

April 1, 2021

Mr. David M. Williams, Plan Administrator West Palm Beach Police Pension Fund 2100 N. Florida Mango Road West Palm Beach, Florida 33409

Re: West Palm Beach Police Pension Fund

Dear Dave:

As requested, we have prepared the enclosed Supplemental Actuarial Valuation Report to illustrate the first-year impact of the following scenarios:

- Scenario 1: Lowering the investment return assumption from 7.50% to 7.375% effective in the September 30, 2020 actuarial valuation.
- Scenario 2: Scenario 1 above, and additionally, increasing the maximum period of DROP participation from 5 years (or upon attaining 30 years of service if earlier) to 8 years (or upon attaining 33 years of service if earlier).
- Scenario 3: Lowering the investment return assumption from 7.50% to 7.25% effective in the September 30, 2020 actuarial valuation.
- Scenario 4: Scenario 3 above, and additionally, increasing the maximum period of DROP participation from 5 years (or upon attaining 30 years of service if earlier) to 8 years (or upon attaining 33 years of service if earlier).

Additionally, we have included herein a discussion on the proposed change in the DROP and Share Plan interest crediting rate (see pages 2 and 3).

With the exceptions described herein, all other assumptions, methods, benefit provisions, and data are the same as indicated in our September 30, 2020 Actuarial Valuation Report.

Summary of Findings

The table on the following page summarizes the impact of each scenario if the proposed changes are adopted.

Summary of Findings								
	9/30/2019 9/30/2020 9/30/2020 Valuation		Scenario 1: 9/30/2020 7.375% Invest. Return	Scenario 2: 9/30/2020 7.375% Invest. Return & Extend DROP Participation to 8 Years	Scenario 3: 9/30/2020 7.25% Invest. Return	Scenario 4: 9/30/2020 7.25% Invest. Return & Extend DROP Participation to 8 Years		
If the City Pays the Required Employer Contribution (REC) on: For the Fiscal Year Ending	10/1/2020 9/30/2021	10/1/2021 9/30/2022	10/1/2021 9/30/2022	10/1/2021 9/30/2022	10/1/2021 9/30/2022	10/1/2021 9/30/2022		
REC for Contribution Year	\$ 5,935,584	\$ 4,370,540	\$ 4,856,058	\$ 5,013,862	\$ 5,354,106	\$ 5,507,217		
REC as % of Covered Payroll in Contribution Year	22.95 %	17.64 %	19.60 %	20.24 %	21.61 %	22.23 %		
Change in REC for Contribution Year	N/A	N/A	\$ 485,518	\$ 643,322	\$ 983,566	\$ 1,136,677		
Change in REC as % of Covered Payroll in Contribution Year	N/A	N/A	1.96 %	2.60 %	3.97 %	4.59 %		
Change in Unfunded Actuarial Accrued Liability (UAAL)	N/A	N/A	\$ 4,473,254	\$ 5,854,816	\$ 9,058,165	\$ 10,422,232		
Funded Ratio	94.0%	98.0%	97.0%	96.7%	96.0%	95.7%		

The increase in the Unfunded Actuarial Accrued Liability (UAAL) in each scenario is being amortized over 30 years. In Scenarios 2 and 4, the assumed retirement rates were changed to reflect the proposed extension of the maximum DROP participation. The revised retirement rates are summarized on page 8. If the proposed changes are adopted, we recommend that the retirement rates be reviewed and revised periodically to reflect emerging experience.

Please note that the impact of the proposed changes for each scenario is being shown on the actuarially determined contribution for the fiscal year ending September 30, 2022 using the valuation results as of September 30, 2020, the most recent actuarial valuation. If the proposed plan changes in Scenario 2 or 4 are adopted before the end of the current fiscal year, funding would need to begin October 1, 2021. An actuarial impact statement based on the actuarial valuation as of September 30, 2020 would show the actuarially determined contribution for the fiscal year ending September 30, 2022 reflecting the plan amendment.

