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Indiana Public Retirement System

Excise, Gaming and Conservation Officers' Retirement Fund

Actuarial Valuation as of
June 30, 2019

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The experience and dedication you deserve

November 6, 2019

Board of Trustees
Indiana Public Retirement System
1 North Capitol, Suite 001
Indianapolis, IN 46204

Dear Members of the Board:

At your request, we performed an actuarial valuation of the Excise, Gaming and Conservation Officers' Fund (EG&C) as of June 30, 2019, for the purpose of estimating the actuarial determined contribution rate for the calendar year 2021. The major findings of the valuation are contained in this report, which reflects the benefit and funding provisions in place on June 30, 2019. There have been no changes to the plan provisions, actuarial methods or assumptions from the prior valuation.

In preparing our report, we relied, without audit, on information (some oral and some in writing) supplied by Indiana Public Retirement System (INPRS) staff. This information includes, but is not limited to, statutory provisions, member data and financial information. We did review the data to ensure that it was reasonably consistent and comparable with data from prior years. The valuation results depend on the integrity of this information. If any of this information is inaccurate or incomplete, our results may be different and our calculations may need to be revised.

We certify that all costs and liabilities for EG&C have been determined on the basis of actuarial assumptions and methods which are individually reasonable (taking into account the experience of the plan and reasonable expectations); and which, in combination, offer the best estimate of anticipated experience affecting the plan. Nevertheless, the emerging costs will vary from those presented in this report to the extent actual experience differs from that projected by the actuarial assumptions.

While the assumptions were generally developed by the prior actuary, we believe they are reasonable. The Board has the final decision regarding the appropriateness of the assumptions and adopted them as indicated in Appendix C. Specifically, we presented the proposed assumptions for the 2019 valuations to the Board on February 22, 2019, and the Board subsequently adopted their use. These assumptions are applicable to both the funding and Governmental Accounting Standards Board (GASB) Statement Number 67 valuation calculations, unless otherwise noted.

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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; 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. Due to the limited scope of our assignment, we did not perform an analysis of the potential range of future measurements.

We prepared a Risk Report for the INPRS Board in August 2019 that contains information which is relevant to EG&C and should be considered part of this valuation report. Although the report was prepared using the data, methods, and assumptions of the June 30, 2018 valuation report, it is our professional opinion that the results of the risk report are substantially applicable to the June 30, 2019 valuation report as well.

Actuarial computations presented in this report are for purposes of determining the funding rates for the Plan. The calculations in the enclosed report have been made on a basis consistent with our understanding of the Plan's funding requirements and goals as adopted by the Board. Additionally, we have included actuarial computations for use in preparing certain reporting and disclosure requirements under Governmental Accounting Standards Board Statements Number 67 and Number 68. Determinations for purposes other than meeting these funding and disclosure requirements may be significantly different from the results contained in this report. Accordingly, additional determinations may be needed for other purposes.

The Comprehensive Annual Financial Report (CAFR) for INPRS contains several exhibits that disclose the actuarial position of the System. This report provides data and tables that we prepared for use in the following sections of the CAFR:

Financial Section:
- Note 1 - Tables of Plan Membership
- Note 7 - Net Pension Liability and Actuarial Information - Defined Benefit Plans
- Schedule of Changes in Net Pension Liability and Plan Fiduciary Net Position
- Schedule of Contributions
- Schedule of Notes to Required Supplementary Information

Actuarial Section:
- Summary of INPRS Funded Status (Included in the Executive Summary)
- Historical Summary of Actuarial Valuation Results by Retirement Plan
- Summary of Actuarial Assumptions, Methods and Plan Provisions
- Analysis of Financial Experience (Included in the Unfunded Actuarial Accrued Liability Reconciliation)
- Solvency Test
- Schedule of Active Member Valuation Data
- Schedule of Retirants and Beneficiaries

Statistical Section:
- Membership Data Summary
- Ratio of Active Members to Annuitants
- Schedule of Benefit Recipients by Type of Benefit Option
- Schedule of Average Benefit Payments

The consultants who worked on this assignment are pension actuaries. Cavanaugh Macdonald's advice is not intended to be a substitute for qualified legal or accounting counsel.

On the basis of the foregoing, we hereby certify that, to the best of our knowledge and belief, this report is complete and accurate and the assumptions and methods used meet the guidance provided in the applicable Actuarial Standards of Practice. We are members of the American Academy of Actuaries and meet the Qualification Standards to render the actuarial opinion contained herein.

The calculations were completed in compliance with applicable law and the calculations for GASB disclosure, in our opinion, meet the requirements of GASB 67 and GASB 68. We are available to answer any questions on the material contained in the report, or to provide explanations or further details as may be appropriate.

We respectfully submit the following report and look forward to discussing it with you.

Sincerely,

Brent A. Banister Ph.D., FSA, EA, MAAA, FCA
Chief Actuary

Patrice A. Beckham, FSA, EA, FCA, MAAA
Principal and Consulting Actuary

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Actuarial Certification Letter

This report presents the results of the June 30, 2019 actuarial valuation of the Excise, Gaming and Conservation Officers' Retirement Fund (EG&C). The primary purposes of performing this actuarial valuation are to:

- Determine the employer contribution rate for the calendar year ending December 31, 2021 that will be sufficient to meet the funding policy set out by the Board to comply with Indiana statutes.
- Disclose asset and liability measurements as well as the current funded status of the plan on the valuation date.
- Compare actual and expected experience in the valuation during the plan year ending June 30, 2019.
- Analyze and report on trends in plan contributions, assets and liabilities over the past several years.

VALUATION RESULTS

There were no changes to plan provisions, actuarial methods and assumptions, or funding policy between the June 30, 2018 and June 30, 2019 valuations.

The actuarial valuation results provide a "snapshot" view of the plan's financial condition on June 30, 2019. The plan's UAAL changed from $7.6 million last year to $11.6 million this year and the funded ratio decreased from 95% to 92%. The most substantial factor behind this reduction was the increase in liability resulting from salary increases above the expected level (continuing actives saw salary increases of more than 10% on average). An additional contributing factor was a lower than expected return on the actuarial value of assets as a portion of prior losses were realized and 80% of gain in the current year was deferred through smoothing. Actual contributions exceeded the actuarially determined contribution needed by about $4.7 million, though that was not enough to offset the actuarial losses.

A summary of the key results from the June 30, 2019 actuarial valuation compared to the June 30, 2018 valuation is shown in the following table. Further detail on the valuation results can be found in the following sections of this Executive Summary.

Valuation Results	June 30, 2018	June 30, 2019
Unfunded Actuarial Accrued Liability	$ 7,614,932	$ 11,648,042
Funded Ratio (Actuarial Assets)	94.56%	92.35%
Normal Cost	11.22%	11.09%
UAAL Amortization	0.56%	1.29%
Total Recommended Contribution	11.78%	12.38%
Estimated Member Contributions	(4.00%)	(4.00%)
Actuarially Determined Contribution Rate	7.78%	8.38%
Surcharge	0.73%	0.61%
Total Contribution Rate	8.51%	8.99%

Numerous components, as examined in the following discussion, contributed to the change in the plan's assets, liabilities, and actuarially determined contribution rate between June 30, 2018 and June 30, 2019.

ASSETS

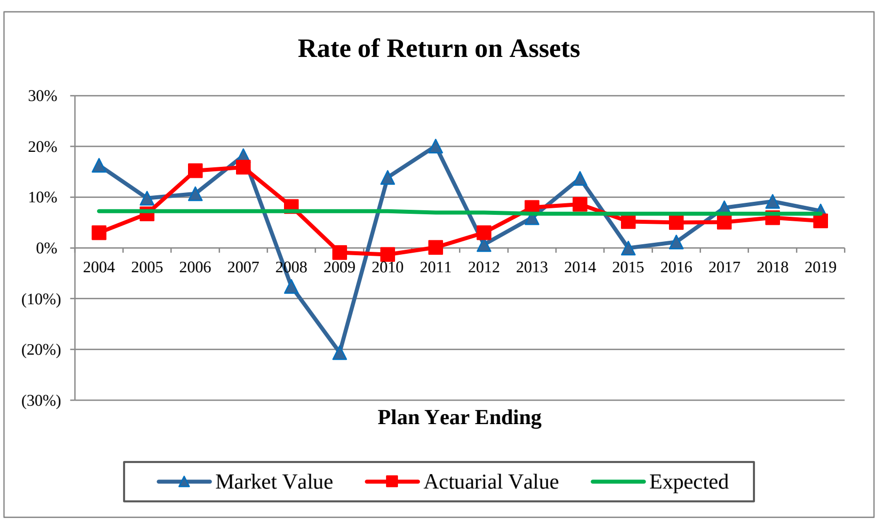
As of June 30, 2019, the plan had net assets of $142.1 million, when measured on a market value basis. This was an increase of $10.6 million from the prior year.

The market value of assets is not used directly in the calculation of the unfunded actuarial accrued liability and the actuarial required contribution rate. An asset valuation method, which smoothes the effect of market fluctuations, is applied to determine the value of assets used in the valuation, termed the actuarial value of assets. In this year's valuation, the actuarial value of assets is $140.6 million, an increase of $8.1 million from the prior year.

The components of change in the asset values are shown in the following table:

		Market Value		Actuarial Value
Net Assets, June 30, 2018	$	131,491,187	$	132,440,635
- Employer and Member Contributions	+	8,349,333	+	8,349,333
- Benefit Payments and Refunds	-	7,325,257	-	7,325,257
- Net Investment Income	+	9,599,355	+	7,093,957
Net Assets, June 30, 2019	$	142,114,618	$	140,558,668
Estimated Rate of Return, Net of Expenses		7.3%		5.3%

The estimated rate of return on the actuarial value of assets was 5.3%, which was lower than the 6.75% investment return assumption applicable for the year ended June 30, 2019. As a result, there was an experience loss on assets of $1.9 million. The estimated return on the market value of assets for FY 2019 of 7.3% resulted in a change in the deferred investment experience from a net deferred investment loss of $0.9 million in last year's valuation to a net deferred investment gain of $1.6 million in the current valuation. See Tables 1, 2, 3 and 4 of this report for detailed information on the market and actuarial value of assets.



The rate of return of the actuarial value of assets has been less volatile than the market value return, illustrating the benefits of using an asset smoothing method.

LIABILITIES

The actuarial accrued liability is that portion of the present value of future benefits that is allocated to past service. The remaining portion will be paid by future normal costs. The difference between this liability and the actuarial value of assets as of the valuation date is called the unfunded actuarial accrued liability (UAAL). The dollar amount of unfunded actuarial accrued liability is reduced if the contributions to the plan exceed the normal cost for the year plus interest on the prior year's UAAL.

The unfunded actuarial accrued liability, including expected future COLAs, is shown as of June 30, 2019 in the following table:

	Market Value	Actuarial Value
Actuarial Accrued Liability	$ 152,206,710	$ 152,206,710
Value of Assets	142,114,618	140,558,668
Unfunded Actuarial Accrued Liability	$ 10,092,092	$ 11,648,042
Funded Ratio	93.37%	92.35%

See Table 5 of this report for the development of the unfunded actuarial accrued liability.

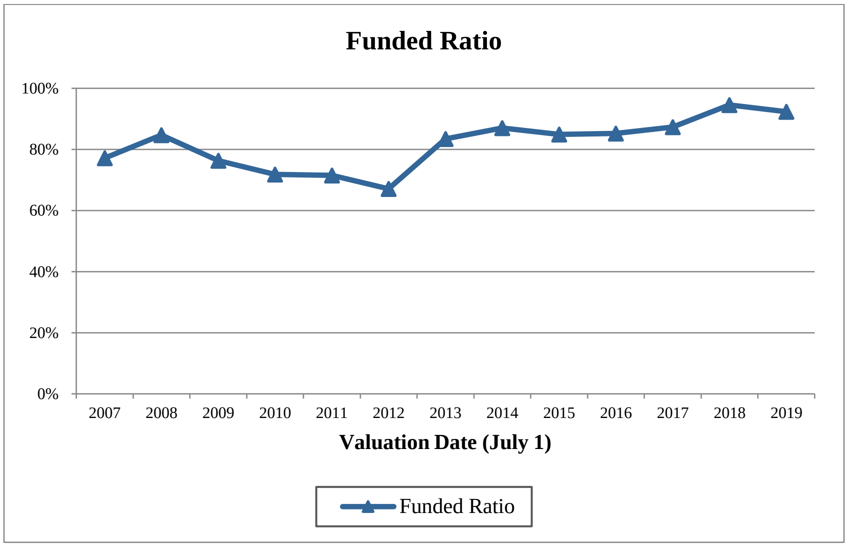
The net change in the total UAAL from June 30, 2018 to June 30, 2019 was an increase of $4 million. The most significant factor in this change was the liability experience loss arising from larger than expected salary increases. The components of the change in the base UAAL are quantified in Table 7 of this report. See Table 8 and Table 9 of this report for a breakdown of the components of experience gains/losses for greater detail.

