

2019

COMPREHENSIVE ANNUAL FINANCIAL REPORT

For the Fiscal Year Ended June 30, 2019



INPRS is a component unit and a pension trust fund of the State of Indiana.



Prepared through the joint efforts of INPRS's team members.
Available online at www.in.gov/inprs

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INPRS is a component unit and a pension trust fund of the State of Indiana.

INPRS is a trust and an independent body corporate and politic. The system is not a department or agency of the state, but is an independent instrumentality exercising essential governmental functions (IC 5-10.5-2-3).

FUNDS MANAGED BY INPRS

ABBREVIATIONS USED

Defined Benefit

1. Public Employees' Defined Benefit Account
2. Teachers' Pre-1996 Defined Benefit Account
3. Teachers' 1996 Defined Benefit Account
4. 1977 Police Officers' and Firefighters' Retirement Fund
5. Judges' Retirement System
6. Excise, Gaming and Conservation Officers' Retirement Fund
7. Prosecuting Attorneys' Retirement Fund
8. Legislators' Defined Benefit Fund

DB Fund

- PERF DB
- TRF Pre-'96 DB
- TRF '96 DB
- '77 Fund
- JRS
- EG&C
- PARF
- LE DB

Defined Contribution

9. Public Employees' Defined Contribution Account
10. My Choice: Retirement Savings Plan for Public Employees
11. Teachers' Defined Contribution Account
12. Legislators' Defined Contribution Fund

DC Fund

- PERF DC
- PERF MC DC
- TRF DC
- LE DC

Other Postemployment Benefit

13. Special Death Benefit Fund

OPEB Fund

- SDBF

Custodial

14. Local Public Safety Pension Relief Fund

Custodial Fund

- LPSPR

Contact Information

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Service

We exist to serve our stakeholders with attentiveness to high quality, respectful customer service.

\$3.5 Billion Unfunded Actuarial Accrued Liability

Excluding TRF 'Pre 96 DB

135.8% ADC Contributed

For the four defined benefit funds that are funded through percent of payroll contributions



Purpose of the Actuarial Section

Funding methods used for the Defined Benefit retirement plans are not governed by and do not conform to GASB Statement No. 67, so the actuary prepares two actuarial valuations for each of the pension plans. One is an actuarial valuation used for financial reporting purposes, which conforms to GASB Statement No. 67 (Financial Section) and the second is an actuarial valuation used for funding purposes (Actuarial Section), which follows generally accepted actuarial principles and the Actuarial Standards of Practice issued by the Actuarial Standards Board. Actuarial methods and assumptions utilized to prepare the two actuarial valuations are nearly identical, with the primary difference being the method of valuation of the pension assets. Amounts presented in the Actuarial Section may differ from the amounts presented for financial reporting purposes in the Financial Section.

Actuarial services are provided by Cavanaugh Macdonald Consulting, LLC.

Accompanying Notes To The Actuarial Schedules

The following details are intended to clarify certain values presented in the actuarial schedules:

- The Unfunded Actuarial Accrued Liability (UAAL) is calculated using the Actuarial Value of Assets (AVA), which is different from the Net Pension Liability in the Financial Section which uses the Plan Fiduciary Net Position, also known as the Fair Value of Assets (FVA).
- Actuarial Accrued Liabilities Experience represents actual experience versus expected experience of the actuarial census assumptions. One factor was the unanticipated changes to the member census data. In JRS there was a 2.7% COLA, rather than the assumed COLA of 2.5% and in the '77 Fund there was a 1.6% COLA, rather than the assumed COLA of 2%.
- Covered Employee Payroll can also be found in the RSI Contribution Schedule in the Financial Section (LE DB is a closed plan with no Covered Employee Payroll).
- For years 2014 and later, the valuation results were calculated using the prior year census data, adjusted for certain activity during the fiscal year.
- End of year benefits are not equal to prior year end annual benefits plus additions less removals due to beneficiary benefit changes, data changes, and COLA increases on the Schedule of Retirants and Beneficiaries.
- Annual Payroll figures shown on the Schedule of Active Members Valuation Data are the anticipated pay for the one-year period following the valuation date.
- Beginning in 2018 there was a change in method impacting Average Annual Pay.

For PERF DB, TRF Pre-'96 DB, and TRF '96 DB the additional information should be considered:

- Annual benefits include amounts for members who selected annuity for their ASA.
- Effective January 1, 2018, members can no longer use their DC balances to increase their DB payments.
- The end of year number of benefit recipients are not equal to the prior end of year number of benefit recipients plus additions less removals due to reclassifications between TRF Pre-'96 DB and TRF '96 DB.



Cavanaugh Macdonald

CONSULTING, LLC

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 actuarial valuations of the eight defined benefit plans administered by the Indiana Public Retirement System (INPRS): the Public Employees' Retirement Fund (PERF DB), the Teachers' Pre-1996 Account (TRF Pre-'96 DB), the Teachers' 1996 Account (TRF '96 DB), the 1977 Police Officers' and Firefighters' Retirement Fund ('77 Fund), the Judges' Retirement System (JRS), the Excise, Gaming and Conservation Officers' Retirement Fund (EG&C), Prosecuting Attorneys' Retirement Fund (PARF), and the Legislators' Defined Benefit Fund (LE DB). These valuations are as of June 30, 2019, for the purpose of estimating the actuarial required contribution for the plan years ending in calendar year 2021 (either June 30 or December 31), and reflect the benefit and funding provisions in place on June 30, 2019.

The PERF DB, TRF Pre-'96 DB, TRF '96 DB and '77 Fund were affected by changes in plan provisions resulting from the passage of House Enrolled Act No. 1059 (HEA 1059) and Senate Enrolled Act No. 85 (SEA 85).

Basis of the Valuations

In preparing our valuation, we relied, without audit, on information (some oral and some in writing) supplied by 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.

As noted above, the valuation reflects the provisions as of June 30, 2019, including the effects of HEA 1059 for PERF DB, TRF '96 DB and TRF – Pre '96 DB and SEA 85 for the '77 Fund.

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We certify that all costs and liabilities for the funds 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.

Actuarial Methods and Assumptions

While the assumptions were generally developed by the prior actuaries in experience studies for the period from July 1, 2010 or July 1, 2011 through June 30, 2014, we believe they are reasonable assumptions for the present. The Board has the final decision regarding the appropriateness of the assumptions and adopted them as indicated in Appendix C. Specifically, we presented the existing 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.

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.

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 and satisfy the guidance set forth in the applicable Actuarial Standards of Practice. 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.

Certification

We certify that the information presented herein accurately and fairly discloses the actuarial position of each fund and the System as a whole, based on the underlying census data and asset information provided by INPRS, using the assumptions and methods approved by the Board. This information, which we prepared, is provided in the following data and tables:

Financial Section:

- Note 1 - Tables of Plan Membership
- Note 8 - 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 Funded Status
- Historical Summary of Actuarial Valuation Results by Retirement Plan



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- Summary of Actuarial Assumptions, Methods and Plan Provisions
- Analysis of Financial Experience
- Solvency Test
- Schedule of Active Member Valuation Data
- Schedule of Retirants and Beneficiaries

Statistical Section:

- Membership Data 10-Year Summary
- Ratio of Active Members to Annuitants
- Schedule of Defined 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 exhibits.

Sincerely,

A handwritten signature in blue ink that reads "Brent A. Banister".

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

A handwritten signature in blue ink that reads "Patrice Beckham".

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

Combined Defined Benefit Funds

Summary of Funded Status ¹

The following table shows the Actuarial Accrued Liabilities and Actuarial Value of Assets as of June 30, 2019 and June 30, 2018.

(dollars in thousands)

Pre-Funded Defined Benefit Retirement Plans	Actuarial Valuation as of June 30, 2019				Actuarial Valuation as of June 30, 2018			
	Actuarial Accrued Liability	Actuarial Value of Assets	Unfunded Actuarial Accrued Liability	Actuarial Funded Status	Actuarial Accrued Liability	Actuarial Value of Assets	Unfunded Actuarial Accrued Liability	Actuarial Funded Status
PERF DB	\$ 16,576,060	\$ 13,157,802	\$ 3,418,258	79.4%	\$ 16,091,373	\$ 12,823,930	\$ 3,267,443	79.7%
TRF '96 DB	5,980,426	6,056,317	(75,891)	101.3	5,563,264	5,478,482	84,782	98.5
'77 Fund	6,389,002	6,299,749	89,253	98.6	5,839,659	5,953,978	(114,319)	102.0
JRS	586,499	538,600	47,899	91.8	547,694	516,749	30,945	94.4
EG&C	152,207	140,559	11,648	92.3	140,056	132,441	7,615	94.6
PARF	110,082	64,909	45,173	59.0	103,284	61,665	41,619	59.7
LE DB	3,362	3,026	336	90.0	3,485	3,050	435	87.5
Total Pre-Funded DB Retirement Plans	29,797,638	26,260,962	3,536,676	88.1	28,288,815	24,970,295	3,318,520	88.3
Pay-As-You-Go DB Retirement Plan								
TRF Pre-'96 DB	14,389,164	3,694,211	10,694,953	25.7	14,583,189	3,721,323	10,861,866	25.5
Total Defined Benefit Retirement Plans	\$ 44,186,802	\$ 29,955,173	\$ 14,231,629	67.8%	\$ 42,872,004	\$ 28,691,618	\$ 14,180,386	66.9%

¹ See Accompanying Notes To The Actuarial Schedules, included in the Introduction to Actuarial Information.

Combined Defined Benefit Funds, continued

Reconciliation of the Change in the Unfunded Liability ¹

The following table reconciles the change in the unfunded liability from FY18 to FY19.

(dollars in thousands)

Defined Benefit Retirement Plans	June 30, 2018 UAAL	Normal Cost and Interest, less Expected Contributions	Expected June 30, 2019 UAAL	Actuarial Value of Assets Experience	(Gain) / Loss				
					Actuarial Accrued Liabilities Experience	Actuarial Assumption & Methodology Changes	Plan Provision Changes ²	Total UAAL (Gain) / Loss	June 30, 2019 UAAL
PERF DB	\$ 3,267,443	\$ (18,167)	\$ 3,249,276	\$ 56,189	\$ 99,873	\$ —	\$ 12,920	\$ 168,982	\$ 3,418,258
TRF Pre-'96 DB	10,861,866	(204,589)	10,657,277	53,359	(15,493)	—	(190)	37,676	10,694,953
TRF '96 DB	84,782	31,334	116,116	(172,850)	(22,096)	—	2,939	(192,007)	(75,891)
'77 Fund	(114,319)	1,265	(113,054)	14,122	30,907	—	157,278	202,307	89,253
JRS	30,945	(1,331)	29,614	9,754	8,531	—	—	18,285	47,899
EG&C	7,615	401	8,016	(2,795)	6,427	—	—	3,632	11,648
PARF	41,619	(951)	40,668	2,265	2,240	—	—	4,505	45,173
LE DB	435	(134)	301	26	9	—	—	35	336
Total INPRS	\$ 14,180,386	\$ (192,172)	\$ 13,988,214	\$ (39,930)	\$ 110,398	\$ —	\$ 172,947	\$ 243,415	\$ 14,231,629

¹ See Accompanying Notes To The Actuarial Schedules, included in the Introduction to Actuarial Information.

² Plan Provision Changes include:

-In 2019, PERF DB, TRF Pre-'96 DB, and TRF '96 DB were modified pursuant to HEA 1059. Previously, statute generally required PERF and TRF members to have 15 years of service to qualify for a survivor benefit prior to retirement. Statute now allows a qualifying spouse/dependent to receive a benefit if the deceased member had a minimum of 10 years of creditable service.

-In 2019, SEA 85 modified the '77 Fund by increasing the basic pension benefit from 50 to 52 percent of a monthly first class salary and the maximum benefit from 74 to 76 percent. Additionally, a surviving spouse in a non-line of duty death now receives 70 percent of the member's monthly benefit, increased from 60 percent.

Combined Defined Benefit Funds, continued

Employer Counts For the Years Ended June 30

The following table shows the historical number of employers by fund.

	Total DB ¹	PERF DB	TRF Pre-'96 DB ²	TRF '96 DB ²	Total TRF DB ²	'77 Fund	JRS	EG&C	PARF	LE DB
2019 ³	1,244	1,187	345	373	N/A	168	1	1	1	1
2018	1,244	1,187	345	373	N/A	168	1	1	1	1
2017	1,234	1,183	341	368	N/A	167	1	1	1	1
2016	1,224	1,177	337	362	N/A	165	1	1	1	1
2015	1,212	1,167	339	360	N/A	165	1	1	1	1
2014	1,175	1,126	340	363	N/A	162	1	1	1	1
2013 ⁴	1,171	1,121	N/A	N/A	365	161	1	1	1	1
2012 ⁴	1,170	1,122	N/A	N/A	364	162	1	1	1	1
2011	1,182	1,132	N/A	N/A	369	166	1	1	1	1
2010	1,230	1,180	N/A	N/A	367	164	1	1	1	1

¹ Sum of employers does not equal total, as an employer may participate in multiple retirement funds.

² Prior to 2014 participating employers for TRF were not split between TRF Pre-'96 DB and TRF '96 DB.

³ The 2019 employer count is as of the 2018 valuation date.

⁴ The Total was adjusted to treat the State and its component units as one employer.

Public Employees' Defined Benefit Account

Historical Summary of Actuarial Valuation Results

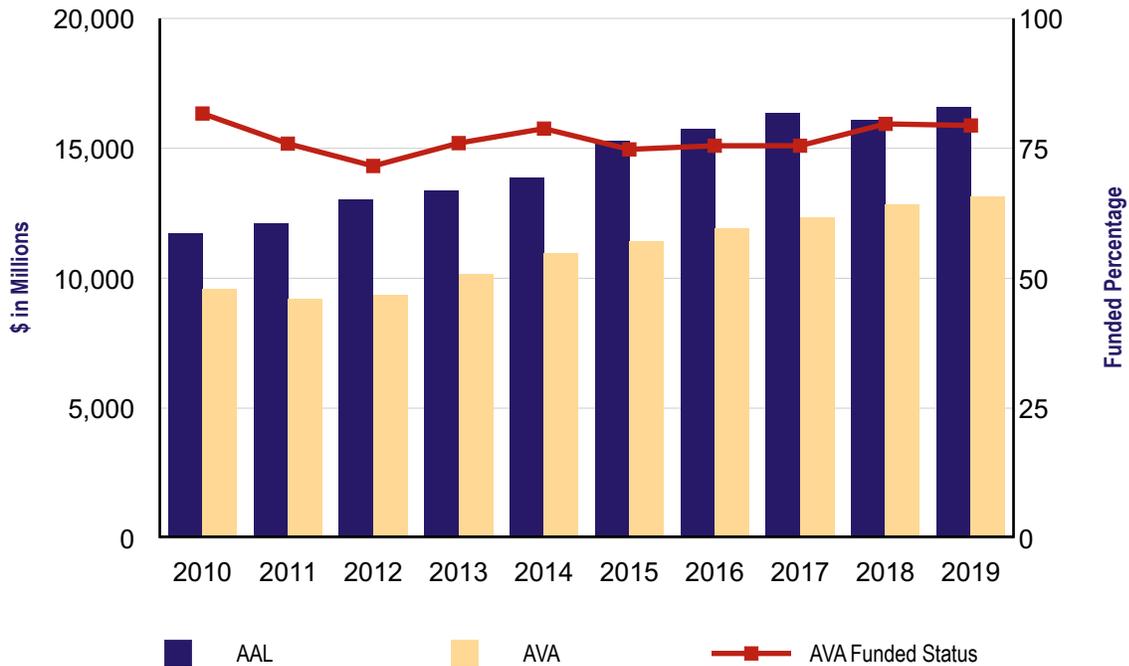
Actuarial Valuation as of June 30 ¹

The following table shows the history of the Unfunded Liability as a percentage of Covered Employee Payroll for PERF DB.

(dollars in thousands)

	Actuarial Accrued Liability (AAL)	Actuarial Value of Assets (AVA)	Unfunded Liability (AAL-AVA)	AVA Funded Status (AVA/AAL)	Covered Employee Payroll	Unfunded Liability as a percentage of Covered Employee Payroll
2019	\$16,576,060	\$13,157,802	\$3,418,258	79.4%	\$5,205,243	65.7%
2018	16,091,373	12,823,930	3,267,443	79.7	5,083,131	64.3
2017	16,335,253	12,327,958	4,007,295	75.5	4,997,555	80.2
2016	15,752,055	11,896,167	3,855,888	75.5	4,868,709	79.2
2015	15,263,395	11,414,710	3,848,685	74.8	4,804,145	80.1
2014	13,880,722	10,939,760	2,940,962	78.8	4,896,635	60.1
2013	13,349,578	10,151,181	3,198,397	76.0	4,700,000	68.1
2012	13,034,791	9,338,776	3,696,015	71.6	4,550,000	81.2
2011	12,108,124	9,195,563	2,912,561	75.9	4,500,000	64.7
2010	11,725,482	9,576,629	2,148,853	81.7	4,800,000	44.8

¹ See Accompanying Notes To The Actuarial Schedules, included in the Introduction to Actuarial Information.



Public Employees' Defined Benefit Account, continued

Summary of Actuarial Assumptions, Actuarial Methods, and Plan Provisions

The actuarial assumptions and methods used in the June 30, 2019 valuation of the Public Employees' Defined Benefit Account were adopted by the INPRS Board in May 2019. The majority of the actuarial assumptions and methods are based on plan experience from July 1, 2010 through June 30, 2014, and were first used in the June 30, 2015 valuation. The INPRS Board adopted a funding policy in April 2014, and the policy was last updated in October 2018. The funding policy is available online at: https://www.in.gov/inprs/files/INPRS_Funding_Policy.pdf.

Changes in Actuarial Assumptions

There were no changes in actuarial assumptions during the fiscal year.

Changes in Actuarial Methods

There were no changes to the actuarial methods during the fiscal year.

Changes in Plan Provisions

In 2019, PERF DB, TRF Pre-'96 DB, and TRF '96 DB were modified pursuant to HEA 1059. Previously, statute generally required PERF and TRF members to have 15 years of service to qualify for a survivor benefit prior to retirement. Statute now allows a qualifying spouse/dependent to receive a benefit if the deceased member had a minimum of 10 years of creditable service.

Actuarial Assumptions

Actuarial assumptions used for funding purposes are the same as those used for accounting and financial reporting, except where noted.

Economic Assumptions

A load on final average salary of \$400 is included to reflect unused sick leave.

Interest Rate / Investment Return:

Funding	6.75 percent (net of administrative and investment expenses)
Accounting & Financial Reporting	6.75 percent (net of investment expenses)

Inflation: 2.25 percent per year

Cost of Living Increases: A service-based 13th check will be paid in the 2020 and 2021 fiscal years. Thereafter, the following COLAs, compounded annually, are assumed:

- 0.4 percent beginning on January 1, 2022
- 0.5 percent beginning on January 1, 2034
- 0.6 percent beginning on January 1, 2039

Future Salary Increases: Based on 2010-2014 experience.

Age	Inflation	Productivity, Merit, and Promotion	Total Individual Salary Growth
<31	2.25%	2.00%	4.25%
31-45	2.25	1.50	3.75
46-55	2.25	1.00	3.25
56-60	2.25	0.50	2.75
61+	2.25	0.25	2.50

Public Employees' Defined Benefit Account, continued

Demographic Assumptions: Based on 2010-2014 Experience

Mortality (Healthy): RP-2014 Total Data Set Mortality Tables, with Social Security generational improvements from 2006 based on the Social Security Administration's 2014 Trustee Report.

Mortality (Disabled): RP-2014 Disability Mortality Tables, with Social Security generational improvements from 2006 based on the Social Security Administration's 2014 Trustee Report.

Age	Years of Service						
	10-14	15-25	26	27	28	29	30+
50-54	—%	4%	4%	4%	4%	4%	4%
55	—	5	5	5	5	5	14
56	—	5	5	5	5	14	10
57	—	5	5	5	14	10	10
58	—	5	5	14	10	10	10
59	—	5	14	10	10	10	10
60	—	12	12	12	12	12	12
61	—	16	16	16	16	16	16
62	—	22	22	22	22	22	22
63	—	19	19	19	19	19	19
64	—	24	24	24	24	24	24
65-74	30	30	30	30	30	30	30
75+	100	100	100	100	100	100	100

Benefit Commencement Timing:

Active Members If eligible for a reduced early retirement benefit upon termination from employment, 33 percent commence immediately and 67 percent defer to earliest unreduced retirement age.

