



Cavanaugh Macdonald
CONSULTING, LLC

The experience and dedication you deserve

Indiana Public Retirement System

Judges' Retirement System

Actuarial Valuation as of
June 30, 2020





Cavanaugh Macdonald
CONSULTING, LLC
The experience and dedication you deserve

November 6, 2020

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

Dear Members of the Board:

At your request, we performed an actuarial valuation of the Judges' Retirement System (JRS) as of June 30, 2020, for the purpose of estimating the actuarial required contribution for the plan year ending June 30, 2022. The major findings of the valuation are contained in this report, which reflects the benefit and funding provisions in place on June 30, 2020. There were no changes in the benefit provisions or actuarial methods from last year. However, this report reflects the updated economic and demographic assumptions proposed in the 2014-2019 Experience Study that were adopted by the Board in June 2020. Please refer to that Study (available on the INPRS web site) for complete details.

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

We certify that all costs and liabilities for JRS 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.

We believe the actuarial assumptions used herein are reasonable. The Board has the final decision regarding the appropriateness of the assumptions and adopted them as indicated in Appendix C. Specifically, we presented the proposed assumptions for the 2020 valuations to the Board on February 21, 2020, 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.



We note that as we are preparing this report, the world is in the midst of a pandemic. We have considered available information, but do not believe that there is yet sufficient data to warrant the modification of any of our assumptions. We will continue to monitor the situation and advise the Board in the future of any adjustments that we believe would be appropriate.

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

We prepared a Risk Report for the INPRS Board in August 2019 that contains information which is relevant to JRS and should be considered part of this valuation report. Although the report was prepared using the data, methods, and assumptions of the June 30, 2018 valuation report, it is our professional opinion that the results of the risk report are applicable to the June 30, 2020 valuation report as well.

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

The Comprehensive Annual Financial Report (CAFR) for INPRS contains several exhibits that disclose the actuarial position of the System. This annual report, prepared as of June 30, 2020, provides data and tables that we prepared for use in the following sections of the CAFR:

Financial Section:

- Note 1 - Tables of Plan Membership
- Note 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 INPRS Funded Status (Included in the Board Summary)
- Historical Summary of Actuarial Valuation Results by Retirement Plan
- Summary of Actuarial Assumptions, Methods and Plan Provisions
- Analysis of Financial Experience (Included in the Unfunded Actuarial Accrued Liability Reconciliation)
- Solvency Test
- Schedule of Active Member Valuation Data
- Schedule of Retirants and Beneficiaries

Statistical Section:

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



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

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

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

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

Sincerely,

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

Brent A. Banister, PhD, FSA, EA, FCA, MAAA
Chief Actuary

A handwritten signature in blue ink that reads "Edward J. Koebel".

Edward Koebel, FCA, EA, MAAA
Chief Executive Officer

A handwritten signature in blue ink that reads "Virginia Fritz".

Virginia Fritz, FSA, EA, FCA, MAAA
Senior Actuary



TABLE OF CONTENTS

<u>Sections</u>	<u>Page</u>
Actuarial Certification Letter	
Section 1 – Board Summary.....	1
Section 2 – Scope of the Report.....	7
Section 3 – Assets	8
Table 1 – Development of Market Value of Assets	9
Table 2 – Development of Actuarial Value of Assets	10
Section 4 – Plan Liabilities	11
Table 3 – Actuarial Accrued Liability	12
Table 4 – Solvency Test	13
Table 5 – Reconciliation of Unfunded Actuarial Accrued Liability	14
Table 6 – Actuarial Gain/(Loss).....	15
Table 7 – Gain/(Loss) Analysis by Source.....	16
Table 8 – Projected Benefit Payments.....	17
Section 5 – Employer Contributions	18
Table 9 – Schedule of Amortization Bases	19
Table 10 – Actuarially Determined Contribution Rate	20
Table 11 – Investment Return Sensitivity	21
Section 6 – GASB Information	22
Table 12 – Statement of Fiduciary Net Position under GASB No. 67	23
Table 13 – Statement of Changes in Fiduciary Net Position under GASB No. 67	24
Table 14 – Schedule of Changes in Net Pension Liability under GASB No. 68.....	25
Table 15 – Deferred Outflow of Resources.....	26
Table 16 – Deferred Inflow of Resources	27
Table 17 – Deferred Inflows and Outflows to be Recognized in Pension Expense	28
Table 18 – Pension Expense under GASB No. 68	29
Notes to the Financial Statements under GASB No. 67 and 68	30
Required Supplemental Information under GASB No. 67 and 68	33
 Appendix A – Membership Data	 39
Appendix B – Summary of Plan Provisions	47
Appendix C – Summary of Actuarial Methods and Assumptions	51
Appendix D – Glossary of Actuarial Terms	56



SECTION 1 – BOARD SUMMARY

This report presents the results of the June 30, 2020 actuarial valuation of the Judges’ Retirement System (JRS). The primary purposes of performing this actuarial valuation are to:

- Determine the contribution amount for the plan year ending June 30, 2022 that will be sufficient to meet the funding policy.
- Disclose asset and liability measurements as well as the plan’s funded status on the valuation date.
- Compare actual and expected experience by the Fund during the plan year ending June 30, 2020.
- Analyze and report on trends in plan contributions, assets and liabilities over the past several years.

VALUATION RESULTS

The 2014-2019 Experience Study was presented to the Board in February 2020 and the recommended assumptions and methods were adopted by the Board at their June meeting. Once the Asset-Liability Model work is completed, there may be a need to propose revised economic assumptions, particularly if the work leads to significant changes in the investment portfolio. There were no changes to the plan benefits, actuarial methods, or funding policy between the June 30, 2019 and June 30, 2020 valuations.

The actuarial valuation results provide a “snapshot” view of the plan’s financial condition on June 30, 2020. The plan’s UAAL decreased from \$47.9 million last year to \$27.8 million this year and the funded ratio increased from 91.8% to 95.3%. The primary driver of this change are the assumption changes resulting from the 2014-2019 Experience Study, which caused a \$24.8 million decrease in liabilities. This decrease was slightly offset by a smaller than expected return on the actuarial value of assets, though most of the market value of asset losses were deferred and will be recognized over the next four years.

A summary of the key results from the June 30, 2020 actuarial valuation compared to the June 30, 2019 valuation is shown in the following table. Further detail on the valuation results can be found in the following sections of this Board Summary.

Valuation Results	June 30, 2019	June 30, 2020
Unfunded Actuarial Accrued Liability	\$ 47,898,809	\$ 27,769,036
Funded Ratio (Actuarial Assets)	91.83%	95.31%
Normal Cost Rate	33.79%	29.89%
UAAL Amortization Rate	8.27%	5.33%
Actuarially Determined Contribution Rate	42.06%	35.22%
Member Contribution Rate	(6.00%)	(6.00%)
Required State Contribution Rate	36.06%	29.22%

Numerous components, as examined in the following discussion, contributed to the change in the plan’s assets, liabilities, and actuarial determined contribution rate between June 30, 2019 and June 30, 2020.



SECTION 1 – BOARD SUMMARY

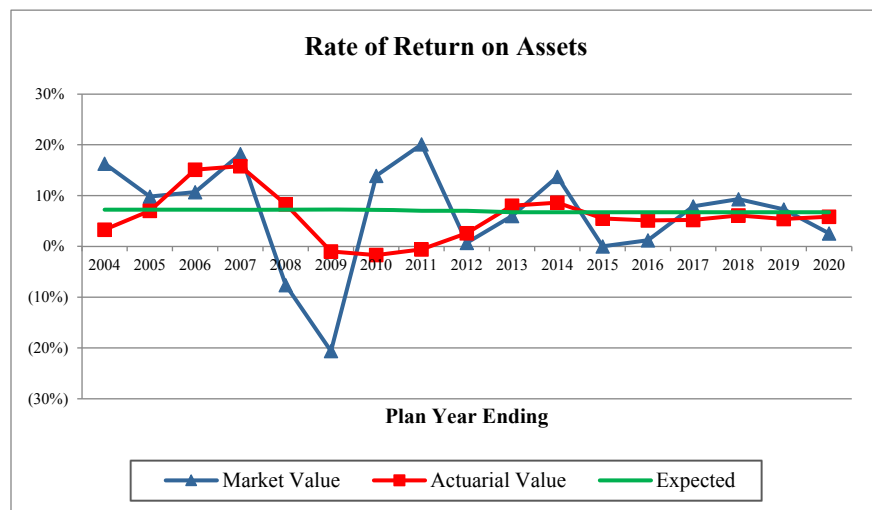
ASSETS

As of June 30, 2020, the plan had net assets of \$554 million, when measured on a market value basis. This was an increase of \$9 million from the prior year.

The market value of assets is not used directly in the calculation of the unfunded actuarial accrued liability and the actuarial determined contribution rate. An asset valuation method, which smoothes the effect of market fluctuations, is applied to determine the value of assets used in the valuation, termed the actuarial value of assets. In this year’s valuation, the actuarial value of assets is \$565 million, an increase of \$26 million from the prior year. The components of change in the asset values are shown in the following table:

	Market Value	Actuarial Value
Net Assets, June 30, 2019	\$ 545,330,816	\$ 538,600,244
- Employer and Member Contributions	+ 21,715,454	+ 21,715,454
- Benefit Payments and Refunds	- 26,836,475	- 26,836,475
- Net Investment Income	+ 13,911,348	+ 31,261,892
Net Assets, June 30, 2020	\$ 554,121,143	\$ 564,741,115
Estimated Rate of Return, Net of Expenses	2.6%	5.8%

The estimated rate of return on the actuarial value of assets was 5.8%, which was lower than the 6.75% investment return assumption applicable for the year ended June 30, 2020. As a result, there was an experience loss on assets of \$4.9 million. The estimated investment return on the market value of assets for FY 2020 of 2.6%, resulted in a change in the deferred investment experience from a net deferred investment gain of \$6.7 million in last year’s valuation to a net deferred investment loss of \$10.6 million in the current valuation. See Table 1 and Table 2 of this report for detailed information on the market and actuarial value of assets



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



SECTION 1 – BOARD SUMMARY

LIABILITIES

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

The unfunded actuarial accrued liability on both a market value and actuarial value of assets basis is shown as of June 30, 2020 in the following table:

	Market Value	Actuarial Value
Actuarial Accrued Liability	\$ 592,510,151	\$ 592,510,151
Value of Assets	554,121,143	564,741,115
Unfunded Actuarial Accrued Liability	\$ 38,389,008	\$ 27,769,036
Funded Ratio	93.52%	95.31%

See Table 3 of this report for the development of the unfunded actuarial accrued liability.

