



# **Government of Anguilla Public Service Pension Fund**

**Actuarial Review as of December 31, 2020**

June 23, 2021

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# Introduction

This report presents the results of the actuarial review as of December 31, 2020 of the Public Service Pension Fund (PSPF or Fund). The Public Service Pension Board (PSPB or Board) retained the services of Lifeworks (formerly Morneau Shepell) to perform this actuarial review.

The previous review report as of December 31, 2019, was performed by Hernando Perez Montas & Asociados, SRL, and submitted in December 2020.

This report of the actuarial review of the PSPF was prepared for the following purposes:

- to estimate projected PSPF benefit costs and net assets over the next 35 years;
- to determine the funded position of the PSPF; and
- to determine the adequacy of current contribution rates.

Also included in this report are discussions of a funding policy to enhance Fund solvency and sustainability and recommendations on the implementation of the Social Security pension offset.

This report does not include a review of the Police Pension Fund.

## **Plan changes that impact the valuation**

Effective January 1, 2020, newly hired police officers joined the PSPF under the same contribution and benefit rules as for all other PSPF members.

## **Subsequent events**

There were no significant events that occurred after the review date that have a material effect on the results of this review.

## **Restriction on use of this report**

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# Executive Summary

The Public Service Pension Fund (PSPF) is the sole pension scheme for Government of Anguilla (GoA) employees and several government agencies. The PSPF is multi-employer, contributory, defined benefit pension plan, whose rules are set out in the Pensions Act, Chapter P20 of the Revised Statutes of Anguilla.

With the exception of some members of the Royal Anguilla Police Force, all Government employees holding pensionable posts, and employees of ten statutory agencies, contribute to the PSPF. While retirement benefits represent the largest portion of benefits paid, benefits are also payable upon death, permanent disability and pre-retirement termination. Surplus assets are invested locally.

Key results of the actuarial projections of the PSPF under *Best Estimate* assumptions are:

- a) The current combined contribution rate of 6% is below the cost of estimated expenditure in 2021 by almost 3% of pensionable salaries. Benefit costs relative to pensionable salaries will keep increasing to over 24% in 2055.
- b) At the current contribution rates and investment strategy, Fund assets will be depleted in 2028 if no changes are made to contribution and benefit rules.
- c) The partially funded financing approach for the PSPF is considered appropriate. Using an open group method to determine the Plan's funded level as of December 2020, actuarial assets (current assets plus the present value of future contributions over 35 years) are 44% of the present value of future liabilities. Actuarial liabilities exceed actuarial assets by \$275 million.
- d) The introduction of the Social Security pension offset as provided for in Section 41(2) of the Pensions Act will have a material impact on PSPF benefit costs and long-term sustainability. However, the PSPF will still not be sustainable at the current 6% combined contribution rate.

## Recommendations:

1. Establish a formal funding policy that will determine when and by how much contribution rates should be increased.
2. Implement the Social Security pension offset as provided for in Section 41(2) of the Pensions Act at the earliest opportunity and amend this section so that only the portion of the Social Security pension earned during PSPF/GoA service is used in determining the offset amount.
3. Expand the options for the investment of Fund assets while ensuring consistency with expected cash flow needs.
4. Confirm the Board's authority regarding the granting of pension increase as outlined in Section 64 of the Act and decide whether pension increases in line with wage increases are reasonable.
5. Consider amendments such as a lower benefit accrual rate (now 1.25% per annum) and a higher retirement age (now 65) as options for reducing long-term costs.

With the Fund projected to be depleted in 2028, long-term Fund sustainability can be achieved if the Board and Government make timely and prudent decisions, and implement them quickly.

# Chapter 1 – Plan Membership & Recent Experience

The Public Service Pension Board (PSPB) manages two pension funds – the PSPF and the now insolvent Police Pension Fund. The following table provides a summary of the key characteristics of the three pension arrangements for GoA employees.

**Table 1.1 Characteristics of Government of Anguilla Pension Arrangements**

Pension Scheme	Gov't of Anguilla	PSPF	Police Pension Fund
Active Members	None	GoA employees excl. some police officers, and employees of GoA agencies	Police officers hired before December 31, 2019
Pensioners	Former GoA employees who retired at 55	GoA employees whose normal retirement age is 60 or 65	Retired Police officers after 2008
Fund/Assets	Unfunded or pay-as-you-go	Invested in local deposits and loans to members	Insolvent (pay-as-you-go). Shortfalls to be met by the Consolidated Fund.
Source of Funding	GoA	3%/3% Employer/Employee	4%/4% Employer/Employee
Administration	GoA	PSPB	PSPB

This report does not include any analysis or projections of future pension costs for the Police Pension Fund, or the GoA Pension Scheme funded from the Consolidated Fund.

## 1.1. PSPF Membership

Plan membership is comprised of both active members and inactive members. A summary of Plan member characteristics as of December 2020 is provided in Table 1.2. Deferred pensioners are former employees who resigned prior to retirement eligibility and received a discounted gratuity payment but maintain the right to a pension starting on either their 60<sup>th</sup> or 65<sup>th</sup> birthday.

**Table 1.2 Summary of December 2020 Plan Participants**

	<b>Actives</b>	<b>Current Pensioners</b>	<b>Deferred Pensioners</b>
Number	1,333	139	129
Average Age	39.5	63.9	47.0
Average Service (years)	11.9	N/A	N/A
Average Annual Salary/Pension	\$70,208	\$33,388	\$16,248

Of the 1,333 active members, 885 are employed by the Government of Anguilla.

Annualized pensionable salaries for active members in December 2020 total \$93.6 million. Annualized pensions to pensioners in December 2020 total \$4.6 million.

Additional details of the Plan member characteristics may be found in Appendix C.

## **1.2. PSPF Experience**

Experience for key factors during 2020 is shown below.

**Table 1.3 - Summary Experience, January to December 2020**

# New Actives	97
# Pre-retirement withdrawals, including due to death	32
# New Retirees	25
Return on Plan Assets (Gross)	2.4%

Effective January 1, 2020, newly hired police officers joined the PSPF. 10 of the 97 new active members were police officers.

There were no others changes to PSPF rules during 2020.

### 1.3. PSPF Finances

Following are PSPF income and expenditure details (Table 1.4) and PSPF assets, liabilities, and net assets available for benefits (Table 1.5) for 2018 to 2020. Police Fund contributions, benefit payments and administrative costs are not included.

**Table 1.4. PSPF Income and Expenditure, 2018 – 2020**

	2018	2019	2020
<b>Income</b>			
Contributions	5,488,362	5,525,782	5,805,727
Investment	1,779,087	1,098,058	939,378
Other	121,607	59,187	42,117
<b>Total</b>	<b>7,389,056</b>	<b>6,683,027</b>	<b>6,787,222</b>
<b>Expenditure</b>			
Pensions, Gratuities & Refunds	5,996,567	7,291,031	7,483,739
Administrative	1,417,925	924,363	860,528
<b>Total</b>	<b>7,414,492</b>	<b>8,215,393</b>	<b>8,344,267</b>
<b>Surplus/(Deficit)</b>	<b>(25,436)</b>	<b>(1,532,367)</b>	<b>(1,557,046)</b>

Totals may be off due to rounding.

**Table 1.5. PSPF Net Assets Available for Benefits, 2018 – 2020**

	2018	2019	2020
<b>Assets</b>			
Cash & Equivalents	6,335,151	4,739,397	2,878,326
Investments	28,498,460	27,202,207	25,729,281
PSPF Loans	4,506,018	5,551,285	7,226,985
Contributions Receivable	2,966,672	3,228,108	3,494,479
Other Assets	89,278	89,585	61,498
<b>Total</b>	<b>42,395,578</b>	<b>40,810,583</b>	<b>39,390,569</b>
<b>Liabilities</b>			
Payable to the GoA	400,737	400,737	400,737
Other Payables and Liabilities	300,932	328,034	284,529
<b>Total</b>	<b>701,669</b>	<b>728,771</b>	<b>685,266</b>
<b>Net Assets Available for Benefits</b>	<b>41,693,909</b>	<b>40,081,811</b>	<b>38,705,302</b>

Totals may be off due to rounding.

As of December 2020, the net amount due from the GoA was \$2.59 million.

## 1.4. PSPF Investments

Investment of PSPF assets is guided by the Second Schedule of the Pensions Act which reads:

### INVESTMENT OF THE FUND

1. The money in the Fund which is not immediately required for any purpose may be invested by the Board in certificates of deposit or related obligations in domestic financial entities, on terms not less favourable than those provided to institutional investors in Anguilla, according to sound principles of diversification.
2. The money in the Fund shall not be invested by the Board in property, securities or offshore ventures until the Fund is adequately capitalized, based on actuarial advice.

At the end of 2020, PSPF investments, excluding cash, stood at \$33.0 million down from \$34.3 million at the end of 2017.

Over the 3-year period 2018 to 2020, the average yield on net assets was 3.2%.

The following table provides a summary of the PSPF investment mix at year-ends 2017 and 2020. Loans to members started in 2017.

