistent pattern.

### Retirement Rates - Early

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 retire (or enter DROP). The current eligibility requirement for Early Retirement is the attainment of age 50 and completion of 10 years of service. Currently, the valuation uses age and service rates for Early Retirement.

The table below illustrates the comparison of the actual Early Retirement experience to the current assumption.

Early Retirement						
Service	Count	Actual	Expected	Actual Rate	Expected Rate	Proposed Rate
10-14	4	0	1.20	0.0%	30.0%	0.0%
15-19	13	3	2.84	23.1%	21.8%	20.0%
20-24	16	5	3.69	31.3%	23.1%	25.0%
25+	6	2	1.65	33.3%	27.5%	30.0%
<Total>	39	10	9.38	25.6%	24.1%	21.54%

As can be seen above, there were no Early Retirements observed during the period for members with less than 15 years of Credited Service. Experience was slightly greater than expected for members with 15 or more years of Credited Service.

### Retirement Rates - Normal

The current eligibility requirements for Normal Retirement are the earlier of (1) attainment of age 55 and completion of 10 years of service, or (2) attainment of age 52 and the completion of 25 years of service.

The tables below illustrate the comparison of the actual Normal Retirement experience to the current assumption.

#### Normal Retirement (Less Than 25 Years of Service)

Age	Count	Actual	Expected	Actual Rate	Expected Rate	Proposed Rate
55	4	2	2.00	50.0%	50.0%	50.0%
56	2	0	1.00	0.0%	50.0%	20.0%
57	3	1	1.50	33.3%	50.0%	20.0%
58+	2	1	2.00	50.0%	100.0%	100.0%
<Total>	11	4	6.5	36.4%	59.1%	45.5%

#### Normal Retirement (25+ Years of Service)

Age	Count	Actual	Expected	Actual Rate	Expected Rate	Proposed Rate
52+	1	1	1	100.0%	100.0%	100.0%

As you can see, the recommended changes result in generally lower rates of retirement. This results in a later assumed retirement age and a lengthened period of time to fund future benefit accruals, thereby decreasing current costs, as shown below.

Retirement Rates	Required City/State Contribution	Increase / (Decrease)	UAAL	Funded Ratio
Current	862,550		1,759,969	97.1%
Proposed	850,001	(12,549)	1,677,489	97.3%

## **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 uses an age-based table with a five-year select period.

Overall, the actual incidence of termination was more than expected in the first ten (10) years of employment, with generally lower than expected turnover for members with 11 or more years of Credited Service. At this time, we are recommending adoption of a strict service-based assumption as provided in the below table.

Withdrawal Rates						
Service	Count	Actual	Expected	Actual Rate	Expected Rate	Proposed Rate
<10	332	44	20.09	13.3%	6.1%	10.0%
10	36	2	2.13	5.6%	5.9%	5.7%
11	34	1	1.99	2.9%	5.9%	5.0%
12	27	1	1.59	3.7%	5.9%	5.0%
13	24	2	1.4	8.3%	5.8%	5.0%
14	18	0	1.04	0.0%	5.8%	5.0%
15+	88	3	4.77	3.4%	5.4%	4.5%
<Total>	559	53	33.0	9.5%	5.9%	7.9%

The recommended changes have the effect of lowering the assumed rates of termination for members with 11 or more years of Credited Service; currently, no members have less than 10 years of Credited Service. The effect is an increase to the UAAL and the City's contribution requirement, as shown below.

Withdrawal Rates	Required City/State Contribution	Increase / (Decrease)	UAAL	Funded Ratio
Current	862,550		1,759,969	97.1%
Proposed	885,978	23,428	3,009,328	95.2%

## **Disability Rates**

The disability rate assumption is the probability that a member will become disabled while an active participant in the plan. Currently, the valuation utilizes an age-based table with relatively low expected probabilities. Over the past ten years, the plan expected 0.5 disabilities and there was one disability retirement during that time. Given this experience, we recommend no change to the current rates.

## SUMMARY

As stated throughout the content of this report, we have recommended the Board consider 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 in compliance with the Actuarial Standards of Practice, are our best estimate of anticipated future experience, and will assist in achieving the objective of developing costs that are stable and predictable. Below, we have provided a summary of the estimated actuarial impact for the discussed changes. Please note we have also included the impact of lowering the investment return assumption from 7.00% to 6.75% for informational purposes.

Change	Assumption	Increase/(Decrease) Required City/State Contribution	Increase/(Decrease) UAAL	Funded Ratio
	Current			97.1%
(1)	6.75% Investment Return	274,739	1,915,609	94.2%
(2)	Salary Increases	14,454	522,833	96.3%
(3)	Retirement Rates	(12,549)	(82,480)	97.3%
(4)	Withdrawal Rates	23,428	1,249,359	95.2%
(5)	Disability Rates	0	0	97.1%
(6)	Combination (7.00%)	10,953	2,042,861	94.0%
(7)	Combination (6.75%)	284,465	4,073,581	91.1%