An evaluation of the UAAL on a pure dollar basis may not provide a complete analysis since only the difference between the assets and liabilities (which are both large numbers) is reflected. Another way to evaluate the UAAL and the progress made in its funding is to track the funded ratio, the ratio of the actuarial value of assets to the actuarial accrued liability. The funded status information, which is based on the actuarial value of assets, is shown below (in millions).

	6/30/2015	6/30/2016	6/30/2017	6/30/2018	6/30/2019
Funded Ratio	84.9%	85.3%	87.3%	94.6%	92.4%
UAAL (in millions)	$20.0	$20.4	$18.1	$7.6	$11.6

Note that the funded ratio does not indicate whether or not the plan assets are sufficient to settle benefits earned to date. The funded ratio, by itself, also may not be indicative of future funding requirements. In addition, if the funded ratios were shown using the market value of assets, the results would differ.

As the following graph shows, the EG&C Plan has generally been making progress towards a fully funded level, especially since 2012.



ACTUARIALLY DETERMINED CONTRIBUTION RATE

The Plan's actuarially determined contribution rate consists of two components:

- A "normal cost" for the portion of projected liabilities allocated by the actuarial cost method to service of members during the year following the valuation date.

- An "unfunded actuarial accrued liability contribution" for the excess of the portion of projected liabilities allocated to service to date over the actuarial value of assets.

The UAAL contribution rate is determined by calculating the amortization payment on the UAAL as a level dollar amount over 20 years for each new amortization base. Because the COLA portion of the benefits are funded through the surcharge, this portion of the benefit only considers the base benefit without any COLA. If the Fund's funded ratio exceeds 100% on a combined basis (base benefits plus future assumed COLAs), all prior amortization bases are eliminated and the negative UAAL (or "surplus") is amortized over an open 30-year period, as an offset to other Fund costs.

In additional to the components above that are designed to fund the guaranteed base benefit, the Board is responsible for determining the surcharge to fund future COLAs and/or 13th checks. Because there are five plans that must, by law, provide the same COLA or 13th check each year, the funding strategy needs to consider the funding needs of the System as well as the specific fund. The long-term assumption is that a COLA of 0.4% will be granted starting in 2022, 0.5% starting in 2034, and then 0.6% in 2039 and beyond. Considering the biennial budgeting cycle in Indiana, the near-term goal is to accumulate funds by June 30, 2021 to fund the two COLAs in the following biennium (January, 2022 and January, 2023). For calendar year 2019, the surcharge rate is 0.73%, and the newly calculated rate will be effective January 1, 2020. Under this approach, the calculated surcharge rate for EG&C will be 0.61%. While this rate is currently adequate to fund the increase anticipated in the next biennium, the Board may wish to consider a surcharge of 1.0% in anticipation of the longer term needs. See Table 12 for further details.

The total employer rate is the sum of the contributions to fund the base benefits plus the surcharge less the member contributions. The total employer contribution rate is lowered part way toward the normal cost rate when the Fund has a funded ratio over 105%, and then ultimately reduced to the normal cost rate should the funded ratio reach 120%. The Board could decide, however, to set the rate higher in order to provide a sufficient surcharge for the COLA funding while preserving the base funding.

See Table 11 of this report for the detailed development of the contribution rates which are summarized in the following table:

Contribution Rate	June 30, 2018	June 30, 2019
Normal Cost	11.22%	11.09%
UAAL Amortization	0.56%	1.29%
Total Recommended Contribution	11.78%	12.38%
Estimated Member Contributions	(4.00%)	(4.00%)
Actuarially Determined Contribution Amount	7.78%	8.38%
Surcharge	0.73%	0.61%
Total Contribution Rate	8.51%	8.99%

The actuarial required contribution, determined this year based on the snapshot of the plan taken on the valuation date of June 30, 2019, will change each year as the deferred investment experience is recognized and other experience (both investment and demographic) impacts the plan. Therefore, it is expected to change each year.

SUMMARY OF PRINCIPAL RESULTS

	June 30, 2017	June 30, 2018	June 30, 2019
MEMBERSHIP			
Active Members	440	430	423
Active Members in DROP[1]		13	13
Retired Members and Beneficiaries	220	231	237
Disabled Members	3	3	3
Inactive Members	126	146	141
Total Members	789	823	817
Projected Annual Salaries in Following Year	$ 28,113,707	$ 30,121,351	$ 34,103,346
Annual Retirement Payments for Retired Members, Disabled Members and Beneficiaries	$ 5,912,079	$ 6,245,912	$ 6,426,356
ASSETS AND LIABILITIES			
Net Assets			
Market Value of Assets (MVA)	$ 120,016,301	$ 131,491,187	$ 142,114,618
Actuarial Value of Assets (AVA)	124,530,420	132,440,635	140,558,668
Actuarial Accrued Liability (AAL)	142,602,804	140,055,567	152,206,710
Unfunded Actuarial Accrued Liability (UAAL):			
AAL - AVA	$ 18,072,384	$ 7,614,932	$ 11,648,042
Funded Ratios			
AVA / AAL	87.33%	94.56%	92.35%
MVA / AAL	84.16%	93.89%	93.37%
CONTRIBUTIONS			
Normal Cost Rate	11.98%	11.22%	11.09%
UAAL Rate	5.35%	0.56%	1.29%
Total Recommended Contribution Rate	17.33%	11.78%	12.38%
Expected Employee Contribution Rate	(4.00%)	(4.00%)	(4.00%)
Actuarially Determined Contribution Rate	13.33%	7.78%	8.38%
Surcharge	0.00%	0.73%	0.61%
Total Contribution Rate	13.33%	8.51%	8.99%

[1] The prior actuary included active members in DROP in the active members count for 2017.

Note: Liability and funded ratio results for 2018 and 2019 include both the base benefits benefit and the supplemental benefit.

This report presents the actuarial valuation results of the Excise, Gaming and Conservation Officers' Retirement Fund as of June 30, 2019. This valuation was prepared at the request of the Indiana Public Retirement System.

Please pay particular attention to our actuarial certification letter, where the guidelines employed in the preparation of this report are outlined. We also comment on the sources and reliability of both the data and the actuarial assumptions upon which our findings are based. Those comments are the basis for our certification that this report is complete and accurate to the best of our knowledge and belief.

A summary of the findings which result from this valuation is presented in the previous section. Section 3 describes the assets and investment experience of the plan. Sections 4 and 5 describe how the obligations of the plan are to be met under the actuarial cost method in use. Section 6 provides information required by the Governmental Accounting Standards Board (GASB) for reporting and disclosure under GASB 67 and GASB 68.

This report includes several appendices:

- Appendix A — Schedules of valuation data classified by various categories of members.
- Appendix B — A summary of the current benefit structure, as determined by the provisions of governing law on June 30, 2019.
- Appendix C — A summary of the actuarial methods and assumptions used to estimate liabilities and determine contribution rates.
- Appendix D — A glossary of actuarial terms.

In many respects, an actuarial valuation can be thought of as an inventory process. The inventory is taken as of the actuarial valuation date, which for this valuation is June 30, 2019. On that date, the assets available for the payment of benefits are appraised. The assets are compared with the liabilities of the plan, which are generally in excess of assets. The actuarial process then leads to a method of determining the contributions needed by members and the employer in the future to balance the plan assets and liabilities.

Market Value of Assets

The current market value represents the "snapshot" or "cash-out" value of plan assets as of the valuation date. In addition, the market value of assets provides a basis for measuring investment performance from time to time.

Table 1 summarizes the changes in the market value of assets for the last two years for the base benefits, whereas Table 2 shows the changes for the supplemental benefit reserve account. Table 15 (in the GASB section) provides detail regarding the allocation of investments in the trust.

Actuarial Value of Assets

The market value of assets, representing a "cash-out" value of plan assets, may not be the best measure of the plan's ongoing ability to meet its obligations. To arrive at a suitable value of assets for the actuarial valuation, a technique for determining the actuarial value of assets is used which dampens swings in the market value while still indirectly recognizing market values. Under the asset smoothing methodology, the difference between the actual and assumed investment return on the market value of assets is recognized evenly over a five-year period.

Table 3 shows the development of the actuarial value of assets (AVA) as of the valuation date for the base benefits and Table 4 shows the information for the supplemental benefit.

TABLE 1

DEVELOPMENT OF MARKET VALUE OF ASSETS
(Base Benefits)

	June 30, 2018	June 30, 2019
1. Market Value of Assets, Beginning of Year	$ 120,016,301	$ 131,491,187
2. Receipts		
a. Member (Includes Purchased Service)[1]	$ 1,172,194	$ 1,367,778
b. Employer	6,174,724	6,861,463
c. Miscellaneous	10,035	0
d. Total	$ 7,356,953	$ 8,229,241
3. Expenditures		
a. Benefit Payments	$ 6,820,189	$ 7,249,375
b. Refund of Contributions	114,768	75,882
c. Member Reassignments	0	0
d. Administrative Expense	136,045	112,002
e. Miscellaneous	0	0
f. Total	$ 7,071,002	$ 7,437,259
4. Investment Return		
a. Investment Income	$ 11,171,967	$ 9,695,478
b. Securities Lending Income	16,968	10,717
c. Total Investment Return	$ 11,188,935	$ 9,706,195
5. Market Value of Assets, End of Year: (1) + (2d) - (3f) + (4c)	$ 131,491,187	$ 141,989,364
6. Estimated Rate of Return, Net of Expenses[2]	9.19%	7.27%

[1] Includes member service purchases of $1,555 in fiscal year 2018 and $50,070 in fiscal year 2019.
[2] Based on individual fund experience. Assumes cash flows occur at mid-year.

TABLE 2

DEVELOPMENT OF MARKET VALUE OF ASSETS
(Supplemental Benefits)

	June 30, 2018	June 30, 2019
1. Market Value of Assets, Beginning of Year	$ 0	$ 0
2. Receipts		
a. Employer Surcharge	$ 0	$ 120,092
b. Lottery Allocation	0	0
c. Miscellaneous	0	0
d. Total	$ 0	$ 120,092
3. Expenditures		
a. Benefit Payments	$ 0	$ 0
b. Administrative Expense	0	0
c. Miscellaneous Expenditures	0	0
d. Total	$ 0	$ 0
4. Investment Return		
a. Investment Income	$ 0	$ 5,161
b. Securities Lending Income	0	1
c. Total Investment Return	$ 0	$ 5,162
5. Market Value of Assets, End of Year: (1) + (2d) - (3d) + (4c)	$ 0	$ 125,254
6. Rate of Return on Market Value of Assets, Net of Expenses [1]	N/A	8.60%

[1] Based on individual fund experience. Assumes cash flows occur at mid-year.

TABLE 3

DEVELOPMENT OF ACTUARIAL VALUE OF ASSETS
(Base Benefits)

						For the Year Ending June 30, 2019
1. Market Value as of June 30, 2018					$	131,491,187
2. Receipts					$	8,229,241
3. Expenditures, Net of Administrative Expenses					$	(7,325,257)
4. Expected Return on Assets [1]					$	8,906,165
5. Expected Market Value as of June 30, 2019: (1) + (2) + (3) + (4)					$	141,301,336
6. Actual Market Value as of June 30, 2019					$	141,989,364
7. Year End 2019 Asset Gain/(Loss): (6) - (5)					$	688,028
8. Deferred Investment Gains and Losses						
	Year Ended June 30:		Gain/(Loss)	Factor		Deferred Amount
	a. 2016	$	(6,255,044)	20%	$	(1,251,009)
	b. 2017		1,232,806	40%		493,122
	c. 2018		2,937,547	60%		1,762,528
	d. 2019		688,028	80%		550,422
	e. Total				$	1,555,063
9. Initial Actuarial Value as of June 30, 2019: (6) - (8e)					$	140,434,301
10. Constraining Values						
a. 80% of Market Value: (6) x 0.8					$	113,591,491
b. 120% of Market Value: (6) x 1.2					$	170,387,237
11. Actuarial Value as of June 30, 2019					$	140,434,301
12. Actuarial Rate of Return, Net of Expenses [2]						5.33%
13. Actuarial Value of Assets as a Percent of Market Value: (11) / (6)						98.9%
14. Actuarial Value of Assets						
a. Base Benefits					$	140,434,301
b. Supplemental Benefits					$	124,367
c. Total					$	140,558,668

[1] Assumes cash flows occur at mid-year and a return assumption of 6.75%.
[2] Assumes cash flows occur at mid-year.