The UAAL (on an actuarial basis) as of June 30, 2020 was \$27.8 million, a decrease of \$20.1 million from last year that was primarily driven by a \$24.8 million decrease in liabilities from revised assumptions. These items are quantified in Table 5 of this report. See Table 6 and Table 7 of this report for a breakdown of the components of experience gains/losses for greater detail.

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

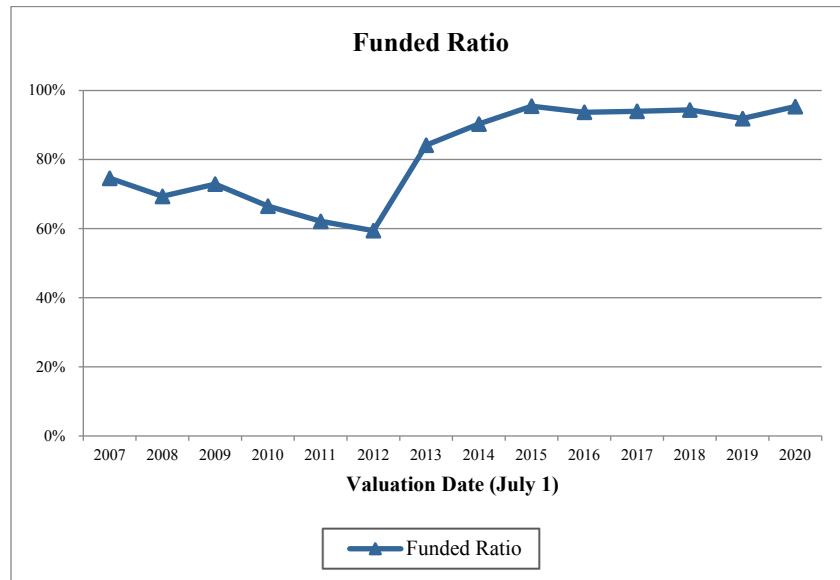
	6/30/2016	6/30/2017	6/30/2018	6/30/2019	6/30/2020
Funded Ratio	93.7%	93.9%	94.4%	91.8%	95.3%
UAAL (in millions)	\$31.7	\$31.7	\$30.9	\$47.9	\$27.8

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



SECTION 1 – BOARD SUMMARY

As the following graph of historical funded ratios shows, JRS has been reasonably well funded for the last several years.



ACTUARIALLY DETERMINED CONTRIBUTION RATE

The State’s funding policy is to contribute an appropriated amount that is estimated at the start of each biennium. The specific amounts in the appropriation bill are guided by the funding requirements of the Plan from an actuarial perspective. A traditional funding strategy includes:

- A “normal cost” for the portion of projected liabilities allocated by the actuarial cost method to service of members during the year following the valuation date.
- An “unfunded actuarial accrued liability contribution” for the excess of the portion of projected liabilities allocated to service to date over the actuarial value of assets.

The UAAL contribution rate is determined by calculating the amortization payment on the UAAL as a level dollar amount over 20 years for each amortization base. Whenever the JRS funded ratio exceeds 100%, all prior amortization bases are eliminated and the negative UAAL (or “surplus”) is amortized over an open 30-year period, as an offset to other Fund costs.

The actuarially determined contribution amount for the Fund includes a normal cost which is theoretically based on all judges’ payroll. However, member contributions are only made on payroll of judges with less than 22 years of service, while the employer contributions are based upon a direct legislative allocation determined from estimated total payroll. **Consequently, the actual funding requirements are adjusted to reflect only the pay upon which member contributions are made.** While this approach may make the presentation of results more complicated and not directly comparable to other plans, it nonetheless produces an amount that will, if contributed, systematically fund the Plan through time.



SECTION 1 – BOARD SUMMARY

See Table 10 of this report for the detailed development of the contribution rates which are summarized in the following table:

Contribution Rates	June 30, 2019	June 30, 2020
Normal Cost Rate	33.79%	29.89%
UAAL Amortization Rate	8.27%	5.33%
Actuarially Determined Contribution Rate	42.06%	35.22%
Member Contribution Rate	(6.00%)	(6.00%)
Required State Contribution Rate	36.06%	29.22%
Estimated Payroll	\$ 57,902,162	\$ 60,109,120
Actuarially Determined Contribution	\$ 20,879,520	\$ 17,563,885

Because the funding of the plan is largely based on payroll, the Actuarially Determined Contribution for FY 2023 can be assumed to be 2.75% (payroll growth assumption) higher than the FY 2022 rate shown above in the June 30, 2020 valuation, or \$18,046,892.

The Actuarially Determined Contribution is noticeably lower this year and is a result of the changes in assumptions. In particular, the retirement rates were adjusted to better align with treating judges as active members even when they have reached 22 years of service. Of course, the true cost of the plan did not change because that is driven by the promised benefits and what actually happens with the members. These new assumptions, however, should lead to a more even funding of the benefits over time.

**SECTION 1 – BOARD SUMMARY****SUMMARY OF PRINCIPAL RESULTS**

	June 30, 2018	June 30, 2019	June 30, 2020
MEMBERSHIP			
Active Members	439	453	458
Retired Members and Beneficiaries	363	373	394
Disabled Members	2	2	2
Inactive Members	68	58	57
Total Members	<u>872</u>	<u>886</u>	<u>911</u>
Projected Annual Salaries of Active Members	\$ 54,470,388	\$ 57,902,162	\$ 60,109,120
Annual Retirement Payments for Retired Members, Disabled Members and Beneficiaries	\$ 22,637,102	\$ 23,793,872	\$ 26,289,294
ASSETS AND LIABILITIES			
Net Assets			
Market Value of Assets (MVA)	\$ 513,952,408	\$ 545,330,816	\$ 554,121,143
Actuarial Value of Assets (AVA)	516,749,872	538,600,244	564,741,115
Actuarial Accrued Liability (AAL)	547,694,452	586,499,053	592,510,151
Unfunded Actuarial Accrued Liability (UAAL): AAL - AVA	\$ 30,944,580	\$ 47,898,809	\$ 27,769,036
Funded Ratios			
AVA / AAL	94.35%	91.83%	95.31%
MVA / AAL	93.84%	92.98%	93.52%
CONTRIBUTIONS			
Normal Cost Rate	33.47%	33.79%	29.89%
UAAL Rate	5.88%	8.27%	5.33%
Total Recommended Contribution Rate	<u>39.35%</u>	<u>42.06%</u>	<u>35.22%</u>
Member Contribution Rate ¹	<u>(6.00%)</u>	<u>(6.00%)</u>	<u>(6.00%)</u>
Actuarially Determined Contribution Rate	33.35%	36.06%	29.22%
Estimated Contribution Amount	\$ 18,165,874	\$ 20,879,520	\$ 17,563,885

¹Only active members with less than 22 years of service make contributions to the plan.



SECTION 2 – SCOPE OF THE REPORT

This report presents the actuarial valuation results of the Judges' Retirement System as of June 30, 2020. This valuation was prepared at the request of the Indiana Public Retirement System.

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

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

This report includes several appendices:

- Appendix A Schedules of valuation data classified by various categories of members.
- Appendix B A summary of the current benefit structure, as determined by the provisions of governing law on June 30, 2020.
- Appendix C A summary of the actuarial methods and assumptions used to estimate liabilities and determine contribution rates.
- Appendix D A glossary of actuarial terms.



SECTION 3 – ASSETS

In many respects, an actuarial valuation can be thought of as an inventory process. The inventory is taken as of the actuarial valuation date, which for this valuation is June 30, 2020. On that date, the assets available for the payment of benefits are appraised. The assets are compared with the liabilities of the plan, which are generally in excess of assets. The actuarial process then leads to a method of determining the contributions needed by members and the employer in the future to balance the plan assets and liabilities.

Market Value of Assets

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

Table 1 summarizes the changes in the market value of assets for the last two years. Table 12 (in the GASB section) provides detail regarding the allocation of investments in the trust.

Actuarial Value of Assets

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

Table 2 shows the development of the actuarial value of assets (AVA) as of the valuation date.



TABLE 1
DEVELOPMENT OF MARKET VALUE OF ASSETS

	June 30, 2019	June 30, 2020
1. Market Value of Assets, Beginning of Year	\$ 513,952,408	\$ 545,330,816
2. Receipts		
a. Member (Includes Purchased Service) ¹	\$ 3,475,575	\$ 3,548,975
b. Employer	16,030,805	18,166,479
c. Total	\$ 19,506,380	\$ 21,715,454
3. Expenditures		
a. Benefit Payments	\$ 25,236,546	\$ 26,798,518
b. Refund of Contributions	154,581	37,957
c. Administrative Expense	107,806	109,105
d. Total	\$ 25,498,933	\$ 26,945,580
4. Investment Return		
a. Investment Income	\$ 37,329,496	\$ 13,990,592
b. Securities Lending Income	41,465	29,861
c. Total Investment Return	\$ 37,370,961	\$ 14,020,453
5. Market Value of Assets, End of Year: (1) + (2c) - (3d) + (4c)	\$ 545,330,816	\$ 554,121,143
6. Estimated Rate of Return, Net of Expenses ²	7.29%	2.56%

¹ Includes \$92,783 of member service purchases during fiscal year 2019 and \$57,371 of member service purchases during fiscal year 2020.

² Based on individual fund experience. Assumes cash flows occur at mid-year.