If eligible for an unreduced retirement benefit upon termination from employment, 100 percent commence immediately.

Terminated Vested Members

100 percent defer to earliest unreduced retirement age. If currently eligible for an unreduced retirement benefit, 100 percent commence immediately.

Termination:

Earnings < \$20,000

Age	State		Political Subdivision		
	Male	Female	Age	Male	Female
20-24	32%	34%	20-24	31%	36%
25-29	32	33	25-29	31	34
30-34	32	30	30-34	26	25
35-39	29	30	35-39	22	18
40-44	29	24	40-44	21	15
45-49	26	24	45-49	18	12
50-54	25	22	50-54	14	11
55+	22	20	55+	14	11

Public Employees' Defined Benefit Account, continued

State (Male)		Years of Service											
Earnings >= \$20,000		Age	0	1	2	3	4	5	6	7	8	9	10+
20-24	23%	23%	23%	23%	20%	20%	17%	17%	12%	12%	7%	7%	
25-29	23	23	23	19	17	17	17	12	12	7	7		
30-34	22	22	19	18	16	13	13	12	7	7	7		
35-39	17	17	17	17	16	10	10	9	7	6	6		
40-44	17	17	14	12	12	10	9	9	7	5	5		
45-49	14	14	14	10	10	10	9	7	4	4	4		
50-54	14	14	9	9	9	9	9	7	4	4	4		
55+	13	13	7	7	7	7	7	7	4	4	4		

State (Female)		Years of Service											
Earnings >= \$20,000		Age	0	1	2	3	4	5	6	7	8	9	10+
20-24	23%	23%	23%	23%	17%	17%	13%	12%	11%	8%	8%		
25-29	23	23	22	21	17	17	13	12	11	8	8		
30-34	21	21	21	17	15	14	12	12	11	8	8		
35-39	19	19	16	16	12	12	12	12	9	8	7		
40-44	18	18	16	13	12	12	9	9	8	8	6		
45-49	16	16	16	13	10	10	9	9	8	8	6		
50-54	16	16	15	12	10	9	9	9	6	6	6		
55+	16	16	11	11	10	9	9	9	6	6	6		

Political Subdivisions (Male)		Years of Service											
Earnings >= \$20,000		Age	0	1	2	3	4	5	6	7	8	9	10+
20-24	18%	18%	18%	18%	14%	12%	11%	11%	7%	7%	5%		
25-29	18	18	18	16	14	12	11	11	7	7	5		
30-34	16	16	16	15	13	11	11	11	7	7	5		
35-39	15	15	12	12	12	10	9	9	7	7	5		
40-44	13	13	11	11	10	10	9	9	7	7	4		
45-49	11	11	11	11	9	7	7	7	7	7	4		
50-54	11	11	9	9	9	7	7	6	6	4	4		
55-59	11	11	7	7	7	7	7	5	5	4	4		
60+	8	8	7	7	7	7	7	5	5	4	4		

Political Subdivisions (Female)		Years of Service											
Earnings >= \$20,000		Age	0	1	2	3	4	5	6	7	8	9	10+
20-24	22%	22%	19%	16%	14%	14%	11%	11%	9%	7%	7%		
25-29	21	21	18	16	14	14	11	11	9	7	7		
30-34	16	16	16	14	14	14	11	11	9	7	7		
35-39	14	14	14	12	12	12	9	9	9	7	6		
40-44	13	13	12	11	10	8	8	8	8	7	4		
45-49	12	12	12	10	8	8	8	7	6	6	4		
50-54	11	11	10	8	8	6	6	6	6	5	4		
55+	11	11	8	8	8	6	6	6	6	4	4		

Public Employees' Defined Benefit Account, continued

Disability:

Age	Sample Rates	
	Male	Female
20	0.0067%	0.0050%
30	0.0208	0.0158
40	0.0646	0.0496
50	0.2005	0.1556
60	0.5815	0.3751
70	0.1000	0.1000
80	0.0000	0.0000

Spouse/Beneficiary: 75 percent of male members and 60 percent of female members are assumed to be married and or to have a dependent beneficiary. Male members are assumed to be three years older than their spouses and female members are assumed to be two years younger than their spouses.

Actuarial Methods

Funding uses the same Actuarial Methods as accounting and financial reporting, except where noted.

Actuarial Cost Method: 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.

This method produces a cost of future benefit accruals that is a level percent of pay over time, which is more desirable for employers from a budgeting standpoint. Other actuarial cost methods are more volatile in their allocation of cost for each year of member service.

Amortization Method:

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 on the additional gain or loss during that year and that base is amortized over a new 20-year period. However, when the plan is at or above 100 percent 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 payment each year. Effective June 30, 2018, the bases are calculated without regard to the COLA provisions. 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 and financial reporting, 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. Gains and losses occurring from investment experience different than assumed are amortized into expense over a five-year period. The effect of plan changes on the plan liability are fully recognized in expense in the year in which they occur.

Data Measurement Date:

Member census data as of the prior year end was used in the valuation and adjusted, where appropriate, to reflect changes during the current fiscal year. Standard actuarial roll forward techniques were then used to project the liabilities computed as of prior year end to the current year measurement date.

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.

Asset Valuation Method:

Funding uses the Actuarial Value of Assets (AVA), which is equal to a five-year smoothing of gains and losses on the Fair Value of Assets (FVA), subject to a 20 percent corridor. Accordingly, the AVA is limited to no more than 20 percent greater than or 20 percent less than the FVA.

Accounting and financial reporting uses the Fair Value of Assets (FVA) in accordance with GASB Statement No. 67.

Plan Provisions

Please refer to Note 1 of the Notes to the Financial Statements in the Financial Section, the actuarial valuation at <https://www.in.gov/inprs/actuarialvaluation.htm>, or the applicable Indiana Code at <http://iga.in.gov/>.

Public Employees' Defined Benefit Account, continued

Analysis of Financial Experience

(dollars in thousands)	UAAL
Unfunded Actuarial Accrued Liability (UAAL): June 30, 2018	\$3,267,443
Normal Cost and Interest, less Expected Contributions	(18,167)
Expected UAAL: June 30, 2019	3,249,276
UAAL (Gain) / Loss	
Actuarial Value of Assets Experience	56,189
Actuarial Accrued Liabilities Experience ¹	99,873
Actuarial Assumption & Methodology Changes	—
Plan Provision Changes ²	12,920
Total UAAL (Gain) / Loss	168,982
Unfunded Actuarial Accrued Liability (UAAL): June 30, 2019	\$3,418,258

¹ See Accompanying Notes To The Actuarial Schedules, included in the Introduction to Actuarial Information.

² Plan Provision Changes include:

-In 2019, PERF DB, TRF Pre-'96 DB, and TRF '96 DB were modified pursuant to HEA 1059. Previously, statute generally required PERF and TRF members to have 15 years of service to qualify for a survivor benefit prior to retirement. Statute now allows a qualifying spouse/dependent to receive a benefit if the deceased member had a minimum of 10 years of creditable service.

Solvency Test ¹

The solvency test compares aggregate actuarial liabilities by various categories with the plan's assets.

(dollars in thousands)	Actuarial Accrued Liabilities				Portion of Actuarial Accrued Liabilities Covered by Assets		
	Actuarial Valuation as of June 30	Retirees and Beneficiaries	Active Member (Employer Financed Portion)	Total Actuarial Accrued Liabilities	Actuarial Value of Assets	Retirees and Beneficiaries	Active Member (Employer Financed Portion)
2019	\$8,068,490	\$8,507,570	\$16,576,060	\$13,157,802	100%	59.8%	79.4%
2018	7,768,231	8,323,142	16,091,373	12,823,930	100	60.7	79.7
2017	7,834,962	8,500,291	16,335,253	12,327,958	100	52.9	75.5
2016	7,595,089	8,156,966	15,752,055	11,896,167	100	52.7	75.5
2015	6,981,308	8,282,087	15,263,395	11,414,710	100	53.5	74.8
2014	6,250,902	7,629,820	13,880,722	10,939,760	100	61.5	78.8
2013	6,367,819	6,981,759	13,349,578	10,151,181	100	54.2	76
2012	5,895,779	7,139,012	13,034,791	9,338,776	100	48.2	71.6
2011	5,370,786	6,737,338	12,108,124	9,195,563	100	56.8	75.9
2010	4,931,592	6,793,890	11,725,482	9,576,629	100	68.4	81.7

¹ See Accompanying Notes To The Actuarial Schedules, included in the Introduction to Actuarial Information.

Public Employees' Defined Benefit Account, continued

Schedule of Active Members Valuation Data

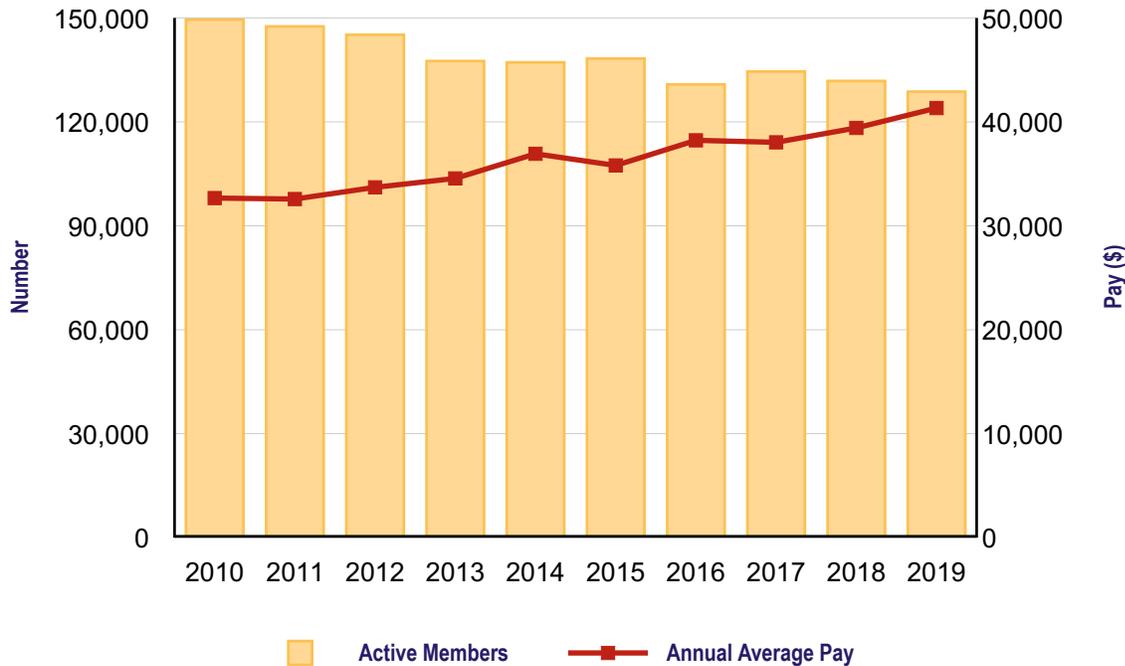
Actuarial Valuation as of June 30 ¹

(dollars in thousands - except annual average pay)

	Active Members	Annual Payroll	Annual Average Pay	Annual Percent Increase / (Decrease) in Average Pay
2019	129,099	\$5,335,374	\$41,328	4.8%
2018	132,181	5,210,209	39,417	3.6
2017	134,909	5,130,437	38,029	(0.5)
2016	131,178	5,014,012	38,223	6.8
2015	138,660	4,964,813	35,806	(3.0)
2014	137,567	5,080,092	36,928	6.9
2013	137,937	4,766,910	34,559	2.5
2012	145,519	4,904,052	33,700	3.5
2011	147,933	4,818,774	32,574	(0.3)
2010	149,877	4,896,013	32,667	(2.1)

¹ See Accompanying Notes To The Actuarial Schedules, included in the Introduction to Actuarial Information.

Total Number of Active Members Per Year and Annual Average Pay



Public Employees' Defined Benefit Account, continued

Schedule of Retirants and Beneficiaries

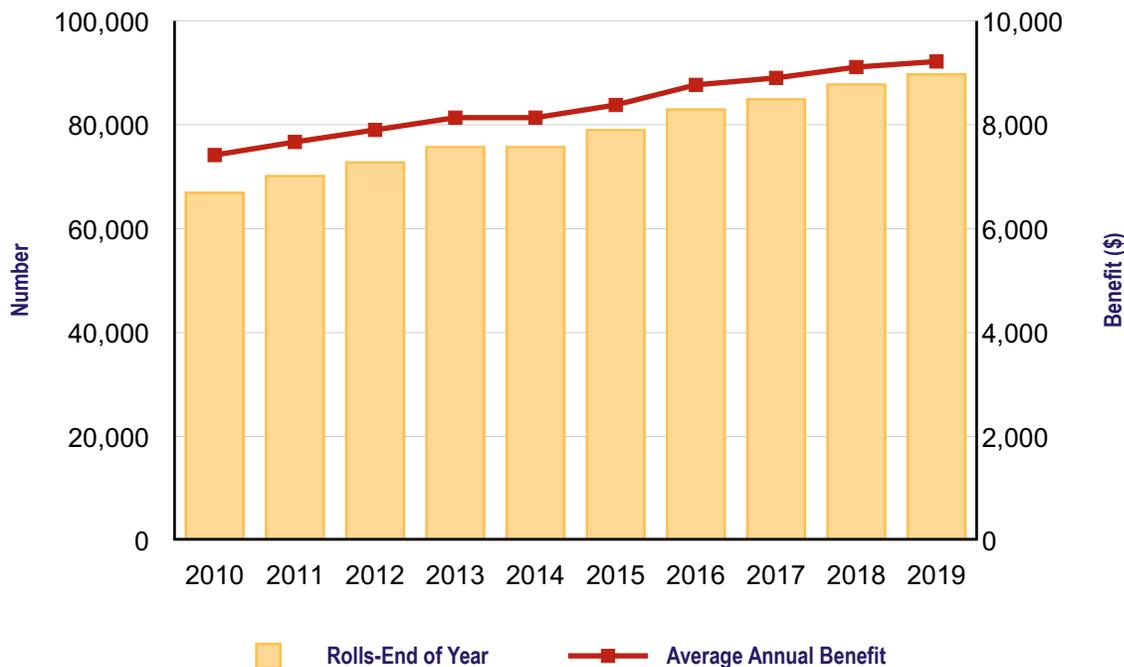
Actuarial Valuation as of June 30 ¹

(dollars in thousands -- except average annual benefit)

	Added to Rolls		Removed from Rolls		Rolls – End of Year		Percent Increase / (Decrease) In Total Annual Benefits	Average Annual Benefit	Percent Increase / (Decrease) in Average Annual Benefit
	Number	Annual Benefits	Number	Annual Benefits	Number	Total Annual Benefits			
2019	5,077	\$50,319	3,135	\$21,565	89,932	\$829,035	3.4%	\$9,218	1.2%
2018	5,249	55,236	2,389	15,609	87,990	801,551	5.8	9,110	2.3
2017	4,855	49,980	2,913	18,808	85,130	757,851	3.9	8,902	1.5
2016	6,478	78,487	2,488	15,597	83,188	729,366	9.9	8,768	4.6
2015	5,489	60,538	2,241	14,107	79,198	663,767	7.4	8,381	3.0
2014	—	—	—	—	75,950	617,977	—	8,137	—
2013	5,231	55,523	2,273	13,898	75,950	617,977	7.2	8,137	3.0
2012	4,751	49,766	2,139	12,540	72,992	576,678	6.8	7,901	3.0
2011	5,402	56,185	2,188	11,698	70,380	539,747	8.3	7,669	3.4
2010	4,827	39,214	2,760	19,022	67,166	498,199	4.3	7,417	1.1

¹ See Accompanying Notes To The Actuarial Schedules, included in the Introduction to Actuarial Information.

Total Number of Retirants and Beneficiaries Per Year and Average Annual Benefit



Teachers' Pre-1996 Defined Benefit Account

Historical Summary of Actuarial Valuation Results

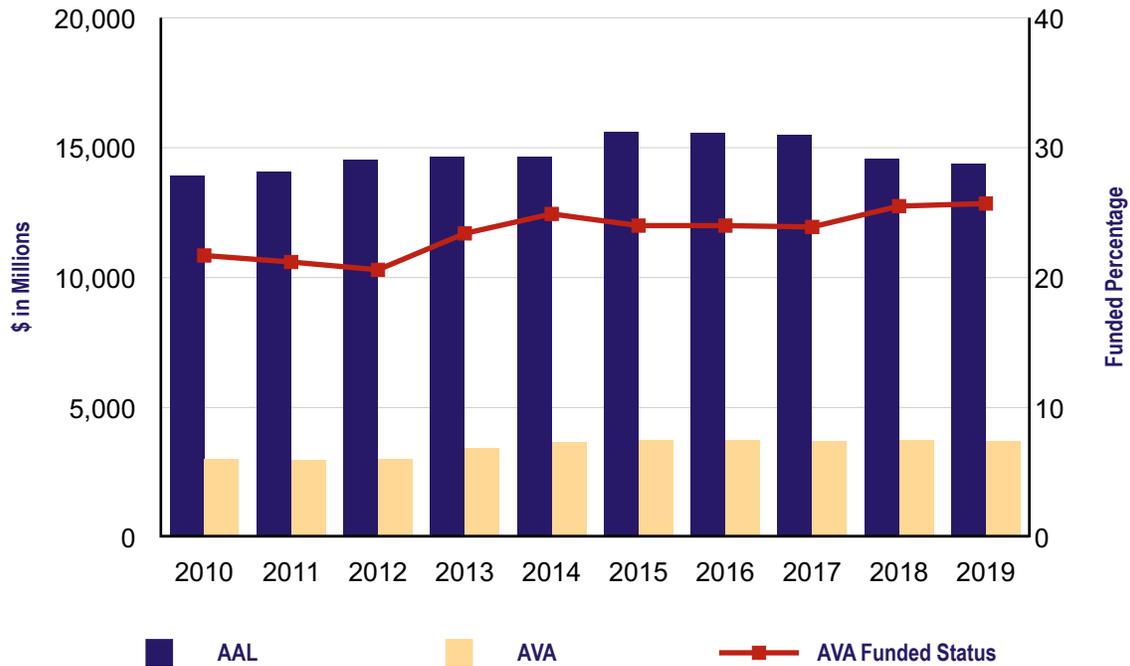
Actuarial Valuation as of June 30 ¹

The following table shows the history of the Unfunded Liability as a percentage of Covered Employee Payroll for TRF Pre-'96 DB.

(dollars in thousands)

	Actuarial Accrued Liability (AAL)	Actuarial Value of Assets (AVA)	Unfunded Liability (AAL-AVA)	AVA Funded Status (AVA/AAL)	Covered Employee Payroll	Unfunded Liability as a percentage of Covered Employee Payroll
2019	\$14,389,164	\$3,694,211	\$10,694,953	25.7%	\$753,355	1,419.6%
2018	14,583,189	3,721,323	10,861,866	25.5	824,770	1,317.0
2017	15,494,539	3,708,870	11,785,669	23.9	912,685	1,291.3
2016	15,575,072	3,743,861	11,831,211	24.0	989,093	1,196.2
2015	15,596,291	3,750,183	11,846,108	24.0	1,074,827	1,102.2
2014	14,639,876	3,643,011	10,996,865	24.9	1,262,828	870.8
2013	14,649,549	3,422,274	11,227,275	23.4	1,383,428	811.6
2012	14,547,939	3,004,031	11,543,908	20.6	1,637,066	705.1
2011	14,081,878	2,990,877	11,091,001	21.2	1,762,750	629.2
2010	13,928,351	3,028,694	10,899,657	21.7	1,865,102	584.4

¹ See Accompanying Notes To The Actuarial Schedules, included in the Introduction to Actuarial Information.



Teachers' Pre-1996 Defined Benefit Account, continued

Summary of Actuarial Assumptions, Actuarial Methods and Plan Provisions

The actuarial assumptions and methods used in the June 30, 2019 valuation of the Teachers' Pre-1996 Defined Benefit Account were adopted by the INPRS Board in May 2019. The majority of the actuarial assumptions and methods are based on plan experience from July 1, 2011 through June 30, 2014, and were first used in the June 30, 2015 valuation. The INPRS Board adopted a funding policy in April 2014, and the policy was last updated in October 2018. The funding policy is available online at: https://www.in.gov/inprs/files/INPRS_Funding_Policy.pdf.