TABLE 4

DEVELOPMENT OF ACTUARIAL VALUE OF ASSETS
(Supplemental Benefits)

		For Plan Year Ending June 30, 2019
1. Market Value, as of June 30, 2018	$	0
2. Receipts	$	120,092
3. Expenditures, Net of Administrative Expenses	$	0
4. Expected Return on Assets [1]	$	4,053
5. Expected Market Value as of June 30, 2019: (1) + (2) + (3) + (4)	$	124,145
6. Actual Market Value as of June 30, 2019	$	125,254
7. Year end 2019 asset gain/(loss): (6) - (5)	$	1,109

8. Deferred Investment Gains and Losses

	Year Ended June 30:		Gain/(Loss)	Factor		Deferred Amount
a.	2016	$	0	20%	$	0
b.	2017		0	40%		0
c.	2018		0	60%		0
d.	2019		1,109	80%		887
e.	Total				$	887

9. Initial Actuarial Value as of June 30, 2019: (6) - (8e)	$	124,367
10. Constraining Values		
a. 80% of Market Value: (6) x 0.8	$	100,203
b. 120% of Market Value: (6) x 1.2	$	150,305
11. Actuarial Value as of June 30, 2019	$	124,367
12. Actuarial Rate of Return, Net of Expenses [2]		7.12%
13. Actuarial Value of Assets as a Percent of Market Value: (11) / (6)		99.3%

[1] Assumes cash flows occur at mid-year and a return assumption of 6.75%.
[2] Assumes cash flows occur at mid-year.

In the previous section, an actuarial valuation was compared with an inventory process, and an analysis was given of the inventory of assets of the Excise, Gaming and Conservation Officers' Retirement Fund as of the valuation date, June 30, 2019. In this section, the discussion will focus on the commitments (future benefit payments) of the plan, which are referred to as its liabilities.

The liability calculations for the June 30, 2019 Excise, Gaming and Conservation Officers' Retirement Fund valuation are based on census data collected as of June 30, 2018. Standard actuarial techniques are used to adjust these results from June 30, 2018 to June 30, 2019. While these roll-forward techniques are based on all actuarial assumptions being met during the intervening year, there will, of course, be many of the assumptions that will not be met exactly. In general, this does not materially affect the resulting calculations or conclusions in this report. Should there be a year in which events, such as plan changes, occur that would affect the results, adjustments in the roll-forward methods would be made to appropriately reflect the events.

All liabilities reflect the benefit provisions and actuarial assumptions in place as of June 30, 2019.

Actuarial Accrued Liability

A fundamental principle in financing the liabilities of a retirement program is that the cost of its benefits should be related to the period in which benefits are earned, rather than to the period of benefit distribution. An actuarial cost method is a mathematical technique that allocates the present value of future benefits into annual costs. In order to do this allocation, it is necessary for the funding method to "breakdown" the present value of future benefits into two components:

(1) that which is attributable to the past and

(2) that which is attributable to the future.

Actuarial terminology calls the part attributable to the past the "past service liability" or the "actuarial accrued liability." The portion allocated to the future is known as the present value of future normal costs, with the specific piece of it allocated to the current year being called the "normal cost."

Table 5 contains the calculation of actuarial accrued liability for the Plan under the Entry Age Normal actuarial cost. This amount is split between the base benefit and the supplemental plan. Once permanent COLAs have been granted, the obligation for future payments will also be included.

TABLE 5

ACTUARIAL ACCRUED LIABILITY
(Base and Supplemental Benefits)

As of June 30, 2019	Base Benefits	Supplemental Benefits *Granted*	Supplemental Benefits *Future*	Total
1. Actuarial Accrued Liability				
a. Member Contribution Balances	$ 11,660,784	$ 0	$ 0	$ 11,660,784
b. Active & Inactive Members	67,673,921	0	4,220,435	71,894,355
c. In-pay Members	66,500,180	0	2,151,391	68,651,571
d. Total	$ 145,834,884	$ 0	$ 6,371,826	$ 152,206,710
2. Actuarial Value of Assets	$ 140,434,301	$ 0	$ 124,367	$ 140,558,668
3. Unfunded Actuarial Accrued Liability: (1d) - (2)	$ 5,400,583	$ 0	$ 6,247,459	$ 11,648,042
4. Funded Ratio: (2) / (1d)	96.3%	N/A	2.0%	92.3%

TABLE 6

COMBINED BASE AND SUPPLEMENTAL PLANS: SOLVENCY TEST

(Base and Supplemental Benefits)

	Actuarial Accrued Liabilities (AAL)					Portion of AAL Covered by Assets			
Actuarial Valuation as of June 30	Active Member Contributions	Retirees and Beneficiaries	Active Member (Employer Financed Portion)	Total Actuarial Accrued Liabilities	Actuarial Value of Assets	Active Member Contributions	Retirees and Beneficiaries	Active Member (Employer Financed Portion)	Total Actuarial Accrued Liabilities
2019	$11,661	$68,652	$71,894	$152,207	$140,559	100.0%	100.0%	83.8%	92.3%
2018	10,715	68,750	60,591	140,056	132,441	100.0	100.0	87.4	94.6
2017	9,737	69,217	63,649	142,603	124,531	100.0	100.0	71.6	87.3
2016	9,085	67,424	62,456	138,965	118,515	100.0	100.0	67.3	85.3
2015	8,456	61,503	62,837	132,796	112,765	100.0	100.0	68.1	84.9
2014	8,042	54,626	60,933	123,601	107,563	100.0	100.0	73.7	87.0
2013	7,494	56,028	54,575	118,097	98,608	100.0	100.0	64.3	83.5
2012	6,532	53,929	52,822	113,283	76,007	100.0	100.0	29.4	67.1
2011	6,271	46,695	48,568	101,534	72,599	100.0	100.0	40.4	71.5
2010	6,220	36,044	55,598	97,862	70,327	100.0	100.0	50.5	71.9

Note: Dollar amounts are in thousands of dollars.

TABLE 7

RECONCILIATION OF UNFUNDED ACTUARIAL ACCRUED LIABILITY
(Base Benefits)

		For Plan Year Ending June 30, 2019
1. Unfunded Actuarial Accrued Liability as of June 30, 2018	$	2,278,561
2. Normal Cost		3,379,616
3. Actuarially Determined Contribution		(3,547,339)
4. Interest		142,481
5. Expected Unfunded Actuarial Accrued Liability as of June 30, 2019	$	2,253,319
6. Actuarial Value of Asset Changes		
a. Investment Experience (Gain)/Loss	$	1,880,570
b. Contributions (Above)/Below the Actuarially Determined Contribution	$	(4,668,189)
7. Actuarial Accrued Liability Changes		
a. Actuarial Accrued Liability Experience (Gain)/Loss	$	5,934,883
b. Additional Liability Due to Benefit Changes		0
c. Additional Liability Due to Assumption Changes		0
8. Total Experience (Gain)/Loss	$	3,147,264
9. Unfunded Actuarial Accrued Liability as of June 30, 2019: (5) + (8)	$	5,400,583

TABLE 8

ACTUARIAL GAIN/(LOSS)
(Base Benefits)

Liabilities		
1. Actuarial Accrued Liability as of June 30, 2018	$	134,719,196
2. Normal Cost for Plan Year Ending June 30, 2019		3,379,616
3. Benefit Payments During Plan Year		(7,325,021)
4. Service Purchases (employee and employer)		50,070
5. Interest at 6.75%		9,076,140
6. Change Due to Benefit Changes		0
7. Change Due to Assumption Changes		0
8. Expected Actuarial Accrued Liability as of June 30, 2019	$	139,900,001
9. Actuarial Accrued Liability as of June 30, 2019	$	145,834,884
Assets		
10. Actuarial Value of Assets as of June 30, 2018	$	132,440,635
11. Receipts During Plan Year		8,229,241
12. Expenditures, Excluding Expenses, During Plan Year		(7,325,257)
13. Interest at 6.75%		8,970,252
14. Expected Actuarial Value of Assets as of June 30, 2019	$	142,314,871
15. Actuarial Value of Assets as of June 30, 2019	$	140,434,301
Experience Gain / (Loss)		
16. Liability Actuarial Experience Gain/(Loss): (8) - (9)	$	(5,934,883)
17. Asset Actuarial Experience Gain/(Loss): (15) - (14)		(1,880,570)
18. Total Actuarial Experience Gain/(Loss): (16) + (17)	$	(7,815,453)

TABLE 9

EXPERIENCE GAIN/(LOSS) ANALYSIS BY SOURCE
(Base Benefits)

Liability Sources		Gain/(Loss)
Retirement	$	389,000
Termination		(283,000)
Disability		395,000
Mortality		108,000
Salary		(6,707,000)
New Entrants/Rehires		(108,000)
Miscellaneous/COLA		271,000
Total Liability Experience Gain/(Loss)	$	(5,935,000)
as a % of AAL		(4.1%)
Asset Experience Gain/(Loss)	$	(1,881,000)
Total Actuarial Experience Gain/(Loss)	$	(7,816,000)

TABLE 10

PROJECTED BENEFIT PAYMENTS
(Base and Supplemental Benefits)

Plan Year Ending June 30	Benefit Amount
2020	$ 7,942,627
2021	7,955,917
2022	8,644,448
2023	8,747,907
2024	9,232,215
2025	9,712,664
2026	10,167,849
2027	10,635,479
2028	11,103,664
2029	11,559,163
2030	12,021,372
2031	12,447,303
2032	12,881,477
2033	13,365,682
2034	13,846,843
2035	14,308,434
2036	14,725,881
2037	15,089,559
2038	15,429,730
2039	15,722,436
2040	15,972,490
2041	16,191,090
2042	16,402,420
2043	16,559,945
2044	16,671,296
2045	16,720,680
2046	16,709,519
2047	16,654,447
2048	16,532,279
2049	16,370,110

Note: Payouts reflect nominal payouts for current members, assuming that all future assumptions are met.

The previous two sections were devoted to a discussion of the assets and liabilities of the plan. We now turn to considering how the benefits will be funded. The method used to determine the incidence of the contributions in various years is called the actuarial cost method. Under an actuarial cost method, the contributions required to meet the difference between current assets and current liabilities are allocated each year between two elements: (1) the normal cost rate and (2) the unfunded actuarial accrued liability contribution rate.

The term "fully funded" is often applied to a plan in which contributions at the normal cost rate are sufficient to pay for the benefits of existing employees as well as for those of new employees. More often than not, plans are not fully funded, either because of past benefit improvements that have not been completely funded, contribution levels, or because of actuarial deficiencies that have occurred because experience has not been as favorable as anticipated by the actuarial assumptions. Under these circumstances, an unfunded actuarial accrued liability (UAAL) exists. Likewise, when the actuarial value of assets is greater than the actuarial accrued liability, a surplus exists.

Description of Contribution Rate Components

The Entry Age Normal (EAN) actuarial cost method is used for the valuation. Under that method, the normal cost for each year from entry age to assumed exit age is a constant percentage of the member's year by year projected compensation. The portion of the present value of future benefits not provided by the present value of future normal costs is the actuarial accrued liability. The unfunded actuarial accrued liability/(surplus) represents the difference between the actuarial accrued liability and the actuarial value of assets as of the valuation date. For EG&C purposes, this calculation excludes consideration of future COLAs. The unfunded actuarial accrued liability is calculated each year and reflects experience gains and losses. New amortization bases are funded over 20 years.

Funding for future COLAs is provided by using a surcharge. This rate is intended to fund the COLAs anticipated to be granted in the next biennium by the start of that biennium.

In general, contributions are computed in accordance with a level percent-of-payroll funding objective. The contribution rate based on the June 30, 2019 actuarial will be used to calculate the actuarially determined employer contribution rate to the Excise, Gaming and Conservation Officers' Retirement Fund for the 2021 calendar year.

Contribution Rate Summary

In Table 11 the amortization payment related to the unfunded actuarial accrued liability/(surplus), as of June 30, 2019, is developed. The surcharge needed to fund the assumed COLAs is developed in Table 12. Table 13 develops the actuarial required contribution rate for the Plan. The contribution rates shown in this report are based on the actuarial assumptions and cost methods described in Appendix C. Additionally, in Table 14 the contribution amounts under alternative discount rates are provided to illustrate the sensitivity of the contribution requirements relative to the selection of the investment return assumption.

