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City of Annapolis Police & Fire Retirement Plan

GASB 67/68 Report as of June 30, 2016 Measurement Date

Produced by Cheiron

December 2016

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LETTER OF TRANSMITTAL

December 27, 2016

Board of Trustees
City of Annapolis Police and Fire Retirement Plan
Municipal Building
Annapolis, Maryland 21401

Dear Members of the Board:

The purpose of this report is to provide accounting and financial disclosure information under the Government Accounting Standards Board Statements 67 and 68 (GASB 67 and GASB 68) for the City of Annapolis Police and Fire Retirement Plan (the Plan) as of a June 30, 2016 measurement date. This June 30, 2016 measurement date is the third year of disclosure related to the Plan under GASB Statement No. 67 and the first year for the City under GASB Statement No. 68.

Information provided in this report includes:

- Projection of the Total Pension Liability from the valuation date to the measurement date,
- Calculation of the Net Pension Liability at the discount rate as well as discount rates 1% higher and lower than the discount rate,
- Changes in the Net Pension Liability,
- Schedule of Employer Contributions,
- Disclosure of Deferred Inflows and Outflows, and
- Calculation of the Annual Pension Expense for the City of Annapolis.

If you have any questions about the report or would like additional information, please let us know.

Sincerely,
Cheiron

Fiona E. Liston

Fiona Liston, FSA, EA	Elizabeth Wiley, FSA, FCA, EA
Principal Consulting Actuary	Consulting Actuary

SECTION I - BOARD SUMMARY

The purpose of this report is to provide accounting and financial disclosure information under Government Accounting Standards Board Statements 67 and 68 for the City of Annapolis Police and Fire Retirement Plan (the Plan) and the City of Annapolis (the City) for their financial reporting as of June 30, 2016. This information is based on the reporting date of June 30, 2016 also being the measurement date for both the Plan and the City and includes:

- Projection of the Total Pension Liability (TPL) from the valuation date to the measurement date,
- Calculation of the Net Pension Liability (NPL) at the discount rate as well as discount rates 1% higher and lower than the discount rate,
- Changes in the Net Pension Liability,
- Schedule of Employer Contributions,
- Disclosure of Deferred Inflows and Outflows, and
- Calculation of the Annual Pension Expense for the City of Annapolis.

Highlights

This report includes measurements as of the June 30, 2016 reporting date based on the Plan's Fiduciary Net Position (fair value of assets) as of June 30, 2016 and the Total Pension Liability measured as of the valuation date, June 30, 2015, updated to the June 30, 2016 reporting date. In addition to the standard update procedures to the TPL of increasing by service and interest cost and reducing by actual benefit payments for the update period, we also updated the measurement as of June 30, 2015 to reflect plan changes enacted during the update period.

The table below provides a summary of the key results as of both the current measurement date, June 30, 2016, and the prior measurement date, June 30, 2015.

Summary of Results

	Measurement Date	
	6/30/2016	6/30/2015
Net Pension Liability	$ 30,121,637	$ 17,951,676
Deferred Inflows	44,601	0
Deferred Outflows	(15,799,602)	(8,633,505)
Net Impact on Statement of Net Position	$ 14,366,636	$ 9,318,171
Pension Expense ($ Amount)	$ 7,926,387	$ 9,916
Pension Expense (% of Payroll)	48.24%	0.06%

The Net Pension Liability increased approximately $12 million since the prior measurement date, primarily due to investment losses, partially offset by plan changes. There were also

SECTION I - BOARD SUMMARY

actuarial losses that increased the NPL. The investment gains and losses are recognized into Pension Expense over five years, beginning in the year of occurrence, and the actuarial gains and losses as well as assumption changes are recognized over the average remaining service life, determined at the beginning of each measurement period. Unrecognized amounts are reported as deferred inflows and deferred outflows. Based on a June 30, 2016 measurement date, the City of Annapolis will report a Net Pension Liability of $30,121,637, Deferred Inflow of Resources Related to Pensions of $44,601, and Deferred Outflow of Resources Related to Pensions of $15,799,602 . Consequently, the net impact on the City of Annapolis' Statement of Net Position due to the Plan would be $14,366,636.