Changes in Actuarial Assumptions

There were no changes to the actuarial assumptions during the fiscal year.

Changes in Actuarial Methods

There were no changes to the actuarial methods during the fiscal year.

Changes in Plan Provisions

In 2019, PERF DB, TRF Pre-'96 DB, and TRF '96 DB were modified pursuant to HEA 1059. Previously, statute generally required PERF and TRF members to have 15 years of service to qualify for a survivor benefit prior to retirement. Statute now allows a qualifying spouse/dependent to receive a benefit if the deceased member had a minimum of 10 years of creditable service.

Actuarial Assumptions

Actuarial assumptions used for funding purposes are the same as those used for accounting and financial reporting, except where noted.

Economic Assumptions

Interest Rate / Investment Return:

Funding	6.75 percent (net of administrative and investment expenses)
Accounting & Financial Reporting	6.75 percent (net of investment expenses)

Inflation: 2.25 percent per year

Cost of Living Increases: A service-based 13th check will be paid in the 2020 and 2021 fiscal years. Thereafter, the following COLAs, compounded annually, are assumed:

0.4 percent beginning on January 1, 2022
0.5 percent beginning on January 1, 2034
0.6 percent beginning on January 1, 2039

Future Salary Increases: Based on 2011-2014 experience. Illustrative rates shown below:

Years of Service	Merit and Seniority	Inflation	Total Individual Salary Growth
1	10.25%	2.25%	12.50%
5	2.75	2.25	5.00
10	2.75	2.25	5.00
15	1.50	2.25	3.75
20	0.25	2.25	2.50
25	0.25	2.25	2.50
30	0.25	2.25	2.50
35	0.25	2.25	2.50
40	0.25	2.25	2.50

Teachers' Pre-1996 Defined Benefit Account, continued

Demographic Assumptions: Based on 2011-2014 Experience

Mortality (Healthy): RP-2014 White Collar Mortality Tables, with Social Security generational improvements from 2006 based on the Social Security Administration's 2014 Trustee Report.

Mortality (Disabled): RP-2014 Disability Mortality Tables, with Social Security generational improvements from 2006 based on the Social Security Administration's 2014 Trustee Report.

Retirement:	Regular Retirement		Rule of 85 Retirement		Early Retirement	
	Age	Probability	Age	Probability	Age	Probability
					50-53	2.0%
					54	5.0
			55	15.0%	55	5.0
			56	15.0	56	5.0
			57	15.0	57	6.5
			58	15.0	58	8.0
			59	20.0	59	12.0
	60	20.0%	60	20.0		
	61	25.0	61	25.0		
	62	30.0	62	30.0		
	63	35.0	63	35.0		
	64	40.0	64	40.0		
	65-69	45.0	65-69	45.0		
	70+	100.0%	70+	100.0%		

Inactive vested members are assumed to commence their retirement benefit at their earliest normal retirement date.

Termination:	Service Based			Sample Age Based ¹		
	Years of Service	Male	Female	Attained Age	Male	Female
	0	35.0%	35.0%	30	2.3%	3.0%
	1	14.0	14.0	35	2.3	3.0
	2	11.0	11.0	40	2.3	2.0
	3	9.0	9.0	45	2.3	2.0
	4	8.0	8.0	50	2.3	2.0
	5	7.0	7.0	55	2.3	2.0
	6	6.0	6.0	60	2.3	2.0
	7	5.0	5.5			
	8	4.5	5.0			
	9	4.5	4.5			

Disability:	Age	Sample Rates
	25	0.01%
30	0.01	
35	0.01	
40	0.01	
45	0.02	
50	0.05	
55	0.09	
60	0.10	

Spouse / Beneficiary: 100 percent of members are assumed to be married for purposes of valuing death-in-service benefits. Male spouses are assumed to be three years older than female spouses.

¹ Age-based rates apply only if 10 or more years of service.

Teachers' Pre-1996 Defined Benefit Account, continued

Actuarial Methods

Funding uses the same Actuarial Methods as accounting and financial reporting, except where noted.

Actuarial Cost Method: 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.

This method produces a cost of future benefit accruals that is a level percent of pay over time, which is desirable for employers from a budgeting standpoint. Other actuarial cost methods are more volatile in their allocation of cost for each year of member service.

Actuarially Determined Contribution:

The Fund's actuarially determined contribution is based on the approach set out in IC - 5.10.4-2-5 that the Indiana Legislature has followed in actually appropriating funds. The basic contribution is the lesser of 3% above the the prior year's basic contribution and the anticipated base benefit payments for the year. However, the contributed funds should not result in the funded ratio exceeding 100%. For fiscal years 2020 and 2021, the State will also contribute funds to pay for the scheduled 13th checks.

Amortization Method:

For accounting and financial reporting, 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. Gains and losses occurring from investment experience different than assumed are amortized into expense over a five-year period. The effect of plan changes on the plan liability are fully recognized in expense in the year in which they occur.

Data Measurement Date:

Member census data as of the prior year end was used in the valuation and adjusted, where appropriate, to reflect changes during the current fiscal year. Standard actuarial roll forward techniques were then used to project the liabilities computed as of prior year end to the current year measurement date.

COLA Funding Amount:

The COLA Funding Amount 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 a present value factor to determine the needed annual contribution.

Asset Valuation Method:

Funding uses the Actuarial Value of Assets (AVA), which is equal to a five-year smoothing of gains and losses on the Fair Value of Assets (FVA), subject to a 20 percent corridor. Accordingly, the AVA is limited to no more than 20 percent greater than or 20 percent less than the FVA.

Accounting and financial reporting uses the Fair Value of Assets (FVA) in accordance with GASB Statement No. 67.

Plan Provisions

Please refer to Note 1 of the Notes to the Financial Statements in the Financial Section, the actuarial valuation at <https://www.in.gov/inprs/actuarialvaluation.htm>, or the applicable Indiana Code at <http://iga.in.gov/>.

Teachers' Pre-1996 Defined Benefit Account, continued

Analysis of Financial Experience

(dollars in thousands)	<u>UAAL</u>
Unfunded Actuarial Accrued Liability (UAAL): June 30, 2018	\$10,861,866
Normal Cost and Interest, less Expected Contributions	<u>(204,589)</u>
Expected UAAL: June 30, 2019	10,657,277
UAAL (Gain) / Loss	
Actuarial Value of Assets Experience	53,359
Actuarial Accrued Liabilities Experience ¹	(15,493)
Actuarial Assumption & Methodology Changes	—
Plan Provision Changes ²	<u>(190)</u>
Total UAAL (Gain) / Loss	<u>37,676</u>
Unfunded Actuarial Accrued Liability (UAAL): June 30, 2019	<u><u>\$10,694,953</u></u>

¹ See Accompanying Notes To The Actuarial Schedules, included in the Introduction to Actuarial Information.

² Plan Provision Changes include:

-In 2019, PERF DB, TRF Pre-'96 DB, and TRF '96 DB were modified pursuant to HEA 1059. Previously, statute generally required PERF and TRF members to have 15 years of service to qualify for a survivor benefit prior to retirement. Statute now allows a qualifying spouse/dependent to receive a benefit if the deceased member had a minimum of 10 years of creditable service.

Solvency Test ¹

The solvency test compares aggregate actuarial liabilities by various categories with the plan's assets.

(dollars in thousands)	<u>Actuarial Accrued Liabilities</u>				<u>Portion of Actuarial Accrued Liabilities Covered by Assets</u>		
	Actuarial Valuation as of June 30	Retirees and Beneficiaries	Active Member (Employer Financed Portion)	Total Actuarial Accrued Liabilities	Actuarial Value of Assets	Retirees and Beneficiaries	Active Member (Employer Financed Portion)
2019	\$11,245,919	\$3,143,245	\$14,389,164	\$3,694,211	32.8%	—%	25.7%
2018	11,160,975	3,422,214	14,583,189	3,721,323	33.3	—	25.5
2017	11,653,674	3,840,865	15,494,539	3,708,870	31.8	—	23.9
2016	11,358,156	4,216,916	15,575,072	3,743,861	33.0	—	24.0
2015	10,488,066	5,108,225	15,596,291	3,750,183	35.8	—	24.0
2014	9,686,391	4,953,485	14,639,876	3,643,011	37.6	—	24.9
2013	10,079,101	4,570,448	14,649,549	3,422,274	34.0	—	23.4
2012	9,260,069	5,287,870	14,547,939	3,004,031	32.4	—	20.6
2011	8,555,971	5,525,907	14,081,878	2,990,877	35.0	—	21.2
2010	8,153,240	5,775,111	13,928,351	3,028,694	37.1	—	21.7

¹ See Accompanying Notes To The Actuarial Schedules, included in the Introduction to Actuarial Information.

Teachers' Pre-1996 Defined Benefit Account, continued

Schedule of Active Members Valuation Data

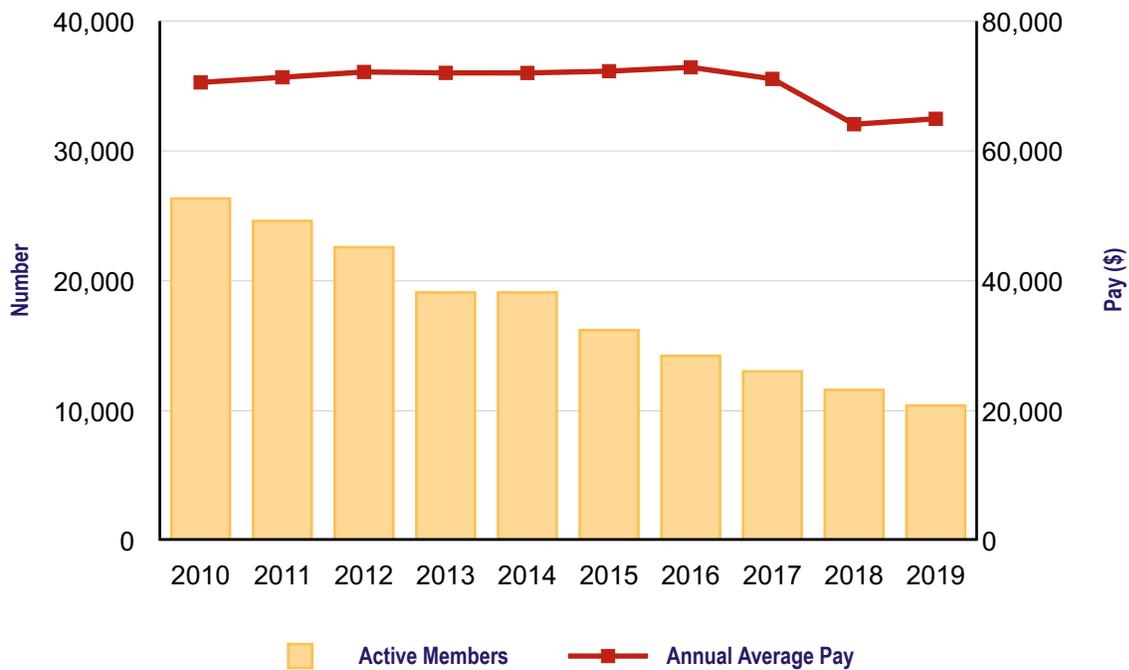
Actuarial Valuation as of June 30 ¹

(dollars in thousands - except annual average pay)

	Active Members	Annual Payroll	Annual Average Pay	Annual Percent Increase / (Decrease) In Average Pay
2019	10,497	\$681,806	\$64,952	1.3%
2018	11,710	750,691	64,107	(9.8)
2017	13,128	933,278	71,091	(2.4)
2016	14,327	1,044,096	72,876	0.8
2015	16,310	1,178,846	72,277	0.4
2014	19,210	1,383,242	72,006	—
2013	19,210	1,383,428	72,016	(0.2)
2012	22,688	1,637,066	72,156	1.1
2011	24,710	1,762,750	71,338	1.1
2010	26,439	1,865,102	70,544	1.8

¹ See Accompanying Notes To The Actuarial Schedules, included in the Introduction to Actuarial Information.

Total Number of Active Members Per Year and Annual Average Pay



Teachers' Pre-1996 Defined Benefit Account, continued

Schedule of Retirants and Beneficiaries

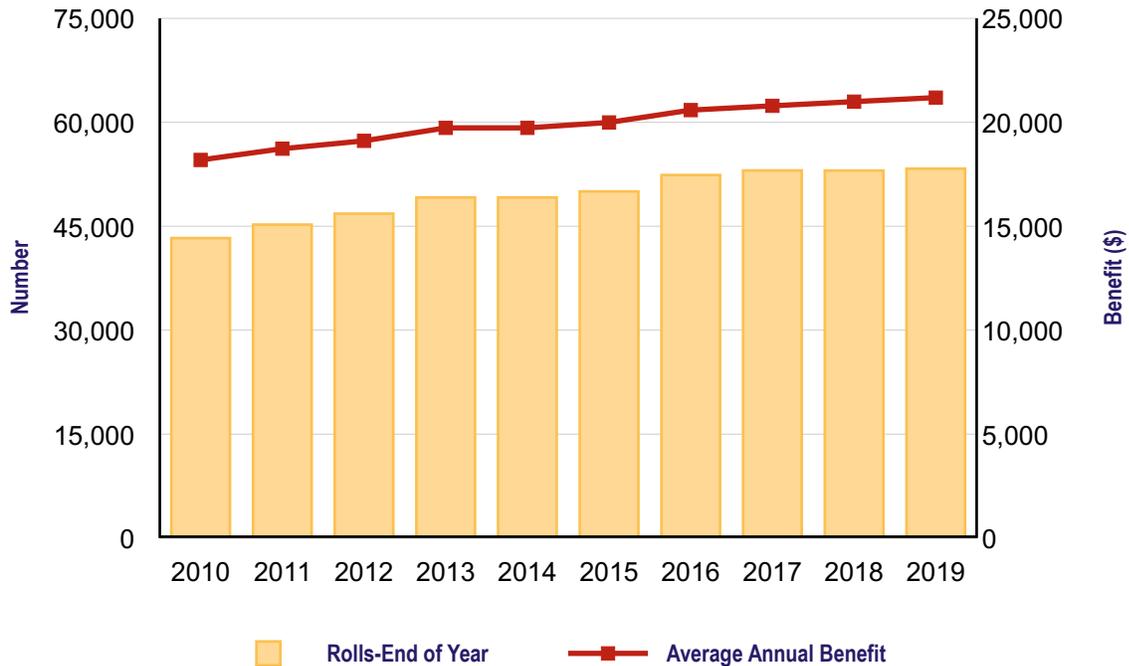
Actuarial Valuation as of June 30 ¹

(dollars in thousands -- except average annual benefit)

	Added to Rolls		Removed from Rolls		Rolls – End of Year		Percent Increase / (Decrease) In Total Annual Benefits	Average Annual Benefit	Percent Increase / (Decrease) in Average Annual Benefit
	Number	Annual Benefits	Number	Annual Benefits	Number	Total Annual Benefits			
2019	1,514	\$ 37,102	1,243	\$ 19,005	53,498	\$ 1,133,528	1.4%	\$ 21,188	0.9%
2018	1,483	33,330	1,496	20,240	53,227	1,117,463	0.9	20,994	1.0
2017	1,953	47,305	1,288	18,257	53,240	1,106,961	2.3	20,792	1.0
2016	3,466	95,994	1,105	14,677	52,575	1,082,306	7.8	20,586	3.0
2015	1,886	50,261	1,017	14,293	50,214	1,003,910	3.1	19,993	1.3
2014	—	93,605	—	14,524	49,345	973,635	—	19,731	—
2013	3,422	93,605	1,077	14,524	49,345	973,635	8.4	19,731	3.3
2012	2,541	63,923	962	12,216	47,000	898,006	5.6	19,107	2.0
2011	3,003	77,290	1,060	13,121	45,421	850,711	7.6	18,729	3.0
2010	1,940	47,657	1,010	11,982	43,478	790,773	3.8	18,188	1.5

¹ See Accompanying Notes To The Actuarial Schedules, included in the Introduction to Actuarial Information.

Total Number of Retirants and Beneficiaries Per Year and Average Annual Benefit



Teachers' 1996 Defined Benefit Account

Historical Summary of Actuarial Valuation Results

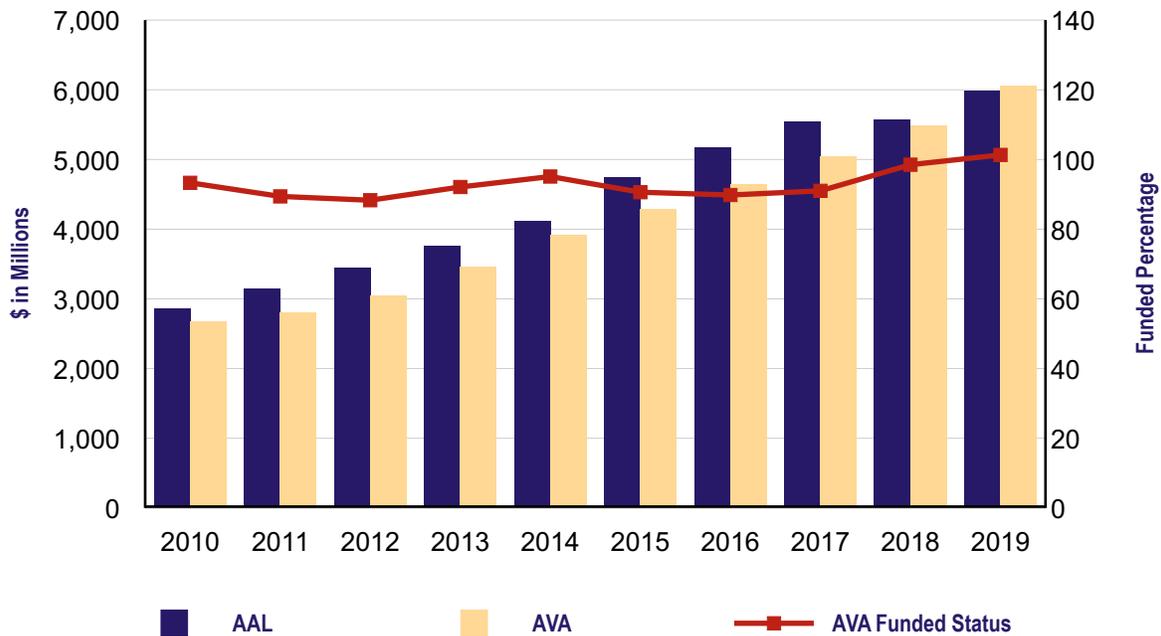
Actuarial Valuation as of June 30 ¹

The following table shows the history of the Unfunded Liability as a percentage of Covered Employee Payroll for TRF '96 DB.

(dollars in thousands)

	Actuarial Accrued Liability (AAL)	Actuarial Value of Assets (AVA)	Unfunded Liability (AAL-AVA)	AVA Funded Status (AVA/AAL)	Covered Employee Payroll	Unfunded Liability as a percentage of Covered Employee Payroll
2019	\$5,980,426	\$6,056,317	\$(75,891)	101.3%	\$3,257,918	(2.3)%
2018	5,563,264	5,478,482	84,782	98.5	3,129,070	2.7
2017	5,536,094	5,035,991	500,103	91.0	3,020,463	16.6
2016	5,174,317	4,648,297	526,020	89.8	2,881,397	18.3
2015	4,734,777	4,290,258	444,519	90.6	2,742,187	16.2
2014	4,116,264	3,914,503	201,761	95.1	2,598,115	7.8
2013	3,757,444	3,461,904	295,540	92.1	2,442,496	12.1
2012	3,438,970	3,037,116	401,854	88.3	2,400,000	16.7
2011	3,138,568	2,806,386	332,182	89.4	2,225,000	14.9
2010	2,863,985	2,671,979	192,006	93.3	2,200,000	8.7

¹ See Accompanying Notes To The Actuarial Schedules, included in the Introduction to Actuarial Information.



Teachers' 1996 Defined Benefit Account, continued

Summary of Actuarial Assumptions, Actuarial Methods and Plan Provisions

The actuarial assumptions and methods used in the June 30, 2019 valuation of the Teachers' 1996 Defined Benefit Account were adopted by the INPRS Board in May 2019. The majority of the actuarial assumptions and methods are based on plan experience from July 1, 2011 through June 30, 2014, and were first used in the June 30, 2015 valuation. The INPRS Board adopted a funding policy in April 2014, and the policy was last updated in October 2018. The funding policy is available online at: https://www.in.gov/inprs/files/INPRS_Funding_Policy.pdf.