TABLE 11

SCHEDULE OF AMORTIZATION BASES
(Base Benefits)

Amortization Bases	Original Amount [1]	June 30, 2019 Remaining Payments	Date of Last Payment	Outstanding Balance as of June 30, 2019	Annual Contribution
2009 UAAL Base	12,159,924	18	7/1/2037	10,015,913	915,986
2010 UAAL Base	3,839,282	21	7/1/2040	3,335,372	282,586
2011 UAAL Base	1,009,127	22	7/1/2041	895,515	74,276
2012 UAAL Base	5,037,093	23	7/1/2042	4,558,115	370,750
2013 UAAL Base	(1,646,934)	24	7/1/2043	(1,517,311)	(121,221)
2014 UAAL Base	(3,141,667)	25	7/1/2044	(2,942,622)	(231,239)
2015 UAAL Base	4,288,938	26	7/1/2045	4,078,872	315,683
2016 UAAL Base	782,014	17	7/1/2036	719,149	67,811
2017 UAAL Base	(1,969,636)	18	7/1/2037	(1,867,559)	(170,794)
2018 UAAL Base	(15,408,361)	19	7/1/2038	(15,022,125)	(1,336,113)
2019 UAAL Base	3,147,264	20	7/1/2039	3,147,264	272,910
Total				$ 5,400,583	$ 440,635

1. Total UAAL Amortization Payments	$ 440,635
2. Projected Payroll for FY 2020	$ 34,103,346
3. UAAL Amortization Payment Rate	1.29%
4. Remaining Amortization Period in Years (Weighted)[2]	23.3

[1] The original amounts from 2013 to 2017 were provided by the prior actuary. Amounts prior to 2013 were estimated by INPRS.
[2] The weighted average remaining UAAL amortization period is calculated by weighting the remaining amortization period of each base by the amortization amount of each base.

TABLE 12

DEVELOPMENT OF SURCHARGE RATE
(Supplemental Benefits)

Projected COLAs in Next Biennium Beginning July 1, 2021

First Anticipated COLA		
1. Date of COLA commencement		January 1, 2022
2. Rate of COLA		0.4%
3. Value as of July 1, 2021 of COLA	$	307,221
Second Anticipated COLA		
4. Date of COLA commencement		January 1, 2023
5. Rate of COLA		0.4%
6. Value as of July 1, 2021 of COLA		305,003
7. Total COLA Funding Requirement as of July 1, 2021: (3) + (6)	$	612,224

Funding Sources for Projected COLAs

8. Assets as of June 30, 2019 Available for Future COLAs	$	124,367
9. Projected Contributions from 7/1/19 to 12/31/19		124,477
10. Expected Earnings through July 1, 2021		32,485
11. Projected Available Assets at July 1, 2021	$	281,329
12. Required Additional Funding for Anticipated COLAs: (7) - (11)		330,895

Surcharge Rate

13. Projected Payroll from 1/1/20 to 6/30/20		17,051,673
14. Projected Payroll from 7/1/20 to 6/30/21		34,955,930
15. Total of (13) and (14) adjusted to July 1, 2021	$	54,952,693
16. Surcharge Rate: (12) /(15)		0.61%

TABLE 13

ACTUARIAL REQUIRED CONTRIBUTION RATE
(Base and Supplemental Benefits)

	Base Benefits	Supplemental Benefits	Total
1. Projected Payroll for FY 2020	$ 34,103,346		
2. Normal Cost Rate	11.09%	0.59%	11.68%
3. Amortization of UAAL as of June 30, 2019			
a. Dollar Amount	$ 440,635		
b. Percent of Projected Pay	1.29%		
4. Expected Employee Contribution Rate	(4.00%)		
5. Preliminary Actuarially Determined Contribution (ADC) Rate: (2) + (3b) + (4)	8.38%		
6. Supplemental Benefit Surcharge Rate		0.61%	
7. ADC Rate Subject to Legal Constraints	8.38%	0.61%	8.99%
8. Board Policy Contribution Rate	20.14%	0.61%	20.75%
9. Estimated ADC Amount	$ 2,857,860	$ 208,030	$ 3,065,890
10. Actuarially Determined Contribution Rate:			
July 1, 2019 - December 31, 2019	8.51%		
January 1, 2020 - June 30, 2020	8.99%		
Average	8.75%		
11. Approved Funding Rate	20.75%		
12. Expected Percentage of ADC Contributed	237.14%		

TABLE 14

INVESTMENT RETURN SENSITIVITY
(Base and Supplemental Benefits)

	1.00% Decrease: (5.75%)	0.75% Decrease: (6.00%)	0.50% Decrease: (6.25%)	0.25% Decrease: (6.50%)	Current Assumption: (6.75%)
Funded Status					
Actuarial Accrued Liability	$172,518,851	$167,052,840	$161,856,214	$156,912,586	$152,206,710
Actuarial Value of Assets	140,558,668	140,558,668	140,558,668	140,558,668	140,558,668
Unfunded Actuarial Accrued Liability	$31,960,183	$26,494,172	$21,297,546	$16,353,918	$11,648,042
Funded Ratio	81.5%	84.1%	86.8%	89.6%	92.3%
Actuarially Determined Contribution Amount					
Normal Cost	$5,016,337	$4,729,741	$4,463,034	$4,214,681	$3,983,271
UAAL Amortization	2,552,452	2,150,269	1,754,755	1,365,563	982,373
Member Contributions	(1,364,134)	(1,364,134)	(1,364,134)	(1,364,134)	(1,364,134)
Actuarially Determined Contribution Amount	$6,204,655	$5,515,876	$4,853,655	$4,216,110	$3,601,510
Actuarially Determined Contribution Rate	18.19%	16.17%	14.23%	12.36%	10.56%

	0.25% Increase: (7.00%)	0.50% Increase: (7.25%)	0.75% Increase: (7.50%)	1.00% Increase: (7.75%)	1.25% Increase: (8.00%)
Funded Status					
Actuarial Accrued Liability	$147,724,406	$143,452,468	$139,378,591	$135,491,310	$131,779,926
Actuarial Value of Assets	140,558,668	140,558,668	140,558,668	140,558,668	140,558,668
Unfunded Actuarial Accrued Liability	$7,165,738	$2,893,800	($1,180,077)	($5,067,358)	($8,778,742)
Funded Ratio	95.1%	98.0%	100.8%	103.7%	106.7%
Actuarially Determined Contribution Amount					
Normal Cost	$3,767,512	$3,566,222	$3,378,313	$3,202,787	$3,038,730
UAAL Amortization	604,886	232,817	(134,103)	(496,121)	(853,470)
Member Contributions	(1,364,134)	(1,364,134)	(1,364,134)	(1,364,134)	(1,364,134)
Actuarially Determined Contribution Amount	$3,008,265	$2,434,905	$1,880,076	$1,342,532	$821,127
Actuarially Determined Contribution Rate	8.82%	7.14%	5.51%	3.94%	2.41%

Note: Comparisons are based on funding the COLA in the same method as the base benefit, rather than with a surcharge. Consequently, these results are for comparative purposes only and will not match the actual results under the funding policy.

GASB NO. 67 AND GASB NO. 68

The Governmental Accounting Standards Board issued Statement No. 67 (GASB 67), "Financial Reporting for Pension Plans" and Statement No. 68 (GASB 68), "Accounting and Financial Reporting for Pensions" in June 2012. The effective date for reporting under GASB 67 for the INPRS Plans was the fiscal year ending June 30, 2014. GASB 68's effective date for employers is the first fiscal year beginning after June 15, 2014.

The sections that follow provide the results of the required actuarial calculations set out in GASB 67 and GASB 68 for note disclosure and Required Supplementary Information (RSI). Some of this information was provided by the INPRS for use in this report.

The discount rate used for these disclosures is the assumed return on assets of 6.75%. We have verified that the current assets in conjunction with future contributions made on behalf of current members (including all contributions to fund any past service liability) will be sufficient to make the anticipated benefit payments to be provided to the current members.

To the best of our knowledge, the information contained in this report is complete and accurate. The calculations were performed by qualified actuaries according to generally accepted actuarial principles and practices, as well as in conformity with Actuarial Standards of Practice issued by the Actuarial Standards Board. The calculations are based on the current provisions of the plan, and on actuarial assumptions that are internally consistent and individually reasonable based on the actual experience of the plan. In addition, the calculations were completed in compliance with applicable law and, in our opinion, meet the requirements of GASB 67 and GASB 68.

TABLE 15

STATEMENT OF FIDUCIARY NET POSITION

			June 30, 2019
1. Assets			
a. Cash		$	0
b. Receivables			
i.	Contributions and Miscellaneous Receivables	$	0
ii.	Investments Receivable		1,470,802
iii.	Foreign Exchange Contracts Receivable		39,232,347
iv.	Interest and Dividends		368,047
v.	Receivables Due From Other Funds		0
vi.	Total Receivables	$	41,071,196
c. Investments			
i.	Short-Term Investments	$	0
ii.	Pooled Repurchase Agreements		27,436
iii.	Pooled Short-Term Investments		7,787,333
iv.	Pooled Fixed Income		48,103,386
v.	Pooled Equity		30,935,047
vi.	Pooled Alternative Investments		59,104,644
vii.	Pooled Derivatives		81,817
viii.	Pooled Investments		0
ix.	Securities Lending Collateral		479,721
x.	Total Investments	$	146,519,384
d. Net Capital Assets			0
e. Other Assets			0
f. Total Assets: a + b(vi) + c(x) + d + e		$	187,590,580
2. Liabilities			
a. Administrative Payable		$	9,054
b. Retirement Benefits Payable			99,740
c. Investments Payable			2,468,435
d. Foreign Exchange Contracts Payable			39,435,405
e. Securities Lending Obligations			479,721
f. Securities Sold Under Agreement to Repurchase			2,972,274
g. Due To Other Funds			11,333
h. Due to Other Governments			0
i. Total Liabilities: a + b + c + d + e + f + g + h		$	45,475,962
3. Fiduciary Net Position Restricted for Pensions: (1)(f) - (2)(i)		**$**	**142,114,618**

TABLE 16

STATEMENT OF CHANGES IN FIDUCIARY NET POSITION

			For Fiscal Year Ending June 30, 2019	
1. Fiduciary Net Position as of June 30, 2018			**$**	**131,491,187**
2. Additions				
	a. Contributions			
	i.	Member Contributions		1,317,708
	ii.	Employer Contributions		6,981,555
	iii.	Service Purchases (Employer and Member) [1]		50,070
	iv.	Non-Employer Contributing Entity Contributions		0
	v.	Total Contributions	$	8,349,333
	b. Investment Income/(Loss)			
	i.	Net Appreciation/(Depreciation)	$	8,554,409
	ii.	Net Interest and Dividend Income		2,042,473
	iii.	Securities Lending Income		13,518
	iv.	Other Net Investment Income		5,266
	v.	Investment Management Expenses		(872,172)
	vi.	Direct Investment Expenses		(29,337)
	vii.	Securities Lending Expenses		(2,800)
	viii.	Total Investment Income/(Loss)	$	9,711,357
	c. Other Additions			
	i.	Member Reassignments		0
	ii.	Miscellaneous Receipts		0
	iii.	Total Other Additions	$	0
	d. Total Revenue (Additions): a(v) + b(viii) + c(iii)		$	18,060,690
3. Deductions				
	a. Pension, Survivor and Disability Benefits		$	7,249,375
	b. Death and Funeral Benefits			0
	c. Distributions of Contributions and Interest			75,882
	d. Administrative Expenses			112,002
	e. Member Reassignments			0
	f. Miscellaneous Expenses			0
	g. Total Expenses (Deductions)		$	7,437,259
4. Net Increase (Decrease) in Fiduciary Net Position: (2)(d) - (3)(g)			**$**	**10,623,431**
5. Fiduciary Net Position as of June 30, 2019: (1) + (4)			**$**	**142,114,618**

[1] Service purchases paid by employee of $50,070.