For the measurement period ending June 30, 2016, the annual Pension Expense is $7,926,387 or approximately 48.24% of payroll. This amount is not related to the City's contribution to the Plan but instead represents the change in the net impact on the City of Annapolis' Statement of Net Position plus City contributions for the period. The Pension Expense is significantly larger than it was in the prior year due primarily to losses in the investments. Volatility in pension expense from year to year is to be expected under GASB 68. This volatility will largely be driven by investment gains or losses, but other changes can also have a significant impact, such as the impact of the plan change during the prior measurement. A breakdown of the components of the Pension Expense is shown in Section VII of this report.

SECTION II - CERTIFICATION

The purpose of this report is to provide accounting and financial reporting information under GASB 67 for the City of Annapolis Police and Fire Retirement Plan (the Plan) and under GASB 68 for the City of Annapolis (the City) based on a June 30, 2016 measurement date. This report is for the use of the Plan, the City of Annapolis, and their respective auditors in preparing financial reports in accordance with applicable law and accounting requirements. This report is not appropriate for other purposes, including the measurement of funding requirements for the Plan.

In preparing our report, we relied on information, some oral and some written, supplied by the City and by the Plan. This information includes, but is not limited to, the plan provisions, member data, and financial information. We performed an informal examination of the obvious characteristics of the data for reasonableness and consistency in accordance with Actuarial Standard of Practice No. 23.

Future actuarial measurements may differ significantly from the current measurements 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; and changes in plan provisions or applicable law.

To the best of our knowledge, this report and its contents have been prepared in accordance with generally recognized and accepted actuarial principles and practices that are consistent with the Code of Professional Conduct and applicable Actuarial Standards of Practice set out by the Actuarial Standards Board. Furthermore, as credentialed actuaries, we meet the Qualification Standards of the American Academy of Actuaries to render the opinion contained in this report. This report does not address any contractual or legal issues. We are not attorneys, and our firm does not provide any legal services or advice.

This report was prepared for the Plan for the purposes described herein and for the use by the plan auditor in completing an audit related to the matters herein. Other users of this report are not intended users as defined in the Actuarial Standards of Practice, and Cheiron assumes no duty or liability to any other user.

Fiona Liston, FSA, EA	Elizabeth Wiley, FSA, FCA, EA
Principal Consulting Actuary	Consulting Actuary

SECTION III - DETERMINATION OF DISCOUNT RATE

The discount rate used to measure the Total Pension Liability was 7.50%.

The projection of cash flows used to determine the discount rate assumed that member contributions will continue to be made at the rates specified in the Plan, including an increase from the 7.5% used in the June 30, 2015 valuation date to 8.0% at January 1, 2016. City contributions were assumed to be made in accordance with the contribution policy established through the Interest Based Bargaining Process (IBB). The IBB calls for City contributions of 16% of payroll in Fiscal Year (FY) 2016 and 18% for FY 2017 and later.

Based on these assumptions, the Plan's Fiduciary Net Position was projected to be available to make all projected future benefit payments for current members until the last payment for the current covered population is expected to be made. Consequently, the single equivalent rate used to determine the Total Pension Liability in the June 30, 2015 valuation is 7.5%, the long-term expected rate-of-return as defined by GASB 68.

SECTION IV - PROJECTION OF TOTAL PENSION LIABILITY

The Total Pension Liability (TPL) at the June 30, 2016 measurement date is measured as of a valuation date of June 30, 2015 and projected to June 30, 2016. In addition to the standard update procedures to the TPL of adding service and interest cost and reducing by actual benefit payments for the update period.