Changes in Actuarial Assumptions

There were no changes to the actuarial assumptions during the fiscal year.

Changes in Actuarial Methods

There were no changes to the actuarial methods during the fiscal year.

Changes in Plan Provisions

In 2019, PERF DB, TRF Pre-'96 DB, and TRF '96 DB were modified pursuant to HEA 1059. Previously, statute generally required PERF and TRF members to have 15 years of service to qualify for a survivor benefit prior to retirement. Statute now allows a qualifying spouse/dependent to receive a benefit if the deceased member had a minimum of 10 years of creditable service.

Actuarial Assumptions

Actuarial assumptions used for funding purposes are the same as those used for accounting and financial reporting, except where noted.

Economic Assumptions

Interest Rate / Investment Return:

Funding	6.75 percent (net of administrative and investment expenses)
Accounting & Financial Reporting	6.75 percent (net of investment expenses)

Inflation: 2.25 percent per year

Cost of Living Increases: A service-based 13th check will be paid in the 2020 and 2021 fiscal years. Thereafter, the following COLAs, compounded annually, are assumed:

0.4 percent beginning on January 1, 2022
0.5 percent beginning on January 1, 2034
0.6 percent beginning on January 1, 2039

Future Salary Increases: Based on 2011-2014 experience. Illustrative rates shown below:

Years of Service	Merit and Seniority	Inflation	Total Individual Salary Growth
1	10.25%	2.25%	12.50%
5	2.75	2.25	5.00
10	2.75	2.25	5.00
15	1.50	2.25	3.75
20	0.25	2.25	2.50
25	0.25	2.25	2.50
30	0.25	2.25	2.50
35	0.25	2.25	2.50
40	0.25	2.25	2.50

Teachers' 1996 Defined Benefit Account, continued

Demographic Assumptions: Based on 2011-2014 Experience

Mortality (Healthy): RP-2014 White Collar Mortality Tables, with Social Security generational improvements from 2006 based on the Social Security Administration's 2014 Trustee Report.

Mortality (Disabled): RP-2014 Disability Mortality Tables, with Social Security generational improvements from 2006 based on the Social Security Administration's 2014 Trustee Report.

Retirement:

Regular Retirement		Rule of 85 Retirement		Early Retirement	
Age	Probability	Age	Probability	Age	Probability
				50-53	2.0%
				54	5.0
		55	15.0%	55	5.0
		56	15.0	56	5.0
		57	15.0	57	6.5
		58	15.0	58	8.0
		59	20.0	59	12.0
60	20.0%	60	20.0		
61	25.0	61	25.0		
62	30.0	62	30.0		
63	35.0	63	35.0		
64	40.0	64	40.0		
65-69	45.0	65-69	45.0		
70+	100.0	70+	100.0		

Inactive vested members are assumed to commence their retirement benefit at their earliest normal retirement date.

Termination:

Service Based			Sample Age Based ¹		
Years of Service	Male	Female	Attained Age	Male	Female
0	35.0%	35.0%	30	2.25%	3.0%
1	14.0	14.0	35	2.25	3.0
2	11.0	11.0	40	2.25	2.0
3	9.0	9.0	45	2.25	2.0
4	8.0	8.0	50	2.25	2.0
5	7.0	7.0	55	2.25	2.0
6	6.0	6.0	60	2.25	2.0
7	5.0	5.5			
8	4.5	5.0			
9	4.5	4.5			

Disability:

Age	Sample Rates
25	0.01%
30	0.01
35	0.01
40	0.01
45	0.02
50	0.05
55	0.09
60	0.10

Spouse / Beneficiary: 100 percent of members are assumed to be married for purposes of valuing death-in-service benefits. Male spouses are assumed to be three years older than female spouses.

¹ Age-based rates apply only if 10 or more years of service.

Teachers' 1996 Defined Benefit Account, continued

Actuarial Methods

Funding uses the same Actuarial Methods as accounting and financial reporting, except where noted.

Actuarial Cost Method: 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.

This method produces a cost of future benefit accruals that is a level percent of pay over time, which is desirable for employers from a budgeting standpoint. Other actuarial cost methods are more volatile in their allocation of cost for each year of member service.

Amortization Method:

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. However, when the plan is at or above 100 percent 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 payment each year. Effective June 30, 2018, the bases are calculated without regards to the COLA provisions. 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 and financial reporting, 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. Gains and losses occurring from investment experience different than assumed are amortized into expense over a five-year period. The effect of plan changes on the plan liability are fully recognized in expense in the year in which they occur.

Data Measurement Date:

Member census data as of the prior year end was used in the valuation and adjusted, where appropriate, to reflect changes during the current fiscal year. Standard actuarial roll forward techniques were then used to project the liabilities computed as of prior year end to the current year measurement date.

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.

Asset Valuation Method:

Funding uses the Actuarial Value of Assets (AVA), which is equal to a five-year smoothing of gains and losses on the Fair Value of Assets (FVA), subject to a 20 percent corridor. Accordingly, the AVA is limited to no more than 20 percent greater than or 20 percent less than the FVA.

Accounting and financial reporting uses the Fair Value of Assets (FVA) in accordance with GASB Statement No. 67.

Plan Provisions

Please refer to Note 1 of the Notes to the Financial Statements in the Financial Section, the actuarial valuation at <https://www.in.gov/inprs/actuarialvaluation.htm>, or the applicable Indiana Code at <http://iga.in.gov/>.

Teachers' 1996 Defined Benefit Account, continued

Analysis of Financial Experience

(dollars in thousands)	UAAL
Unfunded Actuarial Accrued Liability (UAAL): June 30, 2018	\$84,782
Normal Cost and Interest, less Expected Contributions	31,334
Expected UAAL: June 30, 2019	116,116
UAAL (Gain) / Loss	
Actuarial Value of Assets Experience	(172,850)
Actuarial Accrued Liabilities Experience ¹	(22,096)
Actuarial Assumption & Methodology Changes	—
Plan Provision Changes ²	2,939
Total UAAL (Gain) / Loss	(192,007)
Unfunded Actuarial Accrued Liability (UAAL): June 30, 2019	\$(75,891)

¹ See Accompanying Notes To The Actuarial Schedules, included in the Introduction to Actuarial Information.

² Plan Provision Changes include:

-In 2019, PERF DB, TRF Pre-'96 DB, and TRF '96 DB were modified pursuant to HEA 1059. Previously, statute generally required PERF and TRF members to have 15 years of service to qualify for a survivor benefit prior to retirement. Statute now allows a qualifying spouse/dependent to receive a benefit if the deceased member had a minimum of 10 years of creditable service.

Solvency Test ¹

The solvency test compares aggregate actuarial liabilities by various categories with the plan's assets.

(dollars in thousands)	Actuarial Accrued Liabilities			Portion of Actuarial Accrued Liabilities Covered by Assets			
	Actuarial Valuation as of June 30	Retirees and Beneficiaries	Active Member (Employer Financed Portion) Total Actuarial Accrued Liabilities	Actuarial Value of Assets	Retirees and Beneficiaries	Active Member (Employer Financed Portion)	Total Actuarial Accrued Liabilities
2019	\$1,371,702	\$4,608,724	\$5,980,426	\$6,056,317	100%	101.6%	101.3%
2018	1,232,059	4,331,205	5,563,264	5,478,482	100	98.0	98.5
2017	1,213,780	4,322,314	5,536,094	5,035,991	100	88.4	91.0
2016 ²	1,079,255	4,095,062	5,174,317	4,648,297	100	87.2	89.8
2015 ²	897,036	3,837,741	4,734,777	4,290,258	100	88.4	90.6
2014 ²	759,244	3,357,020	4,116,264	3,914,503	100	94.0	95.1
2013 ²	781,870	2,975,574	3,757,444	3,461,904	100	90.1	92.1
2012 ²	646,161	2,792,809	3,438,970	3,037,116	100	85.6	88.3
2011 ²	544,515	2,594,053	3,138,568	2,806,386	100	87.2	89.4
2010	483,118	2,380,867	2,863,985	2,671,979	100	91.9	93.3

¹ See Accompanying Notes To The Actuarial Schedules, included in the Introduction to Actuarial Information.

² DC balances were removed from retirees' and beneficiaries' actuarial accrued liabilities.

Teachers' 1996 Defined Benefit Account, continued

Schedule of Active Members Valuation Data

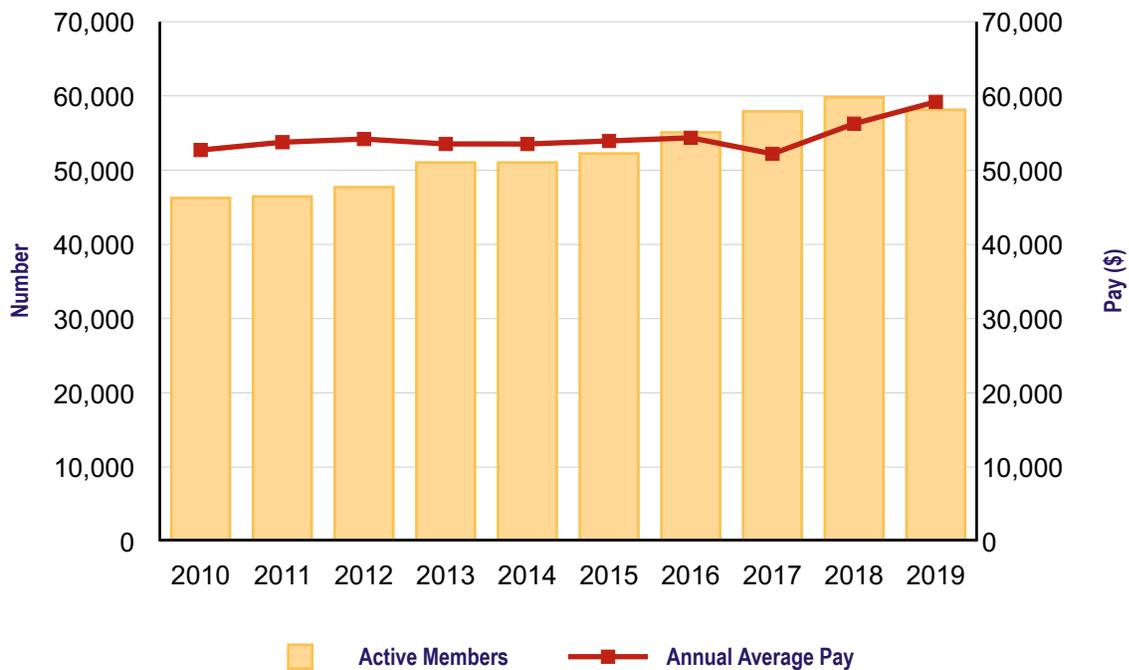
Actuarial Valuation as of June 30 ¹

(dollars in thousands - except annual average pay)

	Active Members	Annual Payroll	Annual Average Pay	Annual Percent Increase / (Decrease) In Average Pay
2019	58,308	\$3,451,731	\$59,198	5.2%
2018	59,996	3,374,943	56,253	7.8
2017	58,097	3,032,299	52,194	(4.0)
2016	55,265	3,004,169	54,359	0.8
2015	52,424	2,827,311	53,932	0.8
2014	51,204	2,740,661	53,524	—
2013	51,204	2,740,940	53,530	(1.2)
2012	47,885	2,594,952	54,191	0.8
2011	46,633	2,507,193	53,764	2.0
2010	46,433	2,447,509	52,711	2.9

¹ See Accompanying Notes To The Actuarial Schedules, included in the Introduction to Actuarial Information.

Total Number of Active Members Per Year and Annual Average Pay



Teachers' 1996 Defined Benefit Account, continued

Schedule of Retirants and Beneficiaries

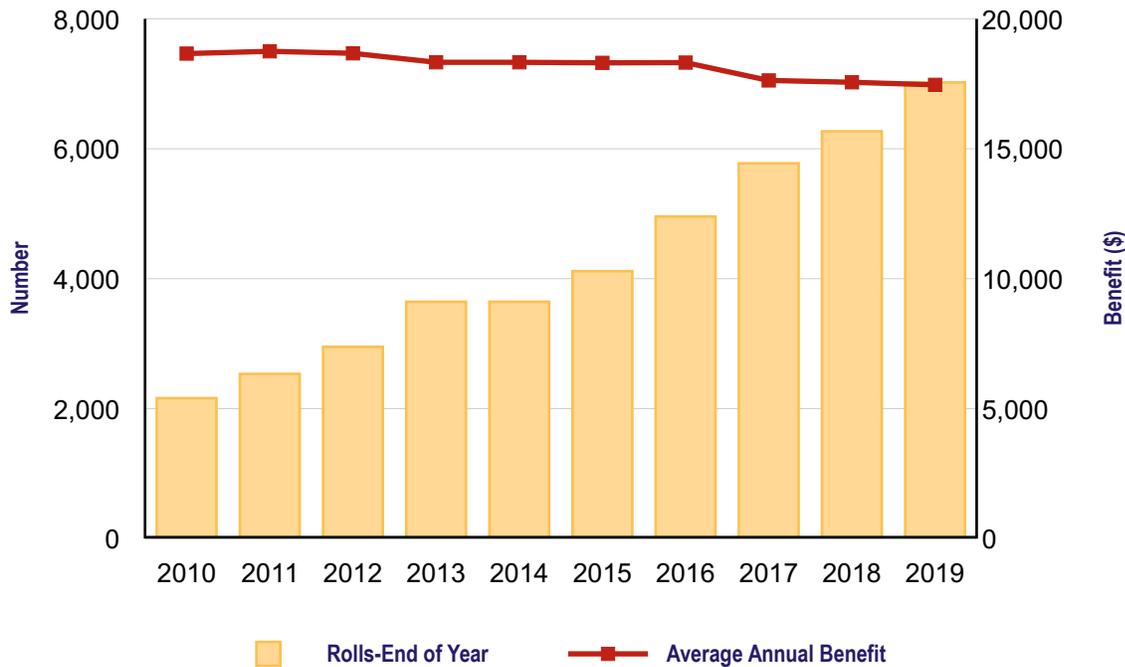
Actuarial Valuation as of June 30 ¹

(dollars in thousands -- except average annual benefit)

	Added to Rolls		Removed from Rolls		Rolls – End of Year		Percent Increase / (Decrease) In Total Annual Benefits	Average Annual Benefit	Percent Increase / (Decrease) in Average Annual Benefit
	Number	Annual Benefits	Number	Annual Benefits	Number	Total Annual Benefits			
2019	798	\$13,285	46	\$566	7,041	\$122,935	11.3%	\$17,460	(0.6)%
2018	710	9,562	217	1,002	6,289	110,423	8.1	17,558	(0.4)
2017	855	12,106	36	564	5,796	102,178	12.1	17,629	(3.8)
2016	858	16,075	17	305	4,977	91,160	20.4	18,316	0.1
2015	499	9,101	28	353	4,136	75,714	12.7	18,306	(0.1)
2014	—	12,216	—	251	3,665	67,169	—	18,327	—
2013	712	12,216	18	251	3,665	67,169	21.1	18,327	(1.8)
2012	433	8,132	16	236	2,971	55,475	15.8	18,672	(0.4)
2011	390	7,666	17	253	2,554	47,887	17.7	18,750	0.5
2010	249	4,859	12	129	2,181	40,701	12.1	18,662	(0.1)

¹ See Accompanying Notes To The Actuarial Schedules, included in the Introduction to Actuarial Information.

Total Number of Retirants and Beneficiaries Per Year and Average Annual Benefit



1977 Police Officers' and Firefighters' Retirement Fund

Historical Summary of Actuarial Valuation Results

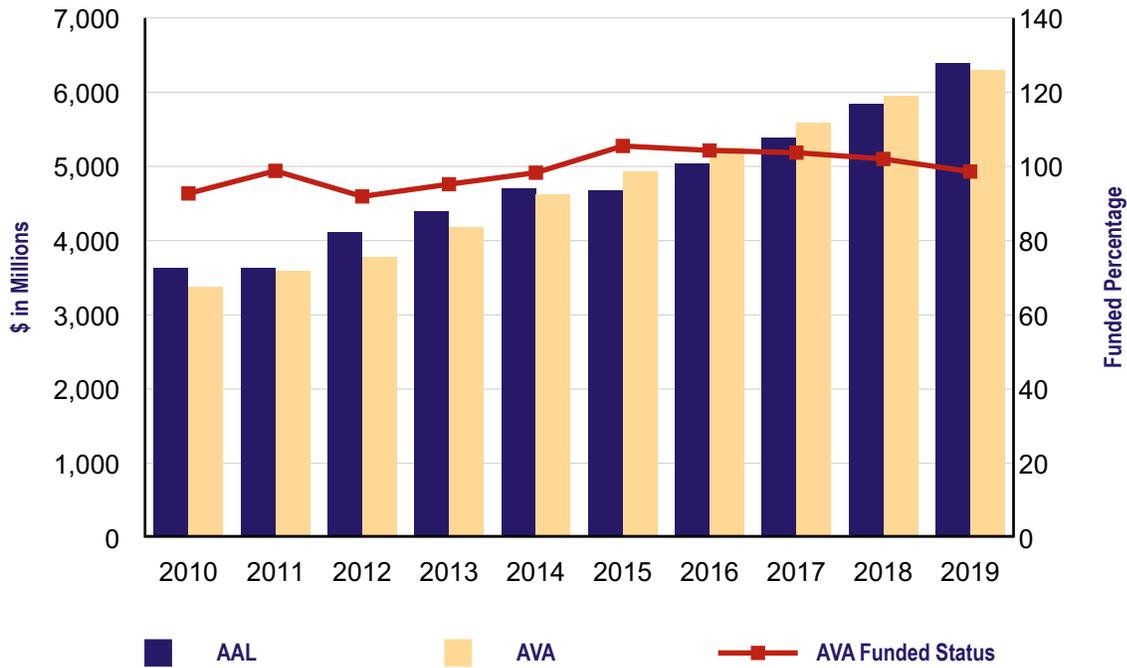
Actuarial Valuation as of June 30 ¹

The following table shows the history of the Unfunded Liability as a percentage of Covered Employee Payroll for 77 Fund.

(dollars in thousands)

	Actuarial Accrued Liability (AAL)	Actuarial Value of Assets (AVA)	Unfunded Liability (AAL-AVA)	AVA Funded Status (AVA/AAL)	Covered Employee Payroll	Unfunded Liability as a percentage of Covered Employee Payroll
2019	\$6,389,002	\$6,299,749	\$89,253	98.6%	\$866,299	10.3%
2018	5,839,659	5,953,978	(114,319)	102.0	842,179	(13.6)
2017	5,385,753	5,587,551	(201,798)	103.7	809,382	(24.9)
2016	5,039,836	5,255,255	(215,419)	104.3	771,949	(27.9)
2015	4,680,694	4,939,330	(258,636)	105.5	745,336	(34.7)
2014	4,706,997	4,625,475	81,522	98.3	710,581	11.5
2013	4,392,947	4,180,704	212,243	95.2	695,000	30.5
2012	4,122,436	3,786,595	335,841	91.9	690,000	48.7
2011	3,638,956	3,593,787	45,169	98.8	687,000	6.6
2010	3,639,669	3,374,438	265,231	92.7	670,000	39.6

¹ See Accompanying Notes To The Actuarial Schedules, included in the Introduction to Actuarial Information.



1977 Police Officers' and Firefighters' Retirement Fund, continued

Summary of Actuarial Assumptions, Actuarial Methods and Plan Provisions

The actuarial assumptions and methods used in the June 30, 2019 valuation of the 1977 Police Officers' and Firefighters' Retirement Fund were adopted by the INPRS Board in May 2019. The majority of the actuarial assumptions and methods are based on plan experience from July 1, 2010 through June 30, 2014, and were first used in the June 30, 2015 valuation. The INPRS Board adopted a funding policy in April 2014, and the policy was last updated in October 2018. The funding policy is available online at: https://www.in.gov/inprs/files/INPRS_Funding_Policy.pdf.

Changes in Actuarial Assumptions

There were no changes to the actuarial assumptions during the fiscal year.

Changes in Actuarial Methods

There were no changes to the actuarial methods during the fiscal year.