TABLE 2

DEVELOPMENT OF ACTUARIAL VALUE OF ASSETS

		For Plan Year Ending June 30, 2020		
1. Market Value as of June 30, 2019				\$ 545,330,816
2. Receipts				\$ 21,715,454
3. Expenditures, Net of Administrative Expenses				\$ (26,836,475)
4. Expected Return on Assets ¹				\$ 36,636,996
5. Expected Market Value as of June 30, 2020: (1) + (2) + (3) + (4)				\$ 576,846,791
6. Actual Market Value as of June 30, 2020				\$ 554,121,143
7. Year End 2020 Asset Gain/(Loss): (6) - (5)				\$ (22,725,648)
8. Deferred Investment Gains and Losses				
	Year Ended June 30:	Gain/(Loss)	Factor	Deferred Amount
a.	2017	\$ 5,312,387	20%	\$ 1,062,477
b.	2018	12,090,206	40%	4,836,082
c.	2019	2,769,978	60%	1,661,987
d.	2020	(22,725,648)	80%	(18,180,518)
e.	Total			\$ (10,619,972)
9. Initial Actuarial Value as of June 30, 2020: (6) - (8e)				\$ 564,741,115
10. Constraining Values				
a. 80% of Market Value: (6) x 0.8				\$ 443,296,914
b. 120% of Market Value: (6) x 1.2				\$ 664,945,372
11. Actuarial Value as of June 30, 2020				\$ 564,741,115
12. Actuarial Rate of Return, Net of Expenses ²				5.83%
13. Actuarial Value of Assets as a Percent of Market Value: (11) / (6)				101.9%

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



SECTION 4 – PLAN LIABILITIES

In the previous section, an actuarial valuation was compared with an inventory process, and an analysis was given of the inventory of assets of the Judges' Retirement System as of the valuation date, June 30, 2020. In this section, the discussion will focus on the commitments (future benefit payments) of the plan, which are referred to as its liabilities.

The liability calculations for the June 30, 2020 Judges' Retirement System valuation are based on census data collected as of June 30, 2019. Standard actuarial techniques are used to adjust these results from June 30, 2019 to June 30, 2020. While these roll-forward techniques are based on the expectation that all actuarial assumptions are met during the intervening year, there will, of course, be many of the assumptions that are not met exactly. In general, this does not materially affect the resulting calculations or conclusions in this report. Should there be a year in which events, such as plan changes, occur that would affect the results, adjustments in the roll-forward methods would be made to appropriately reflect the events.

All liabilities reflect the benefit provisions and actuarial assumptions in place as of June 30, 2020.

Actuarial Accrued Liability

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

- (1) that which is attributable to the past and
- (2) that which is attributable to the future.

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

Table 3 contains the calculation of actuarial accrued liability for the plan. The Entry Age Normal actuarial cost method is used to develop the actuarial accrued liability.



TABLE 3
ACTUARIAL ACCRUED LIABILITY

	As of June 30, 2020
1. Actuarial Accrued Liability	
a. Member Contribution Balances	\$ 41,522,756
b. Active & Inactive Members	251,841,539
c. In-pay Members	<u>299,145,856</u>
d. Total	592,510,151
2. Actuarial Value of Assets	564,741,115
3. Unfunded Actuarial Accrued Liability: (1d) – (2)	27,769,036
4. Funded Ratio: (2)/(1d)	95.31%



SECTION 4 – PLAN LIABILITIES

**TABLE 4
SOLVENCY TEST**

Actuarial Valuation as of June 30	Actuarial Accrued Liabilities (AAL)				Actuarial Value of Assets	Portion of AAL Covered by Assets			
	Active Member Contributions	Retirees and Beneficiaries	Active Member (Employer Financed Portion)	Total Actuarial Accrued Liabilities		Active Member Contributions	Retirees and Beneficiaries	Active Member (Employer Financed Portion)	Total Actuarial Accrued Liabilities
2020	\$41,523	\$299,146	\$251,841	\$592,510	\$564,741	100.0%	100.0%	89.0%	95.3%
2019	38,165	269,886	278,448	586,499	538,600	100.0	100.0	82.8	91.8
2018	38,541	258,255	250,898	547,694	516,750	100.0	100.0	87.7	94.4
2017	36,385	245,177	242,173	523,735	492,013	100.0	100.0	86.9	93.9
2016	34,804	244,484	221,838	501,126	469,378	100.0	100.0	85.7	93.7
2015	32,383	210,020	226,542	468,945	447,514	100.0	100.0	90.5	95.4
2014	32,060	216,044	216,751	464,855	419,568	100.0	100.0	79.1	90.3
2013	29,060	224,132	199,918	453,110	381,240	100.0	100.0	64.1	84.1
2012	27,699	205,341	204,814	437,854	260,096	100.0	100.0	13.2	59.4
2011	24,359	198,797	177,118	400,274	248,623	100.0	100.0	14.4	62.1

Note: All of the dollar amounts are in thousands of dollars.



TABLE 5

RECONCILIATION OF UNFUNDED ACTUARIAL ACCRUED LIABILITY

	For Year Ending June 30, 2020
1. Unfunded Actuarial Accrued Liability as of June 30, 2019	\$ 47,898,809
2. Normal Cost	19,566,868
3. Actuarially Determined Contribution	(24,355,301)
4. Interest	<u>2,909,951</u>
5. Expected Unfunded Actuarial Accrued Liability as of June 30, 2020	\$ 46,020,327
6. Actuarial Value of Asset Changes	
a. Investment Experience (Gain)/Loss	\$ 4,920,790
b. Contributions (Above)/Below the Actuarially Determined Contribution and Other (Gain)/Loss	\$ 3,610,324
7. Actuarial Accrued Liability Changes	
a. Actuarial Accrued Liability Experience (Gain)/Loss	\$ (1,968,123)
b. Additional Liability Due to Benefit Changes	0
c. Additional Liability Due to Assumption Changes	<u>(24,814,282)</u>
8. Total Experience (Gain)/Loss	\$ (18,251,291)
9. Unfunded Actuarial Accrued Liability as of June 30, 2020: (5) + (8)	\$ 27,769,036



TABLE 6
ACTUARIAL GAIN/(LOSS)

Liabilities		
1. Actuarial Accrued Liability as of June 30, 2019	\$	586,499,053
2. Normal Cost for Plan Year Ending June 30, 2020		19,566,868
3. Benefit Payments During Plan Year ¹		(26,836,394)
4. Service Purchases (employee and employer)		57,371
5. Interest at 6.75%		40,005,658
6. Change Due to Benefit Changes		0
7. Change Due to Assumption Changes		(24,814,282)
8. Expected Actuarial Accrued Liability as of June 30, 2020	\$	594,478,274
9. Actuarial Accrued Liability as of June 30, 2020	\$	592,510,151
Assets		
10. Actuarial Value of Assets as of June 30, 2019	\$	538,600,244
11. Receipts During Plan Year		21,715,454
12. Expenditures, Excluding Expenses, During Plan Year		(26,836,475)
13. Interest at 6.75%		36,182,682
14. Expected Actuarial Value of Assets as of June 30, 2020	\$	569,661,905
15. Actuarial Value of Assets as of June 30, 2020	\$	564,741,115
Experience Gain / (Loss)		
16. Liability Actuarial Experience Gain/(Loss): (8) - (9)	\$	1,968,123
17. Asset Actuarial Experience Gain/(Loss): (15) - (14)		(4,920,790)
18. Total Actuarial Experience Gain/(Loss): (16) + (17)	\$	(2,952,667)

¹ Does not include miscellaneous expenses or benefit overpayments.



TABLE 7
EXPERIENCE GAIN/(LOSS) ANALYSIS BY SOURCE

Liability Sources (in thousands)		Gain/(Loss)
Retirement	\$	6,438
Termination		(1,252)
Disability		1,733
Mortality		(758)
Salary		(1,513)
New Entrants/Rehires		(2,372)
Miscellaneous/COLA		(308)
Total Liability Experience Gain/(Loss)	\$	1,968
as a % of AAL		0.3%
Asset Experience Gain/(Loss)	\$	(4,921)
Total Actuarial Experience Gain/(Loss)	\$	(2,953)



TABLE 8
PROJECTED BENEFIT PAYMENTS

<u>Plan Year Ending June 30</u>	<u>Benefit Amount</u>
2021	\$ 32,352,165
2022	34,772,268
2023	36,900,080
2024	39,028,906
2025	41,024,046
2026	43,130,752
2027	44,892,685
2028	46,665,893
2029	48,444,547
2030	50,102,585
2031	51,666,618
2032	53,352,043
2033	54,856,540
2034	56,533,529
2035	57,881,130
2036	59,095,417
2037	60,310,253
2038	61,369,150
2039	61,994,125
2040	62,532,279
2041	62,650,683
2042	62,493,176
2043	62,200,610
2044	61,728,501
2045	60,957,567
2046	60,112,101
2047	59,130,689
2048	57,828,396
2049	56,416,102
2050	54,875,342

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



SECTION 5 – EMPLOYER CONTRIBUTIONS

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

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

Description of Contribution Components

The Entry Age Normal (EAN) actuarial cost method is used for the valuation. Under that method, the normal cost for each year from entry age to assumed exit age is a constant percentage of the member's year by year projected compensation. The portion of the present value of future benefits not provided by the present value of future normal costs is the actuarial accrued liability. The unfunded actuarial accrued liability/(surplus) represents the difference between the actuarial accrued liability and the actuarial value of assets as of the valuation date. The unfunded actuarial accrued liability is calculated each year and reflects experience gains and losses.

The INPRS Board of Trustees has established a funding policy of requesting appropriations from the State in an amount equal to the actuarially determined contribution. The actuarially determined contribution amount in the June 30, 2020 JRS actuarial valuation will be used for contributions in the plan year ending June 30, 2022. It is anticipated that this amount will be used by the Board in determining the appropriations to request from the State for the next biennium, which includes fiscal years 2022 and 2023.

Contribution Summary

In Table 9, the amortization payment related to the unfunded actuarial accrued liability/(surplus), as of June 30, 2020, is developed. Table 10 develops the actuarial determined contribution rate for the Plan. The contribution rates shown in this report are based on the actuarial assumptions and cost methods described in Appendix C. Additionally, in Table 11 the contribution rates under alternative discount rates are provided to illustrate the sensitivity of the contribution requirements to the selection of the investment return assumption.