**Table 1.6. Summary of Cash & Investments, Year-end 2020 & 2017 (millions of \$'s)**

Investment Category	2020		2017	
	\$'s	%	\$'s	%
Fixed Deposits	12,819,126	39%	11,627,123	34%
Deposit Protection Trust	12,910,154	39%	18,690,630	55%
Loans to Members	7,226,869	22%	3,905,338	11%
<b>Total</b>	<b>32,956,149</b>	<b>100%</b>	<b>34,223,091</b>	<b>100%</b>

Note: The 2016 merger of the former National Bank of Anguilla and Caribbean Commercial Bank resulted in \$19.03 million being held in a Deposit Protection Trust. This deposit earns 2% per annum and is being repaid over 10 years.

Analysis of the Fund's investments at the end of 2020 reveals that 75% are held in National Commercial Bank of Anguilla deposits.



# Chapter 2 – Methodology & Assumptions

PSPF pensions are financed by employer and employee contributions of 3% of pensionable salary to the PSPF. Funds are invested locally primarily in term deposits and loans to members.

Pensions payable at retirement depend on final average salaries and pensionable service of members at the time of retirement. 25% of the pension may be converted to a lump sum with the reduced pension payable for life. As a result, the true cost of this type of pension plan cannot be known until the last pensioner dies. However, annual cash flow estimates of the PSPF provided in this report, illustrate the projected trend of future obligations and thus the level of contributions required to maintain Fund sustainability.

In projecting the future cash flows of the PSPF through 2055 (35 years), projections of future salaries, pensionable service, terminations due to resignation, retirement and death have been made. In addition, new entrants are assumed to join the Plan each year. These projections allow for the estimation of future benefits for each member and the expected total cash flows each year. To better reflect the cost of pensions and other benefits, expenditure is presented in both nominal dollar amounts and relative to total salaries for active members. To illustrate the effect of certain assumptions on long-term costs, several sensitivity projections are made by changing one assumption at a time.

Following is a brief description of the methodology and key assumptions used to project benefit costs over 35 years.

## Methodology

1. Each year some active members will exit the service due to retirement, death and pre-retirement termination. Exits due to medical or compulsory retirement have not been assumed.
2. The number of new hires assumed added each year is the sum of the assumed increase in the number of active members and the number of active members who exit during the previous year.
3. Each year, an additional year of service is granted to persons continuing in employment.
4. Pre-retirement termination and deaths occur based on assumed rates that vary by age, while salaries and pension increases are assumed to increase by a single rate for all active and retired members, respectively.
5. Pensionable salary for GoA employees hired prior to 2014 is the highest salary thus far earned. In some cases, this is their 2009 salary. Contributions by GoA and employees are based on pensionable salary.
6. Simplifying assumptions have been adopted to model survivors' benefits.

7. For the Social Security pension offset scenario, it is assumed that only PSPF pensionable service is used in determination of the Social Security pension that is included in the 80% maximum combined pension. It is further assumed that the offset amount will not be changed if the Social Security pension is increased.

## Assumptions

Projecting future cash flows requires specific financial and demographic assumptions. Assumption selection takes into account both recent experience and future expectations, with emphasis placed on long-term trends rather than giving undue weight to recent experience. Following are the assumptions used for the *Best Estimate* scenario.

### Financial Assumptions

- Individual salaries increase by 2.5% per annum.
- All retirees convert 25% of the pension to a lump sum gratuity.
- Pensions in payment are assumed to increase by 1% per annum.
- Fund assets assumed to earn a return of 2.5% per annum.
- To estimate discounted gratuities and the present value of future cash flows, a discount rate of 3.0% per annum has been assumed.

### Demographic Assumptions

- Mortality rates are assumed to follow the Group Annuitant Mortality Table 1994 (United States). This table is considered appropriate for Anguilla public sector employees as life expectancies at age 65 for males and females are 18.9 and 21.3 respectively.
- Terminations are assumed to decrease from 2% at age 18 to 1% at age 55. No terminations other than for retirement are assumed to occur after age 55.
- 10% of employees are assumed to retire five years prior to their normal retirement age and the remainder are assumed to retire at Normal Retirement Age, 60 or 65, depending on when their employment started.
- The number of active Plan members is projected to grow at a rate of 0.5% per year.
- New entrants are assumed to have the age, sex and salary profile of persons hired between 2016 and 2020. (See assumed new entrant profile in Figures B.1 and B.2.)

These assumptions are considered individually and collectively appropriate for the nature and use of the projections. The results from the projections using the above set of assumptions are referred to in this report as *Best Estimate*. To assess the sensitivity of key assumptions to these *Best Estimate* results, several sensitivity scenarios are presented in Chapter 4. Further details of these assumptions may be found in Appendix B.

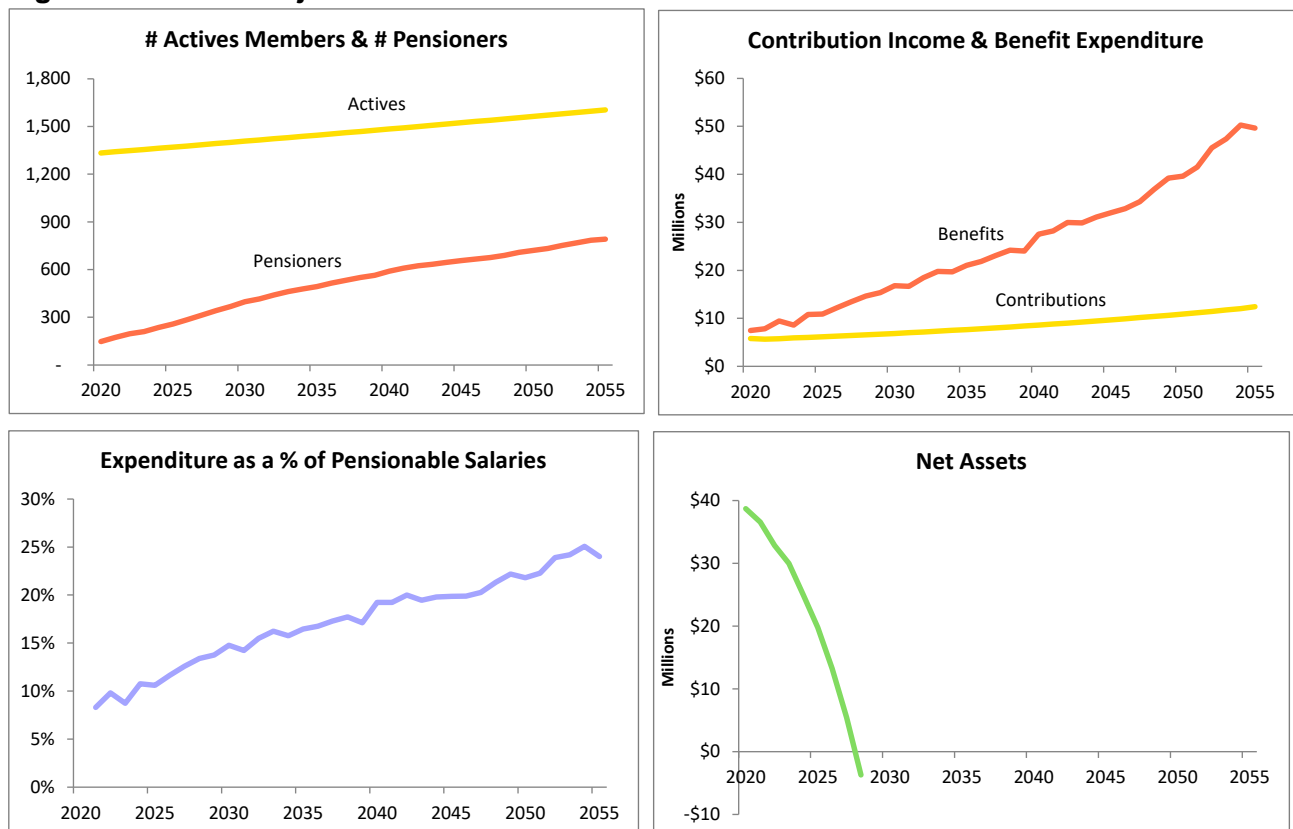
# Chapter 3 – Best Estimate Projections

## 3.1 PSPF Projections

For the period 2021 to 2055, the following charts illustrate the following:

- i. projected number of active and retired members,
- ii. projected contribution income and benefit expenditure,
- iii. PSPF expenditure as a percent of pensionable salaries, also referred to as the pay-as-you-go rate, and
- iv. projected PSPF net assets.

**Figure 3.1. PSPF Projections**



Following is a summary of the projection results illustrated in the above charts.

- a) While the number of active members increases slowly, the number of pensioners increases nearly 6 times over the projection period.

- b) While expenditure is only slightly higher than contributions in 2020, it is projected to be close to 4 times contributions at the current 6% contribution rate.
- c) When expressed as percentage of current salaries, total expenditure is projected to increase from 9% in 2020 to more than 25% over the next 35 years. This would be the required contribution rate if the Fund had no assets.
- d) At the current combined 6% contribution rate, the Fund will be depleted in 2028.