TABLE 17

SCHEDULE OF CHANGES IN NET PENSION LIABILITY

	For Fiscal Year Ending June 30, 2019		
	Total Pension Liability (a)	**Plan Fiduciary Net Position (b)**	**Net Pension Liability (a) – (b)**
1. Balance at June 30, 2018	$ 140,055,567	$ 131,491,187	$ 8,564,380
2. Changes for the Year:			
Service Cost (SC) [1]	3,551,307		3,551,307
Interest Cost	9,447,926		9,447,926
Experience (Gains)/Losses	6,427,097		6,427,097
Assumption Changes	0		0
Plan Amendments	0		0
Benefit Payments [2]	(7,325,257)	(7,325,257)	0
Service Purchases			
Employer Contributions	0	0	0
Employee Contributions	50,070	50,070	0
Member Reassignments	0	0	0
Employer Contributions		6,981,555	(6,981,555)
Non-employer Contributions		0	0
Employee Contributions		1,317,708	(1,317,708)
Net Investment Income		9,711,357	(9,711,357)
Administrative Expenses		(112,002)	112,002
Other		0	0
Net Changes	$ 12,151,143	$ 10,623,431	$ 1,527,712
3. Balance at June 30, 2019	$ 152,206,710	$ 142,114,618	$ 10,092,092

[1] Service cost provided as of beginning of year. Interest to end of year is included in the interest cost.

[2] Includes refund of member contributions of $75,882.

TABLE 18

DEFERRED OUTFLOWS OF RESOURCES

	June 30, 2018	Remaining Period	Recognition	June 30, 2019
1. Liability Experience				
June 30, 2019 Loss	$ 6,427,097	5.78	$ 1,111,955	$ 5,315,142
June 30, 2018 Loss	0	4.95	0	0
June 30, 2017 Loss	81,544	4.26	19,143	62,401
June 30, 2016 Loss	243,795	3.24	75,246	168,549
June 30, 2015 Loss	348,874	2.81	124,156	224,718
June 30, 2014 Loss	0	3.68	0	0
2. Assumption Changes				
June 30, 2019 Loss	$ 0	5.78	$ 0	$ 0
June 30, 2018 Loss	0	4.95	0	0
June 30, 2017 Loss	0	4.26	0	0
June 30, 2016 Loss	0	3.24	0	0
June 30, 2015 Loss	1,101,357	2.81	391,944	709,413
June 30, 2014 Loss	0	3.68	0	0
3. Investment Experience				
June 30, 2019 Loss	$ 0	5.00	$ 0	$ 0
June 30, 2018 Loss	0	4.00	0	0
June 30, 2017 Loss	0	3.00	0	0
June 30, 2016 Loss	2,446,765	2.00	1,223,384	1,223,381
June 30, 2015 Loss	1,667,994	1.00	1,667,994	0
Total Outflows: (1)+(2)+(3)	**$ 12,317,426**		**$ 4,613,822**	**$ 7,703,604**

Information was provided prospectively from June 30, 2013 for GASB No. 68 purposes. Results prior to 2019 were produced by the prior actuary.

In accordance with GASB, the original amortization period for liability experience and assumption changes are amortized over the expected future working lifetime of all members, whereas the investment experience is amortized over five years.

TABLE 19

DEFERRED INFLOWS OF RESOURCES

	June 30, 2018	Remaining Period	Recognition	June 30, 2019
1. Liability Experience				
June 30, 2019 Gain	$ 0	5.78	$ 0	$ 0
June 30, 2018 Gain	488,198	4.95	98,626	389,572
June 30, 2017 Gain	0	4.26	0	0
June 30, 2016 Gain	0	3.24	0	0
June 30, 2015 Gain	0	2.81	0	0
June 30, 2014 Gain	182,141	3.68	49,497	132,644
2. Assumption Changes				
June 30, 2019 Gain	$ 0	5.66	$ 0	$ 0
June 30, 2018 Gain	6,668,308	4.95	1,347,133	5,321,175
June 30, 2017 Gain	1,754,620	4.26	411,883	1,342,737
June 30, 2016 Gain	0	3.24	0	0
June 30, 2015 Gain	0	2.81	0	0
June 30, 2014 Gain	0	3.68	0	0
3. Investment Experience				
June 30, 2019 Gain	$ 804,919	5.00	$ 160,984	$ 643,935
June 30, 2018 Gain	2,462,547	4.00	615,637	1,846,910
June 30, 2017 Gain	813,882	3.00	271,295	542,587
June 30, 2016 Gain	0	2.00	0	0
June 30, 2015 Gain	0	1.00	0	0
Total Inflows: (1)+(2)+(3)	**$ 13,174,615**		**$ 2,955,055**	**$ 10,219,560**

Information was provided prospectively from June 30, 2013 for GASB No. 68 purposes. Results prior to 2019 were produced by the prior actuary.

In accordance with GASB, the original amortization period for liability experience and assumption changes are amortized over the expected future working lifetime of all members, whereas the investment experience is amortized over five years.

TABLE 20

DEFERRED INFLOWS / OUTFLOWS TO BE RECOGNIZED IN PENSION EXPENSE

Fiscal Year Ending June 30	Deferred Outflows	Deferred Inflows	Net Deferred Outflows/(Inflows)
Current Year:			
2019	$ 4,613,822	$ 2,955,055	$ 1,658,767
Future Years:			
2020	$ 2,945,825	$ 2,955,055	$ (9,230)
2021	1,624,375	2,955,052	(1,330,677)
2022	1,149,155	2,667,912	(1,518,757)
2023	1,116,927	1,641,541	(524,614)
2024	867,322	0	867,322
Thereafter	0	0	0

TABLE 21
PENSION EXPENSE UNDER GASB NO. 68

		For Fiscal Year Ending June 30, 2019
1. Service Cost, beginning of year		$ 3,551,307
2. Interest Cost, including interest on service cost		9,447,926
3. Member Contributions [1]		(1,317,708)
4. Administrative Expenses		112,002
5. Expected Return on Assets [2]		(8,906,438)
6. Plan Amendments		0
7. Recognition of Deferred Inflows / Outflows of Resources Related to:		
a. Liability Experience (Gains) / Losses	1,182,377	
b. Assumption Change (Gains) / Losses	(1,367,072)	
c. Investment Experience (Gains) / Losses	1,843,462	
d. Total: (7a)+(7b)+(7c)		1,658,767
8. Miscellaneous (Income) / Expense		0
9. Total Collective Pension Expense: (1)+(2)+(3)+(4)+(5)+(6)+(7d)+(8)		4,545,856
10. Employer Service Purchases		0
Pension Expense / (Income): (9) + (10)		**$ 4,545,856**

[1] Excludes member paid service purchases of $50,070.
[2] Cash flows assumed to occur mid-year.

GASB NO. 67 and GASB NO. 68
NOTES TO THE FINANCIAL STATEMENTS

The material presented herein is a subset of the information requested as Notes to the Financial Statements. Required information not provided herein is to be supplied by the plan.

Actuarial Assumptions and Inputs

Significant actuarial assumptions and other inputs used to measure the total pension liability:

Type of Plan	The Excise, Gaming and Conservation Officers' Fund is a single-employer plan for GASB accounting purposes.
Measurement Date	June 30, 2019
Valuation Date	
Assets:	June 30, 2019
Liabilities:	June 30, 2018 – The TPL as of June 30, 2019 was determined based on an actuarial valuation prepared as of June 30, 2018 rolled forward one year to June 30, 2019, using the following key actuarial assumptions and other inputs, such as benefit accruals and actual benefit payments during that time period.
Inflation	2.25%
Future Salary Increases	2.50%
Cost-of-Living Increases	As of June 30, 2019: In lieu of a COLA on January 1, 2020 and January 1, 2021, members in pay were provided a 13th check on October 1, 2019 and October 1, 2020. Thereafter, the following COLAs, compounded annually, were assumed: 0.4% beginning on January 1, 2022 0.5% beginning on January 1, 2034 0.6% beginning on January 1, 2039 As of June 30, 2018: In lieu of a COLA on January 1, 2019, members in pay were provided a 13th check on October 1, 2018. It is assumed a 13th check would continue for the 2020 and 2021 fiscal years. Thereafter, the following COLAs, compounded annually, were assumed: 0.4% beginning on January 1, 2022 0.5% beginning on January 1, 2034 0.6% beginning on January 1, 2039

Mortality Assumption (Healthy)	RP-2014 (with MP-2014 improvement removed) Blue Collar mortality tables, with future mortality improvement projected generationally using future mortality improvement inherent in the Social Security Administration's 2014 Trustee report.
Mortality Assumption (Disabled)	RP-2014 (with MP-2014 improvement removed) Disability mortality tables, with future mortality improvement projected generationally using future mortality improvement inherent in the Social Security Administration's 2014 Trustee report.
Experience Study	The most recent comprehensive experience study was completed in April 2015 and was based on member experience between June 30, 2010 and June 30, 2014. The demographic assumptions were updated as needed for the June 30, 2015 actuarial valuation based on the results of the study.
Discount Rate	6.75%, net of investment expenses The discount rate is equal to the expected long-term rate of return on plan investments, net of investment expense and including price inflation. There was no change in the discount rate from the prior measurement date. The INPRS Board of Trustees has established a funding policy of setting the employer contribution rate equal to the greater of 20.75% (the current contribution rate) or a rate equal to the actuarially determined contribution rate, which is based on the assumptions and methods selected by the Board for the annual actuarial valuations and projected covered member payroll. The June 30, 2019 actuarial valuation assumes a long-term rate of return on assets of 6.75%, a 20-year level dollar closed method for amortizing the future layers of unfunded actuarial accrued liability (30 years for amortization layers established prior to June 30, 2016), and a 5-year smoothing method for recognizing investment gains and losses in the actuarial value of assets.

Discount Rate Sensitivity

	1% Decrease 5.75%	Current Rate 6.75%	1% Increase 7.75%
Net Pension Liability	$30,404,233	$10,092,092	($6,623,308)

Classes of Plan Members Covered

The June 30, 2019 valuation was performed using census data provided by INPRS as of June 30, 2018. Standard actuarial techniques were used to roll forward the total pension liability computed as of June 30, 2018 to the June 30, 2019 measurement date using actual benefit payments during that period of time.

Number as of June 30, 2018	
1. Currently Receiving Benefits:	
Retired Members, Disabled Members, and Beneficiaries	240
2. Inactive Members Entitled To But Not Yet Receiving Benefits	4
3. Inactive Non-vested Members Entitled to a Refund of Member Contributions	137
4. Active Members	436
Total Covered Plan Members: (1)+(2)+(3)+(4)	817

Money-Weighted Rate of Return

The money-weighted rate of return equals investment performance, net of pension plan investment expense, adjusted for the changing amounts actually invested. For the fiscal year ending June 30, 2019, the money-weighted return on the plan assets is 7.4%.

Components of Net Pension Liability

As of June 30, 2019		
Total Pension Liability	$	152,206,710
Fiduciary Net Position		142,114,618
Net Pension Liability	$	10,092,092
Ratio of Fiduciary Net Position to Total Pension Liability		93.37%

GASB NO. 67 AND GASB NO. 68: REQUIRED SUPPLEMENTAL INFORMATION

SCHEDULE OF CHANGES IN THE TOTAL PENSION LIABILITY AND PLAN FIDUCIARY NET POSITION

Fiscal Year Ending June 30	2013	2014	2015	2016	2017	2018	2019
Total Pension Liability							
Total Pension Liability - beginning	$113,282,644	$118,097,227	$123,600,704	$132,795,504	$138,965,050	$142,602,804	$140,055,567
Service Cost (SC), beginning-of-year	3,810,650	3,841,382	3,904,932	3,011,127	3,550,386	3,369,314	3,551,307
Interest Cost, including interest on SC	7,740,113	8,030,425	8,383,598	8,955,451	9,388,843	9,619,116	9,447,926
Experience (Gains)/Losses	(1,845,309)	(429,626)	845,498	469,533	119,830	(586,824)	6,427,097
Assumption Changes	(40,954)	0	2,669,133	0	(2,578,386)	(8,015,441)	0
Plan Amendments	0	0	0	0	0	0	0
Actual Benefit Payments	(4,835,348)	(5,938,704)	(6,608,361)	(6,245,234)	(6,826,316)	(6,934,957)	(7,325,257)
Member Reassignments	(14,569)	0	0	(21,331)	(25,694)	0	0
Service Purchases	0	0	0	0	9,091	1,555	50,070
Net Change in Total Pension Liability	4,814,583	5,503,477	9,194,800	6,169,546	3,637,754	(2,547,237)	12,151,143
(a) Total Pension Liability - ending	$118,097,227	$123,600,704	$132,795,504	$138,965,050	$142,602,804	$140,055,567	$152,206,710
Plan Fiduciary Net Position							
Plan Fiduciary Net Position – beginning	$76,543,260	$97,018,792	$110,656,502	$110,037,215	$111,329,476	$120,016,301	$131,491,187
Contributions – employer	19,740,031	5,358,617	5,215,010	5,366,551	5,691,313	6,174,724	6,981,555
Contributions – non-employer	0	0	0	0	0	0	0
Contributions – member	1,005,564	1,019,371	1,003,661	1,015,896	1,101,958	1,172,194	1,367,778
Net investment income	4,700,988	13,338,780	(71,559)	1,314,506	8,869,229	11,188,935	9,711,357
Actual benefit payments	(4,835,348)	(5,938,704)	(6,608,361)	(6,245,234)	(6,826,316)	(6,934,957)	(7,325,257)
Net member reassignments	(14,569)	0	0	(21,331)	(25,694)	0	0
Administrative expense	(121,134)	(140,354)	(158,038)	(138,127)	(123,665)	(136,045)	(112,002)
Other	0	0	0	0	0	10,035	0
Net change in Plan Fiduciary Net Position	20,475,532	13,637,710	(619,287)	1,292,261	8,686,825	11,474,886	10,623,431
(b) Plan Fiduciary Net Position - ending	$97,018,792	$110,656,502	$110,037,215	$111,329,476	$120,016,301	$131,491,187	$142,114,618
Net Pension Liability - ending, (a) - (b)	$21,078,435	$12,944,202	$22,758,289	$27,635,574	$22,586,503	$8,564,380	$10,092,092

Information was provided prospectively from June 30, 2013 for GASB No. 67 and GASB No. 68 purposes. Results prior to 2018 were produced by the prior actuary.

