



January 12, 2018

Ms. Johnna Morris, CGFO, CPPT, MBA
Director of Finance
City of Fort Pierce
Retirement and Benefit System
100 North U.S. Highway 1
Fort Pierce, Florida 34950

Attention: Board of Trustees

Re: Fort Pierce Retirement and Benefit System Actuarial Option Factors

Dear Johnna:

The purpose of this letter is to discuss the assumptions used by the Fort Pierce Retirement and Benefit System (FPRBS) for the calculation of optional forms of payment for retirement benefits, such as the 100%, 50%, 75%, and 66 2/3 % joint and survivor (with pop-up) and the 10-year certain and life form of payment as well as non-duty death benefits.

Background

Section 13-33 (Form of payment options) of the Fort Pierce Retirement and Benefit System Ordinance (FPRBSO) states, *"A member or vested former member may elect to have annuity payments made under one of the form of payment options provided in this section and name a survivor pension beneficiary. The election of a form of payment option and naming of survivor annuity beneficiary shall be made on a form furnished by and filed with the retirement system prior to the date the first annuity check is issued. The election of form of payment option and/or survivor annuity beneficiary can be changed up to and until the issuance of the first annuity check. After the date that the first annuity check is issued, no change can be made in the election of form of payment option. If Option A, Option B, Option D, or Option E has been elected, no change can be made in the survivor annuity beneficiary, except as provided in subsection (d) of this section. If form of payment Option C has been elected, more than one survivor annuity beneficiary may be selected. Each selected survivor beneficiary shall share equally in any benefit that becomes payable to a survivor annuity beneficiary unless the retired member has specified and filled with the retirement system, in writing, a different sharing. Payment shall be made under the standard form of payment if there is no timely election of an option form of payment. The amount of annuity under a form of payment option shall have the same **actuarial present value** as the amount of annuity under the standard form of payment."*

Section 13-75 (Adoption of experience tables and regular interest) of the FPRBSO states, *“The retirement board shall from time to time adopt such mortality and other tables of experience, and a rate or rates of regular interest, as are necessary in the operation of the retirement system on an **actuarial basis.**”*

The term “actuarial present value” is not defined in the FPRBSO. In the actuarial field, it is defined as the present value of a contingent stream of payments based on a given set of actuarial assumptions. In this case, the stream of payments is a member’s pension and calculating the actuarial present value of a stream of pension payments requires the use of actuarial assumptions regarding investment return (interest) and mortality. Two amounts that have the same actuarial present value are often called “actuarial equivalent” amounts. The FPRBSO is essentially stating that all optional forms of payment must be actuarially equivalent to the Straight-Life Annuity (standard form of payment) according to assumptions adopted by the Board from time to time.

In conjunction with last year’s actuarial valuation, the Board adopted revised actuarial assumptions for funding purposes including investment return (interest rate) and FRS mortality rates. The main assumptions affecting calculations for the System’s optional forms of benefit are the interest rate, mortality rates, and the mix of males and females electing optional forms of payment. When actuarial assumptions for funding are updated, it does not automatically change any existing assumption being used for determining form of payment options. However, it is common practice for Boards to at least consider whether or not it is also appropriate to change the actuarial assumptions to be used for calculations of optional payment amounts.

Since the FPRBSO does not indicate the assumptions that should be used to calculate optional forms of payment, there are a number of choices available for such assumptions provided that the assumption used for all optional forms of payment during a given year are the same for all genders and that all optional forms of payment are actuarially equivalent to the Straight Life form of payment.

Current Assumptions

For purposes of actuarial equivalence, the System is currently using the following assumptions:

*Interest – Seven and one-half percent per annum; and
Mortality – 100% of the 1971 Group Annuity Mortality Table for both male and female members and the same table with ages set back 5 years for beneficiaries.*

Options Available

One choice would be to use the new valuation assumptions of 7.75% interest and fully generational mortality rates. This choice can generate a cost for the retirement system because, regardless of the assumptions used, there exists an opportunity for members to elect a form of payment that is most financially beneficial to them. This is often called adverse selection. Adverse selection increases retirement system costs; therefore, many systems elect a slightly or moderately more conservative set of assumptions for optional forms of payment to offset adverse selection costs. This also would create challenging administration and communication issues since factors would change every year for members retiring under what appears to be identical circumstances.

In our judgment, assumptions for actuarial equivalence should not be exactly the same as the assumptions used in the valuations. For FPRBS, assumptions for optional forms of payment have generally been based on a lower interest rate than used in the valuation and on a mortality table that reflects some degree of adverse selection. We propose the following assumptions for determining optional forms of payment with this in mind.