It should be noted that because the portion of assets that are loaned to members is not liquid, and thus cannot be used to pay pensions, the inability of Fund assets to meet obligations will occur prior to 2028.

The following table contains the projected number of active members and pensioners, as well as projected pensionable salaries and benefits for each year thru 2030, and every fifth year thereafter up to 2055. Benefits are also shown as a percentage of pensionable salaries.

**Table 3.1. Projected Actives, Pensioners & Benefit Expenditure (\$'s are in millions)**

Year	# of Actives	Total Salaries	# of Pensioners	Pension & Gratuity Payments				
				Pensions	Gratuities	Other	Total	% of Salaries
2020	1,333	\$93.6	159	\$4.5	\$2.8	\$0.2	\$7.5	8.0%
2021	1,341	\$94.2	173	\$5.1	\$2.2	\$0.5	\$7.8	8.3%
2022	1,348	\$96.1	196	\$5.9	\$3.1	\$0.5	\$9.4	9.8%
2023	1,355	\$98.7	210	\$6.5	\$1.6	\$0.5	\$8.6	8.7%
2024	1,363	\$100.4	236	\$7.2	\$3.1	\$0.5	\$10.8	10.8%
2025	1,370	\$102.7	258	\$8.0	\$2.4	\$0.5	\$10.9	10.6%
2026	1,378	\$104.8	285	\$8.7	\$2.9	\$0.5	\$12.2	11.6%
2027	1,385	\$107.0	314	\$9.6	\$3.3	\$0.5	\$13.4	12.6%
2028	1,393	\$109.2	342	\$10.5	\$3.6	\$0.6	\$14.6	13.4%
2029	1,400	\$111.7	368	\$11.5	\$3.3	\$0.6	\$15.4	13.7%
2030	1,408	\$113.8	398	\$12.4	\$3.8	\$0.6	\$16.8	14.8%
2035	1,445	\$127.7	494	\$17.1	\$3.3	\$0.7	\$21.0	16.5%
2040	1,484	\$143.2	590	\$21.5	\$5.3	\$0.7	\$27.5	19.2%
2045	1,524	\$161.3	656	\$26.6	\$4.6	\$0.8	\$32.0	19.9%
2050	1,564	\$181.7	720	\$32.6	\$6.2	\$0.9	\$39.6	21.8%
2055	1,604	\$206.7	791	\$42.0	\$6.7	\$1.0	\$49.6	24.0%

The following table shows projected Fund income, expenditure, and net assets for each year thru 2030, and every fifth year thereafter up to 2055.

**Table 3.2. Projected Cash Flow and Net Assets (millions of \$'s)**

Year	Income		Expenditure		Surplus/ (Deficit)	Net Assets
	Contributions	Investment	Benefits	Admin.		
2018	\$5.5	\$1.8	\$6.0	\$1.4	(\$0.0)	\$41.7
2019	\$5.5	\$1.1	\$7.3	\$0.9	(\$1.5)	\$40.0
2020	\$5.8	\$0.9	\$7.5	\$0.9	(\$1.6)	\$38.7
2021	\$5.7	\$0.9	\$7.8	\$0.9	(\$2.1)	\$36.6
2022	\$5.8	\$0.9	\$9.4	\$0.9	(\$3.7)	\$32.8
2023	\$5.9	\$0.8	\$8.6	\$0.9	(\$2.9)	\$30.0
2024	\$6.0	\$0.7	\$10.8	\$1.0	(\$5.1)	\$24.9
2025	\$6.2	\$0.6	\$10.9	\$1.0	(\$5.2)	\$19.8
2026	\$6.3	\$0.4	\$12.2	\$1.0	(\$6.5)	\$13.2
2027	\$6.4	\$0.2	\$13.4	\$1.0	(\$7.8)	\$5.4
2028	\$6.6	\$0.0	\$14.6	\$1.1	(\$9.1)	(\$3.7)
2029	\$6.7	(\$0.2)	\$15.4	\$1.1	(\$10.0)	(\$13.7)
2030	\$6.8	(\$0.5)	\$16.8	\$1.1	(\$11.6)	(\$25.3)
2035	\$7.7	(\$2.2)	\$21.0	\$1.3	(\$16.8)	(\$97.6)
2040	\$8.6	(\$4.7)	\$27.5	\$1.4	(\$25.1)	(\$202.2)
2045	\$9.7	(\$8.2)	\$32.0	\$1.6	(\$32.2)	(\$348.7)
2050	\$10.9	(\$12.9)	\$39.6	\$1.8	(\$43.4)	(\$542.8)
2055	\$12.4	(\$19.3)	\$49.6	\$2.1	(\$58.6)	(\$811.0)

### 3.2 Current Funded Status

Since the PSPF is partially funded by design, its funded status is best assessed on an open group basis. That is, future contributions based on the existing contribution rate are considered an asset, while liabilities include benefits that are not yet earned but that are expected to be paid during the projection period. The following table presents PSPF assets and liabilities in the form of an accounting balance sheet. Present values are determined using a discount rate of 3%.

**Table 3.3. PSPF Balance Sheet on Open Group Basis (\$'s in millions)**

<b>Assets</b>	
Current Net Assets	\$38.7
PV of Future Contributions	\$178.3
<b>Total Assets (a)</b>	<b>\$217.0</b>
<b>Actuarial Liabilities</b>	
Active Members	\$353.3
New Entrants	\$32.3
Retired Members and Beneficiaries	\$83.1
Deferred Members	\$23.8
<b>Total Actuarial Liabilities (b)</b>	<b>\$492.4</b>
Asset Shortfall (a) – (b)	(\$275.4)
Assets as % of Liabilities (a) / (b)	44%

The \$275 million asset shortfall and 44% funded status on an open group basis are consistent with the cash flow projections presented earlier that show the Fund being depleted in 2028. The overriding conclusion from these two sets of projections is that the PSPF is not sustainable at current contribution rates.

See Chapter 6 for a discussion of financing future benefits and Fund sustainability.

# Chapter 4 – Sensitivity Results

Projections up to 2055 presented in Chapter 3 provide estimates of future PSPF demographics and finances under a set of best-estimate assumptions. Given the uncertainty in forecasting such a long period, alternative scenarios that highlight the sensitivity of the results to differences in a single assumption regarding future Fund outlook have been performed. They also show how sensitive a specific assumption is to future costs. Key results for each scenario are presented in Table 5.1. Given that the PSPF is only partially funded, scenario comparisons use pay-as-you-go rates between 2025 and 2029, the period when the Fund may be depleted, and between 2051 and 2055, the end of the projection period. These rates represent what the required contribution rate would need to be during those periods if the Fund has little or no assets.

## # of Active Members

In the baseline scenario it was assumed that the number of active members will increase by 0.5% per annum. This would take the active membership from 1,333 in 2020 to just over 1,600 in 2055. Two alternative projection sets have been modelled:- one with no increases and another with increases of 1% per year resulting in 1,900 actives in 2055.

From a PSPF perspective, an increase in the number of actives reduces the long-term cost of the Plan but neither scenario has any material impact on the Fund being depleted in 2028.

## Salary Increases

In the Best Estimate scenario, salaries are assumed to increase by 2.5% per annum. Larger salary increases will lead to higher contributions and larger pensions while lower salary increases result in lower contributions and smaller pensions. Scenarios with 1.5% and 3.5% average salary increases have been modelled. While larger salary increases over time result in higher payroll costs, they will result in lower pension costs relative to total pensionable salaries.

## Pension Increases

Section 64 of the Pensions Act states:

“Pension awarded upon retirement to officers whose normal retirement age shall be 60 years or 65 years, as the case may be, shall be adjusted whenever a general increase in salaries is applied to pensionable public officers, and such adjustment shall be made as recommended by the Board.”

Pensions have not been increased since the Plan was established in 2004. It is not clear whether the Board has the authority to not grant pension adjustments, or award them at a different rate to the general increase in salaries of pensionable public officers. In the *Best Estimate* scenario, pensions were assumed to increase by an average 1% starting in 2022. A scenario with 2% annual increases and another with no increases at all have been modelled. As expected, any scenario with larger pension adjustments will result in higher costs and higher required contributions.

## Retirement Behaviour

The Best Estimate scenario assumed that 10% of active members will retire five years prior to their Normal Retirement Age and the remainder will retire at their normal retirement age. Two additional scenarios have been modelled as follows:

- (a) No early retirements: i.e., all retire at normal retirement age;
- (b) 20% retire five (5) years prior to normal retirement age.

More early retirements result in slightly higher costs to the Plan and fewer early retirement result in lower long-term costs.

The table below illustrates the sensitivity on going-concern actuarial liabilities to changes in several assumptions. These are the assumptions to which plan liabilities are most sensitive.