Proposed Change in DROP and Share Plan Interest Crediting Rate (Not Included in Study Results)

We were also requested to discuss the impact of changing the DROP and Share Plan interest crediting rate from the current rate of 8% or 4% depending on the fund's investment returns to a fixed rate of 7.5%, with the possibility of giving members the option to elect the 7.5% interest rate or maintain the current rates. In our opinion, this change would have no immediate actuarial impact for advance funding purposes, since the DROP and Share Plan interest crediting rate is not explicitly reflected. However, it is likely that gains generated from a 4% interest crediting rate would be eliminated over time.



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Under the current DROP and Share Plan interest provisions, actuarial gains are realized in years when the investment return on plan assets is greater than the interest crediting rate, and actuarial losses are realized in years when the investment return is less than the interest crediting rate. The interest crediting rate for DROP and Share Plan accounts is based on the cumulative investment return since FYE 2012. In years when the cumulative return since FYE 2012 exceeds 8%, the interest crediting rate on DROP and Share Plan balances is 8%, and when the cumulative returns since FYE 2012 are below 8% per year, the interest crediting rate is lowered to 4%.

One way to compare the two interest rate options is to consider that crediting 7.5% for each of the next eight years is similar to the current provision if 8% is credited for seven years and 4% is credited for one year (i.e., both options would produce the same cumulative return over the eight-year period in this hypothetical example). However, if over the same period there would be more years limited to the 4% rate, then the 7.5% interest option would be costlier than the current provision. Based on the recent capital market forecasts, average investment returns are expected to be below 7.5%, and therefore, over time the cumulative investment return since FYE 2012 is expected to decrease below 8%. If this occurs, the interest crediting rate for DROP and Share Plan accounts will decrease to 4% under the current provisions. If the interest crediting rate is changed to a fixed 7.5%, this would result in 7.5% being credited in years when the 4% rate would have applied. Therefore, the 7.5% interest crediting rate would increase the probability of eliminating actuarial gains that are projected to occur over time.

It is important to note that actuarial losses will be generated if the DROP and Share Plan interest crediting rate is changed to a fixed rate that exceeds the investment return assumption. Specifically, if the investment return assumption is lowered below 7.5% and the DROP and Share Plan interest crediting rate is set equal to 7.5%, there will be actuarial losses. These actuarial losses will need to be pre-funded which will result in an increase to the Required City Contribution. The pre-funding of these actuarial losses is not included in our scenarios in our exhibits since they still reflect the 4%/8% interest crediting rate structure. Under the 4%/8% interest crediting rate we believe the average interest crediting rate would be less than 7.25%, so there would be no need to pre-fund actuarial losses in any of the scenarios covered in this study. If the DROP interest crediting rate is set equal to 7.5% and the investment return assumption is lowered below 7.5%, we would need to prepare another study to measure the financial impact this combination would have.

Other Cost Considerations

As of September 30, 2020, the Actuarial Value of Assets exceeds the Market Value of Assets by approximately \$10.3 million. This difference will be recognized over the next several years. In turn, the computed overall employer contribution rate will gradually increase by approximately 3.62% of covered payroll in the absence of offsetting gains.



Risks Associated with Measuring the Accrued Liability and Actuarially Determined Contribution

The determination of the accrued liability and the actuarially determined contribution requires the use of assumptions regarding future economic and demographic experience. Risk measures are intended to aid in the understanding of the effects of future experience differing from the assumptions used in the course of the actuarial valuation. Risk measures may also help with illustrating the potential volatility in the accrued liability and the actuarially determined contribution that result from the differences between actual experience and the actuarial assumptions.

Future actuarial measurements may differ significantly from the current measurements presented in this report due to such factors as the following: Plan experience differing from that anticipated by the economic or demographic assumptions; changes in economic or demographic assumptions due to changing conditions; increases or decreases expected as part of the natural operation of the methodology used for these measurements (such as the end of an amortization period, or additional cost or contribution requirements based on the Plan's funded status); and changes in Plan provisions or applicable law. The scope of this report does not include an analysis of the potential range of such future measurements.