The table below shows the projection of the TPL to June 30, 2016 at discount rates equal to the rate used for measuring the TPL at the June 30, 2016 measurement date as well as plus and minus one percent from that rate.

Projection of Total Pension Liability from Valuation to Measurement Date

Discount Rate	6.50%	7.50%	8.50%
Valuation Total Pension Liability, 6/30/2015			
Actives	$ 57,697,090	$ 50,411,499	$ 42,512,767
Deferred Vested	10,770,133	11,562,281	8,368,804
Retirees	130,263,175	118,184,614	107,978,194
Total	**$ 198,730,398**	**$ 180,158,394**	**$ 158,859,765**
Service Cost	4,542,865	3,661,660	2,978,955
Benefit Payments	(9,327,917)	(9,327,917)	(9,327,917)
Interest	12,800,503	13,341,032	13,276,541
Total Pension Liability, 6/30/2016	**$ 206,745,849**	**$ 187,833,168**	**$ 165,787,344**

SECTION V - NOTE DISCLOSURES

The table below shows the changes in the Total Pension Liability (TPL), the Plan Fiduciary Net Position (i.e., fair value of System assets) (FNP), and the Net Pension Liability (NPL) during the measurement period.

Change in Net Pension Liability

	Increase (Decrease)		
	Total Pension Liability (a)	Plan Fiduciary Net Position (b)	Net Pension Liability (a) - (b)
Balances at 6/30/2015	$ 180,273,463	$ 162,321,787	$ 17,951,676
Changes for the year:			
Service cost	3,651,655		3,651,655
Interest	13,302,868		13,302,868
Changes of benefits	0		0
Differences between expected and actual experience	(66,901)		(66,901)
Changes of assumptions	0		0
Contributions - employer		2,877,922	(2,877,922)
Contributions - member		1,324,069	(1,324,069)
Net investment income		515,670	(515,670)
Benefit payments	(9,327,917)	(9,327,917)	0
Administrative expense		-	-
Net changes	7,559,705	(4,610,256)	12,169,961
Balances at 6/30/2016	$ 187,833,168	$ 157,711,531	$ 30,121,637

During the measurement period, the NPL increased by approximately $12 million.

Changes in the discount rate affect the measurement of the TPL. Lower discount rates produce a higher TPL, and higher discount rates produce a lower TPL. Because the discount rate does not affect the measurement of assets, the percentage change in the NPL can be very significant for a relatively small change in the discount rate. The table below shows the sensitivity of the NPL to the discount rate.

SECTION V - NOTE DISCLOSURES

Sensitivity of Net Pension Liability to Changes in Discount Rate	1% Decrease 6.50%	Discount Rate 7.50%	1% Increase 8.50%
Total Pension Liability	$ 206,745,849	$ 187,833,168	$ 165,787,344
Plan Fiduciary Net Position	157,711,531	157,711,531	157,711,531
Net Pension Liability	$ 49,034,319	$ 30,121,637	$ 8,075,813
Plan Fiduciary Net Position as a Percentage of the Total Pension Liability	76.3%	84.0%	95.1%

A one percent decrease in the discount rate increases the TPL by approximately 10% and increases the NPL by approximately 63%. A one percent increase in the discount rate decreases the TPL by approximately 12% and decreases the NPL by approximately 73%.

SECTION VI - REQUIRED SUPPLEMENTARY INFORMATION

The schedules of Required Supplementary Information generally start with information as of the implementation of GASB 67 and eventually will build up to 10 years of information. The schedule below shows the changes in NPL and related ratios required by GASB for the two years since implementation.