**Table 4.1. Results of Assumption Sensitivity Tests**

Assumption (Best Estimate)	Change	Average PAYG Rate		Single Rate Required to Finance Cost over 35 Years
		2025 to 2029	2051 to 2055	
<b>Best Estimate</b>		13.4%	24.9%	16.6%
<b># of Active Members</b> (1/2% pa increase)	1% pa increase	13.0%	21.6%	15.5%
	No increase	13.7%	28.7%	17.7%
<b>Salary increase</b> (2% pa increase)	3.5% increase	12.8%	21.4%	15.5%
	1.5% decrease	14.0%	29.1%	17.6%
<b>Pension increase</b> (1% pa increase)	2% increase	13.8%	27.2%	17.8%
	No increases	13.0%	23.0%	15.5%
<b>Retirement behaviour</b> (10% 5 years before NRA)	20% retire 5 years early	13.7%	25.0%	16.8%
	None retire before NRA	13.0%	24.8%	16.3%



## Investment Returns

Investment returns do not affect the metrics reviewed in the above table which relate to the cost of benefits. They do, however, affect actual PSPF income and thus the size of the Fund. Under the Best Estimate scenario, the average yield on assets was assumed to be 2.5% and Fund depletion is projected in 2028. If assets earn 3.5% per year, Fund depletion would still occur in 2028 given the small portion of total income that investment income represents compared to annual expenditure. This does not suggest, however, that higher yields on assets should not be sought. An average rate of return of 4.5% would delay Fund depletion until 2029.

There are both experience factors and design/policy features that will affect future costs. From the results presented above, the factors that will have greatest effect on future PSPF costs, and thus the need for significantly higher contribution rates, are pension increases and investment returns. While the growth of active membership reduces pension costs, the initial consequence of more staff is higher salaries, which may not be desirable from an employer-cost perspective.

## Benefit Rule Changes

Plan amendments that reduce long-term costs may be considered as a means of reducing the ultimate level of contribution rates while maintaining adequate combined pensions for public officers. The two changes that will have the greatest impact are a reduction in the pension accrual rate and an increase in the normal retirement age. The following table contains a discussion of these potential changes.

**Table 4.2. Results of Assumption Sensitivity Tests**

Possible Amendment	Considerations	Example
<b>Lower pension accrual rate for future service</b>	<ul style="list-style-type: none"> <li>• Cannot apply to past service</li> <li>• Combined Social Security &amp; PSPF pension replacement rates should meet certain targets</li> <li>• A lower accrual rate will reduce the frequency and magnitude of Social Security pension offsets (if implemented)</li> <li>• Employees may resist contributing more than 3% for a very lower accrual rate</li> </ul>	<ul style="list-style-type: none"> <li>• 1% per year (40% after 40 years)</li> <li>• 0.8% per year (32% after 40 years)</li> <li>• 0.6% per year (24% after 40 years)</li> </ul>
<b>Increase the Normal Retirement Age</b>	<ul style="list-style-type: none"> <li>• Without a further amendment, this would also increase the first early retirement age</li> </ul>	<ul style="list-style-type: none"> <li>• Age 67 for future hires</li> <li>• Age 67 for future hires and current active members under age 50</li> </ul>

Table 4.2 shows the effect on projected PSPF costs of the two possible plan amendments.

**Table 4.2. Results of Plan Amendment**

Benefit Rules Scenario	Average PAYG Rate		Single Rate Required to Finance Cost over 35 Years
	2025 to 2029	2051 to 2055	
<b>Current Rules (Best Estimate)</b>	13.4%	24.9%	16.6%
<b>1% Accrual Rate for service after January 1, 2022</b>	13.2%	21.5%	15.4%
<b>Normal Retirement Age of 67 for those less than 50 on January 1, 2022 and all future hires</b>	13.4%	23.7%	15.9%

As shown above, an increase in normal retirement age to 67 has no impact in the first few years and a 1.2% reduction in pay-as-you go costs in projection years 31 to 35. This is due to the age increase having no impact during the first fifteen years, given that only those under age 50 are assumed affected when the amendment is made.

The reduced accrual rate, however, has a small immediate impact and a significant long-term impact with pay-you-go-rates in 2015-2055 projected to be 3.4% lower than under current rules.

# Chapter 5 – Social Security Pension Offset Implementation

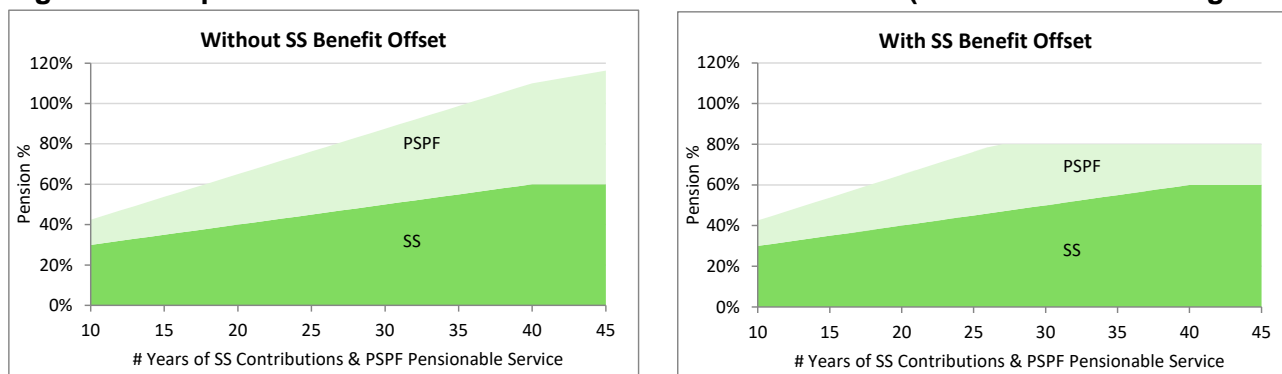
Section 41(2) of the Pensions Act reads:

“An officer who shall have been awarded age pension under the Social Security Act shall not at any time draw from the Fund an amount of pension which, when added to the amount of age pension exceeds 80% of the highest pensionable emoluments drawn by him at any time in the course of his public service.”

Several terms are often used to describe the concept of adjusting the employment pension to account for social security pensions. These include pension offset, integration, and harmonization. The harmonization of the PSPF and Social Security pensions avoids the payment of excessive pensions to an individual and enhances pension equity between higher and lower paid employees. Any required adjustment to avoid the total exceeding 80% would be made to the PSPF pension only; the amount payable by Social Security will never be reduced.

The following charts illustrate the combined pension accrual rates for a member whose wages are below the Social Security (SS) wage ceiling under the current system of (i) non-harmonized benefits (left chart) and (ii) harmonized benefits (right chart).

**Figure 5.1. Replacement Rates Without & With SS Benefit Offset (income below SS wage ceiling)**



Note: PSPF accrual rates are 1.25% for all years

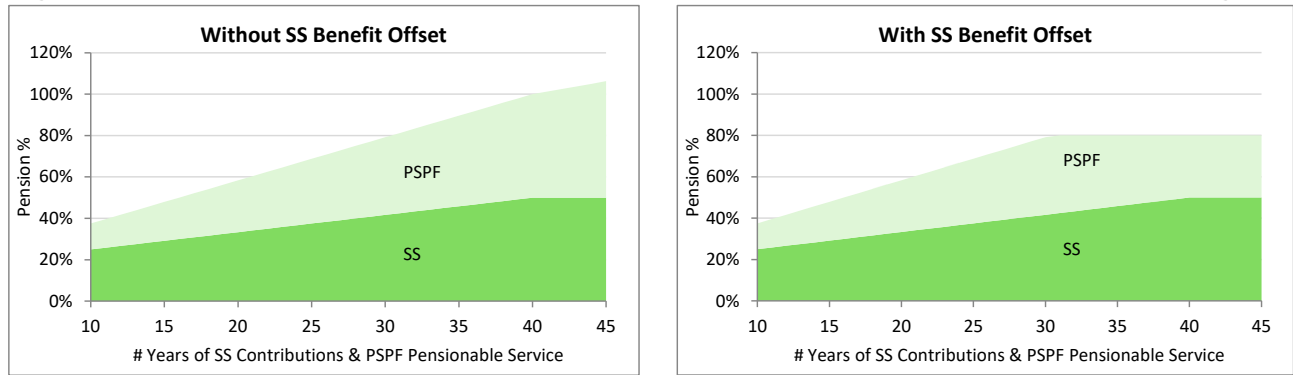
As seen above, combined pensions can exceed 100% under the current approach whereas the maximum replacement rate would be 80% if the two pensions were harmonized. For those with less than 27 years of PSPF contributory service, there will never be an offset adjustment with the current 80% maximum combined replacement rate.

The Social Security wage ceiling caps insurable wages on which contributions and benefits are determined. The wage ceiling is currently \$7,000 per month. Therefore, when someone who earns more

than \$7,000 per month receives the SS Age pension, the pension represents a smaller portion of their regular wage than would the pension of a lower paid person with the same number of SS contributions.

The following charts illustrate the combined pension accrual rates for a member whose wages are \$8,400 per month or 20% above the SS wage ceiling under the current system of (i) non-harmonized benefits (left chart) and (ii) harmonized benefits (right chart).