Examples of risk that may reasonably be anticipated to significantly affect the Plan's future financial condition include:

- Investment risk actual investment returns may differ from the either assumed or forecasted returns;
- 2. Contribution risk actual contributions may differ from expected future contributions. For example, actual contributions may not be made in accordance with the Plan's funding policy or material changes may occur in the anticipated number of covered employees, covered payroll, or other relevant contribution base;
- 3. Salary and Payroll risk actual salaries and total payroll may differ from expected, resulting in actual future accrued liability and contributions differing from expected;
- 4. Longevity risk members may live longer or shorter than expected and receive pensions for a period of time other than assumed;
- Other demographic risks members may terminate, retire or become disabled at times or with benefits other than assumed resulting in actual future accrued liability and contributions differing from expected.

The effects of certain trends in experience can generally be anticipated. For example, if the investment return is less (or more) than the assumed rate, the cost of the Plan can be expected to increase (or decrease). Likewise if longevity is improving (or worsening), increases (or decreases) in cost can be anticipated.

The computed contribution amounts may be considered as minimum contributions that comply with the pension Board's funding policy and the State statutes. The timely receipt of the actuarially determined contributions is critical to support the financial health of the Plan. Users of this report should be aware that contributions made at the actuarially determined rate do not necessarily guarantee benefit security.



Additional Risk Assessment

Additional risk assessment is outside the scope of this report. Additional assessment may include scenario tests, sensitivity tests, stochastic modeling, stress tests, and a comparison of the present value of accrued benefits at low-risk discount rates with the actuarial accrued liability.

Additional Disclosures

This report was prepared at the request of the Board and is intended for use by the Retirement Plan and those designated or approved by them. This report may be provided to parties other than the Plan only in its entirety and only with the permission of the Board. GRS is not responsible for unauthorized use of this report.

This report is intended to describe the financial effect of the proposed changes on the Retirement Plan. Potential effects on other benefit plans were not considered. No statement in this report is intended to be interpreted as a recommendation in favor of the changes, or in opposition to them.

The study was performed on the basis of participant and financial data supplied by the Plan Administrator for the September 30, 2020 actuarial valuation. We checked for internal and year-to-year consistency, but did not audit this data. We are not responsible for the accuracy or completeness of the information provided by the Plan Administrator.

The measurement date used for calculating the financial effect of the proposed changes was September 30, 2020. The calculations are based upon assumptions regarding future events, which may or may not materialize. They are also based upon present and proposed plan provisions that are outlined in the report. If you have reason to believe that the assumptions that were used are unreasonable, that the plan provisions are incorrectly described, that important plan provisions relevant to this proposal are not described, or that conditions have changed since the calculations were made, you should contact the author of this report prior to relying on information in the report.

If you have reason to believe that the information provided in this report is inaccurate, or is in any way incomplete, or if you need further information in order to make an informed decision on the subject matter of this report, please contact the author of the report prior to making such decision.

In the event that more than one change is being considered, it is very important to remember that the results of separate actuarial valuations cannot generally be added together to produce a correct estimate of the combined effect of all of the changes. The total can be considerably greater than the sum of the parts due to the interaction of various plan provisions with each other, and with the assumptions that must be used.



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This report was prepared using our proprietary valuation model and related software which in our professional judgment has the capability to provide results that are consistent with the purposes of the valuation and has no material limitations or known weaknesses. We performed tests to ensure that the model reasonably represents that which is intended to be modeled.

Jeffrey Amrose and Trisha Amrose are members of the American Academy of Actuaries. These actuaries meet the Academy's Qualification Standards to render the actuarial opinions contained herein.

The signing actuaries are independent of the plan sponsor.

This report has been prepared by actuaries who have substantial experience valuing public employee retirement systems. To the best of our knowledge the information contained in this report is accurate and fairly presents the actuarial position of the Plan as of the valuation date. All calculations have been made in conformity with generally accepted actuarial principles and practices, and with the Actuarial Standards of Practice issued by the Actuarial Standards Board and with applicable statutes.

We welcome your questions and comments.

Sincerely yours,

Jeffrey Amrose, EA, MAAA, FCA

Senior Consultant & Actuary

Trisha Amrose, EA, MAAA, FCA

Consultant & Actuary

Enclosures

This communication shall not be construed to provide tax advice, legal advice or investment advice.



Supplemental Actuarial Valuation Report

Plan

West Palm Beach Police Pension Fund

Valuation Date

September 30, 2020

Date of Report

April 1, 2021

Report Requested by

Board of Trustees

Prepared by

Jeffrey Amrose, EA, MAAA, FCA

Group Valued

All active and inactive members of the Plan.