**SECTION 5 – EMPLOYER CONTRIBUTIONS****TABLE 9****SCHEDULE OF AMORTIZATION BASES**

Amortization Bases	Original Amount ¹	June 30, 2020 Remaining Payments	Date of Last Payment	Outstanding Balance as of June 30, 2020	Annual Contribution
2009 UAAL Base	40,281,829	16	7/1/2036	31,519,817	3,074,056
2010 UAAL Base	15,151,518	20	7/1/2040	12,860,856	1,115,211
2011 UAAL Base	14,155,565	21	7/1/2041	12,297,620	1,041,905
2012 UAAL Base	12,754,451	22	7/1/2042	11,318,553	938,777
2013 UAAL Base	(6,981,734)	23	7/1/2043	(6,317,841)	(513,883)
2014 UAAL Base	(25,396,685)	24	7/1/2044	(23,397,841)	(1,869,295)
2015 UAAL Base	(22,870,686)	25	7/1/2045	(21,421,684)	(1,683,372)
2016 UAAL Base	11,116,546	16	7/1/2036	9,883,907	963,955
2017 UAAL Base	1,104,859	17	7/1/2037	1,016,040	95,806
2018 UAAL Base	458,415	18	7/1/2038	434,657	39,751
2019 UAAL Base	18,284,577	19	7/1/2039	17,826,243	1,585,520
2020 UAAL Base	(18,251,291)	20	7/1/2040	<u>(18,251,291)</u>	<u>(1,582,634)</u>
Total				\$ 27,769,036	\$ 3,205,797
1. Total UAAL Amortization Payments					\$ 3,205,797
2. Projected Payroll for FY 2021, Under 22 Years of Service					\$ 60,109,120
3. UAAL Amortization Payment Rate					5.33%
4. Remaining Amortization Period in Years (Weighted) ²					9.8

¹ The original amounts from 2017 to 2013 were provided by the prior actuary. Amounts prior to that were estimated by INPRS.

² The weighted average remaining UAAL amortization period is calculated by weighting the remaining amortization period of each base by the amortization amount of each base.



SECTION 5 – EMPLOYER CONTRIBUTIONS

TABLE 10

ACTUARIALLY DETERMINED CONTRIBUTION RATE

1. Projected Covered Payroll for FY 2021	\$ 60,109,120
2. Normal Cost as of June 30, 2019	
a. Dollar Amount	\$ 17,969,443
b. Percent of Total Pay	26.37%
c. Percent of Covered Pay ¹	29.89%
3. Amortization of UAAL as of June 30, 2019	
a. Dollar Amount	\$ 3,205,797
b. Percent of Covered Pay ¹	5.33%
4. Total Recommended Contribution Rate: (2c) + (3b)	35.22%
5. Expected Employee Contributions	
a. Dollar Amount	\$ 3,606,547
b. Percent of Covered Pay ¹	6.00%
6. Actuarially Determined Contribution Rate: (4) - (5)	29.22%
7. Estimated Actuarially Determined Contribution Amount ² : (1) x (6)	\$ 17,563,885
8. Expected Appropriations and Court Fees for FY 2021	\$ 18,620,626
9. Expected Percentage of Actuarially Determined Contribution Contributed	106.02%

¹ Active members with less than 22 years of service make 6% contributions.

² Used to assist with the determination of the FY 2022 and FY 2023 approved funding amounts.



SECTION 5 – EMPLOYER CONTRIBUTIONS

**TABLE 11
INVESTMENT RETURN SENSITIVITY**

	1.00% Decrease: (5.75%)	0.75% Decrease: (6.00%)	0.50% Decrease: (6.25%)	0.25% Decrease: (6.50%)	Current Assumption: (6.75%)
Funded Status					
Actuarial Accrued Liability	\$660,918,065	\$642,667,295	\$625,210,634	\$608,505,033	\$592,510,151
Actuarial Value of Assets	<u>564,741,115</u>	<u>564,741,115</u>	<u>564,741,115</u>	<u>564,741,115</u>	<u>564,741,115</u>
Unfunded Actuarial Accrued Liability	\$96,176,950	\$77,926,180	\$60,469,519	\$43,763,918	\$27,769,036
Funded Ratio	85.4%	87.9%	90.3%	92.8%	95.3%
Actuarially Determined Contribution Amount					
Normal Cost	\$22,163,429	\$21,014,066	\$19,935,114	\$18,921,732	\$17,969,443
UAAL Amortization	8,600,197	7,232,469	5,877,887	4,535,853	3,205,797
Expected Member Contributions	<u>(3,606,547)</u>	<u>(3,606,547)</u>	<u>(3,606,547)</u>	<u>(3,606,547)</u>	<u>(3,606,547)</u>
Actuarially Determined Contribution Amount	\$27,157,078	\$24,639,988	\$22,206,454	\$19,851,037	\$17,568,693
Actuarially Determined Contribution Rate	45.18%	40.99%	36.94%	33.03%	29.22%
	0.25% Increase: (7.00%)	0.50% Increase: (7.25%)	0.75% Increase: (7.50%)	1.00% Increase: (7.75%)	1.25% Increase: (8.00%)
Funded Status					
Actuarial Accrued Liability	\$577,188,159	\$562,503,576	\$548,423,092	\$534,915,430	\$521,951,204
Actuarial Value of Assets	<u>564,741,115</u>	<u>564,741,115</u>	<u>564,741,115</u>	<u>564,741,115</u>	<u>564,741,115</u>
Unfunded Actuarial Accrued Liability	\$12,447,044	(\$2,237,539)	(\$16,318,023)	(\$29,825,685)	(\$42,789,911)
Funded Ratio	97.8%	100.4%	103.0%	105.6%	108.2%
Actuarially Determined Contribution Amount					
Normal Cost	\$17,074,106	\$16,231,887	\$15,439,235	\$14,692,860	\$13,989,714
UAAL Amortization	1,887,189	(172,368)	(1,285,272)	(2,401,021)	(3,519,369)
Expected Member Contributions	<u>(3,606,547)</u>	<u>(3,606,547)</u>	<u>(3,606,547)</u>	<u>(3,606,547)</u>	<u>(3,606,547)</u>
Actuarially Determined Contribution Amount	\$15,354,748	\$12,452,972	\$10,547,416	\$8,685,292	\$6,863,798
Actuarially Determined Contribution Rate	25.54%	20.72%	17.55%	14.45%	11.42%



SECTION 6 – GASB INFORMATION

GASB NO. 67 AND GASB NO. 68

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

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

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

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



TABLE 12

STATEMENT OF FIDUCIARY NET POSITION

	June 30, 2020
1. Assets	
a. Cash	\$ 248
b. Receivables	
i. Contributions and Miscellaneous Receivables	\$ 3,605,752
ii. Investments Receivable	15,192,639
iii. Foreign Exchange Contracts Receivable	129,104,630
iv. Interest and Dividends	1,267,690
v. Receivables Due From Other Funds	0
vi. Total Receivables	\$ 149,170,711
c. Investments	
i. Short-Term Investments	\$ 0
ii. Pooled Repurchase Agreements	127,137
iii. Pooled Short-Term Investments	25,002,929
iv. Pooled Fixed Income	190,304,897
v. Pooled Equity	122,127,814
vi. Pooled Alternative Investments	237,562,666
vii. Pooled Derivatives	252,567
viii. Pooled Investments	0
ix. Securities Lending Collateral	2,848,999
x. Total Investments	\$ 578,227,009
d. Net Capital Assets	0
e. Other Assets	0
f. Total Assets: a + b(vi) + c(x) + d + e	\$ 727,397,968
2. Liabilities	
a. Administrative Payable	\$ 2,273
b. Retirement Benefits Payable	0
c. Investments Payable	34,051,272
d. Foreign Exchange Contracts Payable	129,406,646
e. Securities Lending Obligations	2,848,999
f. Securities Sold Under Agreement to Repurchase	6,958,363
g. Due To Other Funds	9,272
h. Due to Other Governments	0
i. Total Liabilities: a + b + c + d + e + f + g + h	\$ 173,276,825
3. Fiduciary Net Position Restricted for Pensions: (1)(f) - (2)(i)	\$ 554,121,143



TABLE 13

STATEMENT OF CHANGES IN FIDUCIARY NET POSITION

		For Fiscal Year Ending June 30, 2020
1. Fiduciary Net Position as of June 30, 2019		\$ 545,330,816
2. Additions		
a. Contributions		
i. Member Contributions		3,491,604
ii. Employer Contributions		18,166,479
iii. Service Purchases (Employer and Member) ¹		57,371
iv. Non-Employer Contributing Entity Contributions		0
v. Total Contributions		<u>\$ 21,715,454</u>
b. Investment Income/(Loss)		
i. Net Appreciation/(Depreciation)		\$ 13,040,115
ii. Net Interest and Dividend Income		4,569,980
iii. Securities Lending Income		38,686
iv. Other Net Investment Income		62,178
v. Investment Management Expenses		(3,588,893)
vi. Direct Investment Expenses		(92,788)
vii. Securities Lending Expenses		(8,825)
viii. Total Investment Income/(Loss)		<u>\$ 14,020,453</u>
c. Other Additions		
i. Member Reassignments		0
ii. Miscellaneous Receipts		0
iii. Total Other Additions		<u>\$ 0</u>
d. Total Revenue (Additions): a(v) + b(viii) + c(iii)		<u>\$ 35,735,907</u>
3. Deductions		
a. Pension, Survivor and Disability Benefits		\$ 26,798,518
b. Death and Funeral Benefits		0
c. Distributions of Contributions and Interest		37,957
d. Administrative Expenses		109,105
e. Member Reassignments		0
f. Miscellaneous Expenses		0
g. Total Expenses (Deductions)		<u>\$ 26,945,580</u>
4. Net Increase (Decrease) in Fiduciary Net Position: (2)(d) - (3)(g)		\$ 8,790,327
5. Fiduciary Net Position as of June 30, 2020: (1) + (4)		\$ 554,121,143

¹ Service purchases paid by employer of \$0 and employee of \$57,371.



TABLE 14
SCHEDULE OF CHANGES IN NET PENSION LIABILITY

	For Fiscal Year Ending June 30, 2020		
	Total Pension Liability	Plan Fiduciary Net Position	Net Pension Liability
	(a)	(b)	(a) – (b)
1. Balance at June 30, 2019	\$ 586,499,053	\$ 545,330,816	\$ 41,168,237
2. Changes for the Year:			
Service Cost (SC) ¹	19,566,868		19,566,868
Interest Cost	40,005,655		40,005,655
Experience (Gains)/Losses	(1,968,039)		(1,968,039)
Assumption Changes	(24,814,282)		(24,814,282)
Plan Amendments	0		0
Benefit Payments ²	(26,836,475)	(26,836,475)	0
Service Purchases			
Employer Contributions	0	0	0
Employee Contributions	57,371	57,371	0
Member Reassignments	0	0	0
Employer Contributions ³		18,166,479	(18,166,479)
Non-employer Contributions		0	0
Employee Contributions		3,491,604	(3,491,604)
Net Investment Income		14,020,453	(14,020,453)
Administrative Expenses		(109,105)	109,105
Other		0	0
Net Changes	\$ 6,011,098	\$ 8,790,327	\$ (2,779,229)
3. Balance at June 30, 2020	\$ 592,510,151	\$ 554,121,143	\$ 38,389,008

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

² Includes special death benefits of \$0 and refund of member contributions of \$37,957.