**Figure 5.2. Replacement Rates Without & With SS Benefit Offset (income 20% above SS wage ceiling)**



Note: PSPF accrual rates are 1.25% for all years

As seen above, combined pensions where there is no SS benefit offset, are always lower for the higher income person than for the lower paid person. If the offset is introduced, however, the differences in combined pension replacement rates are much less.

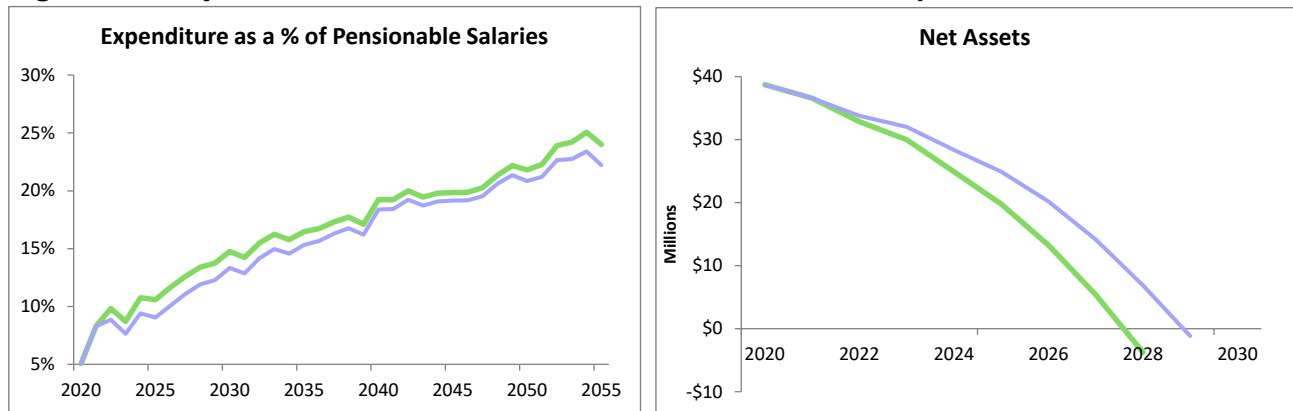
The following conclusions can be drawn from the above two sets of charts:

- (a) Without the SS pension offset, combined pensions can be unnecessarily high. i.e., they can exceed 100% of pre-retirement salary, a level well beyond what is required to maintain pre-retirement living standards.
- (b) With the SS pension offset, maximum pension rates of 80% provide adequate income replacement levels for most people.
- (c) With the SS pension offset, there is improved equity between higher and lower income earners.

## 5.1 Fund Projections with the Social Security Offset

Projections similar to those presented in Chapter 3 have been made for a scenario with the Social Security benefit offset as called for by the Act, being fully implemented in 2022. The following charts illustrate the improved financial outcomes of introducing the benefit offset. It is estimated that 91 out of 139 existing pensioners and 17 out of 129 deferred pensioners will have their PSPF pension adjusted downwards effective January 2022. The reduction in pension expenditure in 2022 is estimated at \$0.91 million.

**Figure 5.3 Projected Benefits and Net Assets if Pension Offset Implemented in 2022**



As shown above implementing the pension offset results in reduced expenditure each year and assets would be depleted in 2029 instead of 2028. It can also be seen that the reduction in benefit costs gets smaller over time. This is due to a gradual reduction in both the number of retirees who will be affected by the offset and the magnitude of the offset. With the 2% annual benefit accrual rate prior to 2004, many of the existing pensioners have combined Social Security and PSPF replacement rates above 100% and thus their pension offset will be significant. For those hired after 2003 when the annual benefit accrual was reduced to 1.25%, even if they have a long public service career, combined replacement rates will be lower and thus any offset will be smaller.

The present value of the decrease in benefits over 35 years, due to the Social Security pension offset, is estimated at \$31.6 million.

## 5.2 Calculating the Pension Offset – New Retirees

The following diagram illustrates the steps that should be taken in determining the pension amount payable by the PSPF for new retirees.

**Figure 5.4. Process for Determining Net PSPF Pension Amount Payable**



Note: The SS pension % will be adjusted if final average salary is greater than the SS wage ceiling.

The following example illustrates how pensions payable will be determined for a member with 30 years of service and a final monthly salary of \$4,000.

- (a) PSPF pension rate, before adjustment:  $[30 \times 1.25\%] = 37.5\%$
- (b) SS pension rate earned during PSPF pensionable service: 50%
- (c) Combined SS + PSPF pension rate:  $37.5\% + 50\% = 87.5\%$  which exceeds the maximum 80%**
- (d) Portion payable by PSPF when SS pension starts:  $[80\% - 50\%] = 30\%$
- (e) Pension payable by PSPF =  $30\% \times \$4,000 = \$1,200$  per month

The following example illustrates how pensions payable will be determined for a member with final monthly salary of \$8,400 and the same 30 years of service.

- (a) PSPF pension rate, before adjustment:  $[30 \times 1.25\%] = 37.5\%$
- (b) SS pension rate earned during PSPF pensionable service:  $50\% \times \$7,000/\$8,400 = 41.7\%$
- (c) Combined SS + PSPF pension rate:  $37.5\% + 41.7\% = 79.2\%$  which is less than the maximum 80%**
- (d) Portion payable by PSPF when SS pension starts: 37.5% (no adjustment)
- (e) Pension payable by PSPF =  $37.5\% \times \$8,400 = \$3,150$  per month

The above calculations are made prior to the calculation of the 25% gratuity and reduced pension.

The three examples in Table 5.1 below show the pension percentages for a member who earns less than the Social Security wage ceiling. The final pension amounts shown apply to a member with a final salary of \$4,000 per month.

**Table 5.1. Sample Replacement Rates & Pensions If Final Salary is \$4,000 per month**

	Years of Pensionable Service		
Pensionable Service	20	30	40
PSPF Pension %	25.0%	37.5%	50.0%
SS Pension %	40.0%	50.0%	60.0%
<b>Combined PSPF + SS</b>	65.0%	87.5%	110.0%
<b>Pension Offset</b>	-	(7.5%)	(30.0%)
<b>Net PSPF Pension %</b>	25.0%	30.0%	20.0%
<b>PSPF Pension (if salary is \$4,000 per month)</b>	\$1,000	\$1,500	\$800
<b>Combined SS + PSPF Pension Income</b>	\$2,600	\$3,200	\$3,200

The examples in Table 5.2 below show the percentages and final pension amount for a member who earns \$8,400 per month, i.e., 20% more than the existing wage ceiling.

**Table 5.2. Sample Replacement Rates & Pensions If Final Salary is \$8,400 per month**

Pensionable Service	Years of Pensionable Service		
	20	30	40
PSPF Pension %	25.0%	37.5%	50.0%
SS Pension %	33.3%	41.7%	50.0%
Combined PSPF + SS	58.3%	79.2%	100.0%
Pension Offset	-	-	(20.0%)
Net PSPF Pension %	25.0%	37.5%	30.0%
PSPF Pension (if salary is \$8,400 per month)	\$2,100	\$3,150	\$2,520
Combined SS + PSPF Pension Income	\$4,900	\$6,650	\$6,720

While most members may retire at normal retirement age (60 or 65), some retire sooner. However, Social Security Age benefit is first available at age 65. The following table describes how the SS pension offset will be applied under various circumstances.

**Table 5.3. Start Dates for Social Security Pension Offset**

PSPF Retirement Age	PSPF Portion of Pension	SS Portion of Pension
65 <sup>th</sup> birthday	PSPF pension starts upon retirement at the net PSPF pension % rate. I.e., the offset is applied from the first payment.	Age benefit starts at age 65. Full amount paid.
Retires on 60 <sup>th</sup> birthday (normal retirement age) or any other age prior to 65	PSPF pays full pension amount ( <u>no offset</u> ) until age 65. At age 65 PSPF pension reduced, if necessary, to the net amount payable.	Age benefit starts at age 65. Full amount paid.

When calculating the net PSPF pension and determining the date at which the pension offset will start, the SS Age pension is always assumed to start at age 65.

### 5.3 Implementing the Pension Offset – Existing Pensioners

It is estimated that 91 of the 139 current pensioners currently receive combined Social Security and PSPF pensions (using the full pension amount) that exceed 80% of their highest salary. If the pension offset is implemented, the PSPF pension amount paid to these persons would have to be reduced.

Several decisions regarding existing pensioners will be required prior to implementation. These are presented below.