Actuarial Assumptions / Plan Provisions Being Considered for Change

- Scenario 1: Lowering the investment return assumption from 7.50% to 7.375% effective in the September 30, 2020 actuarial valuation.
- Scenario 2: Scenario 1 above, and additionally, increasing the maximum period of DROP participation from 5 years (or upon attaining 30 years of service if earlier) to 8 years (or upon attaining 33 years of service if earlier).
- Scenario 3: Lowering the investment return assumption from 7.50% to 7.25% effective in the September 30, 2020 actuarial valuation.
- Scenario 4: Scenario 3 above, and additionally, increasing the maximum period of DROP participation from 5 years (or upon attaining 30 years of service if earlier) to 8 years (or upon attaining 33 years of service if earlier).

Participants Affected

All active and inactive members of the Plan.

Actuarial Assumptions and Methods

Same as used in the September 30, 2020 Actuarial Valuation Report, with the exception of the investment return assumption and/or the assumed rates of normal retirement.

For Scenarios 2 and 4:

• Increase the probability of retirement in the first year when reaching normal retirement eligibility from 45% to 65%.



- Increase the probability of retirement in the next two years after reaching normal retirement eligibility from 35% to 55%.
- Increase the probability of retirement in the third year after reaching normal retirement eligibility from 35% to 100%.
- Increase the initial retirement rate for members eligible for normal retirement as of the valuation date, September 30, 2020, to 85%.

Some of the key assumptions/methods are:

Investment Return Baseline (9/30/2020 actuarial valuation): 7.50%

Scenarios 1 and 2: 7.375%; Scenarios 3 and 4: 7.25%

Salary increase 5.00% per year Cost Method Entry Age Normal

Mortality PUB-2010 Headcount Weighted Safety Below Median Employee Male Table

(pre-retirement), the PUB-2010 Headcount Weighted Safety Employee Female Table (pre-retirement), the PUB-2010 Headcount Weighted Safety Below Median Healthy Retiree Male Table (post-retirement) and the PUB-2010 Safety Healthy Retiree Female Table (post-retirement). These tables use ages set forward one year and mortality improvements to all future years after 2010 using Scale MP-2018. These are the same rates used for Special Risk Class members in the July 1, 2019 Actuarial Valuation of the Florida Retirement System (FRS), as required under Florida Statutes, Chapter

112.63(1)(f).

Amortization Period for Any Change in Actuarial Accrued Liability

30 years

Summary of Data Used in Report

See page 12.

Actuarial Impact of Proposal(s)

See attached page(s) for the first-year impact of the proposed changes; please refer to pages 2 and 3 for a discussion about the proposed change in the interest crediting rate for DROP and Share Plan balances.

Other Cost Considerations

As of September 30, 2020, the Actuarial Value of Assets exceeds the Market Value of Assets by approximately \$10.3 million. This difference will be recognized over the next several years. In turn, the computed overall employer contribution rate will gradually increase by approximately 3.62% of covered payroll in the absence of offsetting gains.



Actuarially Determined Contribution (ADC)