GASB NO. 67 AND GASB NO. 68: REQUIRED SUPPLEMENTAL INFORMATION

SCHEDULE OF THE NET PENSION LIABILITY

Fiscal Year Ending June 30	2013	2014	2015	2016	2017	2018	2019
Total Pension Liability	$118,097,227	$123,600,704	$132,795,504	$138,965,050	$142,602,804	$140,055,567	$152,206,710
Plan Fiduciary Net Position	97,018,792	110,656,502	110,037,215	111,329,476	120,016,301	131,491,187	142,114,618
Net Pension Liability	$21,078,435	$12,944,202	$22,758,289	$27,635,574	$22,586,503	$8,564,380	$10,092,092
Ratio of Plan Fiduciary Net Position to Total Pension Liability	82.15%	89.53%	82.86%	80.11%	84.16%	93.89%	93.37%
Covered-employee payroll [1]	$24,675,000	$25,824,626	$25,132,559	$25,525,549	$27,428,006	$29,386,684	$33,271,557
Net Pension Liability as a percentage of covered-employee payroll	85.42%	50.12%	90.55%	108.27%	82.35%	29.14%	30.33%

[1] As provided by INPRS.

Information was provided prospectively from June 30, 2013 for GASB No. 67 and GASB No. 68 purposes. Results prior to 2018 were produced by the prior actuary.

GASB NO. 67 AND GASB NO. 68: REQUIRED SUPPLEMENTAL INFORMATION

SCHEDULE OF EMPLOYER CONTRIBUTIONS

Fiscal Year Ending June 30	2013	2014	2015	2016	2017	2018	2019
Actuarially Determined Contribution [1]	$4,794,353	$5,340,533	$4,820,425	$4,077,706	$4,033,288	$4,393,309	$4,874,283
Actual employer contributions	$19,740,031	$5,358,617	$5,215,010	$5,366,551	$5,691,313	$6,174,724	$6,981,555
Annual contribution (deficiency) / excess	$14,945,678	$18,084	$394,585	$1,288,845	$1,658,025	$1,781,415	$2,107,272
Covered-employee payroll [2]	$24,675,000	$25,824,626	$25,132,559	$25,525,549	$27,428,006	$29,386,684	$33,271,557
Actual contributions as a percentage of covered-employee payroll	80.00%	20.75%	20.75%	21.02%	20.75%	21.01%	20.98%

[1] Actuarially determined contribution rate for July-December was developed in the actuarial funding valuation completed two years prior to the fiscal year.
Actuarially determined contribution rate for January-June was developed in the actuarial funding valuation completed one year prior to the fiscal year.
The average of these two rates was applied to the actual covered employee payroll for the fiscal year to determine the contribution amount.

[2] As provided by INPRS.

Information was provided prospectively from June 30, 2013 for GASB No. 67 and GASB No. 68 purposes. Results prior to 2018 were produced by the prior actuary.

GASB NO. 67 AND GASB NO. 68: REQUIRED SUPPLEMENTAL INFORMATION

SCHEDULE OF MONEY-WEIGHTED RETURNS

For Fiscal Year Ending June 30	Money-Weighted Return
2019	7.4%
2018	9.3%
2017	8.0%
2016	1.2%
2015	(0.1%)
2014	13.7%
2013	5.5%

Information was provided prospectively from June 30, 2013 for GASB No. 67 and GASB No. 68 purposes. Returns were provided by INPRS.

MEMBER DATA RECONCILIATION
For June 30, 2018 Data used in the June 30, 2019 Valuation

	Active Members	Actives in DROP	Inactive Vested	Inactive Nonvested	Disabled	Retired	Beneficiary	Total
1. As of June 30, 2017	**430**	**13**	**5**	**141**	**3**	**185**	**46**	**823**
2. Data Adjustments								
New Participants	9	0	0	0	0	0	0	9
Rehires	1	0	0	(1)	0	0	0	0
Terminations:								
Not Vested	(7)	0	0	7	0	0	0	0
Deferred Vested	0	0	0	0	0	0	0	0
DROP	(4)	4	0	0	0	0	0	0
Disability	0	0	0	0	0	0	0	0
Retirements	(3)	(3)	(1)	0	0	7	0	0
Refund / Benefits Ended	(2)	0	0	(10)	0	0	0	(12)
Deaths:								
With Beneficiary	0	(1)	0	0	0	(3)	4	0
Without Beneficiary	(1)	0	0	0	0	0	(3)	(4)
Data Corrections	0	0	0	0	0	1	0	1
Net Change	(7)	0	(1)	(4)	0	5	1	(6)
3. As of June 30, 2018	**423**	**13**	**4**	**137**	**3**	**190**	**47**	**817**

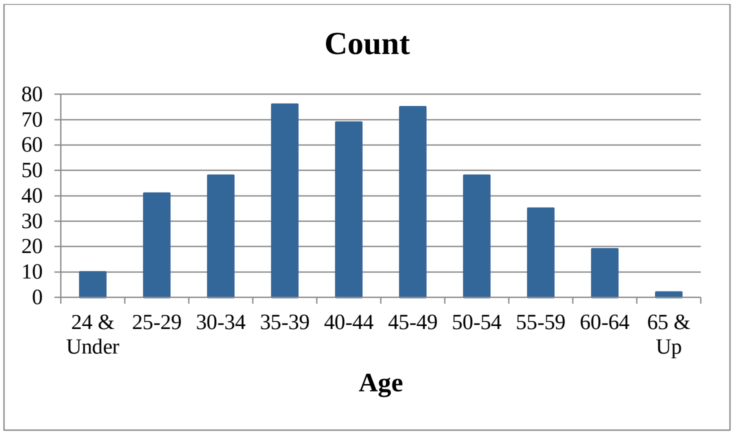
SUMMARY OF MEMBERSHIP DATA

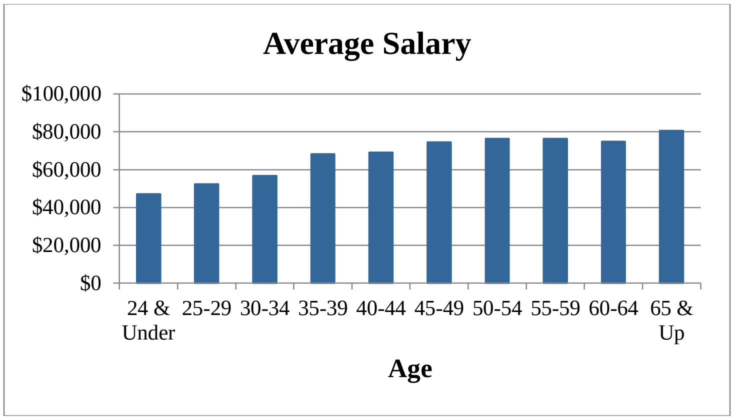
Valuation Date		June 30, 2018		June 30, 2019	% Change
Date of Membership Data [1]		July 1, 2017		July 1, 2018	
ACTIVE MEMBERS					
Number of Members					
Active		430		423	(1.6%)
Active in DROP		13		13	0.0%
Total		443		436	(1.6%)
Annual Membership Data Salary [2,3]	$	26,392,402	$	29,871,173	13.2%
Anticipated Payroll for Next Fiscal Year	$	30,121,351	$	34,103,346	13.2%
Active Member Averages[3]					
Age		42.2		42.8	1.5%
Service		10.9		11.6	6.0%
Annual Membership Data Salary	$	59,577	$	68,512	15.0%
INACTIVE MEMBERS					
Number of Members					
Inactive Vested		5		4	(20.0%)
Inactive Non-Vested		141		137	(2.8%)
Total		146		141	(3.4%)
Inactive Vested Member Averages					
Age		46.6		48.3	3.5%
Service		16.8		17.3	2.8%
RETIREES, DISABLEDS, AND BENEFICIARIES					
Number of Members					
Retired		185		190	2.7%
Disabled		3		3	0.0%
Beneficiaries		46		47	2.2%
Total		234		240	2.6%
Annual Benefits					
Retired	$	5,748,826	$	5,876,331	2.2%
Disabled		48,610		48,610	0.0%
Beneficiaries		448,476		501,415	11.8%
Total	$	6,245,912	$	6,426,356	2.9%

[1] The valuation results were calculated using the prior year's census data and were adjusted for certain activity during fiscal year.
[2] Annualized for actives with less than a year of service. Actives with no salary provided are defaulted to the average salary.
[3] The June 30, 2018 valuation results were updated to include active members in DROP.

ACTIVE MEMBERS [1]
As of June 30, 2018 for the June 30, 2019 Valuation

	Count of Members			FY 2018 Annual Membership Data Salary		
Age	Male	Female	Total	Male	Female	Total
24 & Under	10	0	10	$ 470,645	$ 0	$ 470,645
25-29	38	3	41	1,972,793	172,272	2,145,065
30-34	44	4	48	2,510,850	211,505	2,722,355
35-39	63	13	76	4,294,151	893,671	5,187,822
40-44	57	12	69	3,940,192	825,379	4,765,571
45-49	69	6	75	5,130,623	455,170	5,585,793
50-54	47	1	48	3,585,586	79,605	3,665,191
55-59	34	1	35	2,589,198	83,508	2,672,706
60-64	18	1	19	1,350,992	71,264	1,422,256
65 & Up	2	0	2	161,235	0	161,235
Total	382	41	423	$ 26,006,265	$ 2,792,374	$ 28,798,639





[1] Actives with no salary provided are defaulted to the average salary.