³ Includes \$11,013,290 of state appropriations to the fund.



TABLE 15
DEFERRED OUTFLOWS OF RESOURCES

	June 30, 2019	Remaining Period	Recognition	June 30, 2020
1. Liability Experience				
June 30, 2020 Loss	\$ 0	4.27	\$ 0	\$ 0
June 30, 2019 Loss	5,989,419	2.36	2,537,890	3,451,529
June 30, 2018 Loss	0	1.38	0	0
June 30, 2017 Loss	0	0.50	0	0
June 30, 2016 Loss	0	0.00	0	0
June 30, 2015 Loss	0	0.00	0	0
June 30, 2014 Loss	0	0.00	0	0
2. Assumption Changes				
June 30, 2020 Loss	\$ 0	4.27	\$ 0	\$ 0
June 30, 2019 Loss	0	2.36	0	0
June 30, 2018 Loss	0	1.38	0	0
June 30, 2017 Loss	0	0.50	0	0
June 30, 2016 Loss	0	0.00	0	0
June 30, 2015 Loss	0	0.00	0	0
June 30, 2014 Loss	0	0.00	0	0
3. Investment Experience				
June 30, 2020 Loss	\$ 22,612,860	5.00	\$ 4,522,572	\$ 18,090,288
June 30, 2019 Loss	0	4.00	0	0
June 30, 2018 Loss	0	3.00	0	0
June 30, 2017 Loss	0	2.00	0	0
June 30, 2016 Loss	4,834,801	1.00	4,834,801	0
Total Outflows:				
(1)+(2)+(3)	\$ 33,437,080		\$ 11,895,263	\$ 21,541,817

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

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



TABLE 16
DEFERRED INFLOWS OF RESOURCES

	June 30, 2019	Remaining Period	Recognition	June 30, 2020
1. Liability Experience				
June 30, 2020 Gain	\$ 1,968,039	4.27	\$ 460,900	\$ 1,507,139
June 30, 2019 Gain	0	2.36	0	0
June 30, 2018 Gain	1,261,698	1.38	914,276	347,422
June 30, 2017 Gain	443,787	0.50	443,787	0
June 30, 2016 Gain	0	0.00	0	0
June 30, 2015 Gain	0	0.00	0	0
June 30, 2014 Gain	0	0.00	0	0
2. Assumption Changes				
June 30, 2020 Gain	\$ 24,814,282	4.27	\$ 5,811,308	\$ 19,002,974
June 30, 2019 Gain	0	2.36	0	0
June 30, 2018 Gain	0	1.38	0	0
June 30, 2017 Gain	173,274	0.50	173,274	0
June 30, 2016 Gain	0	0.00	0	0
June 30, 2015 Gain	0	0.00	0	0
June 30, 2014 Gain	0	0.00	0	0
3. Investment Experience				
June 30, 2020 Gain	\$ 0	5.00	\$ 0	\$ 0
June 30, 2019 Gain	2,305,137	4.00	576,285	1,728,852
June 30, 2018 Gain	7,328,008	3.00	2,442,670	4,885,338
June 30, 2017 Gain	2,174,420	2.00	1,087,212	1,087,208
June 30, 2016 Gain	0	1.00	0	0
Total Inflows:				
(1)+(2)+(3)	\$ 40,468,645		\$ 11,909,712	\$ 28,558,933

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

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



TABLE 17

DEFERRED INFLOWS / OUTFLOWS TO BE RECOGNIZED IN PENSION EXPENSE

Fiscal Year Ending June 30	Deferred Outflows	Deferred Inflows	Net Deferred Outflows/(Inflows)
Current Year:			
2020	\$ 11,895,263	\$ 11,909,712	\$ (14,449)
Future Years:			
2021	\$ 7,060,462	\$ 10,725,793	\$ (3,665,331)
2022	5,436,211	9,291,161	(3,854,950)
2023	4,522,572	6,848,490	(2,325,918)
2024	4,522,572	1,693,489	2,829,083
2025	0	0	0
Thereafter	0	0	0



TABLE 18
PENSION EXPENSE UNDER GASB NO. 68

		For Fiscal Year Ending June 30, 2020
1. Service Cost, beginning of year	\$	19,566,868
2. Interest Cost, including interest on service cost		40,005,655
3. Member Contributions ¹		(3,491,604)
4. Administrative Expenses		109,105
5. Expected Return on Assets ²		(36,633,313)
6. Plan Amendments		0
7. Recognition of Deferred Inflows / Outflows of Resources Related to:		
a. Liability Experience (Gains) / Losses	718,927	
b. Assumption Change (Gains) / Losses	(5,984,582)	
c. Investment Experience (Gains) / Losses	<u>5,251,206</u>	
d. Total: (7a)+(7b)+(7c)		(14,449)
8. Miscellaneous (Income) / Expense		0
9. Total Collective Pension Expense: (1)+(2)+(3)+(4)+(5)+(6)+(7d)+(8)		19,542,262
10. Employer Service Purchases		0
Pension Expense / (Income): (9) + (10)	\$	19,542,262

¹ Excludes member paid service purchases of \$57,371.

² Cash flows assumed to occur mid-year.



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

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

Actuarial Assumptions and Inputs

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

Type of Plan	The Judges' Retirement System is a single-employer plan for GASB accounting purposes.
Measurement Date	June 30, 2020
Valuation Date	
Assets:	June 30, 2020
Liabilities:	June 30, 2019 – The TPL as of June 30, 2020 was determined based on an actuarial valuation prepared as of June 30, 2019 rolled forward one year to June 30, 2020, using the following key actuarial assumptions and other inputs, such as benefit accruals and actual benefit payments during that time period.
Inflation	2.25%
Future Salary Increases	2.75% per year beginning July 1, 2021. Actual salary increases on July 1, 2019 (2.7%) and July 1, 2020 (3.3%) are reflected in the in the liability valuation at June 30, 2019.
Cost-of-Living Increases	As of June 30, 2020: 2.75% compounded annually, beginning July 1, 2021. Actual COLA increases at July 1, 2019 (2.7%) and July 1, 2020 (3.3%) are reflected in the valuation. As of June 30, 2019: 2.5% compounded annually, beginning July 1, 2020. Actual COLA increases at July 1, 2018 (2.1%) and July 1, 2019 (2.7%) are reflected in the valuation.



SECTION 6 – GASB INFORMATION

Mortality Assumption	<p>Pub-2010 Public Retirement Plans Mortality Tables (Amount-Weighted) with a fully generational projection of mortality improvements using SOA Scale MP-2019.</p> <p><i>Healthy Employees</i> – General Employee table with a 1 year setback for males and a 1 year setback for females.</p> <p><i>Retirees</i> – General Retiree table with a 1 year setback for males and a 1 year setback for females.</p> <p><i>Beneficiaries</i> – Contingent Survivor table with no set forward for males and a 2 year set forward for females.</p> <p><i>Disableds</i> – General Disabled table with a 140% load.</p>
Experience Study	<p>The most recent comprehensive experience study, based on member experience between June 30, 2014 and June 30, 2019, was completed in February 2020. The demographic assumptions were approved by the Board in June 2020 and were updated as appropriate based on the results of the study for this June 30, 2020 actuarial valuation.</p>
Discount Rate	<p>6.75%, net of investment expenses</p> <p>The discount rate is equal to the expected long-term rate of return on plan investments, net of investment expense and including price inflation. There was no change in the discount rate from the prior measurement date.</p> <p>The INPRS Board of Trustees has established a funding policy of requesting appropriations from the State in an amount equal to the actuarially determined contribution, which is based on the assumptions and methods selected by the Board for the annual actuarial valuations and projected covered member payroll. The June 30, 2020 actuarial valuation assumes a long-term rate of return on assets of 6.75%, a 20-year level dollar closed method for amortizing the future layers of unfunded actuarial accrued liability (30 years for amortization layers established prior to June 30, 2016), and a 5-year smoothing method for recognizing investment gains and losses in the actuarial value of assets.</p>



SECTION 6 – GASB INFORMATION

Discount Rate Sensitivity

	1% Decrease 5.75%	Current Rate 6.75%	1% Increase 7.75%
Net Pension Liability	\$106,796,922	\$38,389,008	(\$19,205,713)

Classes of Plan Members Covered

The June 30, 2020 valuation was performed using census data provided by INPRS as of June 30, 2019. Standard actuarial techniques were used to roll forward the total pension liability computed as of June 30, 2019 to the June 30, 2020 measurement date using actual benefit payments during that period of time.

Number as of June 30, 2019	
1. Currently Receiving Benefits:	
Retired Members, Disabled Members, and Beneficiaries	396
2. Inactive Members Entitled To But Not Yet Receiving Benefits	24
3. Inactive Non-vested Members Entitled to a Refund of Member Contributions	33
4. Active Members	458
Total Covered Plan Members: (1)+(2)+(3)+(4)	911

Money-Weighted Rate of Return

The money-weighted rate of return equals investment performance, net of pension plan investment expense, adjusted for the changing amounts actually invested. For the fiscal year ending June 30, 2020, the money-weighted return on the plan assets is 2.6%.