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A.	Valuation Date	September 30, 2019 Valuation	Baseline: September 30, 2020 Valuation	Scenario 1: September 30, 2020 7.375% Invest. Return	Scenario 2: September 30, 2020 7.375% Invest. Return & Extend DROP Participation to 8 Years	Scenario 3: September 30, 2020 7.25% Invest. Return	Scenario 4: September 30, 2020 7.25% Invest. Return & Extend DROP Participation to 8 Years
В.	ADC to Be Paid During				r articipation to o rears		r articipation to 5 rears
	Fiscal Year Ending	9/30/2021	9/30/2022	9/30/2022	9/30/2022	9/30/2022	9/30/2022
C.	Assumed Date of Employer Contributions	Quarterly	Quarterly	Quarterly	Quarterly	Quarterly	Quarterly
D.	Annual Payment to Amortize						
	Unfunded Actuarial Accrued Liability (UAAL)	\$ 1,865,856	\$ 573,752	\$ 870,112	\$ 964,947	\$ 1,171,214	\$ 1,263,678
E.	Normal Cost	6,746,272	6,369,990	6,552,505	6,614,324	6,741,674	6,803,139
F.	Total Required Contribution if Paid Continuously During Year Beginning on Valuation Date	8,612,128	6,943,742	7,422,617	7,579,271	7,912,888	8,066,817
G.	Covered Payroll	24,754,653	23,708,778	23,708,778	23,708,778	23,708,778	23,708,778
Н.	Total Required Contribution as % of Covered Payroll	34.79 %	29.29 %	31.31 %	31.97 %	33.38 %	34.02 %
1.	Member Contribution as % of Covered Payroll	11.00 %	11.00 %	11.00 %	11.00 %	11.00 %	11.00 %
J.	State Contribution as % of Covered Payroll	0.00 %	0.00 %	0.00 %	0.00 %	0.00 %	0.00 %
K.	Required Employer Contribution (REC) as % of Covered Payroll	23.79 %	18.29 %	20.31 %	20.97 %	22.38 %	23.02 %
L.	Projected Covered Payroll for Contribution Year	25,868,612	24,775,673	24,775,673	24,775,673	24,775,673	24,775,673
M.	REC for Contribution Year: K x L	6,154,144	4,531,472	5,031,940	5,195,460	5,544,797	5,703,361
N.	REC as % of Covered Payroll in Contribution Year: M ÷ L	23.79 %	18.29 %	20.31 %	20.97 %	22.38 %	23.02 %
Ο.	Change in REC for Contribution Year			500,468	663,988	1,013,325	1,171,889
Р.	Change in REC as % of Covered Payroll in Contribution Year			2.02 %	2.68 %	4.09 %	4.73 %
If t	he City Makes its Contribution on October 1st:						
Q.	REC for Contribution Year	5,935,584	4,370,540	4,856,058	5,013,862	5,354,106	5,507,217
R.	REC as % of Covered Payroll in Contribution Year	22.95 %	17.64 %	19.60 %	20.24 %	21.61 %	22.23 %
ς	Change in REC for Contribution Year	22.93 %	17.04 %	485,518	643,322	983,566	1,136,677
	Change in REC as % of Covered Payroll			403,310	043,322	303,300	1,130,077
I	in Contribution Year			1.96 %	2.60 %	3.97 %	4.59 %



Actuarial Value of Benefits and Assets

					I	ı
A. Valuation Date	September 30, 2019 Valuation	Baseline: September 30, 2020 Valuation	Scenario 1: September 30, 2020 7.375% Invest. Return	Scenario 2: September 30, 2020 7.375% Invest. Return & Extend DROP	Scenario 3: September 30, 2020 7.25% Invest. Return	Scenario 4: September 30, 2020 7.25% Invest. Return & Extend DROP
B. Actuarial Present Value of All Projected				Participation to 8 Years		Participation to 8 Years
Benefits for				, articipation to a rears		, armopanen to e rears
1. Active Members						
a. Service Retirement Benefits	\$ 149,551,512	\$ 141,905,976	\$ 145,467,643	\$ 144,445,486	\$ 149,155,997	\$ 147,998,021
b. Vesting Benefits	4,646,762	4,323,293	4,448,513	4,448,513	4,578,493	4,578,493
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c. Disability Benefits	5,971,963	5,616,438	5,745,543	5,745,543	5,878,979	5,878,979
d. Preretirement Death Benefits	1,625,442	1,132,470	1,159,070	1,032,939	1,186,575	1,057,345
e. Return of Member Contributions	516,059	499,619	501,247	498,214	502,863	499,810
f. Total	162,311,738	153,477,796	157,322,016	156,170,695	161,302,907	160,012,648
2. Inactive Members						
a. Service Retirees & Beneficiaries	187,937,907	190,567,357	192,930,681	192,930,681	195,347,292	195,347,292
b. Terminated Vested Members	1,708,451	2,422,684	2,470,149	2,470,149	2,519,034	2,519,034
c. Total	189,646,358	192,990,041	195,400,830	195,400,830	197,866,326	197,866,326
3 Share Plan / DROP Accounts	112,701,915	119,311,401	119,311,401	119,311,401	119,311,401	119,311,401
4. Total for All Members	464,660,011	465,779,238	472,034,247	470,882,926	478,480,634	477,190,375
C. Actuarial Accrued (Past Service) Liability	414,552,779	418,534,872	423,008,126	424,389,688	427,593,037	428,957,104
D. Actuarial Present Value of Accumulated Plan						
Benefits per FASB Statement No. 35	N/A	N/A	N/A	N/A	N/A	N/A
E. Plan Assets						
1. Market Value	383,442,225	400,055,406	400,055,406	400,055,406	400,055,406	400,055,406
2. Actuarial Value	389,635,162	410,350,311	410,350,311	410,350,311	410,350,311	410,350,311
F. Unfunded Actuarial Accrued Liability (UAAL)	24,917,617	8,184,561	12,657,815	14,039,377	17,242,726	18,606,793
G. Change in UAAL	N/A	N/A	4,473,254	5,854,816	9,058,165	10,422,232
H. Actuarial Present Value of Projected Covered Payroll	191,615,196	182,643,461	184,020,575	172,654,088	185,416,692	173,929,718
Actuarial Present Value of Projected Member Contributions	21,077,672	20,090,782	20,242,263	18,991,950	20,395,836	19,132,268
J. Funded Ratio: E2/C	94.0 %	98.0 %	97.0 %	96.7 %	96.0 %	95.7 %