- Interest Rate: six percent per annum; and
- Mortality: 100% of the RP-2000 Combined Healthy Male Mortality Table and 100% of the RP-2000 Combined Healthy Female Mortality Table for beneficiaries
- Consider setting ages forward 5 years for disabled members

The above assumptions are based on:

- An interest rate that is lower than the rate used for funding valuation purposes
- The base mortality tables mandated by the State

Additional detail on the changes discussed follows.

Mortality Component

The mortality table used for the calculation of optional forms of payment impacts the benefits assumed to be paid to members and beneficiaries. The longer members are expected to live, the less likely it is that payments will be made to beneficiaries. This means that updating the mortality table to reflect longer life expectancies will result in increased benefits paid to members who elect optional forms of payment since the assumed value of beneficiary coverage is reduced. Moving from the mortality assumption in the current tables to an updated table will generally produce increased benefits for members electing an optional form of payment.

Interest Rate Component

Decreasing/Increasing the interest rate assumption will act to decrease/increase the amounts paid to retirees who elect optional forms of payment. Using an interest rate less than the rate of return assumed for actuarial valuation purposes is reasonable since, in the long term, assets supporting benefits that are immediately payable are likely to earn less than assets supporting benefits payable in the future.

Net Effect of Assumption Changes on Optional Forms of Payment

The suggested assumptions will result in optional forms of payment benefits that are higher than at present for all or almost all people electing optional forms of payment. It does not necessarily follow that System costs will increase. New option factors could cause healthier members to elect an optional form of payment, who would not have done so under the current option factors. An actuarial impact statement on the potential change would result in a de minimis impact. The tables that follow illustrate the effect of changing the option factors for various sample ages.

**City of Fort Pierce
 Retirement and Benefit System**

Illustration of Actuarial Equivalence

Sample Pension Benefit Based on \$3,000 Accrued Benefit				
Forms of Payment	Member Age 50, Spouse Age 50		Member Age 55, Spouse Age 55	
	Current Basis	Proposed Basis	Current Basis	Proposed Basis
Normal Form: Straight-Life Annuity	\$ 3,000.00	\$ 3,000.00	\$ 3,000.00	\$ 3,000.00
Option A: 100% Joint and Survivor with Pop-up	2,634.57	2,708.34	2,538.57	2,622.90
Option B: 50% Joint and Survivor with Pop-up	2,805.45	2,846.70	2,750.07	2,798.79
Option C: 10 Year Certain and Life	2,944.20	2,978.67	2,908.05	2,959.05
Option D: 75% Joint and Survivor with Pop-up	2,717.34	2,775.81	2,640.09	2,707.98
Option E: 66⅔% Joint and Survivor with Pop-up	2,746.08	2,799.03	2,675.76	2,737.59

Sample Pension Benefit Based on \$3,000 Accrued Benefit				
Forms of Payment	Member Age 60, Spouse Age 60		Member Age 65, Spouse Age 65	
	Current Basis	Proposed Basis	Current Basis	Proposed Basis
Normal Form: Straight-Life Annuity	\$ 3,000.00	\$ 3,000.00	\$ 3,000.00	\$ 3,000.00
Option A: 100% Joint and Survivor with Pop-up	2,423.46	2,516.13	2,287.41	2,391.36
Option B: 50% Joint and Survivor with Pop-up	2,681.10	2,736.84	2,595.69	2,661.33
Option C: 10 Year Certain and Life	2,845.02	2,917.92	2,730.12	2,841.51
Option D: 75% Joint and Survivor with Pop-up	2,545.77	2,621.85	2,431.83	2,519.13
Option E: 66⅔% Joint and Survivor with Pop-up	2,589.33	2,659.11	2,484.09	2,564.82

Going forward, we continue to recommend that assumptions be reviewed and potentially revised at the time of each future experience study, or if there is a significant change in the investment return assumption or the mortality assumption.

We can discuss at the January 18, 2018 Board meeting, and if the Board adopts a change, we can also discuss an effective date for the change including current vested terminated members.

Other Considerations

Implementation of our recommendation may require:

1. Drafting of the proposed amendatory Ordinance,
2. Passage by the City Commission at first and second reading,
3. Preparation of a no cost Actuarial Impact Statement (letter) for filing with the State after passage by the Board at second reading,
4. Update program factors in existing software,
5. Produce complete factor tables for all integer ages, and
6. Effective date for the new factors.

Please call us if you have any questions.

Sincerely,



Brad L. Armstrong, ASA, EA, FCA, MAAA

BLA:sc

cc: Christine Paz, Senior Accounting Clerk – Retirement
James Walker, Esq.