Components of Net Pension Liability

As of June 30, 2020	
Total Pension Liability	\$ 592,510,151
Fiduciary Net Position	554,121,143
Net Pension Liability	\$ 38,389,008
Ratio of Fiduciary Net Position to Total Pension Liability	93.52%



SECTION 6 – GASB INFORMATION

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

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

Fiscal Year Ending June 30	2016	2017	2018	2019	2020
Total Pension Liability					
Total Pension Liability - beginning	\$468,944,751	\$501,125,713	\$523,735,050	\$547,694,452	\$586,499,053
Service Cost (SC), beginning-of-year	13,869,891	14,762,102	14,885,621	18,229,583	19,566,868
Interest Cost, including interest on SC	31,889,331	34,082,760	35,567,044	37,346,053	40,005,655
Experience (Gains)/Losses	7,181,935	(3,106,524)	(3,090,250)	8,527,309	(1,968,039)
Assumption Changes	0	(1,212,930)	0	0	(24,814,282)
Plan Amendments	0	0	0	0	0
Actual Benefit Payments	(20,921,745)	(22,099,240)	(23,622,253)	(25,391,127)	(26,836,475)
Member Reassignments	0	0	0	0	0
Service Purchases	161,550	183,169	219,240	92,783	57,371
Net Change in Total Pension Liability	32,180,962	22,609,337	23,959,402	38,804,601	6,011,098
(a) Total Pension Liability - ending	\$501,125,713	\$523,735,050	\$547,694,452	\$586,499,053	\$592,510,151
Plan Fiduciary Net Position					
Plan Fiduciary Net Position – beginning	\$437,352,498	\$441,790,144	\$475,054,556	\$513,952,408	\$545,330,816
Contributions – employer	16,946,301	16,823,600	15,117,494	16,030,805	18,166,479
Contributions – non-employer	0	0	0	0	0
Contributions – member	3,239,092	3,467,843	3,417,904	3,475,575	3,548,975
Net investment income	5,322,425	35,195,878	44,103,829	37,370,961	14,020,453
Actual benefit payments	(20,921,745)	(22,099,240)	(23,622,253)	(25,391,127)	(26,836,475)
Net member reassignments	0	0	0	0	0
Administrative expense	(148,427)	(123,669)	(119,122)	(107,806)	(109,105)
Other	0	0	0	0	0
Net change in Plan Fiduciary Net Position	4,437,646	33,264,412	38,897,852	31,378,408	8,790,327
(b) Plan Fiduciary Net Position - ending	\$441,790,144	\$475,054,556	\$513,952,408	\$545,330,816	\$554,121,143
Net Pension Liability - ending, (a) - (b)	\$59,335,569	\$48,680,494	\$33,742,044	\$41,168,237	\$38,389,008

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



SECTION 6 – GASB INFORMATION

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

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

(continued)

Fiscal Year Ending June 30	2013	2014	2015
Total Pension Liability			
Total Pension Liability - beginning	\$437,854,459	\$453,109,893	\$464,854,573
Service Cost (SC), beginning-of-year	16,084,589	15,301,638	15,283,088
Interest Cost, including interest on SC	30,047,576	30,992,602	31,753,468
Experience (Gains)/Losses	(13,602,915)	(16,025,822)	8,410,750
Assumption Changes	185,587	0	(31,925,306)
Plan Amendments	0	0	0
Actual Benefit Payments	(17,579,537)	(18,527,788)	(19,431,822)
Member Reassignments	120,134	4,050	0
Service Purchases	0	0	0
Net Change in Total Pension Liability	15,255,434	11,744,680	4,090,178
(a) Total Pension Liability - ending	\$453,109,893	\$464,854,573	\$468,944,751
Plan Fiduciary Net Position			
Plan Fiduciary Net Position – beginning	\$262,325,682	\$375,752,562	\$432,729,729
Contributions – employer	111,417,613	20,894,700	21,020,000
Contributions – non-employer	0	0	0
Contributions – member	2,631,374	2,855,956	3,292,222
Net investment income	16,963,156	51,896,235	(93,406)
Actual benefit payments	(17,579,537)	(18,527,788)	(19,431,822)
Net member reassignments	120,134	4,050	0
Administrative expense	(125,860)	(145,986)	(164,225)
Other	0	0	0
Net change in Plan Fiduciary Net Position	113,426,880	56,977,167	4,622,769
(b) Plan Fiduciary Net Position - ending	\$375,752,562	\$432,729,729	\$437,352,498
Net Pension Liability - ending, (a) - (b)	\$77,357,331	\$32,124,844	\$31,592,253

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



SECTION 6 – GASB INFORMATION

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

SCHEDULE OF THE NET PENSION LIABILITY

Fiscal Year Ending June 30	2016	2017	2018	2019	2020
Total Pension Liability	\$501,125,713	\$523,735,050	\$547,694,452	\$586,499,053	\$592,510,151
Plan Fiduciary Net Position	<u>441,790,144</u>	<u>475,054,556</u>	<u>513,952,408</u>	<u>545,330,816</u>	<u>554,121,143</u>
Net Pension Liability	\$59,335,569	\$48,680,494	\$33,742,044	\$41,168,237	\$38,389,008
Ratio of Plan Fiduciary Net Position to Total Pension Liability	88.16%	90.71%	93.84%	92.98%	93.52%
Covered-employee payroll ¹	\$51,381,964	\$54,755,206	\$53,350,037	\$56,379,905	\$58,188,887
Net Pension Liability as a percentage of covered-employee payroll	115.48%	88.91%	63.25%	73.02%	65.97%
Fiscal Year Ending June 30	2013			2014	2015
Total Pension Liability	\$453,109,893			\$464,854,573	\$468,944,751
Plan Fiduciary Net Position	<u>375,752,562</u>			<u>432,729,729</u>	<u>437,352,498</u>
Net Pension Liability	\$77,357,331			\$32,124,844	\$31,592,253
Ratio of Plan Fiduciary Net Position to Total Pension Liability	82.93%			93.09%	93.26%
Covered-employee payroll ¹	\$47,594,849			\$46,041,085	\$48,582,165
Net Pension Liability as a percentage of covered-employee payroll	162.53%			69.77%	65.03%

¹ As provided by INPRS.

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



SECTION 6 – GASB INFORMATION

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

SCHEDULE OF EMPLOYER CONTRIBUTIONS

Fiscal Year Ending June 30	2016	2017	2018	2019	2020
Actuarially Determined Contribution ¹	\$17,485,282	\$14,334,913	\$14,852,650	\$14,861,743	\$19,405,994
Actual employer contributions	<u>\$16,946,301</u>	<u>\$16,823,600</u>	<u>\$15,117,494</u>	<u>\$16,030,805</u>	<u>\$18,166,479</u>
Annual contribution (deficiency) / excess	(\$538,981)	\$2,488,687	\$264,844	\$1,169,062	(\$1,239,515)
Covered-employee payroll ²	\$51,381,964	\$54,755,206	\$53,350,037	\$56,379,905	\$58,188,887
Actual contributions as a percentage of covered-employee payroll	32.98%	30.73%	28.34%	28.43%	31.22%

Fiscal Year Ending June 30	2013	2014	2015
Actuarially Determined Contribution ¹	\$25,458,485	\$27,647,672	\$18,864,455
Actual employer contributions	<u>\$111,417,613</u>	<u>\$20,894,700</u>	<u>\$21,020,000</u>
Annual contribution (deficiency) / excess	\$85,959,128	(\$6,752,972)	\$2,155,545
Covered-employee payroll ²	\$47,594,849	\$46,041,085	\$48,582,165
Actual contributions as a percentage of covered-employee payroll	234.10%	45.38%	43.27%

¹ Actuarially determined contribution rate was developed in the actuarial funding valuation completed one year prior to the fiscal year. This rate was applied to the actual covered employee payroll for the fiscal year to determine the contribution amount.

² As provided by INPRS.

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



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

SCHEDULE OF MONEY-WEIGHTED RETURNS

<u>For Fiscal Year Ending June 30</u>	<u>Money-Weighted Return</u>
2020	2.6%
2019	7.3%
2018	9.3%
2017	8.0%
2016	1.2%
2015	(0.1%)
2014	13.7%
2013	5.2%

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



APPENDIX TABLE OF CONTENTS

<u>Appendix</u>	<u>Page</u>
Appendix A – Membership Data	39
<i>Schedules of valuation data classified by various categories of members.</i>	
Appendix B – Summary of Plan Provisions	47
<i>A summary of the current benefit structure, as determined by the provisions of governing law on June 30, 2020.</i>	
Appendix C – Summary of Actuarial Methods and Assumptions	51
<i>A summary of the actuarial methods and assumptions used to estimate liabilities and determine contribution rates.</i>	
Appendix D – Glossary of Actuarial Terms	56
<i>A glossary of actuarial terms used in the valuation report.</i>	



APPENDIX A – MEMBERSHIP DATA

MEMBER DATA RECONCILIATION
For June 30, 2019 Data used in the June 30, 2020 Valuation

Table with 8 columns: Active Members, Inactive Vested, Inactive Nonvested, Disabled, Retired, Beneficiary, Total. Rows include: 1. As of June 30, 2018 (Total 886); 2. Data Adjustments (Net Change 25); 3. As of June 30, 2019 (Total 911).

1 The valuation results were calculated using the prior year's census data and were adjusted for certain activity during fiscal year.

**APPENDIX A – MEMBERSHIP DATA****SUMMARY OF MEMBERSHIP DATA**

Valuation Date	June 30, 2019	June 30, 2020	% Change
Date of Membership Data ¹	July 1, 2018	July 1, 2019	
ACTIVE MEMBERS			
Number of Active Members	453	458	1.1%
Annual Membership Data Salary ²	\$ 63,387,240	\$ 65,582,237	3.5%
Anticipated Covered Pay for Next Fiscal Year ³	\$ 57,902,162	\$ 60,109,120	3.8%
Active Member Averages			
Age	56.3	55.6	(1.2%)
Service	10.2	9.7	(4.9%)
Annual Membership Data Salary	\$ 139,928	\$ 143,193	2.3%
INACTIVE MEMBERS			
Number of Members			
Inactive Vested	22	24	9.1%
Inactive Non-Vested	36	33	(8.3%)
Total	58	57	(1.7%)
Inactive Vested Member Averages			
Age	57.7	58.3	1.0%
Service	12.9	12.7	(1.6%)
RETIREES, DISABLEDS, AND BENEFICIARIES			
Number of Members			
Retired	265	290	9.4%
Disabled	2	2	0.0%
Beneficiaries	108	104	(3.7%)
Total	375	396	5.6%
Annual Benefits			
Retired	\$ 20,577,617	\$ 23,044,992	12.0%
Disabled	126,085	138,298	9.7%
Beneficiaries	3,090,170	3,106,004	0.5%
Total	\$ 23,793,872	\$ 26,289,294	10.5%

¹The valuation results were calculated using the prior year's census data and were adjusted for certain activity during fiscal year.

² Annualized for actives with less than a year of service. Actives with no salary provided are defaulted to the state provided salary for their job title.