Calculation of Normal Cost							
A. Valuation Date	September 30, 2019 Valuation	Baseline: September 30, 2020 Valuation Scenario 1: September 30, 2020 7.375% Invest. Return		Scenario 2: September 30, 2020 7.375% Invest. Return & Extend DROP	Scenario 3: September 30, 2020 7.25% Invest. Return	September 30, 2020 7.25% Invest. Return & Extend DROP	
 B. Normal Cost for Service Retirement Benefits Vesting Benefits Disability Benefits Preretirement Death Benefits Return of Member Contributions Total for Future Benefits As % of Covered Payroll 	\$ 5,488,173	\$ 5,208,655	\$ 5,372,873	\$ 5,422,882	\$ 5,543,068	\$ 5,592,254	
	308,182	291,999	300,780	306,085	309,880	315,447	
	414,728	398,125	407,185	413,917	416,518	423,549	
	95,178	66,544	68,135	64,633	69,809	66,191	
	192,464	184,175	183,040	186,315	181,907	185,206	
	6,498,725	6,149,498	6,332,013	6,393,832	6,521,182	6,582,647	
	26.25 %	25,94 %	26,71 %	26.97 %	27,51 %	27.76 %	
7. Assumed Amount for Administrative Expenses As % of Covered Payroll 8. Total Normal Cost As % of Covered Payroll	247,547	220,492	220,492	220,492	220,492	220,492	
	1.00 %	0.93 %	0.93 %	0.93 %	0.93 %	0.93 %	
	6,746,272	6,369,990	6,552,505	6,614,324	6,741,674	6,803,139	
	27.25 %	26.87 %	27.64 %	27.90 %	28.44 %	28.69 %	



Participant Data									
	September 30, 2019 Valuation		September 30, 2020 Valuation & All Scenarios						
ACTIVE MEMBERS									
Number Covered Annual Payroll Average Annual Payroll Average Age Average Past Service Average Age at Hire	\$	264 24,754,653 93,768 39.1 11.1 28.0	\$	264 23,708,778 89,806 39.2 11.1 28.1					
RETIREES, BENEFICIARIES & DROP PARTICIPAN	RETIREES, BENEFICIARIES & DROP PARTICIPANTS								
Number Annual Benefits Average Annual Benefit Average Age	\$ \$	246 13,480,932 54,801 64.6	\$ \$	251 14,261,095 56,817 64.9					
DISABILITY RETIREES	ı								
Number Annual Benefits Average Annual Benefit Average Age	\$ \$	20 958,616 47,931 54.2	\$ \$	20 961,313 48,066 55.2					
TERMINATED VESTED MEMBERS									
Number Annual Benefits Average Annual Benefit Average Age	\$ \$	7 167,053 23,865 45.0	\$ \$	9 245,272 27,252 44.5					