**Table 5.4. Decisions Required for Social Security Pension Offset Implementation**

Decision Required	Considerations	Recommendations
<b>1. Should past PSPF pensions which took combined pensions over 80% be recovered?</b>	<ul style="list-style-type: none"> <li>▪ Pensioners had no control over the non-implementation of the pension offset.</li> <li>▪ Legal advice could be sought as to whether recovery is possible.</li> <li>▪ A few pensioners have already died</li> </ul>	<ul style="list-style-type: none"> <li>▪ Do not seek to recover amounts that would not have been paid had the offset been implemented sooner.</li> </ul>
<b>2. How to handle the excess gratuity paid?</b>	<ul style="list-style-type: none"> <li>▪ The pension offset is intended to be applied to the base pension amount prior to calculation of gratuity &amp; reduced pension.</li> <li>▪ 25% of the base (full) pension was paid upon retirement. In many cases, the PSPF pension starts before the SS pension.</li> </ul>	<ul style="list-style-type: none"> <li>▪ In line with the above recommendation for pensions, do not seek to recover gratuity amounts that would not have been paid.</li> <li>▪ Consider amending the Act so that the pension offset applies only to the reduced pension after the gratuity calculation. i.e., SS pension plus reduced PSPF pension should not exceed 80% of pre-retirement salary.</li> </ul>
<b>3. Social Security pension amount to be used for offset calculations</b>	<ul style="list-style-type: none"> <li>▪ In the event that the member worked elsewhere, before and/or after PSPF/public service, only the portion of the pension earned during PSPF/public service should be used</li> </ul>	<ul style="list-style-type: none"> <li>▪ Amend the Act so that the appropriate portion of the Social Security Age pension is used in offset calculations</li> </ul>
<b>4. Implementation Date</b>	<ul style="list-style-type: none"> <li>▪ Adequate notice should be given to those who will see their pension amount reduced.</li> <li>▪ The Fund will immediately benefit from reduced pension payments.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Implement as soon as possible with at least 3 months notice to pensioners</li> </ul>

If the pension offset will be introduced and decisions made on the above questions, a review of each pensioner’s employment history and SS benefit amount will be required to determine the amount of the adjustment, if any. An Excel spreadsheet that will quickly determine the adjustment amount should be used.



# Chapter 6 – Funding Future Benefits

At inception, the PSPF inherited a large unfunded liability given that it would be responsible for pensions earned during service prior to 2004. A partial funding approach to financing PSPF pensions was adopted. Under this approach, excess funds accumulated in the early years were set aside in advance to meet future obligations, but assets were never intended to approach accrued liabilities. GoA pensions prior to 2004 were unfunded, a financing method often described as “pay-as-you-go”; i.e., no assets are set aside, and benefit payments are made from current revenues. If the PSPF had only private sector employers, full funding would have been the appropriate funding method.

The PSPF does not currently have any explicit funding targets. As a result, there is no requirement for specific actions such as increasing the contributing rate or reducing benefits, when a certain deficit amount, funding level, or asset-to-expenditure ratio is either reached or projected by the actuary. Introducing funding targets and prescribed actions will help ensure that future contribution rate increases aimed at enhancing long-term sustainability, are gradual and predictable.

It is strongly recommended that a formal funding policy be established. Such a policy would include specific principles and objectives and then, guided by actuarial advice, a rate adjustment strategy would be devised if necessary. The first step in creating such a policy is identifying high level funding goals for the PSPF. The following table includes examples of two sets of objectives – (i) what the Fund wishes to achieve and (ii) what the Fund wishes to avoid.

**Table 6.1. Sample Funding Objectives**

Things the PSPF Wishes to Achieve	Things the PSPF Wishes to Avoid
<ol style="list-style-type: none"> <li>1. Sustainable plan for the long-term               <ul style="list-style-type: none"> <li>• sufficient assets on hand to meet expenditure in normal times as well as during certain unexpected shocks.</li> </ul> </li> <li>2. Contribution rates, especially for employees, that are generally stable over time               <ul style="list-style-type: none"> <li>• No drastic or surprise increases in contribution rates</li> </ul> </li> </ol>	<ol style="list-style-type: none"> <li>1. Fund assets being depleted</li> <li>2. Placing a large amount of funds in low yielding investments when they could be otherwise used for national development.</li> <li>3. Excessive contribution rates for employees and employers</li> <li>4. Employers opting out of the Fund if less costly pension arrangements are available</li> </ol>

With Fund depletion projected to occur in 2028, current expenditure already at 9% of pensionable salaries, and net assets currently less than 5 times annual benefit expenditure, the options for funding targets are few. For the first funding policy, the following principle and targets are suggested for consideration under the premise that the PSPF will remain partially funded.

**Figure 6.1. Sample Funding Policy Priorities & Triggers**

<p>Principle # 1 <b>Employer/Employee Contribution Ratio</b></p>	<ul style="list-style-type: none"> <li>• Future increases in contribution rate will be in the ratio of 3%/1% for employers/ members respectively. (eg. 6%/4%, 9%/5%, 12%/6%)</li> </ul>
<p>Funding Target #1 <b>Avoid Fund depletion</b></p>	<ul style="list-style-type: none"> <li>• Projected assets should not be depleted within 15 years of the actuarial review date. (2035 for this review)</li> </ul>
<p>Funding Target #2 <b>Minimum Asset-Expenditure (A-E) Ratio</b></p>	<ul style="list-style-type: none"> <li>• Projected reserves should not fall below two (2) times annual expenditure within 10 years of the actuarial review date. (2030 for this review)</li> </ul>

With funding targets based on the number of years from each actuarial review date, the target year will be always moving ensuring a specific level of Fund adequacy and sustainability. It should be noted that given the illiquid nature of loans to members, a separate funding target could include a minimum amount held in liquid assets.

Following are three sets of contribution rate increase schedules and an indication of whether each meets the sample targets described above. In each case, the first contribution rate increase is assumed to take effect in January 2022.

**Table 6.2. Sample Contribution Rate Adjustment (No Social Security Pension Offset)**

Rate Adjustment	E'er Rate	E'ee rate	Fund Depleted	A-E Ratio in 2030	Target #1 Met?	Target #2 Met?
<b>Current Rates</b>	3%	3%	2028	-1.4	X	X
<b>1. One time adjustment in Jan. 2022</b>	6%	4%	2033	0.9	√	X
<b>2. One time adjustment in Jan. 2022</b>	9%	5%	2043	3.3	√	√
<b>3. 2-step adjustment</b>						
2022	6%	4%	2040	2.2	√	√
2026	9%	5%				

As shown above, rate increases to a combined 14% in either one (in 2022) or two steps (2022 & 2026) will meet both suggested funding targets. However, funding levels will be higher if the increase to 14% happens sooner.

If the Social Security pension offset is implemented in 2022, the sample funding targets will be more easily met as shown in table 6.3 below.

**Table 6.3. Sample Contribution Rate Adjustments (with Social Security Pension Offset)**

Rate Adjustment	E'er Rate	E'ee rate	Fund Depleted	A-E Ratio in 2030	Target #1 Met?	Target #2 Met?
<b>Current Rates</b>	3%	3%	2029	-0.7	X	X
<b>1. One time adjustment in Jan. 2022</b>	6%	4%	2036	1.9	√	X
<b>2. One time adjustment in Jan. 2022</b>	9%	5%	2047	4.5	√	√
<b>3. 2-step adjustment</b>						
<b>2022</b>	6%	4%	2044	3.4	√	√
<b>2026</b>	9%	5%				

As shown above, implementing the Social Security pension offset will make a material difference in Fund sustainability.

The above funding targets and rate increase scenarios are illustrative only. Other targets and rate increase schedules can be prepared and presented for further discussion.

# Chapter 7 – Risk Assessment

## Snapshot

The worse case scenario for any pension plan is to be unable to pay benefits when they are due. This means not only having sufficient assets on hand at all times, but also having assets that can be readily converted to cash. In this regard, the ability of the PSFB to make tough, and potentially unpopular decisions, will be critical. Following are several risks that could challenge PSPF solvency along with strategies that can be adopted to reduce the long-term effect of these risks.

**Table 7.1. PSPF Risks & Mitigating Strategies**

Risk	Description of the Risk	Risk Level	Mitigating Strategies
<b>Extremely high contribution rates in the future</b>	<ul style="list-style-type: none"> <li>Higher contribution rates, at least by the employers, are inevitable. How high, and when increases are made, will depend on funding objectives, experience and decision making.</li> </ul>	High	<ul style="list-style-type: none"> <li>Adopt a funding policy and start increasing contribution rates soon</li> </ul>
<b>Investments poorly diversified and returns lower than expected and lower than possible</b>	<ul style="list-style-type: none"> <li>80% of investments are in short-term deposits</li> <li>75% of investments are in one commercial bank and yields are low</li> </ul>	High	<ul style="list-style-type: none"> <li>Expand the list of investment options and match investments with cash flow needs</li> </ul>
<b>Not implementing Social Security pension offset</b>	<ul style="list-style-type: none"> <li>Plan rules provide for an acceptable means of ensuring that members of all income levels receive adequate and equitable combined pensions from state pension arrangements. Implementing this rule will enhance sustainability and lower future required contribution rates.</li> </ul>	High	<ul style="list-style-type: none"> <li>Implement the Social Security pension offset as soon as possible</li> </ul>
<b>Pension Indexation</b>	<ul style="list-style-type: none"> <li>It is not clear whether the Board can grant pensions increases different from salary increases.</li> <li>A 100% link between salary and pension increases could result in excessive pension costs as well as lower salary increases given the related implications</li> </ul>	High	<ul style="list-style-type: none"> <li>Confirm whether the Board has authority to not grant pension increases</li> <li>Remove direct link between pension increases and salary increases</li> </ul>
<b>Net \$2.585 million due from GoA</b>	<ul style="list-style-type: none"> <li>If deficits continue to grow, cash will be needed in a few years to meet benefit obligations</li> </ul>	Medium	<ul style="list-style-type: none"> <li>GoA should indicate when it will pay outstanding amounts</li> </ul>

# Actuarial Opinion

This opinion is given with respect to the Public Service Pension Fund.