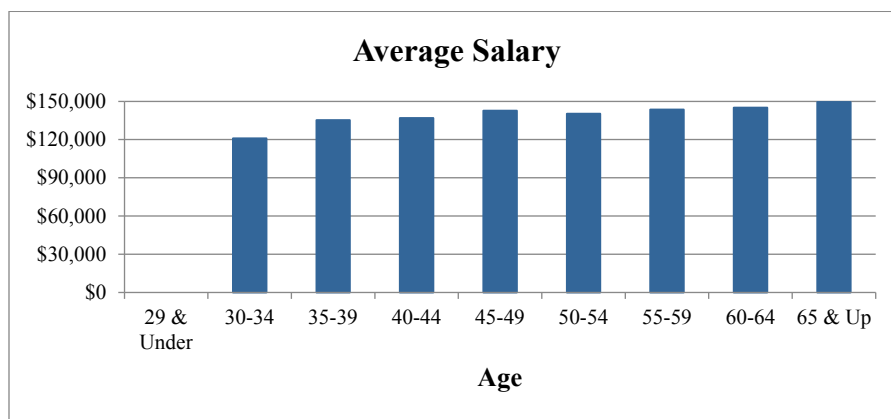
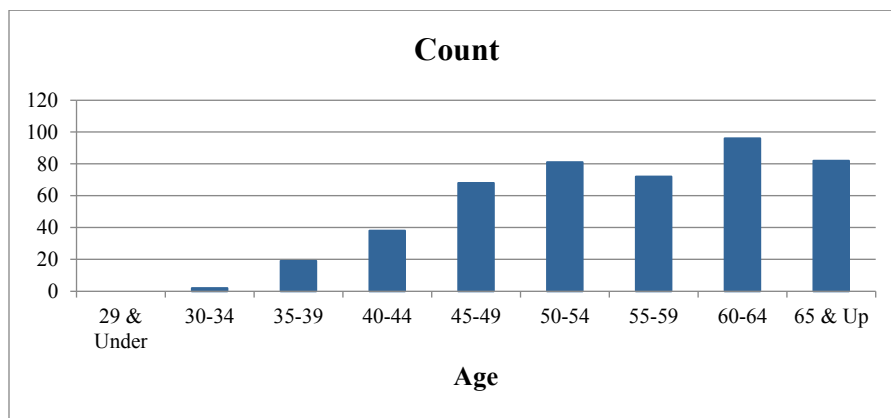
³ Actual pay for contributing members with less than 22 years of service for the fiscal year ending on the valuation date, rolled forward at the known pay increase of 3.3%.



APPENDIX A – MEMBERSHIP DATA

**ACTIVE MEMBERS
As of June 30, 2019 for the June 30, 2020 Valuation**

<u>Age</u>	<u>Count of Members</u>			<u>FY 2019 Annual Membership Data Salary</u>		
	<u>Male</u>	<u>Female</u>	<u>Total</u>	<u>Male</u>	<u>Female</u>	<u>Total</u>
29 & Under	0	0	0	0	0	0
30-34	0	2	2	0	241,820	241,820
35-39	11	8	19	1,511,372	1,057,961	2,569,333
40-44	21	17	38	2,871,607	2,327,513	5,199,120
45-49	43	25	68	6,166,394	3,536,609	9,703,003
50-54	48	33	81	6,887,436	4,473,662	11,361,098
55-59	53	19	72	7,730,718	2,599,560	10,330,278
60-64	68	28	96	9,915,258	4,012,081	13,927,339
65 & Up	<u>60</u>	<u>22</u>	<u>82</u>	<u>8,998,934</u>	<u>3,251,312</u>	<u>12,250,246</u>
Total	304	154	458	\$ 44,081,719	\$ 21,500,518	\$ 65,582,237





APPENDIX A – MEMBERSHIP DATA

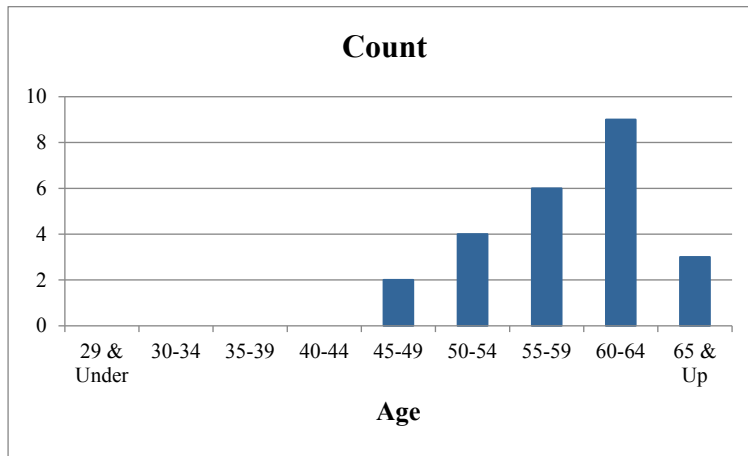
**AGE AND SERVICE DISTRIBUTION
As of June 30, 2019 for the June 30, 2020 Valuation**

Age		0-4	5-9	10-14	15-19	20-24	25-29	30-34	Over 34	Total
29 & Under	Number	0	0	0	0	0	0	0	0	0
	Total Salary	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0
	Average Sal.	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0
30-34	Number	2	0	0	0	0	0	0	0	2
	Total Salary	\$ 241,820	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 241,820
	Average Sal.	\$ 120,910	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 120,910
35-39	Number	15	3	1	0	0	0	0	0	19
	Total Salary	\$ 2,055,466	\$ 392,957	\$ 120,910	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 2,569,333
	Average Sal.	\$ 137,031	\$ 130,986	\$ 120,910	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 135,228
40-44	Number	26	8	4	0	0	0	0	0	38
	Total Salary	\$ 3,566,838	\$ 1,027,734	\$ 604,548	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 5,199,120
	Average Sal.	\$ 137,186	\$ 128,467	\$ 151,137	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 136,819
45-49	Number	36	21	9	2	0	0	0	0	68
	Total Salary	\$ 5,168,889	\$ 2,932,061	\$ 1,330,006	\$ 272,047	\$ 0	\$ 0	\$ 0	\$ 0	\$ 9,703,003
	Average Sal.	\$ 143,580	\$ 139,622	\$ 147,778	\$ 136,024	\$ 0	\$ 0	\$ 0	\$ 0	\$ 142,691
50-54	Number	33	20	20	7	1	0	0	0	81
	Total Salary	\$ 4,534,116	\$ 2,746,281	\$ 2,932,059	\$ 997,505	\$ 151,137	\$ 0	\$ 0	\$ 0	\$ 11,361,098
	Average Sal.	\$ 137,397	\$ 137,314	\$ 146,603	\$ 142,501	\$ 151,137	\$ 0	\$ 0	\$ 0	\$ 140,260
55-59	Number	22	16	16	10	8	0	0	0	72
	Total Salary	\$ 3,083,864	\$ 2,177,042	\$ 2,327,511	\$ 1,506,954	\$ 1,234,907	\$ 0	\$ 0	\$ 0	\$ 10,330,278
	Average Sal.	\$ 140,176	\$ 136,065	\$ 145,469	\$ 150,695	\$ 154,363	\$ 0	\$ 0	\$ 0	\$ 143,476
60-64	Number	18	20	21	13	24	0	0	0	96
	Total Salary	\$ 2,569,331	\$ 2,720,470	\$ 3,022,742	\$ 1,904,993	\$ 3,709,803	\$ 0	\$ 0	\$ 0	\$ 13,927,339
	Average Sal.	\$ 142,741	\$ 136,024	\$ 143,940	\$ 146,538	\$ 154,575	\$ 0	\$ 0	\$ 0	\$ 145,076
65 & Up	Number	8	10	20	12	32	0	0	0	82
	Total Salary	\$ 1,148,642	\$ 1,386,046	\$ 3,022,740	\$ 1,783,417	\$ 4,909,401	\$ 0	\$ 0	\$ 0	\$ 12,250,246
	Average Sal.	\$ 143,580	\$ 138,605	\$ 151,137	\$ 148,618	\$ 153,419	\$ 0	\$ 0	\$ 0	\$ 149,393
Total	Number	160	98	91	44	65	0	0	0	458
	Total Salary	\$ 22,368,966	\$ 13,382,591	\$ 13,360,516	\$ 6,464,916	\$ 10,005,248	\$ 0	\$ 0	\$ 0	\$ 65,582,237
	Average Sal.	\$ 139,806	\$ 136,557	\$ 146,819	\$ 146,930	\$ 153,927	\$ 0	\$ 0	\$ 0	\$ 143,193



INACTIVE VESTED MEMBERS
As of June 30, 2019 for the June 30, 2020 Valuation

<u>Age</u>	<u>Count of Members</u>		
	<u>Male</u>	<u>Female</u>	<u>Total</u>
29 & Under	0	0	0
30-34	0	0	0
35-39	0	0	0
40-44	0	0	0
45-49	1	1	2
50-54	1	3	4
55-59	2	4	6
60-64	4	5	9
65 & Up	<u>3</u>	<u>0</u>	<u>3</u>
Total	11	13	24

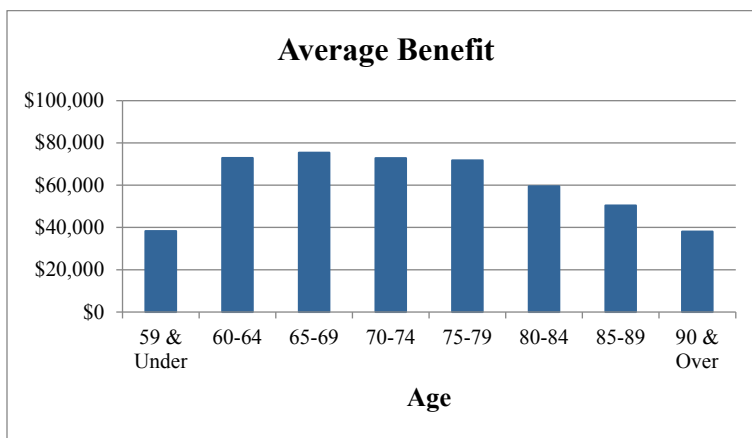
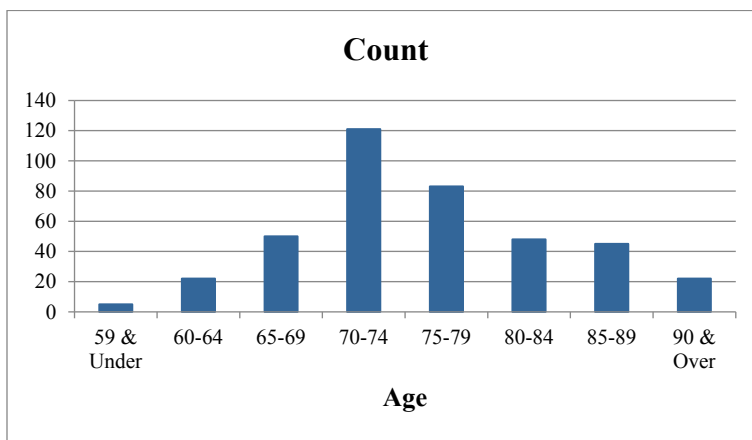