Schedule of Changes in Net Pension Liability and Related Ratios

	FYE 2016	FYE 2015	FYE 2014
Total Pension Liability			
Service cost (MOY)	$ 3,651,655	$ 3,673,745	$ 3,821,288
Interest (includes interest on service cost)	13,302,868	12,768,894	12,349,153
Changes of benefit terms	0	(5,211,445)	0
Differences between expected and actual experience	(66,901)	3,568,771	0
Changes of assumptions	0	0	0
Benefit payments, including refunds of member contributions	(9,327,917)	(9,070,882)	(8,654,196)
Net change in total pension liability	**$ 7,559,705**	**$ 5,729,083**	**$ 7,516,245**
Total pension liability - beginning	**180,273,463**	**174,544,380**	**167,028,135**
Total pension liability - ending	**$ 187,833,168**	**$ 180,273,463**	**$ 174,544,380**
Plan fiduciary net position			
Contributions - employer	$ 2,877,922	$ 2,451,163	$ 1,535,001
Contributions - member	1,324,069	1,220,879	1,138,427
Net investment income	515,670	4,935,665	22,156,263
Benefit payments, including refunds of member contributions	(9,327,917)	(9,070,882)	(8,654,196)
Administrative expense	-	-	-
Net change in plan fiduciary net position	**$ (4,610,256)**	**$ (463,175)**	**$ 16,175,495**
Plan fiduciary net position - beginning	**162,321,787**	**162,784,962**	**146,609,467**
Plan fiduciary net position - ending	**$ 157,711,531**	**$ 162,321,787**	**$ 162,784,962**
Net pension liability - ending	**$ 30,121,637**	**$ 17,951,676**	**$ 11,759,418**
Plan fiduciary net position as a percentage of the total pension liability	83.96%	90.04%	93.26%
Covered employee payroll	$ 16,430,407	$ 16,529,127	$ 16,269,356
Net pension liability as a percentage of covered employee payroll	183.33%	108.61%	72.28%

Schedule of Employer Contributions

	FYE 2016	FYE 2015	FYE 2014
Actuarially Determined Contribution	$ 3,740,905	$ 3,234,493	$ 4,052,175
Contributions in Relation to the Actuarially Determined Contribution	2,877,922	2,451,163	1,535,001
Contribution Deficiency/(Excess)	$ 862,983	$ 783,330	$ 2,517,174
Covered-Employee Payroll	$ 16,430,407	$ 16,529,127	$ 16,269,356
Contributions as a Percentage of Covered-Employee Payroll	17.52%	14.83%	9.43%

The notes below summarize the key methods and assumptions used to determine the ADC for FYE 2016.

Notes to Schedule

Valuation Date	6/30/2015
Timing	Actuarially determined contribution rates are calculated based on the actuarial valuation one year prior to the beginning of the plan year

Key Methods and Assumptions Used to Determine Contribution Rates:

Actuarial cost method	Entry Age
Asset valuation method	3-year smoothing
Amortization method	The UAL is amortized over an open 30-year period as a level dollar amount
Discount rate	7.50%
Amortization growth rate	0.00%
Price inflation	3.00%
Salary increases	3.50% plus merit component based on employee classification and years of service
Mortality	Sex distinct RP-2000 Combined Mortality projected to 2016 using Scale AA

A complete description of the methods and assumptions used to determine contribution rates for the year ending June 30, 2016 can be found in the June 30, 2015 actuarial valuation report.

SECTION VII – EMPLOYER REPORTING AMOUNTS

The City of Annapolis was required to implement GASB 68 for their reporting date of June 30, 2015. The amounts reported as of June 30, 2016 can be based on either the June 30, 2015 or 2016 measurement dates. Since the City is publishing both its own GASB 68 reporting and the Plan’s GASB 67 reporting in its financial statements, it may make sense for the City to use the 2016 measurement date for their 2016 reporting date. If the City decides instead to make their June 30, 2016 reporting date disclosures based on a June 30, 2015 measurement date, we will need to provide a revised version of this report.

The impact of experience gains or losses and assumption changes on the TPL are recognized in expense over the average expected remaining service life of all active and inactive members of the System. As of the June 30, 2016 measurement date, this recognition period was six years.