Changes in Plan Provisions

In 2019, SEA 85 modified the '77 Fund by increasing the basic pension benefit from 50 to 52 percent of a monthly first class salary and the maximum benefit from 74 to 76 percent. Additionally, a surviving spouse in a non-line of duty death now receives 70 percent of the member's monthly benefit, increased from 60 percent.

Actuarial Assumptions

Actuarial assumptions used for funding purposes are the same as those used for accounting and financial reporting, except where noted.

Economic Assumptions

Interest Rate / Investment Return:

Funding	6.75 percent (net of administrative and investment expenses)
Account & Financial Reporting	6.75 percent (net of investment expenses)
Interest on Member Contributions	3.50 percent per year
Inflation	2.25 percent per year
Cost of Living Increases:	2.00 percent per year in retirement
Future Salary Increases:	2.50 percent per year

Demographic Assumptions: Based on 2010-2014 Experience

Mortality (Healthy):	RP-2014 Blue Collar Mortality Tables, with Social Security generational improvements from 2006 based on the Social Security Administration's 2014 Trustee Report.
Mortality (Disabled):	RP-2014 Disability Mortality Tables, with Social Security generational improvements from 2006 based on the Social Security Administration's 2014 Trustee Report.

1977 Police Officers' and Firefighters' Retirement Fund, continued

Retirement:

Ages	Service <32	Service >= 32
50-57	10.0%	20.0%
58-61	15.0	20.0
62-64	20.0	20.0
65-69	50.0	50.0
70+	100.0	100.0

Inactive vested members are assumed to commence their retirement benefit at their earliest eligible retirement date (age 50 or current age if greater).

Termination:

Service	Rate	Service	Rate
0	10.0%	6-8	2.0%
1	5.0	9-11	1.5
2	4.0	12-19	1.0
3-4	3.5	20+	2.0
5	2.5		

Disability:

Age	Sample Rates
<=30	0.10%
35	0.16
40	0.26
45	0.36
50	0.46
55	0.56
60	0.66
62+	0.70

Spouse / Beneficiary:

80 percent of male members and 50 percent of female members are assumed to be married or to have a dependent beneficiary. Male members are assumed to be three years older than females and female members are assumed to be the same age as males.

Disability Retirement:

For members hired after 1989 that become disabled, impairments are assumed to be one percent catastrophic Class 1 (at 100 percent of salary), 44 percent Class 1 (at 65 percent of salary), 10 percent Class 2 (at 50 percent of salary), and 45 percent Class 3 (at 36 percent of salary).

Pre-Retirement Death:

Of active member deaths, 10 percent are assumed to be in the line of duty and 90 percent are other than in the line of duty. Additionally, all deaths among retired and disabled members are other than in the line of duty.

1977 Police Officers' and Firefighters' Retirement Fund, continued

Actuarial Methods

Funding uses the same Actuarial Methods as accounting and financial reporting, except where noted.

Actuarial Cost Method: 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.

This method produces a cost of future benefit accruals that is a level percent of pay over time, which is desirable for employers from a budgeting standpoint. Other actuarial cost methods are more volatile in their allocation of cost for each year of member service.

Amortization Method: 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. However, when the plan is at or above 100 percent 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 payment 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 and financial reporting, 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. Gains and losses occurring from investment experience different than assumed are amortized into expense over a five-year period. The effect of plan changes on the plan liability are fully recognized in expense in the year in which they occur.

Data Measurement Date: Member census data as of the prior year end was used in the valuation and adjusted, where appropriate, to reflect changes during the current fiscal year. Standard actuarial roll forward techniques were then used to project the liabilities computed as of prior year end to the current year measurement date.

Asset Valuation Method: Funding uses the Actuarial Value of Assets (AVA), which is equal to a five-year smoothing of gains and losses on the Fair Value of Assets (FVA), subject to a 20 percent corridor. Accordingly, the AVA is limited to no more than 20 percent greater than or 20 percent less than the FVA.

Accounting and financial reporting uses the Fair Value of Assets (FVA) in accordance with GASB Statement No. 67.

Plan Provisions

Please refer to Note 1 of the Notes to the Financial Statements in the Financial Section, the actuarial valuation at <https://www.in.gov/inprs/actuarialvaluation.htm>, or the applicable Indiana Code at <http://iga.in.gov/>.

1977 Police Officers' and Firefighters' Retirement Fund, continued

Analysis of Financial Experience

(dollars in thousands)	<u>UAAL</u>
Unfunded Actuarial Accrued Liability (UAAL): June 30, 2018	\$(114,319)
Normal Cost and Interest, less Expected Contributions	<u>1,265</u>
Expected UAAL: June 30, 2019	(113,054)
UAAL (Gain) / Loss	
Actuarial Value of Assets Experience	14,122
Actuarial Accrued Liabilities Experience ¹	30,907
Actuarial Assumption & Methodology Changes	—
Plan Provision Changes ²	<u>157,278</u>
Total UAAL (Gain) / Loss	<u>202,307</u>
Unfunded Actuarial Accrued Liability (UAAL): June 30, 2019	<u><u>\$89,253</u></u>

¹ See Accompanying Notes To The Actuarial Schedules, included in the Introduction to Actuarial Information.

² Plan Provision Changes include:

-In 2019, SEA 85 modified the '77 Fund by increasing the basic pension benefit from 50 to 52 percent of a monthly first class salary and the maximum benefit from 74 to 76 percent. Additionally, a surviving spouse in a non-line of duty death now receives 70 percent of the member's monthly benefit, increased from 60 percent.

Solvency Test ¹

The solvency test compares aggregate actuarial liabilities by various categories with the plan's assets.

(dollars in thousands)	<u>Actuarial Accrued Liabilities</u>				<u>Portion of Actuarial Accrued Liabilities Covered by Assets</u>				
	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)
2019	\$883,706	\$2,169,744	\$3,335,552	\$6,389,002	\$6,299,749	100%	100%	97.3%	98.6%
2018	866,551	1,910,154	3,062,954	5,839,659	5,953,978	100	100	103.7	102.0
2017	857,426	1,715,503	2,812,824	5,385,753	5,587,551	100	100	107.2	103.7
2016	843,628	1,532,936	2,663,272	5,039,836	5,255,255	100	100	108.1	104.3
2015	832,760	1,362,021	2,485,913	4,680,694	4,939,330	100	100	110.4	105.5
2014	809,877	1,280,920	2,616,200	4,706,997	4,625,475	100	100	96.9	98.3
2013	782,124	1,288,457	2,322,366	4,392,947	4,180,704	100	100	90.9	95.2
2012	728,892	1,135,538	2,258,006	4,122,436	3,786,595	100	100	85.1	91.9
2011	679,849	970,676	1,988,431	3,638,956	3,593,787	100	100	97.7	98.8
2010	634,865	859,626	2,145,178	3,639,669	3,374,438	100	100	87.6	92.7

¹ See Accompanying Notes To The Actuarial Schedules, included in the Introduction to Actuarial Information.

1977 Police Officers' and Firefighters' Retirement Fund, continued

Schedule of Active Members Valuation Data

Actuarial Valuation as of June 30 ¹

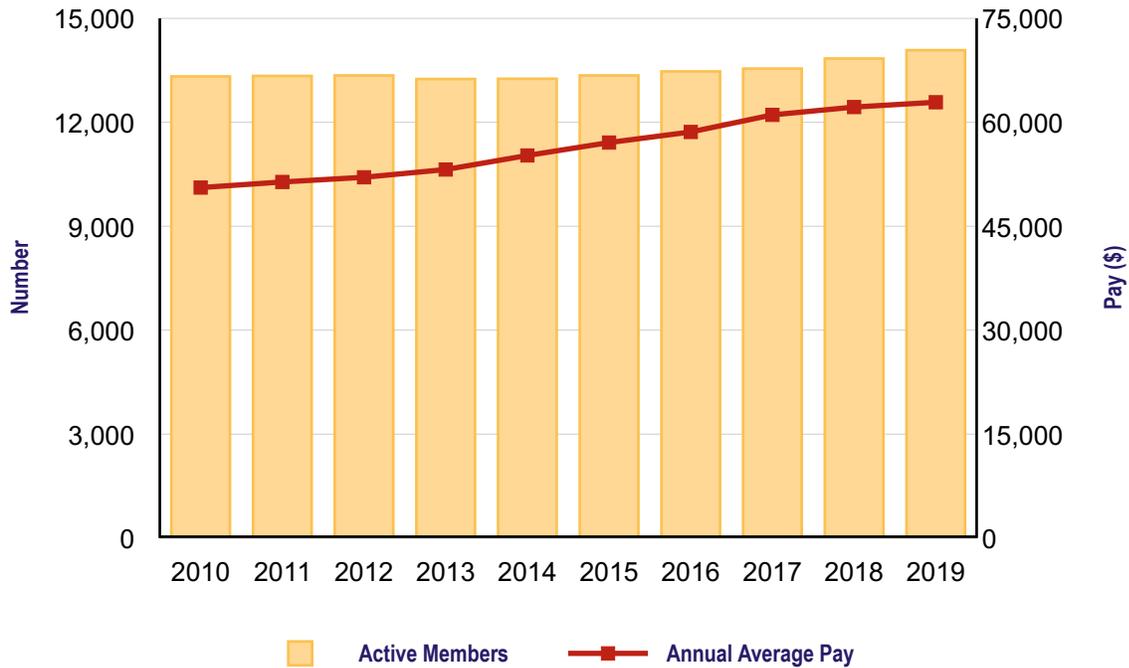
(dollars in thousands - except annual average pay)

	Active Members	Annual Payroll ²	Annual Average Pay	Annual Percent Increase / (Decrease) In Average Pay
2019	14,119	\$887,957	\$62,891	1.1%
2018	13,879	863,233	62,197	1.8
2017	13,587	829,736	61,068	4.2
2016	13,506	791,508	58,604	2.7
2015	13,390	764,215	57,074	3.4
2014	13,295	734,024	55,211	3.8
2013	13,287	706,603	53,180	2.1
2012	13,390	697,111	52,062	1.3
2011	13,376	687,342	51,386	1.6
2010	13,362	675,797	50,576	2.7

¹ See Accompanying Notes To The Actuarial Schedules, included in the Introduction to Actuarial Information.

² Excludes payroll from members that are over the 32 year service cap.

Total Number of Active Members Per Year and Annual Average Pay



1977 Police Officers' and Firefighters' Retirement Fund, continued

Schedule of Retirants and Beneficiaries

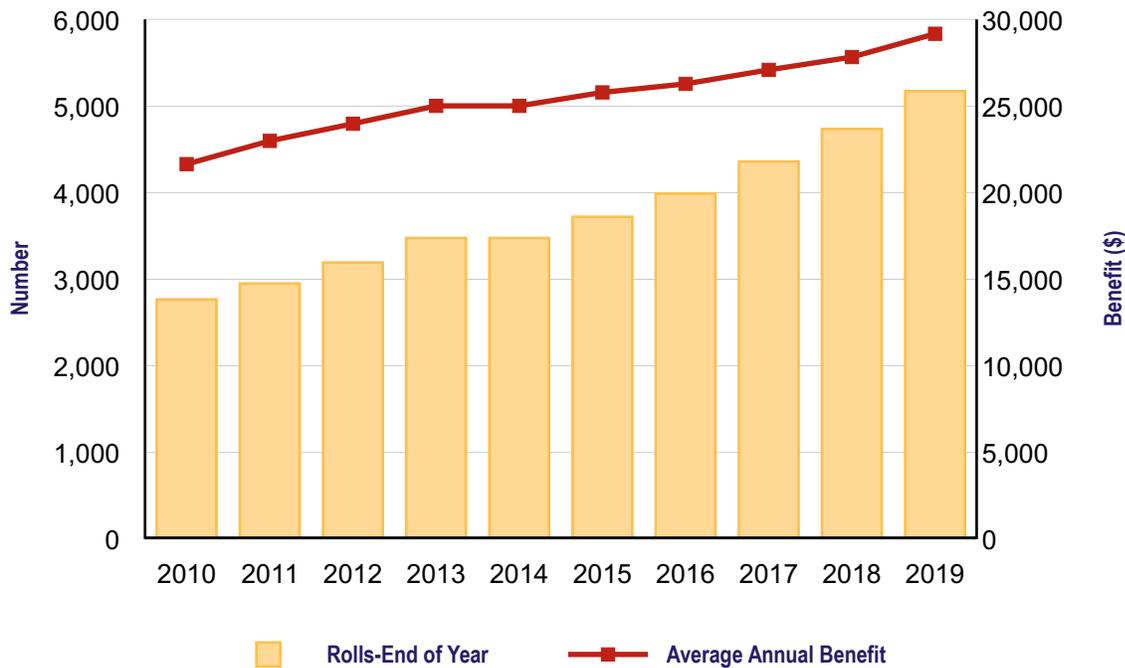
Actuarial Valuation as of June 30 ¹

(dollars in thousands -- except average annual benefit)

	Added to Rolls		Removed from Rolls		Rolls – End of Year		Percent Increase / (Decrease) In Total Annual Benefits	Average Annual Benefit	Percent Increase / (Decrease) in Average Annual Benefit
	Number	Annual Benefits	Number	Annual Benefits	Number	Total Annual Benefits			
2019	476	\$17,344	40	\$803	5,187	\$151,305	14.4%	\$29,170	4.8%
2018	429	14,914	52	1,002	4,751	132,207	11.6	27,827	2.7
2017	407	13,321	37	642	4,374	118,472	12.6	27,086	3.1
2016	312	10,074	44	834	4,004	105,218	9.2	26,278	1.9
2015	283	8,858	38	727	3,736	96,336	10.3	25,786	3.1
2014	—	—	—	—	3,491	87,301	—	25,008	—
2013	326	10,098	43	845	3,491	87,301	13.5	25,008	4.3
2012	281	7,900	39	814	3,208	76,917	12.8	23,977	4.3
2011	218	6,179	34	609	2,966	68,179	13.2	22,987	6.2
2010	208	4,918	34	641	2,782	60,220	8.4	21,646	1.6

¹ See Accompanying Notes To The Actuarial Schedules, included in the Introduction to Actuarial Information.

Total Number of Retirants and Beneficiaries Per Year and Average Annual Benefit



Judges' Retirement System

Historical Summary of Actuarial Valuation Results

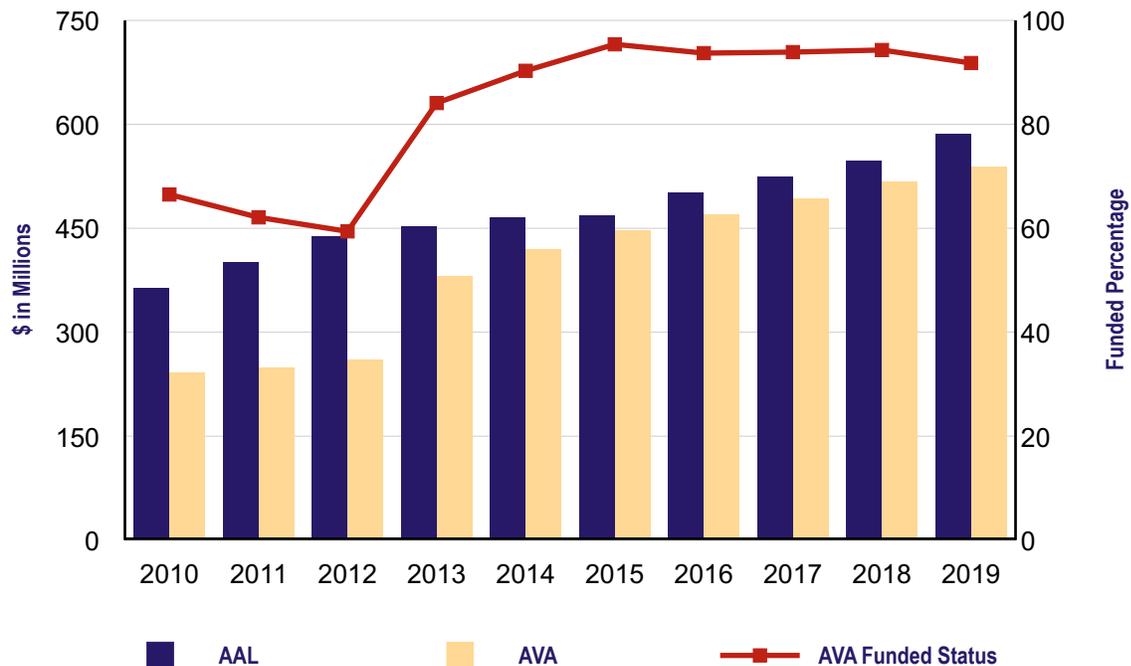
Actuarial Valuation as of June 30 ¹

The following table shows the history of the Unfunded Liability as a percentage of Covered Employee Payroll for JRS.

(dollars in thousands)

	Actuarial Accrued Liability (AAL)	Actuarial Value of Assets (AVA)	Unfunded Liability (AAL-AVA)	AVA Funded Status (AVA/AAL)	Covered Employee Payroll	Unfunded Liability as a percentage of Covered Employee Payroll
2019	\$586,499	\$538,600	\$47,899	91.8%	\$56,380	85.0%
2018	547,694	516,749	30,945	94.4	53,350	58.0
2017	523,735	492,013	31,722	93.9	54,755	57.9
2016	501,126	469,378	31,748	93.7	51,382	61.7
2015	468,945	447,514	21,431	95.4	48,582	44.1
2014	464,855	419,568	45,287	90.3	46,041	98.5
2013	453,110	381,240	71,870	84.1	47,595	151.1
2012	437,854	260,096	177,758	59.4	45,138	393.9
2011	400,274	248,623	151,651	62.1	45,764	331.5
2010	364,123	242,143	121,980	66.5	36,722	332.2

¹ See Accompanying Notes To The Actuarial Schedules, included in the Introduction to Actuarial Information.



Judges' Retirement System, continued

Summary of Actuarial Assumptions, Actuarial Methods, and Plan Provisions

The actuarial assumptions and methods used in the June 30, 2019 valuation of the 1977 Police Officers' and Firefighters' Retirement Fund were adopted by the INPRS Board in May 2019. The majority of the actuarial assumptions and methods are based on plan experience from July 1, 2010 through June 30, 2014, and were first used in the June 30, 2015 valuation. The INPRS Board adopted a funding policy in April 2014, and the policy was last updated in October 2018. The funding policy is available online at: https://www.in.gov/inprs/files/INPRS_Funding_Policy.pdf.

Changes in Actuarial Assumptions

There were no changes to the actuarial assumptions during the fiscal year.

Changes in Actuarial Methods

There were no changes to the actuarial methods during the fiscal year.

Changes in Plan Provisions

There were no changes to the plan provisions during the fiscal year.

Actuarial Assumptions

Actuarial assumptions used for funding purposes are the same as those used for accounting and financial reporting, except where noted.

Economic Assumptions

Interest Rate / Investment Return:

Funding	6.75 percent (net of administrative and investment expenses)
Account & Financial Reporting	6.75 percent (net of investment expenses)
Interest on Member Contributions	3.50 percent per year
Inflation	2.25 percent per year
Cost of Living Increases:	2.50 percent per year in deferral and retirement
Future Salary Increases:	2.50 percent per year

Demographic Assumptions: Based on 2010-2014 Experience

Mortality (Healthy):	RP-2014 White Collar Mortality Tables, with Social Security generational improvements from 2006 based on the Social Security Administration's 2014 Trustee Report.
Mortality (Disabled):	RP-2014 Disability Mortality Tables, with Social Security generational improvements from 2006 based on the Social Security Administration's 2014 Trustee Report.

Judges' Retirement System, continued

Retirement:	Ages	Service <22	Age	Service ≥22
	62	25.0%	55-74	70.0%
	63	15.0	75+	100.0
	64	10.0		
	65	50.0		
	66-74	30.0		
	75+	100.0		

Inactive vested members are assumed to commence their retirement benefit at their earliest eligible retirement date.

Termination: 3 percent per year for all members prior to retirement eligibility.

Disability: 1964 OASDI Table. Illustrative rates shown below:

Age	Rate
20	0.060%
25	0.085
30	0.110
35	0.147
40	0.220
45	0.360
50	0.606
55	1.009
60	1.627
65+	0.000

Spouse / Beneficiary: 90 percent of members are assumed to be married or to have a dependent beneficiary. Male members are assumed to be three years older than their spouses and female members are assumed to be two years younger than their spouses.

Judges' Retirement System, continued

Actuarial Methods

Funding uses the same Actuarial Methods as accounting and financial reporting, except where noted.

Actuarial Cost Method: 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.