AGE AND SERVICE DISTRIBUTION
As of June 30, 2018 for the June 30, 2019 Valuation

Age		0-4	5-9	10-14	15-19	20-24	25-29	30-34	Over 34	Total
24 & Under	Number	10	0	0	0	0	0	0	0	10
	Total Salary	$ 470,645	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 470,645
	Average Sal.	$ 47,065	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 47,065
25-29	Number	25	16	0	0	0	0	0	0	41
	Total Salary	$ 1,219,523	$ 925,542	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 2,145,065
	Average Sal.	$ 48,781	$ 57,846	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 52,319
30-34	Number	13	25	10	0	0	0	0	0	48
	Total Salary	$ 625,406	$ 1,449,494	$ 647,455	$ 0	$ 0	$ 0	$ 0	$ 0	$ 2,722,355
	Average Sal.	$ 48,108	$ 57,980	$ 64,746	$ 0	$ 0	$ 0	$ 0	$ 0	$ 56,716
35-39	Number	6	16	53	1	0	0	0	0	76
	Total Salary	$ 357,720	$ 968,925	$ 3,770,878	$ 90,299	$ 0	$ 0	$ 0	$ 0	$ 5,187,822
	Average Sal.	$ 59,620	$ 60,558	$ 71,149	$ 90,299	$ 0	$ 0	$ 0	$ 0	$ 68,261
40-44	Number	6	13	36	13	1	0	0	0	69
	Total Salary	$ 369,686	$ 808,666	$ 2,534,769	$ 979,824	$ 72,626	$ 0	$ 0	$ 0	$ 4,765,571
	Average Sal.	$ 61,614	$ 62,205	$ 70,410	$ 75,371	$ 72,626	$ 0	$ 0	$ 0	$ 69,066
45-49	Number	6	8	27	9	20	5	0	0	75
	Total Salary	$ 443,521	$ 586,509	$ 1,929,599	$ 704,833	$ 1,540,515	$ 380,816	$ 0	$ 0	$ 5,585,793
	Average Sal.	$ 73,920	$ 73,314	$ 71,467	$ 78,315	$ 77,026	$ 76,163	$ 0	$ 0	$ 74,477
50-54	Number	9	4	12	4	6	10	3	0	48
	Total Salary	$ 654,252	$ 302,844	$ 898,325	$ 271,455	$ 491,231	$ 799,346	$ 247,738	$ 0	$ 3,665,191
	Average Sal.	$ 72,695	$ 75,711	$ 74,860	$ 67,864	$ 81,872	$ 79,935	$ 82,579	$ 0	$ 76,358
55-59	Number	11	6	7	0	0	2	8	1	35
	Total Salary	$ 744,443	$ 484,306	$ 517,534	$ 0	$ 0	$ 151,789	$ 681,700	$ 92,934	$ 2,672,706
	Average Sal.	$ 67,677	$ 80,718	$ 73,933	$ 0	$ 0	$ 75,895	$ 85,213	$ 92,934	$ 76,363
60-64	Number	2	4	12	0	1	0	0	0	19
	Total Salary	$ 149,890	$ 288,442	$ 912,057	$ 0	$ 71,867	$ 0	$ 0	$ 0	$ 1,422,256
	Average Sal.	$ 74,945	$ 72,111	$ 76,005	$ 0	$ 71,867	$ 0	$ 0	$ 0	$ 74,856
65 & Up	Number	0	1	1	0	0	0	0	0	2
	Total Salary	$ 0	$ 82,418	$ 78,817	$ 0	$ 0	$ 0	$ 0	$ 0	$ 161,235
	Average Sal.	$ 0	$ 82,418	$ 78,817	$ 0	$ 0	$ 0	$ 0	$ 0	$ 80,618
Total	Number	88	93	158	27	28	17	11	1	423
	Total Salary	$ 5,035,086	$ 5,897,146	$ 11,289,434	$ 2,046,411	$ 2,176,239	$ 1,331,951	$ 929,438	$ 92,934	$ 28,798,639
	Average Sal.	$ 57,217	$ 63,410	$ 71,452	$ 75,793	$ 77,723	$ 78,350	$ 84,494	$ 92,934	$ 68,082

[1] Actives with no salary provided are defaulted to the average salary.

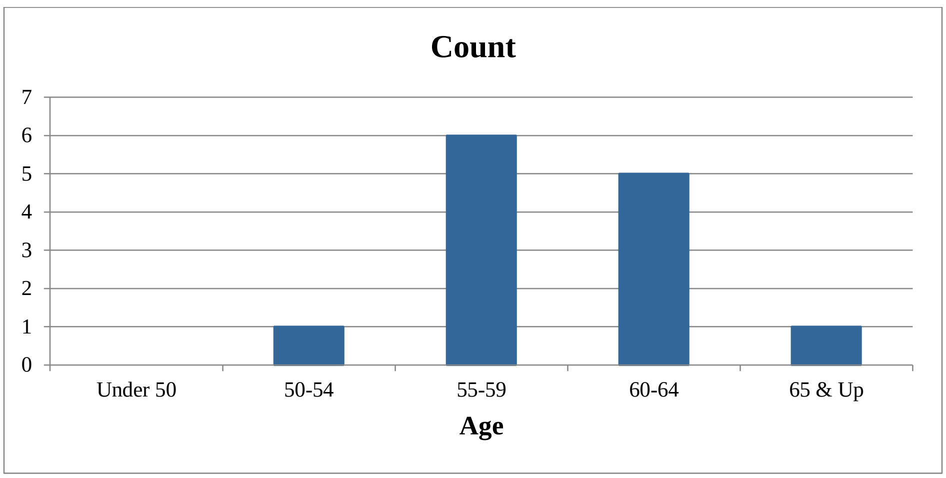
ACTIVE MEMBERS IN DROP
As of June 30, 2018 for the June 30, 2019 Valuation

Count of Members

Age	Male	Female	Total
Under 50	0	0	0
50-54	1	0	1
55-59	5	1	6
60-64	5	0	5
65 & Up	1	0	1
Total	12	1	13

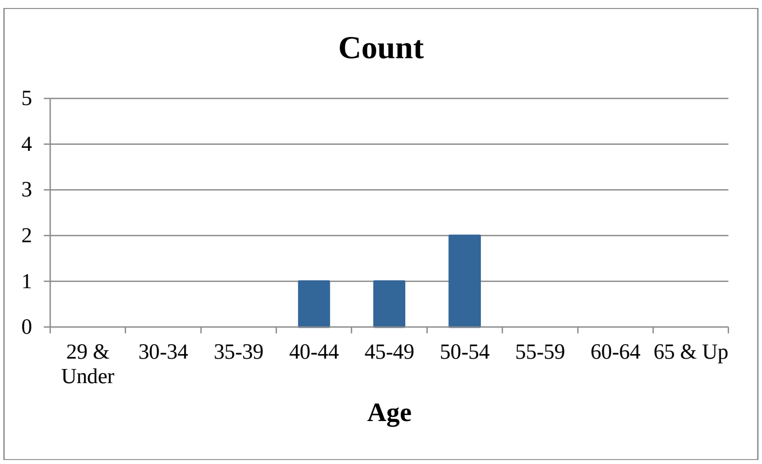
FY 2018 Annual Membership Data Salary

Total Salary	$ 1,072,534
Average Salary	$ 82,503



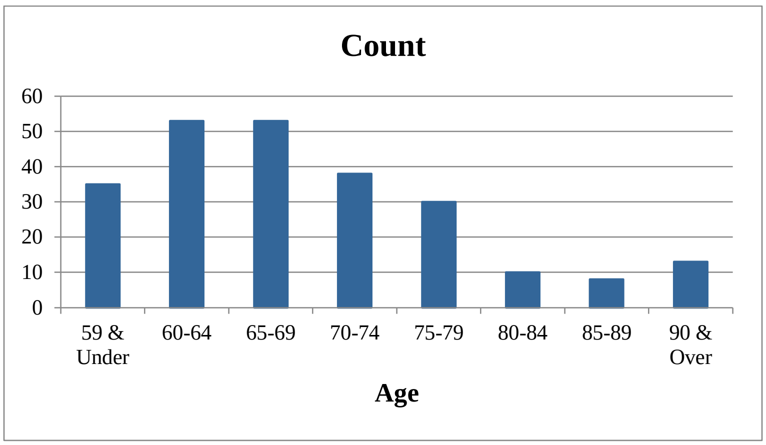
INACTIVE VESTED MEMBERS
As of June 30, 2018 for the June 30, 2019 Valuation

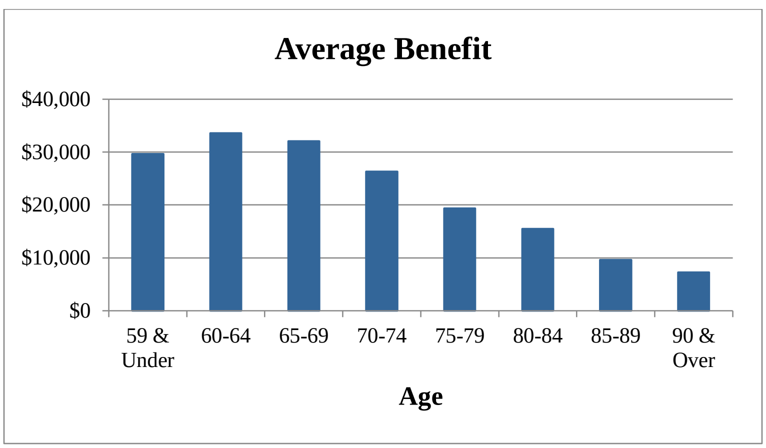
	Count of Members		
Age	Male	Female	Total
29 & Under	0	0	0
30-34	0	0	0
35-39	0	0	0
40-44	1	0	1
45-49	1	0	1
50-54	2	0	2
55-59	0	0	0
60-64	0	0	0
65 & Up	0	0	0
Total	4	0	4



MEMBERS AND BENEFICIARIES RECEIVING BENEFITS
As of June 30, 2018 for the June 30, 2019 Valuation

	Count of Members			Annual Benefits		
Age	Male	Female	Total	Male	Female	Total
59 & Under	32	3	35	$ 984,272	$ 52,984	$ 1,037,256
60-64	44	9	53	1,606,433	175,061	1,781,494
65-69	46	7	53	1,597,321	103,681	1,701,002
70-74	31	7	38	899,935	99,741	999,676
75-79	20	10	30	455,813	124,985	580,798
80-84	6	4	10	110,244	44,616	154,860
85-89	2	6	8	34,265	42,901	77,166
90 & Over	2	11	13	22,080	72,023	94,103
Total	183	57	240	$ 5,710,363	$ 715,992	$ 6,426,355





MEMBERS AND BENEFICIARIES RECEIVING BENEFITS
As of June 30, 2018 for the June 30, 2019 Valuation

Schedule of Average Benefit Payments[1]

	Years of Credited Service						
For the Year Ended June 30, 2019	< 10	10 - 14	15 - 19	20 - 24	25 - 29	30 +	Total
Average Monthly Defined Benefit	$851	$1,366	$594	$1,064	$2,177	$2,830	$2,231
Average Final Average Salary [2]	$51,086	$64,944	$33,535	$39,323	$53,322	$57,149	$53,507
Number of Benefit Recipients	2	7	21	19	75	116	240

Schedule of Benefit Recipients by Type of Benefit Option[1]

	Number of Recipients by Benefit Option			
Amount of Monthly Benefit (in dollars)	Joint with 50% Survivor Benefits	Survivors	Disability	Total Benefit Recipients
1 - 500	2	10	1	13
501 - 1,000	12	20	0	32
1,001 - 1,500	21	13	1	35
1,501 - 2,000	10	3	0	13
2,001 - 2,500	35	1	1	37
2,501 - 3,000	46	0	0	46
Over 3,000	64	0	0	64
Total	190	47	3	240

[1]Calculated using the prior year census data, adjusted for certain activity during the fiscal year.

[2]Excludes the 22 in-pay members who are missing a final average salary in the data.

MEMBERS AND BENEFICIARIES RECEIVING BENEFITS
As of June 30, 2018 for the June 30, 2019 Valuation

	Added to Rolls		Removed from Rolls		Rolls - End of Year				
	Number	Annual Benefits	Number	Annual Benefits	Number	Total Annual Benefits	Percent Change In Total Annual Benefits[1,2]	Average Annual Benefit	Percent Change In Average Annual Benefit
2019 [3]	9	$216	3	$19	240	6,426	2.9%	26,776	0.3%
2018 [3]	13	404	2	23	234	6,246	5.6	26,692	0.7
2017 [3]	8	314	5	60	223	5,912	4.4	26,512	3.0
2016 [3]	14	506	1	4	220	5,661	8.7	25,733	2.2
2015 [3]	15	556	1	5	207	5,210	11.7	25,170	4.1
2014 [3]	0	0	0	0	193	4,666	0.0	24,177	0.0
2013	8	253	2	9	193	4,666	4.8	24,177	1.5
2012	14	495	3	14	187	4,452	11.9	23,810	5.3
2011	22	902	3	23	176	3,978	26.9	22,602	13.2
2010	6	136	6	49	157	3,134	2.6	19,962	2.6

[1] Dollar amounts are in thousands except for the average annual benefit.
[2] End of year annual benefits are not equal to prior end of year annual benefits plus additions less removals due to beneficiary benefit changes, data changes, and COLA increases.
[3] The valuation results were calculated using the prior year census data, adjusted for certain activity during the fiscal year.

Definitions

Fiscal year	Twelve month period ending June 30.
Participation	All Indiana State Excise Police Officers, all Indiana State Conservation Enforcement officers, all Indiana Gaming Agents, and all Indiana Gaming Control Officers must become members as a condition of employment.
Member contributions	Each member is required to contribute at the rate of 4% of pay. These contributions are kept on deposit and credited with interest until such time as they are refunded or used to provide benefits at retirement.
Average monthly earnings	Average monthly earnings is the monthly average of earnings calculated based on any five years of salary within the 10 years preceding retirement that produce the highest such average.