We performed a review of the Public Service Pension Fund as of December 31, 2020, based on the Fund's provisions and data as at that date. The Public Service Pension Board (PSFB) has confirmed that, between December 31, 2020 and the date of this report, no subsequent events, modifications or extraordinary changes to the membership or the Plan that would materially affect the results of this actuarial valuation have occurred, except as indicated in this report.

We hereby certify that, in our opinion, as of December 31, 2020:

- The membership data on which the projections are based are sufficient and reliable for the purposes of the review.
- The assumptions are appropriate for the purposes of the review.
- The methods employed in the review are appropriate for the purposes of the review.

This report has been prepared using guidance from Actuarial Practice Standard #3 of the Caribbean Actuarial Association. While this standard relates primarily to social security programmes, it is the standard whose concepts most closely match the partially funded public sector pension scheme being reviewed.

The assumptions that form each actuarial basis used in this report were reasonable at the time this actuarial review report was prepared. The recommendations and opinions are given exclusively from a financial viewpoint. This actuarial report does not constitute a legal opinion on the rights and duties of the PSFB, the participating employers, or the members of the Fund.

Actuarial reviews are performed based on assumptions and methods that are in accordance with sound actuarial principles. Emerging experience differing from these assumptions may result in gains or losses, which may affect future contribution levels. These gains or losses will be revealed in future actuarial reviews. The next actuarial review should be performed not later than as of December 31, 2023.

The undersigned are available to provide supplementary information and explanation, as appropriate, concerning this report.

## LifeWorks



Derek Osborne  
Fellow of the Society of Actuaries  
Partner



Marcia Tam-Marks  
Fellow of the Society of Actuaries  
Partner

Nassau, Bahamas  
June 23, 2021

# Appendix A – Summary of Plan Provisions

The projections and analysis in this actuarial review are based on the Plan provisions in effect on December 31, 2020. The following is a summary of the Plan’s main provisions in effect December 31, 2020. It is not intended as a complete description of the Plan.

<b>Eligible Members</b>	Pensionable GoA employees (other than certain police officers) and employees of certain Government agencies
<b>Pensionable Salary</b>	Base salary
<b>Final Average Salary</b>	Highest salary if in the position for three years; Average salary in last three years if in the position for less than three years.
<b>Min. Service for Benefits</b>	10 years
<b>Normal Retirement Age</b>	If joined before 1/1/2004: 60 If joined after 1/1/2004: 65
<b>Early Retirement Age</b>	5 years before Normal Retirement Age
<b>Benefit Accrual Rates</b>	2.0% per year of service before 1/1/2004 plus 1.25% per year of service after 1/1/2004
<b>Maximum Benefit</b>	PSPF pension only: 2/3rds of Final Average Salary PSPF + SS pensions: 80% Final Average Salary (not yet in force)
<b>Gratuity Option at Retirement</b>	Convert up to 25% with factor of 12.5
<b>Termination Benefit</b>	If < 10 years of service: refund of member contributions with interest If > 10 years of service: discounted gratuity portion of pension earned to date (paid upon exit) with reduced pension starting at Normal Retirement Age
<b>Death Benefit</b>	Survivors benefit to eligible survivors
<b>Survivors Benefit</b>	<ul style="list-style-type: none"> <li>• Payable upon death of current or deferred pensioner and ceases upon remarriage or after 5 years if &lt; 50 when spouse died.</li> <li>• Children until age 18, or 21 if in full-time education.</li> </ul>
<b>Employee Contributions</b>	3%
<b>Employer Contributions</b>	At least 3% but upon actuarial advice, rate required to adequately fund the Plan

# Appendix B – Best Estimate Assumptions

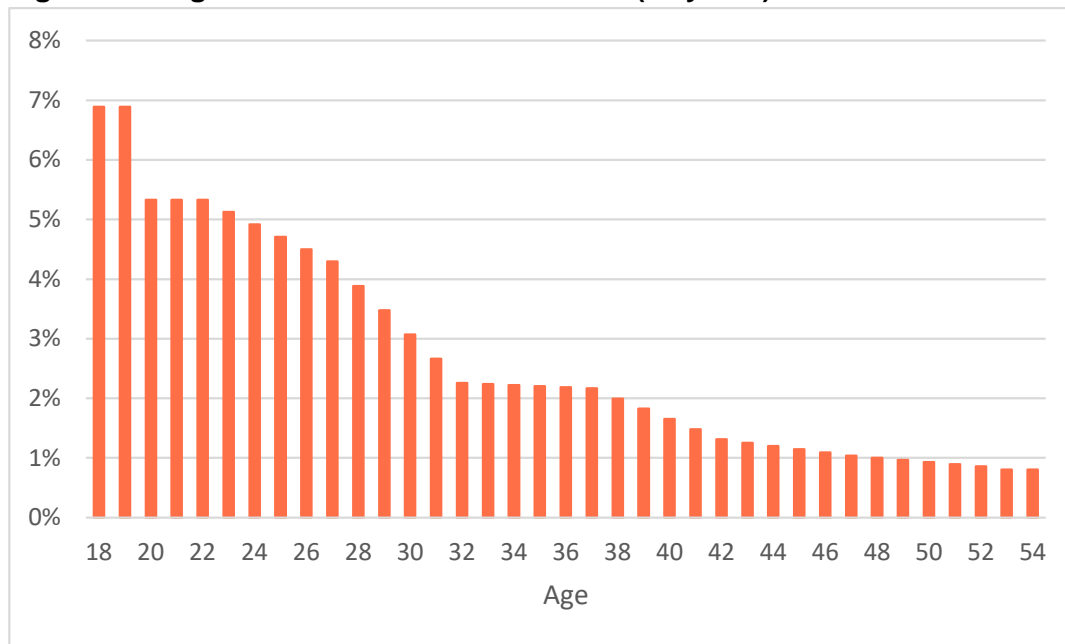
**Table B.1 – Best Estimate Assumptions**

	<b>Assumption</b>
<b>Increase in # of active members</b>	0.5% per annum
<b>Salary Increases</b>	2.5% per annum
<b>Interest on member contributions</b>	2% per annum
<b>Increase in Social Security wage ceiling</b>	1% per annum
<b>% of pension converted to lump sum</b>	25%
<b>% of members who convert portion of pension to a lump sum</b>	100%
<b>Early Retirement</b>	10% retire (with immediate pension) 5 years prior to their Normal Retirement Age
<b>Normal Retirement</b>	100% of remaining members at Normal Retirement Age
<b>Pension Increases</b>	1% per annum
<b>Investment Return</b>	3% per annum
<b>Administrative Expenses</b>	\$0.9 million in 2021 increasing by 2.5% per annum

**Table B.2 Mortality Rates (x 1000) & Termination Rates**

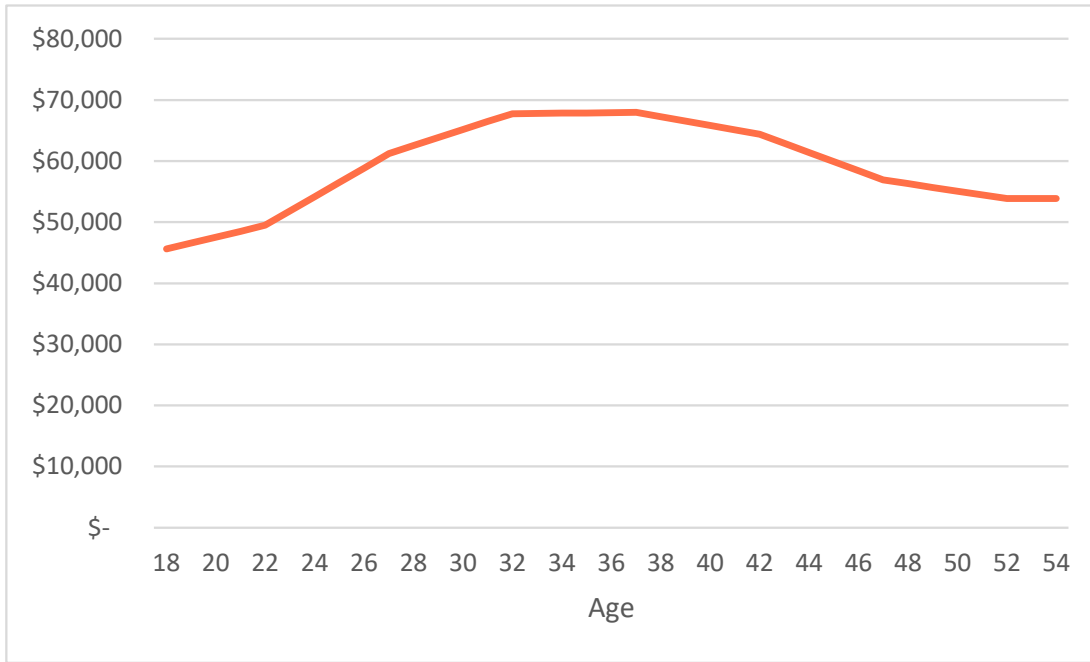
Age	Mortality Rates		Termination Rates
	Male	Female	
20	0.51	0.28	1.9%
25	0.66	0.29	1.8%
30	0.80	0.35	1.7%
35	0.85	0.48	1.5%
40	1.07	0.71	1.4%
45	1.58	0.97	1.3%
50	2.58	1.43	1.1%
55	4.43	2.29	1.0%
60	7.98	4.44	-
70	23.73	13.73	-
80	62.03	39.40	-
90	152.90	116.27	-
100	317.24	276.43	-

**Figure B.1. Age Distribution of New Entrants (all years)**





**Figure B.2. Salary Distribution of New Entrants (2021)**



Note: Starting salaries are assumed to increase each year by the rate of salary increases assumed for the specific scenario being modelled.