This method produces a cost of future benefit accruals that is a level percent of pay over time, which is desirable for employers from a budgeting standpoint. Other actuarial cost methods are more volatile in their allocation of cost for each year of member service.

Amortization Method: 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. However, when the plan is at or above 100 percent 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 payment 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 and financial reporting, 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. Gains and losses occurring from investment experience different than assumed are amortized into expense over a five-year period. The effect of plan changes on the plan liability are fully recognized in expense in the year in which they occur.

Data Measurement Date: Member census data as of the prior year end was used in the valuation and adjusted, where appropriate, to reflect changes during the current fiscal year. Standard actuarial roll forward techniques were then used to project the liabilities computed as of prior year end to the current year measurement date.

Asset Valuation Method: Funding uses the Actuarial Value of Assets (AVA), which is equal to a five-year smoothing of gains and losses on the Fair Value of Assets (FVA), subject to a 20 percent corridor. Accordingly, the AVA is limited to no more than 20 percent greater than or 20 percent less than the FVA.

Accounting and financial reporting uses the Fair Value of Assets (FVA) in accordance with GASB Statement No. 67.

Plan Provisions

Please refer to Note 1 of the Notes to the Financial Statements in the Financial Section, the actuarial valuation at <https://www.in.gov/inprs/actuarialvaluation.htm>, or the applicable Indiana Code at <http://iga.in.gov/>.

Judges' Retirement System, continued

Analysis of Financial Experience

(dollars in thousands)	UAAL
Unfunded Actuarial Accrued Liability (UAAL): June 30, 2018	\$30,945
Normal Cost and Interest, less Expected Contributions	(1,331)
Expected UAAL: June 30, 2019	29,614
UAAL (Gain) / Loss	
Actuarial Value of Assets Experience	9,754
Actuarial Accrued Liabilities Experience ¹	8,531
Actuarial Assumption & Methodology Changes	—
Plan Provision Changes	—
Total UAAL (Gain) / Loss	18,285
Unfunded Actuarial Accrued Liability (UAAL): June 30, 2019	\$47,899

¹ See Accompanying Notes To The Actuarial Schedules, included in the Introduction to Actuarial Information.

Solvency Test ^{1,2}

The solvency test compares aggregate actuarial liabilities by various categories with the plan's assets.

(dollars in thousands)	Actuarial Accrued Liabilities				Actuarial Value of Assets	Portion of Actuarial Accrued Liabilities Covered by Assets			
	Active Member Contributions	Retirees and Beneficiaries	Active Member (Employer Financed Portion)	Total Actuarial Liabilities		Active Member Contributions	Retirees and Beneficiaries	Active Member (Employer Financed Portion)	Total Actuarial Liabilities
2019	\$38,165	\$269,886	\$278,448	\$586,499	\$538,600	100%	100%	82.8%	91.8%
2018	38,541	258,255	250,898	547,694	516,749	100	100	87.7	94.3
2017	36,385	245,177	242,173	523,735	492,013	100	100	86.9	93.9
2016	34,804	244,484	221,838	501,126	469,378	100	100	85.7	93.7
2015	32,383	210,020	226,542	468,945	447,514	100	100	90.5	95.4
2014	32,060	216,044	216,751	464,855	419,568	100	100	79.1	90.3
2013	29,060	224,132	199,918	453,110	381,240	100	100	64.1	84.1
2012	27,699	205,341	204,814	437,854	260,096	100	100	13.2	59.4
2011	24,359	198,797	177,118	400,274	248,623	100	100	14.4	62.1
2010	23,138	182,023	158,962	364,123	242,143	100	100	23.3	66.5

¹ See Accompanying Notes To The Actuarial Schedules, included in the Introduction to Actuarial Information.

² In accordance with Legislation passed during March 2012, the State appropriated \$90,187 thousand during 2013 to reach a funded status of 80.0 percent based on the actuarial valuation as of June 30, 2012.

Judges' Retirement System, continued

Schedule of Active Members Valuation Data

Actuarial Valuation as of June 30 ¹

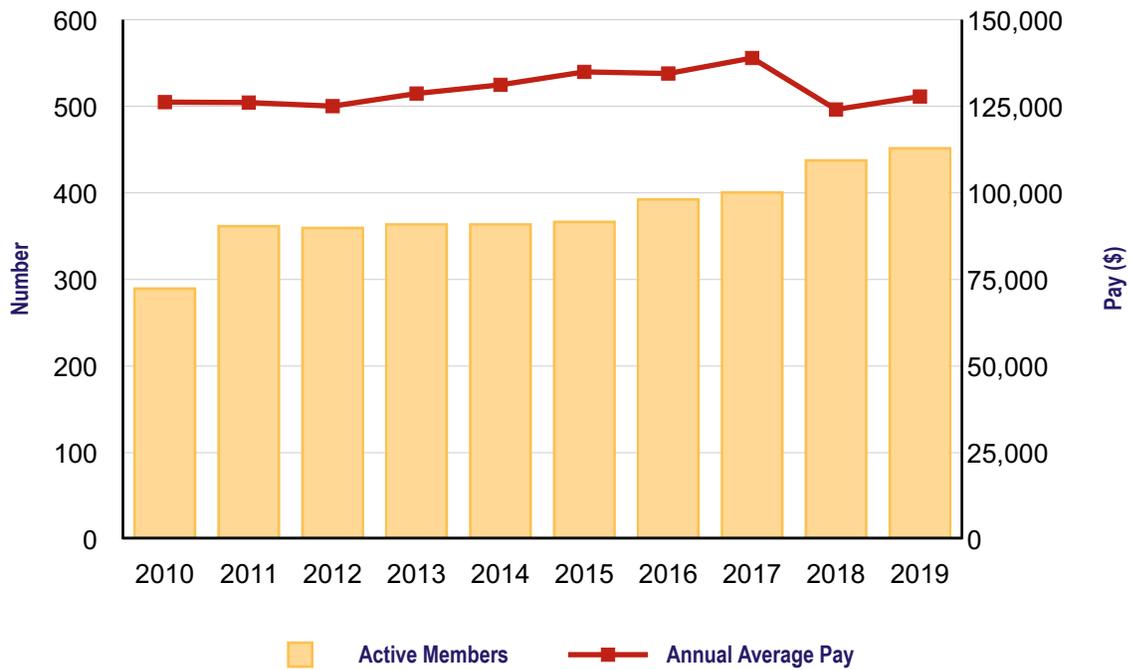
(dollars in thousands - except annual average pay)

	Active Members	Annual Payroll ²	Annual Average Pay	Annual Percent Increase / (Decrease) In Average Pay
2019	453	\$57,902	\$127,819	3.0%
2018	439	54,470	124,078	(10.7)
2017	402	55,850	138,931	3.3
2016	394	52,975	134,454	(0.3)
2015	368	49,651	134,921	2.8
2014	365	47,883	131,186	2.0
2013	365	46,967	128,676	2.9
2012	361	45,138	125,036	(0.8)
2011	363	45,764	126,072	(0.1)
2010	291	36,722	126,192	0.4

¹ See Accompanying Notes To The Actuarial Schedules, included in the Introduction to Actuarial Information.

² Excludes payroll from members that are over the 22 year service cap.

Total Number of Active Members Per Year and Annual Average Pay



Judges' Retirement System, continued

Schedule of Retirants and Beneficiaries

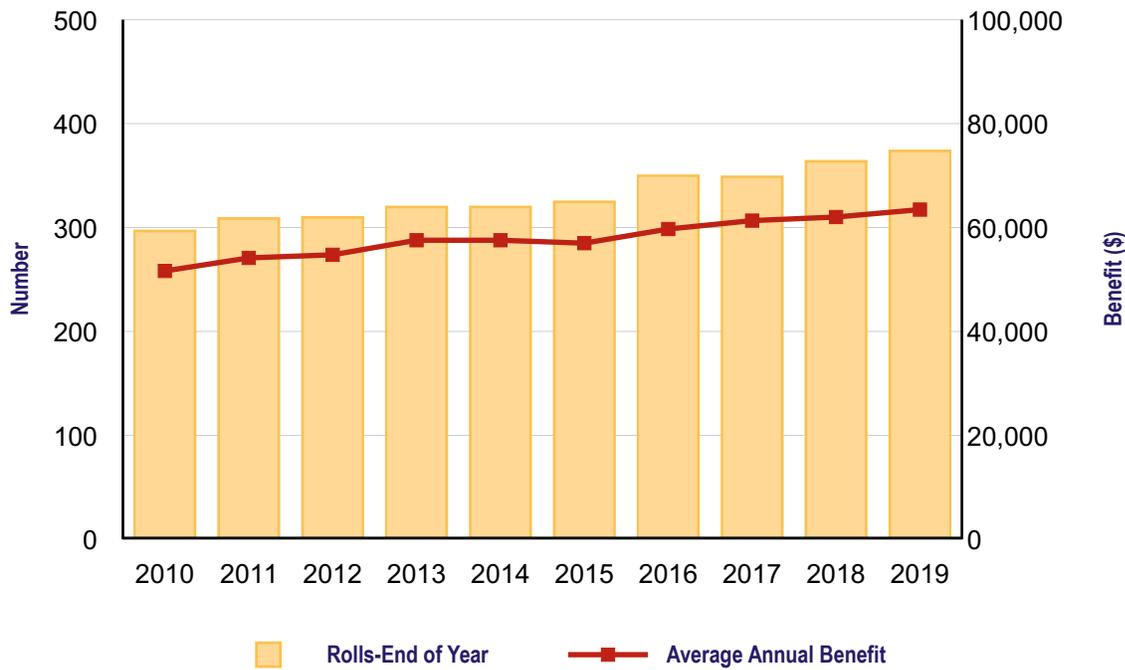
Actuarial Valuation as of June 30 ¹

(dollars in thousands -- except average annual benefit)

	Added to Rolls		Removed from Rolls		Rolls – End of Year		Percent Increase / (Decrease) In Total Annual Benefits	Average Annual Benefit	Percent Increase / (Decrease) in Average Annual Benefit
	Number	Annual Benefits	Number	Annual Benefits	Number	Total Annual Benefits			
2019	18	\$1,340	8	\$191	375	\$23,794	5.1%	\$63,450	2.3%
2018	22	1,723	7	309	365	22,637	5.5	62,019	1.1
2017	9	696	10	509	350	21,465	2.4	61,329	2.7
2016	34	2,520	9	340	351	20,959	12.8	59,714	4.8
2015	10	494	5	195	326	18,578	0.6	56,987	(1.0)
2014	—	—	—	—	321	18,474	—	57,551	—
2013	24	1,798	14	442	321	18,474	8.5	57,551	5.1
2012	7	444	6	194	311	17,028	1.4	54,751	1.1
2011	21	1,452	9	200	310	16,787	9.1	54,152	4.9
2010	11	627	6	339	298	15,390	1.1	51,644	(0.6)

¹ See Accompanying Notes To The Actuarial Schedules, included in the Introduction to Actuarial Information.

Total Number of Retirants and Beneficiaries Per Year and Average Annual Benefit



Excise, Gaming and Conservation Officers' Retirement Fund

Historical Summary of Actuarial Valuation Results

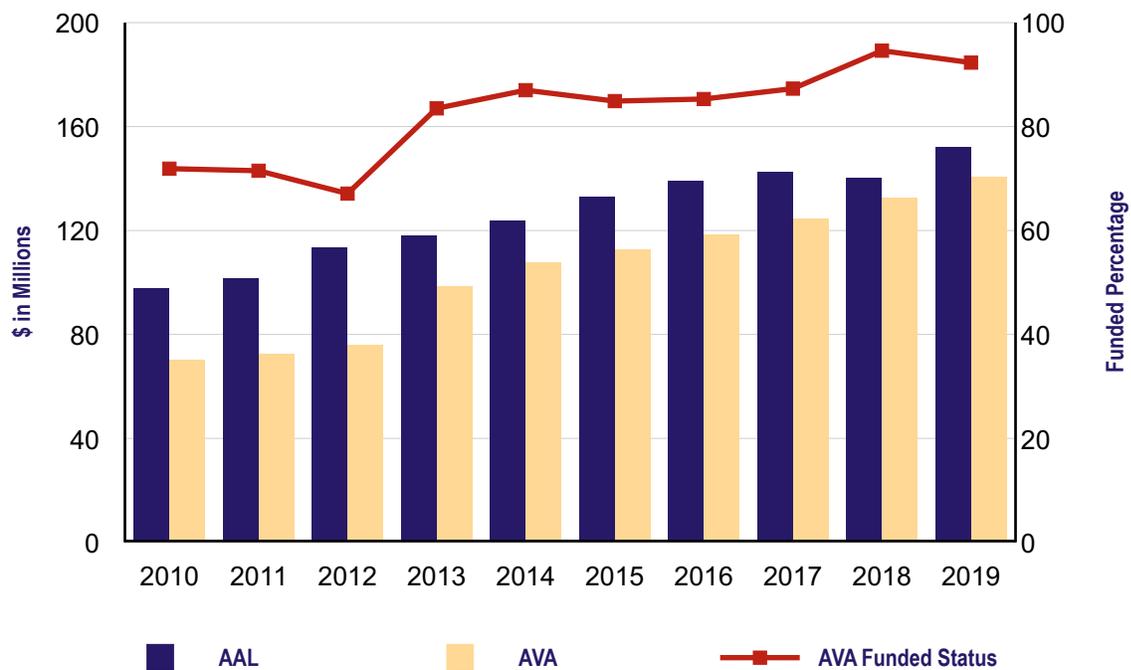
Actuarial Valuation as of June 30 ¹

The following table shows the history of the Unfunded Liability as a percentage of Covered Employee Payroll for EG&C.

(dollars in thousands)

	Actuarial Accrued Liability (AAL)	Actuarial Value of Assets (AVA)	Unfunded Liability (AAL-AVA)	AVA Funded Status (AVA/AAL)	Covered Employee Payroll	Unfunded Liability as a percentage of Covered Employee Payroll
2019	\$152,207	\$140,559	\$11,648	92.3%	\$33,272	35.0%
2018	140,056	132,441	7,615	94.6	29,387	25.9
2017	142,603	124,531	18,072	87.3	27,428	65.9
2016	138,965	118,515	20,450	85.3	25,526	80.1
2015	132,796	112,765	20,031	84.9	25,133	79.7
2014	123,601	107,563	16,038	87.0	25,825	62.1
2013	118,097	98,608	19,489	83.5	24,675	79.0
2012	113,283	76,007	37,276	67.1	24,300	153.5
2011	101,534	72,599	28,935	71.5	25,000	115.6
2010	97,862	70,327	27,535	71.9	25,300	108.7

¹ See Accompanying Notes To The Actuarial Schedules, included in the Introduction to Actuarial Information.



Excise, Gaming and Conservation Officers' Retirement Fund, continued

Summary of Actuarial Assumptions, Actuarial Methods, and Plan Provisions

The actuarial assumptions and methods used in the June 30, 2019 valuation of the Excise, Gaming and Conservation Officers' Retirement Fund were adopted by the INPRS Board in May 2019. The majority of the actuarial assumptions and methods are based on plan experience from July 1, 2010 through June 30, 2014, and were first used in the June 30, 2015 valuation. The INPRS Board adopted a funding policy in April 2014, and the policy was last updated in October 2018. The funding policy is available online at: https://www.in.gov/inprs/files/INPRS_Funding_Policy.pdf.

Changes in Actuarial Assumptions

There were no changes to the actuarial assumptions.

Changes in Actuarial Methods

There were no changes to the actuarial methods during the fiscal year.

Changes in Plan Provisions

There were no changes to the plan provisions.

Actuarial Assumptions

Actuarial assumptions used for funding purposes are the same as those used for accounting and financial reporting, except where noted.

Economic Assumptions

Interest Rate / Investment Return:

Funding	6.75 percent (net of administrative and investment expenses)
Accounting & Financial Reporting	6.75 percent (net of investment expenses)

Interest on Member Contributions: 3.50 percent per year

Inflation: 2.25 percent per year

Cost of Living Increases: A service-based 13th check will be paid in the 2020 and 2021 fiscal years. Thereafter, the following COLAs, compounded annually, are assumed:

0.4 percent beginning on January 1, 2022

0.5 percent beginning on January 1, 2034

0.6 percent beginning on January 1, 2039

Future Salary Increases: 2.50 percent per year

Excise, Gaming and Conservation Officers' Retirement Fund, continued

Demographic Assumptions: Based on 2010-2014 Experience

Mortality (Healthy): RP-2014 Blue Collar Mortality Tables, with Social Security generational improvements from 2006 based on the Social Security Administration's 2014 Trustee Report.

Mortality (Disabled): RP-2014 Disability Mortality Tables, with Social Security generational improvements from 2006 based on the Social Security Administration's 2014 Trustee Report.

Retirement:

Age	Rate
45	3.0%
46-49	2.0
50	3.0
51-59	15.0
60-64	40.0
65+	100.0

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

Termination:

Years of Service	Rate	Years of Service	Rate
0-1	10.0%	6	5.0%
2	9.0	7	4.0
3	8.0	8	3.0
4	7.0	9	2.0
5	6.0	10+	1.0

Disability:

150 percent of 1964 OASDI Table. Illustrative rates shown below.

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

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

Spouse / Beneficiary:

90 percent of members are assumed to be married or to have a dependent beneficiary. Males are assumed to be three years older than females.

Excise, Gaming and Conservation Officers' Retirement Fund, continued

Actuarial Methods

Funding uses the same Actuarial Methods as accounting and financial reporting, except where noted.

Actuarial Cost Method: 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.

This method produces a cost of future benefit accruals that is a level percent of pay over time, which is desirable for employers from a budgeting standpoint. Other actuarial cost methods are more volatile in their allocation of cost for each year of member service.

Amortization Method: 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. However, when the plan is at or above 100 percent 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 payment each year. Effective June 30, 2018, the bases are calculated without regards to the COLA provisions. 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 and financial reporting, 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. Gains and losses occurring from investment experience different than assumed are amortized into expense over a five-year period. The effect of plan changes on the plan liability are fully recognized in expense in the year in which they occur.

Data Measurement Date: Member census data as of the prior year end was used in the valuation and adjusted, where appropriate, to reflect changes during the current fiscal year. Standard actuarial roll forward techniques were then used to project the liabilities computed as of prior year end to the current year measurement date.

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.

Asset Valuation Method: Funding uses the Actuarial Value of Assets (AVA), which is equal to a five-year smoothing of gains and losses on the Fair Value of Assets (FVA), subject to a 20 percent corridor. Accordingly, the AVA is limited to no more than 20 percent greater than or 20 percent less than the FVA.

Accounting and financial reporting uses the Fair Value of Assets (FVA) in accordance with GASB Statement No. 67.

Plan Provisions

Please refer to Note 1 of the Notes to the Financial Statements in the Financial Section, the actuarial valuation at <https://www.in.gov/inprs/actuarialvaluation.htm>, or the applicable Indiana Code at <http://iga.in.gov/>.

Excise, Gaming and Conservation Officers' Retirement Fund, continued

Analysis of Financial Experience

(dollars in thousands)	UAAL
Unfunded Actuarial Accrued Liability (UAAL): June 30, 2018	\$7,615
Normal Cost and Interest, less Expected Contributions	401
Expected UAAL: June 30, 2019	8,016
UAAL (Gain) / Loss	
Actuarial Value of Assets Experience	(2,795)
Actuarial Accrued Liabilities Experience ¹	6,427
Actuarial Assumption & Methodology Changes	—
Plan Provision Changes	—
Total UAAL (Gain) / Loss	3,632
Unfunded Actuarial Accrued Liability (UAAL): June 30, 2019	\$11,648

¹ See Accompanying Notes To The Actuarial Schedules, included in the Introduction to Actuarial Information.

Solvency Test ^{1,2}

The solvency test compares aggregate actuarial liabilities by various categories with the plan's assets.

(dollars in thousands)	Actuarial Accrued Liabilities				Portion of Actuarial Accrued Liabilities 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)
2019	\$11,661	\$68,652	\$71,894	\$152,207	\$140,559	100%	100%	83.8%	92.3%
2018	10,715	68,750	60,591	140,056	132,441	100	100	87.4	94.6
2017	9,737	69,217	63,649	142,603	124,531	100	100	71.6	87.3
2016	9,085	67,424	62,456	138,965	118,515	100	100	67.3	85.3
2015	8,456	61,503	62,837	132,796	112,765	100	100	68.1	84.9
2014	8,042	54,626	60,933	123,601	107,563	100	100	73.7	87.0
2013	7,494	56,028	54,575	118,097	98,608	100	100	64.3	83.5
2012	6,532	53,929	52,822	113,283	76,007	100	100	29.4	67.1
2011	6,271	46,695	48,568	101,534	72,599	100	100	40.4	71.5
2010	6,220	36,044	55,598	97,862	70,327	100	100	50.5	71.9

¹ See Accompanying Notes To The Actuarial Schedules, included in the Introduction to Actuarial Information.