Eligibility for Benefits

Deferred vested	15 or more years of creditable service and no longer active.
Disability retirement	As determined by a disability medical panel.
Early retirement	Age 45 with 15 or more years of creditable service.
Normal retirement	Earliest of: - Age 65 (mandatory retirement) - 10 or more years of creditable service for members hired on or after age 50 - Age 55 with sum of age and creditable service equal to 85 or more - Age 50 with 25 or more years of creditable service
Pre-retirement death	15 or more years of creditable service.

Monthly Benefits Payable

Normal retirement	The normal retirement benefit is a monthly annuity payable in a Joint and 50% Surviving Beneficiary form and is equal to 25% of average monthly earnings, plus 1-2/3% of average monthly earnings for years of creditable service more than 10 years. The normal retirement benefit may not exceed 75% of the average annual salary.

Early retirement	The early retirement benefit is the accrued retirement benefit determined as of the early retirement date and payable commencing at the normal retirement date. A member may elect to have the benefit commence prior to normal retirement provided the benefit is reduced by 1/4% for each month that the benefit commencement date precedes age 60. The early retirement benefit may not exceed 75% of the average annual salary.
Deferred retirement	If termination is prior to earning 15 years of service, the member shall be entitled to a lump sum refund of employee contributions plus accumulated interest. If termination is after earning 15 years of service, the termination benefit is the accrued retirement benefit determined as of the termination date and payable commencing as of the normal retirement date. The member may elect to receive a reduced early retirement benefit beginning at age 45.
Disability	If disability occurs in the line of duty, the disability retirement benefit is the member's monthly salary multiplied by the degree of impairment and is payable commencing the month following disability date without reduction for early commencement. The benefit shall not be less than 20% of the member's salary if the member has more than 5 years of service, or 10% if 5 or less years of service. If disability does not occur in the line of duty, the disability retirement benefit is equal to 50% of the member's monthly salary multiplied by the degree of impairment and is payable commencing the month following disability date without reduction for early commencement. The benefit shall not be less than 10% of the member's salary if the member has more than 5 years of service, or 5% if 5 or less years of service.
Pre-retirement death	If death is prior to earning 15 years of service, the member's beneficiary or estate shall receive employee contributions plus accumulated interest. If death is after earning 15 years of service, the spouse or dependent beneficiary is entitled to receive the monthly survivor annuity under the assumption that the member retired on the day before the date of death.

Deferred retirement option plan ("DROP")	Effective July 1, 2008, a DROP is established for all plan participants.

An employee may make a DROP election as provided in this chapter only if, immediately upon termination, he/she is eligible to receive an unreduced annual retirement allowance under the provisions of the EG&C Fund on his/her entry date into the DROP.

The DROP retirement benefit will be based on average annual salary and years of creditable service on the date the member enters the DROP. Average annual salary is based on the 5 highest years of annual salary in the 10 years immediately preceding the member's retirement date.

Any member who chooses the DROP shall agree to the following:

- The member shall execute an irrevocable election to retire on the DROP retirement date and shall remain in active service until that date.
- While in the DROP, the member shall continue to make contributions to the EG&C Fund under the provisions of that fund.
- The member shall elect a DROP retirement date not less than 12 months and not more than 36 months after the member's DROP entry date.
- The member may not remain in the DROP after the date the member reaches any mandatory retirement age as set forth in the EG&C Fund.
- The member may make an election to enter the DROP only once in the member's lifetime.
- A member who retires on his/her DROP retirement date may elect to receive an annual retirement allowance:
  a) Computed as if the member had never entered the DROP; or
  b) Consisting of the DROP frozen benefit, plus an additional amount paid as the member elects, determined by multiplying the DROP frozen benefit by the number of months the member was in DROP.

No cost of living increase is applied to a DROP frozen benefit while the participant is in the DROP. After the participant's DROP retirement date, cost of living increases determined under the EG&C Fund apply to the participant's annual retirement allowance.

Cost-of-Living-Adjustments	The monthly annuity benefits for members in pay status are increased periodically to preserve purchasing power that is diminished due to inflation. Such increases are not guaranteed by Statute and will only be provided by legislative action. Legislation passed in the 2018 legislative session creates a funding mechanism to provide for future benefit increases or 13th checks. The INPRS Board has the authority to have employers contribute up to 1% of member pay into the fund. Increases or payments are made upon passed legislation subject to the availability of funds to provide the benefit.
Forms of payment a. Single life annuity	Member will receive a monthly benefit for life, but there are no monthly payments to anyone after death.
b. Joint with one-half survivor benefits	Member will be paid a monthly benefit for life. After death, one-half (1/2) of the benefit will be paid to the spouse or parent for their lifetime or the dependent until age 18. If the spouse's age is more than 5 years younger than the member, the benefit is actuarially adjusted.

Changes in Plan Provisions since the Prior Year

None.

ACTUARIAL METHODS

1. **Actuarial Cost Method**

   The actuarial cost method is Entry Age Normal - Level Percent of Payroll.

   The normal cost is calculated separately for each active member and is equal to the level percentage of payroll needed as an annual contribution from entry age to retirement age to fund projected benefits. The actuarial accrued liability on any valuation date is the accumulated value of such normal costs from entry age to the valuation date.

   For funding, gains and losses occurring from census experience different than assumed, assumption changes, and benefit changes are amortized over a 20-year period with level payments each year. A new gain or loss base is established each year based on the additional gain or loss during that year and that base is amortized over a new 20-year period (gain or loss bases established prior to June 30, 2016 were amortized over 30 years and will continue to be amortized over 30 -year period). However, when the plan is at or above 100% funded (based on Actuarial Value of Assets), the past amortization bases are considered fully amortized and a single amortization base equal to the surplus is amortized over a 30-year period with level payments each year. The purpose of the method is to give a smooth progression of the costs from year to year and, at the same time, provide for an orderly funding of the unfunded liabilities.

   For accounting, gains and losses occurring from census experience different than assumed and assumption changes are amortized into expense over the average expected future service of all plan participants (active and inactive). Gains and losses occurring from investment experience different from assumed are amortized into expense over a 5-year period. The effect of plan changes on the plan liability are fully recognized in expense in the year in which they occur.

   Member census data as of June 30, 2018 was used in the valuation and adjusted, where appropriate, to reflect changes between June 30, 2018 and June 30, 2019. The valuation results from June 30, 2018 were rolled-forward to June 30, 2019 to reflect benefit accruals during the year less benefits paid.

2. **COLA Surcharge**

   The COLA Surcharge is developed by determining the assets needed at the start of the next biennium to fund the post-retirement benefit increases anticipated to be granted in that biennium. This amount is divided by the present value of expected payroll over which the accumulations will occur.

3. **Asset Valuation Method**

   The Actuarial Value of Assets smoothes the recognition of gains and losses on the Market Value of Assets over five years, subject to a 20% corridor.

4. Anticipated Payroll

The Anticipated Payroll for the fiscal year beginning July 1, 2019 is equal to the actual payroll during the year ending June 30, 2019, increased with one year of salary scale.

5. Employer Contribution Rate

Based on the assumptions and methods previously described, an actuarially determined contribution rate is computed. The Board considers this information, but has ultimate authority in setting the employer contribution rate.

Changes in Actuarial Methods since the Prior Year

None.

ACTUARIAL ASSUMPTIONS

Valuation Date	June 30, 2019

Economic Assumptions

1. Investment return	6.75% per year, compounded annually (net of administrative and investment expenses)
2. Inflation	2.25% per year
3. Salary increase	2.50% per year
4. Interest on member balances	3.50% per year
5. Cost-of-Living Adjustment (COLA)	In lieu of a COLA on January 1, 2020 and January 1, 2021, members in pay are provided a 13th check on October 1, 2019 and October 1, 2020. Thereafter, the following COLAs, compounded annually, were assumed: 0.4% beginning on January 1, 2022 0.5% beginning on January 1, 2034 0.6% beginning on January 1, 2039

Demographic Assumptions

1. Mortality	The mortality assumption includes an appropriate level of conservatism that reflects expected future mortality improvement.
a. Healthy mortality	RP-2014 (with MP-2014 improvement removed) Blue Collar mortality tables, with future mortality improvement projected generationally using future mortality improvement inherent in the Social Security Administration's 2014 Trustee report.
b. Disabled mortality	RP-2014 (with MP-2014 improvement removed) Disability mortality tables, with future mortality improvement projected generationally using future mortality improvement inherent in the Social Security Administration's 2014 Trustee report.

2. Disability

Age	Sample Rates
20	0.0900%
25	0.1275%
30	0.1650%
35	0.2205%
40	0.3300%
45	0.5400%
50	0.9090%
55	1.5135%
60	2.4405%
65+	0.0000%

Active members who become disabled are assumed to receive 20% of their salary if they have less than 5 years of service and 40% of their salary if they have 5 or more years of service.

3. Retirement

Age	Rate
<=44	0%
45	3%
46-49	2%
50	3%
51-59	15%
60-64	40%
65+	100%

Inactive vested members are assumed to commence their retirement benefit at their earliest eligible retirement date (age 45, or current age if greater).

4. Termination

Years of Service	Rate
0-1	10%
2	9%
3	8%
4	7%
5	6%
6	5%
7	4%
8	3%
9	2%
10+	1%

Other Assumptions

1. Form of payment	Members are assumed to elect either a single life annuity or a 50% joint survivor benefit based on the marriage assumptions below.
2. Marital status	
a. Percent married	90% of members are assumed to be married or to have a dependent beneficiary.
b. Spouse's age	Males are assumed to be three (3) years older than females.
3. Pay increase timing	Beginning of (fiscal) year. Payroll amounts stated in the valuation data are amounts projected to be paid during the current year.
4. Decrement timing	Decrements are assumed to occur at the beginning of the year.
5. Active members in DROP	Members who are participating in the DROP are assumed to receive an annuity benefit commencing at the end of their DROP period as well as a lump sum payment equal to the number of years they were in the DROP times their annual annuity benefit. The annuity benefit is estimated based on salary and service at the time the member entered the DROP.

Changes in Assumptions since the Prior Year

None.

Data Adjustments

Active and retired member data is reported as of June 30. Member census data as of June 30, 2018 was used in the valuation and adjusted. Standard actuarial roll-forward techniques were then used to project the liability computed as of June 30, 2018 to the June 30, 2019 valuation date. The normal cost rate is assumed to remain unchanged between June 30, 2018 and June 30, 2019.

The member total payroll and the asset information for this valuation were furnished as of June 30, 2019. Total payroll in FYE 2020 is assumed to increase by the salary growth assumption over the total payroll observed for FYE 2019. We did not audit the information provided, but we did review it thoroughly for reasonableness and compared it with the prior year's submission for consistency.

Other Technical Valuation Procedures

Salary increases are assumed to apply to annual amounts.

Decrements are assumed to occur at the beginning of the year. Standard adjustments are made for multiple decrements.

No actuarial liability is included for participants who terminated without being vested prior to the valuation date, except those due a refund of contributions.

Accrued Service	Service credited under the plan that was rendered before the date of the actuarial valuation.
Actuarial Assumptions	Estimates of future experience with respect to demographic or economic events. Demographic assumptions (rates of mortality, disability, turnover and retirement) are generally based on past experience, often modified for projected changes in conditions. Economic assumptions (salary increases and investment income) consist of an underlying rate in an inflation-free environment plus a provision for a long-term average rate of inflation.
Actuarial Cost Method	A mathematical budgeting procedure for allocating the dollar amount of the actuarial present value of retirement plan benefits between future normal cost and actuarial accrued liability. Sometimes referred to as the "actuarial funding method."
Actuarial Equivalent	A single amount or series of amounts of equal value to another single amount or series of amounts computed on the basis of a given set of actuarial assumptions.
Actuarial Accrued Liability	The difference between the actuarial present value of plan benefits and the actuarial value of future normal costs. Also referred to as "accrued liability" or "actuarial liability."
Actuarial Present Value	The amount of funds currently required to provide a payment or series of payments in the future. It is determined by discounting future payments at predetermined rates of interest and by probabilities of payment.
Amortization	Paying off an interest-discounted amount with periodic payments of interest and principal, as opposed to paying off with lump sum payment.
Experience Gain (Loss)	The difference between actual experience and actuarial assumptions anticipated experience during the period between two actuarial valuation dates.
Normal Cost	The actuarial present value of retirement plan benefits allocated to the current year by the actuarial cost method.
Unfunded Actuarial Accrued Liability	The difference between actuarial liability and the actuarial value of assets. Sometimes referred to as "unfunded accrued liability" or "unfunded liability".
	Most retirement plans have unfunded actuarial liability. They arise anytime new benefits are added and anytime an actuarial loss is realized.