# Appendix C – Membership Data

## Description of Membership Data

PSPF projections are based on data provided to us by the PSPF. We have taken the following steps to review the data to ensure sufficiency and reliability:

- the contributions and pensions paid since the last review shown in the financial statements were compared with the equivalent values drawn from the data;
- a reconciliation was performed in order to follow the changes in the number of active members and retired members and beneficiaries;
- basic data checks were performed to ensure that age, salary and service data were reasonable for the purposes of the review.

## Summary of Membership Data

The following tables were prepared using data as of December 31, 2020:

C.1 Active Members by Employer

C.2 Summary of Membership Data

C.3 Age/Service/Salary Distribution for Active Members

C.4 Age Profile of Active Members based on their Normal Retirement Age

C.5 Age/Pension Distribution for Inactive Members

**Table C.1. Active Member by Employer**

<b>Employer</b>	<b>Count</b>
Anguilla Air & Seaports Authority	176
Anguilla Community College	11
Anguilla Development Board	9
Anguilla Tourist Board	9
Financial Services Commission	10
Government of Anguilla	885
Health Authority of Anguilla	195
Public Service Pension Fund	5
Public Utilities Commission	2
Royal Anguilla Police Force	12
Water Corporation of Anguilla	19
<b>Total</b>	<b>1,333</b>

**Table C.2. Summary of Membership Data**

	<b>Males</b>	<b>Females</b>	<b>Total</b>
<b># of Active Participants</b>	418	915	1,333
Average Age	38.7	39.9	39.5
Average Pensionable Service	10.6	12.5	11.9
Average Pensionable Salary	\$69,656	\$70,460	\$70,208
Total Pensionable Salary	\$29,116,124	\$64,471,098	\$93,587,222
<b># of Retired Participants in Receipt of Pension</b>	45	94	139
Average Age	63.7	64.0	63.9
Average Annual Pension	\$36,629	\$31,836	\$33,388
Total Annual Pensions	\$1,648,285	\$2,992,603	\$4,640,888
<b># of Deferred Pensioners</b>	42	87	129
Average Age	48.9	46.1	47.0
Average Annual Pension	\$20,214	\$14,333	\$16,248
Total Annual Pensions	\$848,975	\$1,246,960	\$2,095,935
<b># of Survivors Pensioners</b>	2	6	8
Average Age	38.8	34.6	35.7
Average Annual Pension	\$16,794	\$9,533	\$11,348
Total Annual Pensions	\$33,588	\$57,195	\$90,783

**Table C.3. Age/Service/Salary Distribution for Active Members**

Age	Years of Pensionable Service																TOTAL	
	0 to 4		5 to 9		10 to 14		15 to 19		20 to 24		25 to 29		30 to 34		35 to 39			
	#	Avg. Sal	#	Avg. Sal	#	Avg. Sal	#	Avg. Sal	#	Avg. Sal	#	Avg. Sal	#	Avg. Sal	#	Avg. Sal	#	Avg. Sal
15 to 19	12	\$40,438															12	\$40,438
20 to 24	115	\$46,701	8	\$53,760													123	\$47,160
25 to 29	97	\$54,442	56	\$56,272	18	\$59,303											171	\$55,553
30 to 34	76	\$64,787	28	\$81,093	90	\$59,629	21	\$68,312									215	\$65,096
35 to 39	51	\$70,491	35	\$82,987	63	\$71,040	45	\$77,035	24	\$85,274							218	\$75,634
40 to 44	33	\$64,114	15	\$84,662	40	\$77,971	26	\$93,193	34	\$87,174	7	\$89,311					155	\$80,752
45 to 49	27	\$59,827	15	\$90,738	36	\$70,063	16	\$81,420	16	\$94,676	22	\$89,182	15	\$86,136			147	\$78,709
50 to 54	14	\$57,906	12	\$80,871	26	\$74,675	14	\$79,055	11	\$82,422	13	\$93,657	41	\$97,054	5	\$89,338	136	\$83,673
55 to 59	23	\$50,805	9	\$79,518	23	\$69,693	15	\$78,792	9	\$88,444	13	\$79,424	20	\$83,181	21	\$96,058	133	\$76,529
60 to 64			7	\$82,178	14	\$70,842	2	\$53,058									23	\$72,746
<b>Total</b>	<b>448</b>	<b>\$56,620</b>	<b>185</b>	<b>\$73,777</b>	<b>310</b>	<b>\$68,022</b>	<b>139</b>	<b>\$79,292</b>	<b>94</b>	<b>\$87,531</b>	<b>55</b>	<b>\$87,950</b>	<b>76</b>	<b>\$91,248</b>	<b>26</b>	<b>\$94,766</b>	<b>1,333</b>	<b>\$70,208</b>

Average Age: 39.5  
 Average Service: 11.9  
 Average Salary: \$70,208

**Table C.4. Age Profile of Active Members based on Normal Retirement Age**

Age	Normal Retirement Age		Total
	60	65	
15 to 19	-	12	12
20 to 24	-	123	123
25 to 29	-	171	171
30 to 34	-	215	215
35 to 39	49	169	218
40 to 44	56	99	155
45 to 49	63	84	147
50 to 54	76	60	136
55 to 59	67	66	133
60 to 64	-	23	23
<b>Total</b>	<b>311</b>	<b>1,022</b>	<b>1,333</b>

**Table C.5. Age/Pension Distribution for Inactive Members**

Age	Retired		Deferred		Survivors	
	#	Avg. Pension	#	Avg. Pension	#	Avg Pension
Under 20	-	-	-	-	2	\$3,322
25-29	-	-	4	\$7,663	-	-
30-34	-	-	29	\$8,920	-	-
35-39	-	-	36	\$13,508	-	-
40-44	-	-	24	\$15,623	1	\$23,718
45-49	-	-	21	\$28,565	1	\$4,761
50-54	-	-	9	\$20,358	-	-
55-59	8	\$36,366	2	\$10,882	1	21,729
60-64	82	\$33,350	4	\$35,126	-	-
65-69	40	\$35,636	-	-	1	\$10,357
70-74	9	\$21,091	-	-	-	-
<b>Total</b>	<b>139</b>	<b>\$33,388</b>	<b>129</b>	<b>\$16,248</b>	<b>8</b>	<b>\$11,348</b>

# Appendix D – Summary of Relevant Social Security Provisions

Following is a summary of key Social Security rules related to coverage, contributions and benefits and details of the *Age* pension:

**Coverage:** All employed and self-employed persons between the ages of 16 and 65.

**Contributions:** 10% of insurable earnings – 5% paid by the employee and 5% by the employer. Insurable earnings include salary and wages up to the ceiling on insurable wages. The ceiling on insurable earnings is currently \$7,000 per month.

**Benefits:** There are two categories of benefits – Short-term and Long-term. The benefits relevant to the discussion at hand are Long-term benefits which include *Age*, *Disability* and *Survivors* pensions.

An *Age pension* is payable to an insured person who has attained age 65 and who has made at least 500 weekly contributions (approximately 10 years). The amount of the monthly pension is based on the number of contributions made, average insurable earnings in the best 3 years out of the last 15 years, and a schedule of benefit rates ranging from 30% to 60%. A minimum pension of \$165 per week is payable, should the calculated pension fall below this amount. Old *Age* pensions are paid even if the insured continues to work and while pension increases are not automatic, periodic adjustments are made so that pension amounts keep pace with inflation.

Social Security pensions are also payable should a contributor be deemed disabled prior to attaining pensionable age. For a *Disability* pension, only 3 years of contributions are required, and the benefit percentage ranges from 30% to 60%, increasing in the same pattern as for the *Age* pension. Where a contributor or pensioner dies and has a dependent spouse and/or children, a pension may also be payable to the spouse and each eligible child.





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