² In accordance with Legislation passed during March 2012, the State appropriated \$14,619 thousand during 2013 to reach a funded status of 80.0 percent based on the actuarial valuation as of June 30, 2012.

Excise, Gaming and Conservation Officers' Retirement Fund, continued

Schedule of Active Members Valuation Data

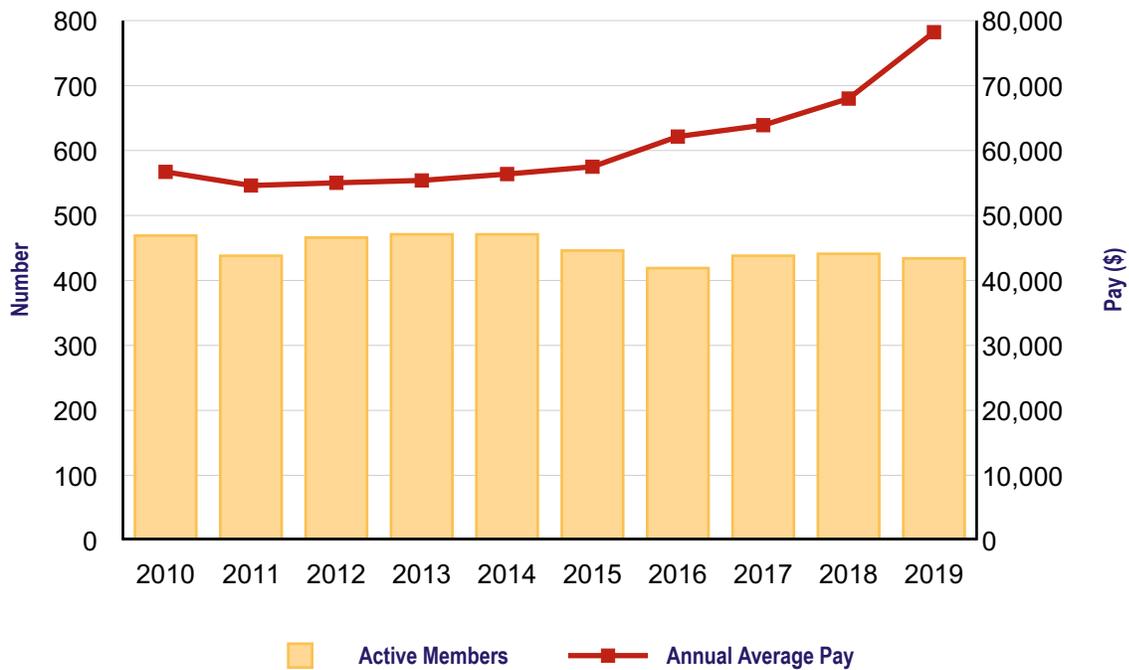
Actuarial Valuation as of June 30 ¹

(dollars in thousands - except annual average pay)

	Active Members	Annual Payroll	Annual Average Pay	Annual Percent Increase / (Decrease) In Average Pay
2019	436	\$34,103	\$78,219	15.0%
2018	443	30,121	67,994	6.4
2017	440	28,114	63,895	2.8
2016	421	26,164	62,147	8.1
2015	448	25,761	57,502	2.0
2014	473	26,664	56,372	1.8
2013	473	26,201	55,393	0.7
2012	468	25,752	55,026	0.8
2011	440	24,028	54,609	(3.7)
2010	471	26,709	56,707	(0.5)

¹ See Accompanying Notes To The Actuarial Schedules, included in the Introduction to Actuarial Information.

Total Number of Active Members Per Year and Annual Average Pay



Excise, Gaming and Conservation Officers' Retirement Fund, continued

Schedule of Retirants and Beneficiaries

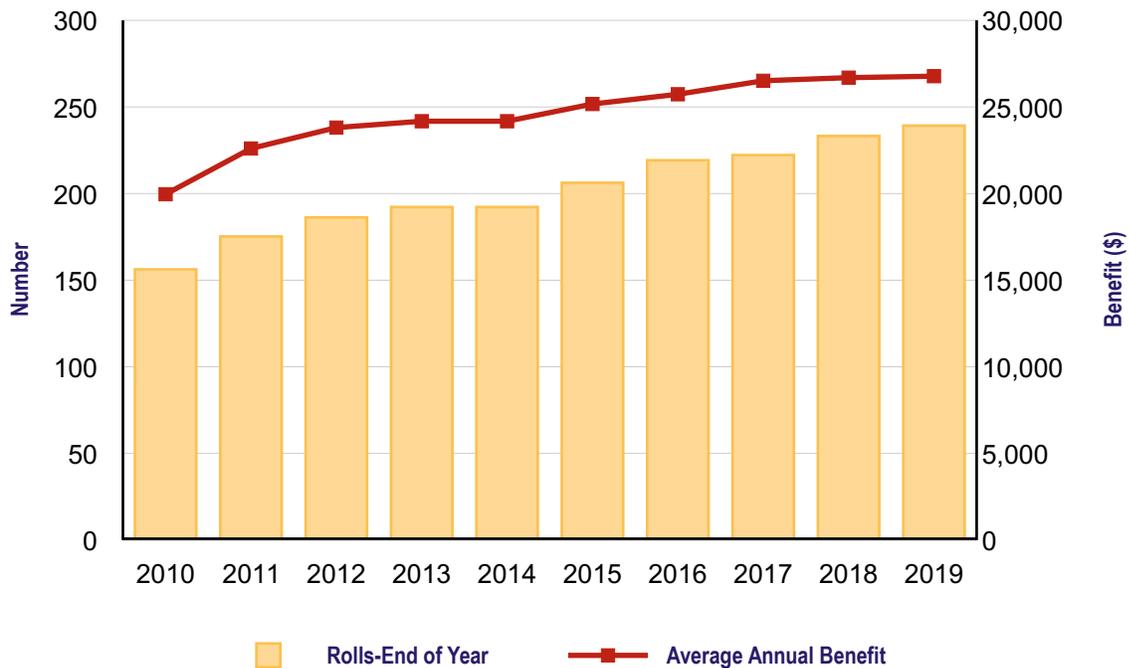
Actuarial Valuation as of June 30 ¹

(dollars in thousands -- except average annual benefit)

	Added to Rolls		Removed from Rolls		Rolls – End of Year		Percent Increase / (Decrease) In Total Annual Benefits	Average Annual Benefit	Percent Increase / (Decrease) in Average Annual Benefit
	Number	Annual Benefits	Number	Annual Benefits	Number	Total Annual Benefits			
2019	9	\$216	3	\$19	240	\$6,426	2.9%	\$26,776	0.3%
2018	13	404	2	23	234	6,246	5.6	26,692	0.7
2017	8	314	5	60	223	5,912	4.4	26,512	3.0
2016	14	506	1	4	220	5,661	8.7	25,733	2.2
2015	15	556	1	5	207	5,210	11.7	25,170	4.1
2014	—	—	—	—	193	4,666	—	24,177	—
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 See Accompanying Notes To The Actuarial Schedules, included in the Introduction to Actuarial Information.

Total Number of Retirants and Beneficiaries Per Year and Average Annual Benefit



Prosecuting Attorneys' Retirement Fund

Historical Summary of Actuarial Valuation Results

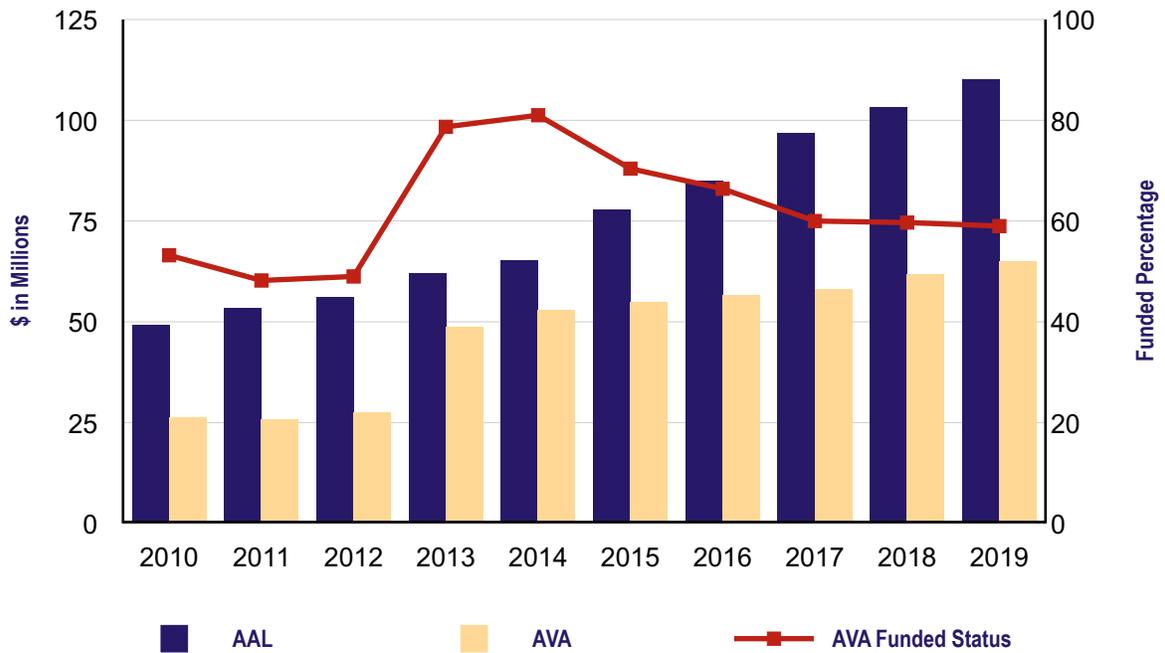
Actuarial Valuation as of June 30 ¹

The following table shows the history of the Unfunded Liability as a percentage of Covered Employee Payroll for PARF.

(dollars in thousands)

	Actuarial Accrued Liability (AAL)	Actuarial Value of Assets (AVA)	Unfunded Liability (AAL-AVA)	AVA Funded Status (AVA/AAL)	Covered Employee Payroll	Unfunded Liability as a percentage of Covered Employee Payroll
2019	\$110,082	\$64,909	\$45,173	59.0%	\$21,791	207.3%
2018	103,284	61,665	41,619	59.7	21,578	192.9
2017	96,655	57,967	38,688	60.0	22,635	170.9
2016	85,033	56,472	28,561	66.4	21,372	133.6
2015	77,861	54,848	23,013	70.4	21,145	108.8
2014	65,336	52,936	12,400	81.0	20,608	60.2
2013	61,940	48,762	13,178	78.7	18,805	70.2
2012	56,080	27,501	28,579	49.0	21,705	131.8
2011	53,252	25,651	27,601	48.2	18,082	152.6
2010	49,174	26,166	23,008	53.2	21,016	109.4

¹ See Accompanying Notes To The Actuarial Schedules, included in the Introduction to Actuarial Information.



Prosecuting Attorneys' Retirement Fund, continued

Summary of Actuarial Assumptions, Actuarial Methods, and Plan Provisions

The actuarial assumptions and methods used in the June 30, 2019 valuation of the Prosecuting Attorneys' Retirement Fund were adopted by the INPRS Board in May 2019. The majority of the actuarial assumptions and methods are based on plan experience from July 1, 2010 through June 30, 2014, and were first used in the June 30, 2015 valuation. The INPRS Board adopted a funding policy in April 2014, and the policy was last updated in October 2018. The funding policy is available at: https://www.in.gov/inprs/files/INPRS_Funding_Policy.pdf.

Changes in Actuarial Assumptions

There were no changes to the actuarial assumptions during the fiscal year.

Changes in Actuarial Methods

There were no changes to the actuarial methods during the fiscal year.

Changes in Plan Provisions

There were no changes to the plan provisions during the fiscal year.

Actuarial Assumptions

Except as noted below, actuarial assumptions used for funding purposes are the same as those used for accounting and financial reporting.

Economic Assumptions

Interest Rate / Investment Return:

Funding	6.75 percent (net of administrative and investment expenses)
Account & Financial Reporting	6.75 percent (net of investment expenses)
Interest on Member Contributions	3.50 percent per year
Inflation	2.25 percent per year
Cost of Living Increases:	N/A
Future Salary Increases:	4.00 percent per year

Demographic Assumptions: Based on 2010-2014 Experience

Mortality (Healthy): RP-2014 White Collar Mortality Tables, with Social Security generational improvements from 2006 based on the Social Security Administration's 2014 Trustee Report.

Mortality (Disabled): RP-2014 Disability Mortality Tables, with Social Security generational improvements from 2006 based on the Social Security Administration's 2014 Trustee Report.

Retirement:	Ages	Service <22	Age	Service >=22
	62-34	20.0%	55-64	70.0%
	65+	100.0	65+	100.0

Inactive vested members are assumed to commence their retirement benefit at their earliest unreduced eligible retirement date (age 62, or current age if greater).

Termination: 10 percent per year for all members prior to retirement eligibility

Disability:

Age	Sample Rates	
	Male	Female
20	0.0067%	0.0050%
30	0.0208	0.0158
40	0.0646	0.0496
50	0.2005	0.1556
60	0.6220	0.4881
70	0.1000	0.1000
71+	0.0000	0.0000

Spouse / Beneficiary: 90 percent of members are assumed to be married or to have a dependent beneficiary. Males are assumed to be three years older than females.

Prosecuting Attorneys' Retirement Fund, continued

Actuarial Methods

Funding uses the same Actuarial Methods as accounting and financial reporting, except where noted.

Actuarial Cost Method: 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.

This method produces a cost of future benefit accruals that is a level percent of pay over time, which is desirable for employers from a budgeting standpoint. Other actuarial cost methods are more volatile in their allocation of cost for each year of member service.

Amortization Method:

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. However, when the plan is at or above 100 percent 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 payment 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 and financial reporting, 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. Gains and losses occurring from investment experience different than assumed are amortized into expense over a five-year period. The effect of plan changes on the plan liability are fully recognized in expense in the year in which they occur.

Data Measurement Date:

Member census data as of the prior year end was used in the valuation and adjusted, where appropriate, to reflect changes during the current fiscal year. Standard actuarial roll forward techniques were then used to project the liabilities computed as of prior year end to the current year measurement date.

Asset Valuation Method:

Funding uses the Actuarial Value of Assets (AVA), which is equal to a five-year smoothing of gains and losses on the Fair Value of Assets (FVA), subject to a 20 percent corridor. Accordingly, the AVA is limited to no more than 20 percent greater than or 20 percent less than the FVA.

Accounting and financial reporting uses the Fair Value of Assets (FVA) in accordance with GASB Statement No. 67.

Plan Provisions

Please refer to Note 1 of the Notes to the Financial Statements in the Financial Section, the actuarial valuation at <https://www.in.gov/inprs/actuarialvaluation.htm>, or the applicable Indiana Code at <http://iga.in.gov/>.

Prosecuting Attorneys' Retirement Fund, continued

Analysis of Financial Experience

(dollars in thousands)	UAAL
Unfunded Actuarial Accrued Liability (UAAL): June 30, 2018	\$41,619
Normal Cost and Interest, less Expected Contributions	(951)
Expected UAAL: June 30, 2019	40,668
UAAL (Gain) / Loss	
Actuarial Value of Assets Experience	2,265
Actuarial Accrued Liabilities Experience ¹	2,240
Actuarial Assumption & Methodology Changes	—
Plan Provision Changes	—
Total UAAL (Gain) / Loss	4,505
Unfunded Actuarial Accrued Liability (UAAL): June 30, 2019	\$45,173

¹ See Accompanying Notes To The Actuarial Schedules, included in the Introduction to Actuarial Information.

Solvency Test ^{1,2}

The solvency test compares aggregate actuarial liabilities by various categories with the plan's assets.

(dollars in thousands)	Actuarial Accrued Liabilities					Portion of Actuarial Accrued Liabilities 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	\$ 27,471	\$ 39,607	\$ 43,004	\$ 110,082	\$ 64,909	100%	94.5%	—%	59.0%	
2018	27,620	39,034	36,630	103,284	61,664	100	87.2	—	59.7	
2017	26,327	38,504	31,824	96,655	57,967	100	82.2	—	60.0	
2016	26,206	37,709	21,118	85,033	56,472	100	80.3	—	66.4	
2015	25,479	26,636	25,746	77,861	54,848	100	100	10.6	70.4	
2014	26,654	22,665	16,017	65,336	52,936	100	100	22.6	81.0	
2013	25,371	22,004	14,565	61,940	48,762	100	100	9.5	78.7	
2012	23,406	18,660	14,014	56,080	27,501	100	21.9	—	49.0	
2011	21,592	16,806	14,854	53,252	25,651	100	24.2	—	48.2	
2010	20,999	12,557	15,618	49,174	26,166	100	41.1	—	53.2	

¹ See Accompanying Notes To The Actuarial Schedules, included in the Introduction to Actuarial Information.

² In accordance with Legislation passed during March 2012, the State appropriated \$17,363 thousand during 2013 to reach a funded status of 80.0 percent based on the actuarial valuation as of June 30, 2012.

Prosecuting Attorneys' Retirement Fund, continued

Schedule of Active Members Valuation Data

Actuarial Valuation as of June 30 ¹

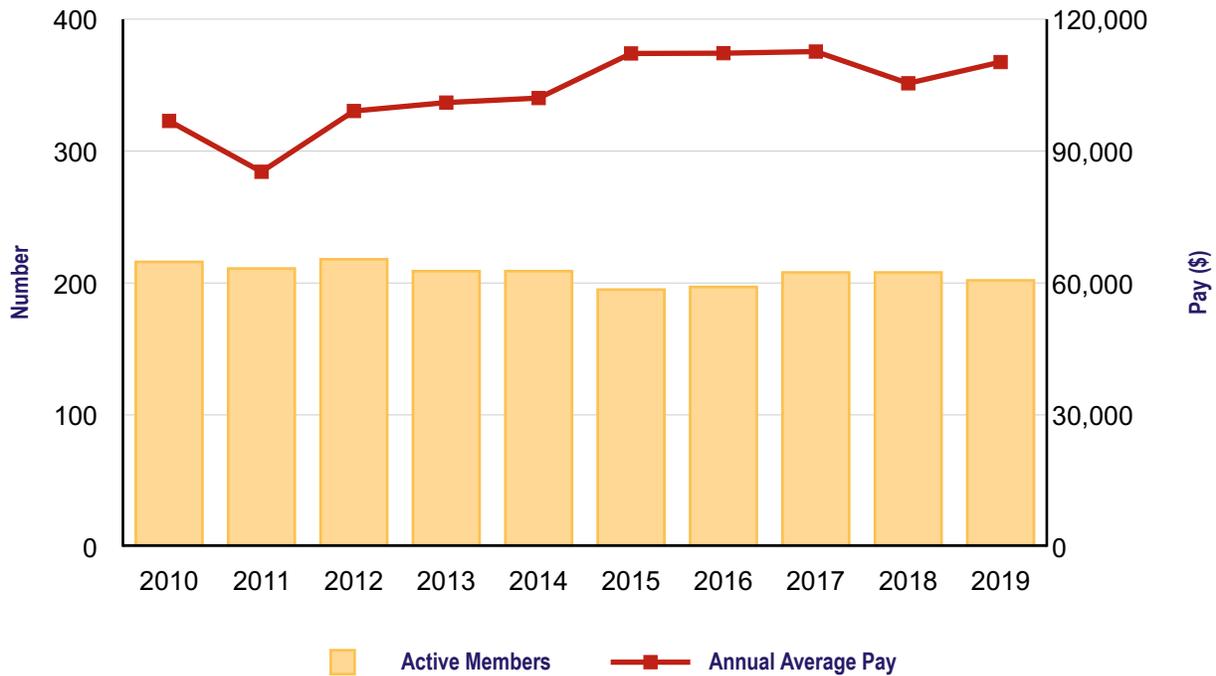
(dollars in thousands - except annual average pay)

	Active Members	Annual Payroll ²	Annual Average Pay	Annual Percent Increase / (Decrease) In Average Pay
2019	203	\$22,379	\$110,242	4.6%
2018	209	22,031	105,413	(6.4)
2017	209	23,540	112,632	0.3
2016	198	22,227	112,257	0.1
2015	196	21,991	112,198	9.9
2014	210	21,432	102,057	1.0
2013	210	21,217	101,033	1.9
2012	219	21,705	99,110	16.2
2011	212	18,082	85,292	(11.9)
2010	217	21,016	96,848	3.0

¹ See Accompanying Notes To The Actuarial Schedules, included in the Introduction to Actuarial Information.