During the measurement year ending June 30, 2016, there was an experience loss of approximately $3.6 million. Approximately $0.6 million of that loss was recognized as an increase in Pension Expense in the current year and an identical amount will be recognized in each of the next five years, resulting in a deferred outflow of resources as of June 30, 2016 of approximately $3 million. There were no existing unrecognized experience gains or losses from prior periods as of June 30, 2016 to continue to be recognized.

Plan changes since the last measurement date decreased the TPL approximately $5.2 million. The entire amount of this decrease was recognized in Pension Expense as of the June 30, 2016 measurement date.

The impact of investment gains or losses is recognized over a period of five years beginning on the date they are reported. During the measurement year ending June 30, 2016, there was an investment loss of approximately $7 million. Approximately $1.4 million of that loss was recognized in the current year, and an identical amount will be recognized in each of the next four years. The unrecognized investment losses this year results in a Deferred Outflow of Resources as of June 30, 2016 of approximately $5.6 million.

The table below summarizes the current balances of Deferred Outflows and Deferred Inflows of Resources related to the Plan, along with the net recognition over the next five years.

SECTION VII – EMPLOYER REPORTING AMOUNTS

Schedule of Deferred Inflows and Outflows of Resources

	Deferred Outflows of Resources	Deferred Inflows of Resources
Differences between expected and actual experience	$ 2,379,181	$ 44,601
Changes in assumptions	-	0
Net difference between projected and actual earnings on pension plan investments	13,420,421	0
Total	**$ 15,799,602**	**$ 44,601**

Amounts reported as deferred outflows and deferred inflows of resources will be recognized in pension expense as follows:

Measurement year ended June 30:	
2017	4,281,320
2018	4,281,319
2019	4,303,621
2020	2,888,741
2021	0
Thereafter	$ 0

The annual Pension Expense recognized by the City of Annapolis can be calculated two different ways. First, it is the change in the amounts reported on the City’s Statement of Net Position that relate to the Plan and are not attributable to employer contributions. That is, it is the change in NPL plus the changes in Deferred Outflows and Inflows plus employer contributions during the year.

Alternatively, annual Pension Expense can be calculated by its individual components. While GASB does not require or suggest the organization of the individual components shown in the table below, we believe it helps to understand the level and volatility of pension expense.

SECTION VII – EMPLOYER REPORTING AMOUNTS

Calculation of Pension Expense	Measurement Year Ending 2016	Measurement Year Ending 2015
Change in Net Pension Liability	$ 12,169,961	$ 6,192,258
Change in Deferred Outflows	(7,166,097)	(8,633,505)
Change in Deferred Inflows	44,601	0
Employer Contributions	2,877,922	2,451,163
Pension Expense	**$ 7,926,387**	**$ 9,916**
Pension Expense as % of Payroll	**48.24%**	**0.06%**
Operating Expenses		
Service cost	$ 3,651,655	$ 3,673,745
Employee contributions	(1,324,069)	(1,220,879)
Administrative expenses	-	-
Total	$ 2,327,586	$ 2,452,866
Financing Expenses		
Interest cost	$ 13,302,868	$ 12,768,894
Expected return on assets	(11,985,387)	(12,010,076)
Total	$ 1,317,481	$ 758,818
Changes		
Benefit changes	$ 0	$ (5,211,445)
Recognition of assumption changes	-	0
Recognition of liability gains and losses	572,495	594,795
Recognition of investment gains and losses	3,708,825	1,414,882
Total	$ 4,281,320	$ (3,201,768)
Pension Expense	**$ 7,926,387**	**$ 9,916**

First, there are components referred to as operating expenses. These are items directly attributable to the operation of the plan during the measurement year. Service cost less member contributions represents the increase in City-provided benefits attributable to the year, and administrative expenses are the cost of operating the Plan for the year.

Second, there are the financing expenses: the interest on the Total Pension Liability less the expected return on assets, calculated using the 7.5% discount rate.