² Excludes payroll from members that are over the 22 year service cap.

Total Number of Active Members Per Year and Annual Average Pay



Prosecuting Attorneys' Retirement Fund, continued

Schedule of Retirants and Beneficiaries

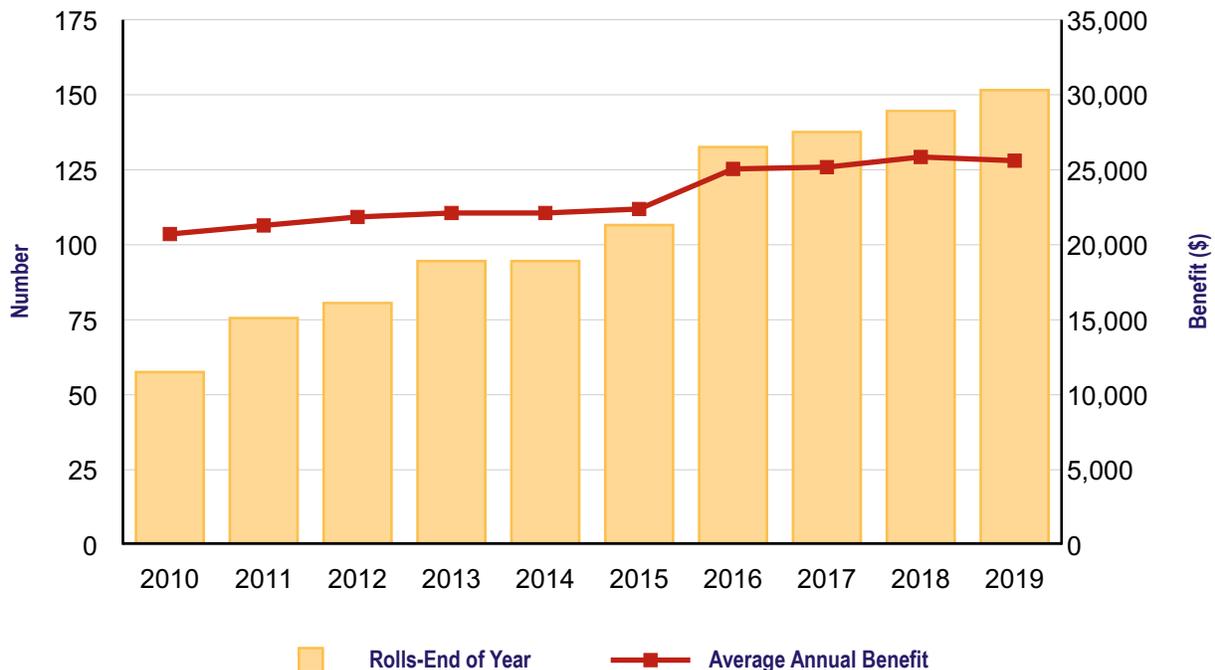
Actuarial Valuation as of June 30 ¹

(dollars in thousands -- except average annual benefit)

	Added to Rolls		Removed from Rolls		Rolls – End of Year		Percent Increase / (Decrease) In Total Annual Benefits	Average Annual Benefit	Percent Increase / (Decrease) in Average Annual Benefit
	Number	Annual Benefits	Number	Annual Benefits	Number	Total Annual Benefits			
2019	9	\$168	2	\$25	152	\$3,892	3.8%	\$25,605	(1.0)%
2018	9	307	2	28	145	3,749	7.9	25,853	2.7
2017	5	140	—	—	138	3,474	4.3	25,176	0.5
2016	26	937	—	—	133	3,332	39.1	25,056	11.9
2015	14	319	2	14	107	2,395	14.0	22,385	1.2
2014	—	—	—	—	95	2,101	—	22,118	—
2013	15	362	1	27	95	2,101	18.7	22,118	1.2
2012	6	178	1	27	81	1,770	9.4	21,853	2.7
2011	19	473	1	16	76	1,618	34.7	21,288	2.8
2010	9	187	1	16	58	1,201	16.4	20,715	0.4

¹ See Accompanying Notes To The Actuarial Schedules, included in the Introduction to Actuarial Information.

Total Number of Retirants and Beneficiaries Per Year and Average Annual Benefit



Legislators' Defined Benefit Fund

Historical Summary of Actuarial Valuation Results

Actuarial Valuation as of June 30 ¹

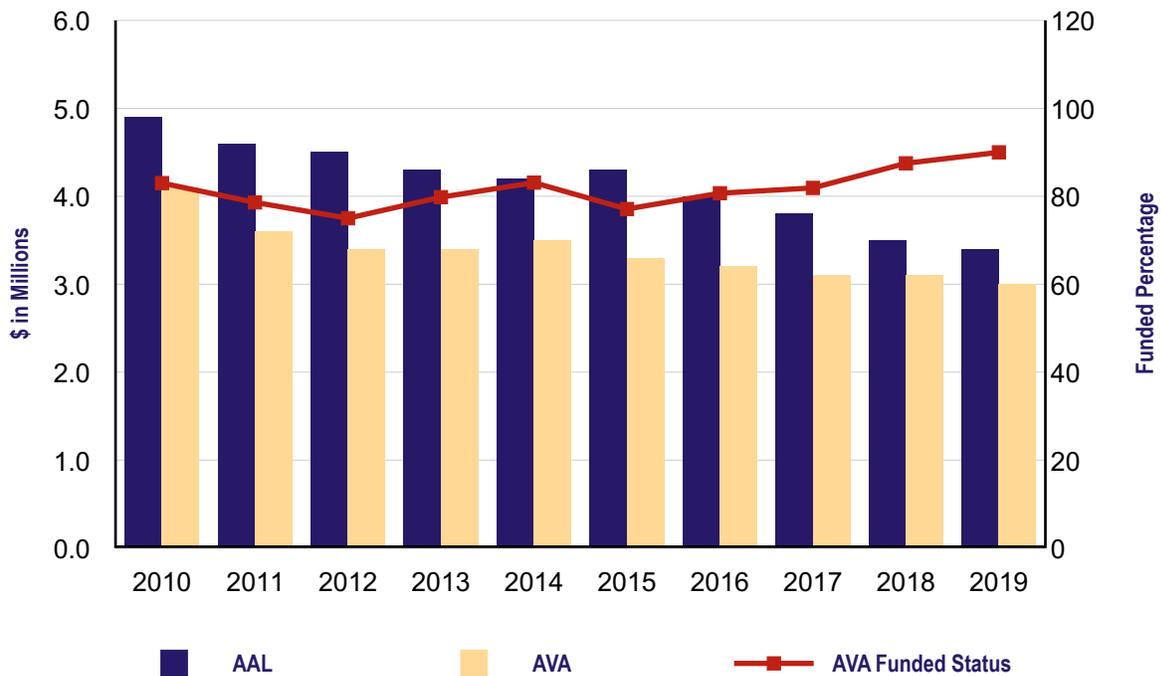
The following table shows the history of the Unfunded Liability for LE DB.

(dollars in thousands)

	Actuarial Accrued Liability (AAL)	Actuarial Value of Assets (AVA)	Unfunded Liability (AAL-AVA)	AVA Funded Status (AVA/AAL)	Covered Employee Payroll ²	Unfunded Liability as a percentage of Covered Employee Payroll
2019	\$3,362	\$3,026	\$336	90.0%	N/A	N/A
2018	3,485	3,050	435	87.5	N/A	N/A
2017	3,804	3,114	690	81.9	N/A	N/A
2016	4,016	3,241	775	80.7	N/A	N/A
2015	4,328	3,336	992	77.1	N/A	N/A
2014	4,173	3,467	706	83.1	N/A	N/A
2013	4,295	3,428	867	79.8	N/A	N/A
2012	4,503	3,377	1,126	75.0	N/A	N/A
2011	4,621	3,634	987	78.6	N/A	N/A
2010	4,909	4,075	834	83.0	N/A	N/A

¹ See Accompanying Notes To The Actuarial Schedules, included in the Introduction to Actuarial Information.

² LE DB is a closed plan with no Covered Employee Payroll.



Legislators' Defined Benefit Fund, continued

Summary of Actuarial Assumptions, Actuarial Methods, and Plan Provisions

The actuarial assumptions and methods used in the June 30, 2019 valuation of the Legislators' Defined Benefit Fund were adopted by the INPRS Board in May 2019. The majority of the actuarial assumptions and methods are based on plan experience from July 1, 2010 through June 30, 2014, and were first used in the June 30, 2015 valuation. The INPRS Board adopted a funding policy in April 2014, and the policy was last updated in October 2018. The funding policy is available online at: https://www.in.gov/inprs/files/INPRS_Funding_Policy.pdf.

Changes in Actuarial Assumptions

There were no changes to the actuarial assumptions.

Changes in Actuarial Methods

There were no changes to the actuarial methods during the fiscal year.

Changes in Plan Provisions

There were no changes to the plan provisions.

Actuarial Assumptions

Except as noted below, actuarial assumptions used for funding purposes are the same as those used for accounting and financial reporting.

Economic Assumptions

Interest Rate / Investment Return:

Funding	6.75 percent (net of administrative and investment expenses)
Accounting & Financial Reporting	6.75 percent (net of investment expenses)

Inflation: 2.25 percent per year

Cost of Living Increases: No COLA or 13th check will be paid in the 2020 and 2021 fiscal years. Thereafter, the following COLAs, compounded annually, are assumed:

0.4 percent beginning on January 1, 2022
0.5 percent beginning on January 1, 2034
0.6 percent beginning on January 1, 2039

Future Salary Increases: 2.25 percent per year

Demographic Assumptions: Based on 2010-2014 Experience

Mortality (Healthy): RP-2014 White Collar Mortality Tables, with Social Security generational improvements from 2006 based on the Social Security Administration's 2014 Trustee Report.

Mortality (Disabled): RP-2014 Disability Mortality Tables, with Social Security generational improvements from 2006 based on the Social Security Administration's 2014 Trustee Report.

Legislators' Defined Benefit Fund, continued

Retirement:

Age	Rate
55	10.0%
56-57	8.0
58-61	2.0
62-64	5.0
65+	100.0

Inactive vested members are assumed to commence their retirement benefit at their earliest eligible retirement date (age 55, or current age if greater).

Termination:

Sarason T-2 Tables. Sample rates:

Age	Rate	Age	Rate
20	5.4384%	40	3.5035%
25	5.2917	45	1.7686
30	5.0672	50	0.4048
35	4.6984	55+	0.0000

Disability:

75 percent of 1964 OASDI Tables. Sample rates:

Age	Rate	Age	Rate
20	0.045%	45	0.270%
25	0.064	50	0.454
30	0.083	55	0.757
35	0.111	60	1.220
40	0.165	65+	0.000

Spouse / Beneficiary:

90 percent of members are assumed to be married or to have a dependent beneficiary. Males are assumed to be three (3) years older than females.

Legislators' Defined Benefit Fund, continued

Actuarial Methods

Actuarial Cost & Amortization Methods:

Funding: Traditional Unit Credit

The normal cost is calculated separately for each active member and is equal to actuarial present value of additional benefits expected to be accrued during the year following the valuation date. The actuarial accrued liability on any valuation date is the actuarial present value of the benefits earned for service prior to the valuation date. Since the benefits for all members of the Legislators' Defined Benefit Fund are fixed and no longer increasing with future service credit or future salary increases, applying the Traditional Unit Credit cost method results in the Actuarial Accrued Liability being equal to the Present Value of Future Benefits (i.e. all benefits are treated as though they are attributable to past service) and the Normal Cost being equal to \$0. This is consistent with the actual status of member benefit accruals.

Gains and losses occurring from census experience different than assumed, assumption changes, and benefit changes are amortized over a five-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 five-year period. However, when the plan is at or above 100 percent 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 payment 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.

Accounting & Financing Reporting: 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.

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. Gains and losses occurring from investment experience different than assumed are amortized into expense over a five-year period. The effect of plan changes on the plan liability are fully recognized in expense in the year in which they occur.

Data Measurement Date: Member census data as of the prior year end was used in the valuation and adjusted, where appropriate, to reflect changes during the current fiscal year. Standard actuarial roll forward techniques were then used to project the liabilities computed as of prior year end to the current year measurement date.

COLA Funding Amount: The COLA may be funded by either direct State appropriations or by allocation of a portion of the lottery proceeds. The COLA Funding Amount 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 a present value factor over which the accumulations will occur.

Asset Valuation Method: Funding uses the Actuarial Value of Assets (AVA), which is equal to a five-year smoothing of gains and losses on the Fair Value of Assets (FVA), subject to a 20 percent corridor. Accordingly, the AVA is limited to no more than 20 percent greater than or 20 percent less than the FVA.

Accounting and financial reporting uses the Fair Value of Assets (FVA) in accordance with GASB Statement No. 67.

Plan Provisions

Please refer to Note 1 of the Notes to the Financial Statements in the Financial Section, the actuarial valuation at <https://www.in.gov/inprs/actuarialvaluation.htm>, or the applicable Indiana Code at <http://iga.in.gov/>.

Legislators' Defined Benefit Fund, continued

Analysis of Financial Experience

(dollars in thousands)	UAAL
Unfunded Actuarial Accrued Liability (UAAL): June 30, 2018	\$435
Normal Cost and Interest, less Expected Contributions	(134)
Expected UAAL: June 30, 2019	301
UAAL (Gain) / Loss	
Actuarial Value of Assets Experience	26
Actuarial Accrued Liabilities Experience ¹	9
Actuarial Assumption & Methodology Changes	—
Total UAAL (Gain) / Loss	35
Unfunded Actuarial Accrued Liability (UAAL): June 30, 2019	\$336

¹ See Accompanying Notes To The Actuarial Schedules, included in the Introduction to Actuarial Information.

Solvency Test ¹

The solvency test compares aggregate actuarial liabilities by various categories with the plan's assets.

(dollars in thousands)	Actuarial Accrued Liabilities			Actuarial Value of Assets	Portion of Actuarial Accrued Liabilities Covered by Assets		
	Actuarial Valuation as of June 30	Retirees and Beneficiaries	Active Member (Employer Financed Portion)		Total Actuarial Accrued Liabilities	Retirees and Beneficiaries	Active Member (Employer Financed Portion)
2019	\$2,747	\$615	\$3,362	\$3,026	100%	45.3%	90.0%
2018	2,783	702	3,485	3,050	100	38.1	87.5
2017	3,013	791	3,804	3,114	100	12.9	81.9
2016	3,207	809	4,016	3,241	100	4.2	80.7
2015	3,213	1,115	4,328	3,336	100	11.1	77.1
2014	3,076	1,097	4,173	3,467	100	35.7	83.1
2013	3,192	1,103	4,295	3,428	100	21.4	79.8
2012	3,031	1,472	4,503	3,377	100	23.5	75.0
2011	3,037	1,584	4,621	3,634	100	37.7	78.6
2010	3,017	1,892	4,909	4,075	100	55.9	83.0

¹ See Accompanying Notes To The Actuarial Schedules, included in the Introduction to Actuarial Information.

Legislators' Defined Benefit Fund, continued

Schedule of Active Members Valuation Data

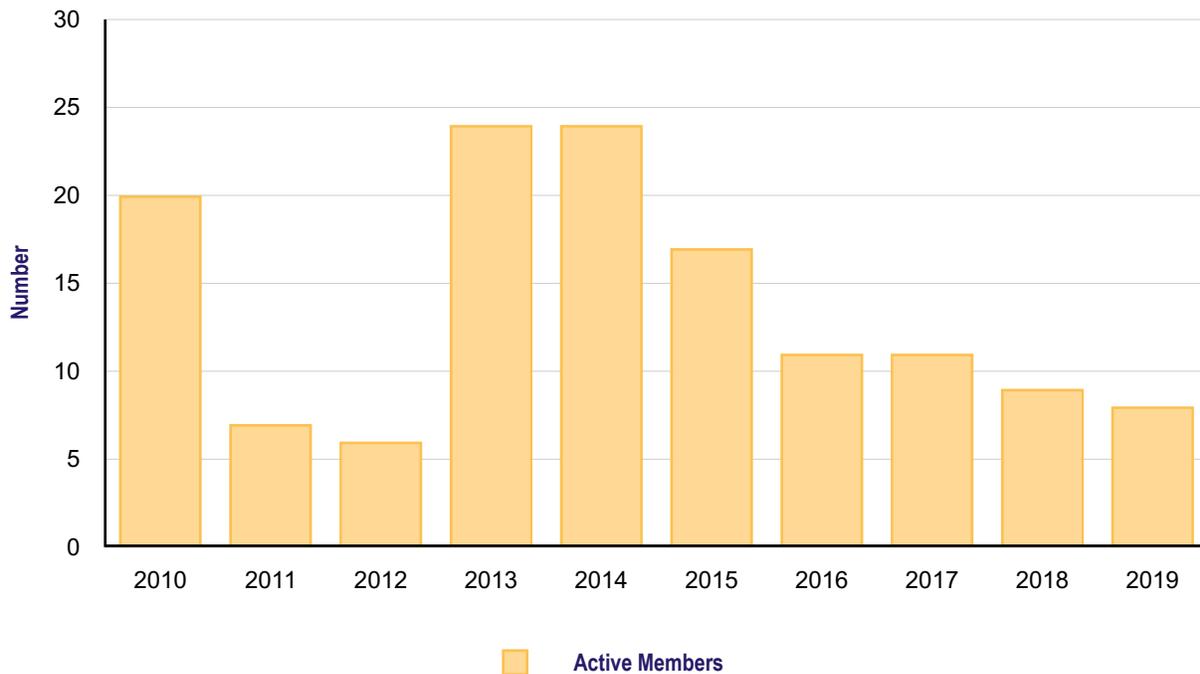
Actuarial Valuation as of June 30 ¹

(dollars in thousands - except annual average pay)

	Active Members	Annual Payroll	Annual Average Pay	Annual Percent Increase / (Decrease) In Average Pay
2019	8	N/A	N/A	N/A
2018	9	N/A	N/A	N/A
2017	11	N/A	N/A	N/A
2016	11	N/A	N/A	N/A
2015	17	N/A	N/A	N/A
2014	24	N/A	N/A	N/A
2013	24	N/A	N/A	N/A
2012	6	N/A	N/A	N/A
2011	7	N/A	N/A	N/A
2010	20	N/A	N/A	N/A

¹ See Accompanying Notes To The Actuarial Schedules, included in the Introduction to Actuarial Information.

Total Number of Active Members Per Year



Legislators' Defined Benefit Fund, continued

Schedule of Retirants and Beneficiaries

Actuarial Valuation as of June 30 ¹

(dollars in thousands -- except average annual benefit)

	Added to Rolls		Removed from Rolls		Rolls – End of Year		Percent Increase / (Decrease) In Total Annual Benefits	Average Annual Benefit	Percent Increase / (Decrease) in Average Annual Benefit
	Number	Annual Benefits	Number	Annual Benefits	Number	Total Annual Benefits			
2019	2	\$7	—	\$—	78	\$364	2.0%	\$4,669	(0.7)%
2018	4	16	—	—	76	357	—	4,704	(5.1)
2017	—	—	2	7	72	357	(1.9)	4,956	0.8
2016	8	23	2	14	74	364	(0.5)	4,919	(8.5)
2015	1	2	1	1	68	366	0.5	5,377	0.3
2014	—	—	—	—	68	364	—	5,362	—
2013	9	41	4	26	68	364	4.3	5,362	(3.1)
2012	2	13	4	20	63	349	(2.0)	5,536	1.1
2011	4	22	—	—	65	356	2.6	5,477	(3.7)
2010	5	9	3	27	61	347	(6.5)	5,685	(9.5)

¹ See Accompanying Notes To The Actuarial Schedules, included in the Introduction to Actuarial Information.

Total Number of Retirants and Beneficiaries Per Year and Average Annual Benefit