The final category is changes. This category will drive most of the volatility in Pension Expense from year to year. It includes any changes in benefits made during the year and the recognized amounts due to assumption changes, gains or losses on the TPL, and investment gains or losses. The total Pension Expense dropped from the prior year, primarily due to the immediate recognition of the benefit changes. Absent this amount, the Pension Expense would have been around $3.2 million.

APPENDIX A – ASSUMPTIONS, PLAN PROVISIONS, DATA

Data: Please refer to the June 30, 2015 actuarial valuation report for a complete summary of the data.

Assumptions: Please refer to the June 30, 2015 actuarial valuation report for a complete summary of the data.

Plan Provisions: The plan provisions used in this report are identical to those disclosed in the June 30, 2014 actuarial valuation report of the City of Annapolis Police and Fire Retirement Plan with the exception of the following:

13. Cost-of-Living Adjustment

Old Plan:	Retired and disabled members receive annual increases equal to the same percentage as any increase in the pay scale for members of the same rank and years of service who are on active duty. Spouses receiving benefits will receive the same increase, subject to a cap of 3% per year.
Old Plan Revised:	Same provisions as Old Plan but service and disabled retirees’ increase is capped at 4% per year.
New and New Revised:	Retired and disabled members receive annual increases equal to 2% per year effective each July1.

APPENDIX B - GLOSSARY OF TERMS

1. **Actuarially Determined Contribution**

   A target or recommended contribution for the reporting period, determined in conformity with Actuarial Standards of Practice based on the most recent measurement available when the contribution for the reporting period was adopted.

2. **Actuarial Valuation Date**

   The date as of which an actuarial valuation is performed. This date may be up to 24 months prior to the measurement date and up to 30 months prior to the employer's reporting date.

3. **Deferred Inflow of Resources**

   An acquisition of net assets by a government employer that is applicable to a future reporting period. In the context of GASB 68, these are experience gains on the Total Pension Liability, assumption changes reducing the Total Pension Liability, or investment gains that are recognized in future reporting periods.

4. **Deferred Outflow of Resources**

   A consumption of net assets by a government employer that is applicable to a future reporting period. In the context of GASB 68, these are experience losses on the Total Pension Liability, assumption changes increasing the Total Pension Liability, or investment losses that are recognized in future reporting periods.

5. **Entry Age Actuarial Cost Method**

   The actuarial cost method required for GASB 67 and 68 calculations. Under this method, the actuarial present value of the projected benefits of each individual included in an actuarial valuation is allocated on a level basis over the earnings of the individual between entry age and assumed exit ages. The portion of this actuarial present value allocated to a valuation year is called the Service Cost. The portion of this actuarial present value not provided for at a valuation date by the actuarial present value of future service costs is called the Total Pension Liability.

6. **Measurement Date**

   The date as of which the Total Pension Liability and Plan Fiduciary Net Position are measured. The Total Pension Liability may be projected from the Actuarial Valuation Date to the Measurement Date. The Measurement Date must be the same as the Reporting Date for the plan.

APPENDIX B - GLOSSARY OF TERMS

7. Net Pension Liability

The liability of employers and nonemployer contributing entities to members for benefits provided through a defined benefit pension plan. It is calculated as the Total Pension Liability less the Plan Fiduciary Net Position.

8. Plan Fiduciary Net Position

The fair or market value of assets.

9. Reporting Date

The last day of the plan or employer's fiscal year.

10. Service Cost

The portion of the actuarial present value of projected benefit payments that is attributed to the current period of member service in conformity with the requirements of GASB 67 and 68. The Service Cost is the normal cost calculated under the entry age actuarial cost method.

11. Total Pension Liability

The portion of the actuarial present value of projected benefit payments that is attributed to past periods of member service in conformity with the requirements of GASB 67 and 68. The Total Pension Liability is the actuarial liability calculated under the entry age actuarial cost method.