APPENDIX A – MEMBERSHIP DATA

**MEMBERS AND BENEFICIARIES RECEIVING BENEFITS
As of June 30, 2019 for the June 30, 2020 Valuation**

Age	Count of Members			Annual Benefits		
	Male	Female	Total	Male	Female	Total
59 & Under	0	5	5	\$ 0	\$ 191,374	\$ 191,374
60-64	13	9	22	1,083,321	520,340	1,603,661
65-69	39	11	50	3,065,272	703,615	3,768,887
70-74	90	31	121	7,293,257	1,515,145	8,808,402
75-79	63	20	83	5,118,802	837,102	5,955,904
80-84	27	21	48	2,076,136	778,510	2,854,646
85-89	21	24	45	1,599,204	669,241	2,268,445
90 & Over	<u>7</u>	<u>15</u>	<u>22</u>	<u>407,211</u>	<u>430,764</u>	<u>837,975</u>
Total	260	136	396	\$ 20,643,203	\$ 5,646,091	\$ 26,289,294





**MEMBERS AND BENEFICIARIES RECEIVING BENEFITS
As of June 30, 2019 for the June 30, 2020 Valuation**

Schedule of Average Benefit Payments ¹

For the Year Ended June 30, 2020	Years of Credited Service						Total
	< 10	10 - 14	15 - 19	20 - 24	25 - 29	30 +	
Average Monthly Defined Benefit	\$2,035	\$4,804	\$5,807	\$6,565	\$6,651	\$6,739	\$5,532
Average Final Average Salary ²	\$108,475	\$123,809	\$128,881	\$131,607	\$117,627	\$128,801	\$126,008
Number of Benefit Recipients	43	89	88	102	41	33	396

Schedule of Benefit Recipients by Type of Benefit Option ¹

Amount of Monthly Benefit (in dollars)	Number of Recipients by Benefit Option			Total Benefit Recipients
	Joint with 50% Survivor Benefits	Survivors	Disability	
1 - 500	0	0	0	0
501 - 1,000	0	0	0	0
1,001 - 1,500	0	22	0	22
1,501 - 2,000	0	12	0	12
2,001 - 2,500	3	13	0	16
2,501 - 3,000	9	19	0	28
Over 3,000	278	38	2	318
Total	290	104	2	396

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

² Excludes the 114 in-pay members who are missing a final average salary in the data.



**MEMBERS AND BENEFICIARIES RECEIVING BENEFITS
As of June 30, 2019 for the June 30, 2020 Valuation**

Schedule of Retirants and Beneficiaries

	<u>Added to Rolls</u>		<u>Removed from Rolls</u>		<u>Rolls - End of Year</u>		Percent Change In Total Annual Benefits	Average Annual Benefit	Percent Change In Average Annual Benefit
	Number	Annual Benefits ¹	Number	Annual Benefits ¹	Number	Total Annual Benefits ^{1,2}			
2020 ³	31	\$2,498	10	\$261	396	\$26,289	10.5%	\$66,387	4.6%
2019 ³	18	1,340	8	191	375	23,794	5.1	63,450	2.3
2018 ³	22	1,723	7	309	365	22,637	5.5	62,019	1.1
2017 ³	9	696	10	509	350	21,465	2.4	61,329	2.7
2016 ³	34	2,520	9	340	351	20,959	12.8	59,714	4.8
2015 ³	10	494	5	195	326	18,578	0.6	56,987	(1.0)
2014 ³	0	0	0	0	321	18,474	0.0	57,551	0.0
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

¹Dollar amounts are in thousands except for the average annual benefit.

²End of year annual benefits are not equal to prior end of year annual benefits plus additions less removals due to beneficiary benefit changes, data changes, and COLA increases.

³The valuation results were calculated using the prior year census data, adjusted for certain activity during the fiscal year.



APPENDIX B – SUMMARY OF PLAN PROVISIONS

Definitions

Fiscal year	Twelve month period ending June 30.
Participation	All individuals serving as a judge or justice in Indiana as defined in IC 33-38-6-7. A judge who begins service before September 1, 1985 shall be a participant of the 1977 Plan (IC 33-38-7) and a judge who begins service after August 31, 1985 shall be a participant of the 1985 Plan (IC 33-38-8).
Member contributions	Each participant contributes 6% of his total salary until completion of 22 years of service. Beginning in 2013, the employee contributions are picked up by the employer as pre-tax money which are also included in annual salary.
Earnings	Earnings is the annual salary being paid for the office which the participant held at the time of separation from service effective January 1, 2010.

Eligibility for Benefits

Deferred vested	8 or more years of creditable service and no longer active.
Disability retirement	A participant is considered disabled if two (2) physicians certify that the participant is totally incapacitated from earning a livelihood and that the condition is likely to be permanent.
Early retirement	Age 62 with 8 or more years of creditable service.
Normal retirement	Earliest of: <ul style="list-style-type: none">- Age 65 with 8 or more years of creditable service- Age 55 with sum of age and creditable service equal to 85 or more
Pre-retirement death	8 or more years of creditable service entitled to a future benefit.



APPENDIX B – SUMMARY OF PLAN PROVISIONS

Monthly Benefits Payable

Normal retirement

The normal retirement benefit is a monthly annuity payable for life with a 50% continuation (or \$12,000 annually, if greater) to a surviving spouse or surviving dependent children. The benefit is equal to a percentage of earnings in accordance with the following table:

Years of Service	Percentage
7 or less	0%
8	24%
9	27%
10	30%
11	33%
12	50%
13	51%
14	52%
15	53%
16	54%
17	55%
18	56%
19	57%
20	58%
21	59%
22 or more	60%

An additional percentage shall be calculated by prorating between applicable percentages, based on the number of months in a partial year of service.

Early retirement

The early retirement benefit is the accrued retirement benefit determined as of the early retirement date and payable commencing at the normal retirement date. A participant may elect to have the benefit commence prior to age 65 provided the benefit is reduced by 0.1% for each month that the benefit commencement date precedes age 65.

Deferred retirement

The termination benefit is the accrued retirement benefit determined as of the termination date and payable commencing as of the normal retirement date. The participant may elect to receive a reduced early retirement benefit.



APPENDIX B – SUMMARY OF PLAN PROVISIONS

Disability

The disability retirement benefit is payable for the duration of the disability commencing the month following disability date. The amount of monthly benefit shall be equal to a percentage of: (1) for the 1977 JRS Plan – the salary paid for the office the member held at the time of separation; (2) for the 1985 Plan - salary paid to the member at the time of separation. The percentages are in accordance with the following table:

Years of Service	Percentage
12 or less	50%
13	51%
14	52%
15	53%
16	54%
17	55%
18	56%
19	57%
20	58%
21	59%
22 or more	60%

An additional percentage shall be calculated by prorating between applicable percentages, based on the number of months in a partial year of service.

Pre-retirement death

If death occurs (a) while receiving benefits, (b) while in service as a judge with 8 or more years of service, or (c) while permanently disabled, the spouse or family of dependent children shall be eligible for a benefit equal to the greater of \$12,000 (effective July 1, 1977) annually or 50% of the benefit the participant was receiving or was entitled to receive at the time of death.

Spousal benefits are payable as a lifetime monthly pension.

Post-retirement benefit increases

Participant benefits in the Judges’ 1977 Retirement, Disability, and Death Plan increase in the same ratio as the salary being paid for the office a participant held at the time of separation from service increases. Effective January 1, 2010, the Judges’ 1985 Retirement, Disability, and Death Plan will also have benefits increase in the same manner, on a prospective basis only.



APPENDIX B – SUMMARY OF PLAN PROVISIONS

Cost-of-Living-Adjustments	Benefits for retired members (does not include disabled members or surviving spouses) increase automatically based on the annual pay increase granted for the position the member held at the time of retirement. The annual cost-of-living assumption for the valuation is 2.75%, which is the same as the salary increase assumption for active members.
Forms of payment	
a. Single life annuity	Member will receive a monthly benefit for life, but there are no monthly payments to anyone after death.
b. Joint with one-half survivor benefits	Member will be paid a monthly benefit for life. After death, one-half (1/2) of the benefit will be paid to the spouse for their lifetime or the dependent until age 18 unless disabled. If the dependent child was named the beneficiary, once they are no longer entitled to the benefit, the spouse would receive the benefit for life.

Changes in Plan Provisions since the Prior Year

None.



ACTUARIAL METHODS

1. Actuarial Cost Method

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

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

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

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

Member census data as of June 30, 2019 was used in the valuation and adjusted, where appropriate, to reflect changes between June 30, 2019 and June 30, 2020. The valuation results from June 30, 2019 were rolled-forward to June 30, 2020 to reflect benefit accruals during the year less benefits paid.

2. Asset Valuation Method

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

3. State Appropriations

Based on the assumptions and methods previously described, an actuarially determined contribution amount is computed. The Board considers this information when requesting funds from the State.



APPENDIX C – SUMMARY OF ACTUARIAL METHODS AND ASSUMPTIONS

4. Anticipated Payroll

The anticipated payroll for the fiscal year following the valuation date is equal to the actual payroll during the year ending on the valuation date, increased with the actual pay adjustment as of the valuation date. The proportion of pay attributable to active members with more than 22 years of service is presumed constant.

Changes in Methods since the Prior Year

None.



ACTUARIAL ASSUMPTIONS

Valuation Date June 30, 2020

Economic Assumptions

1. Investment return 6.75% per year, compounded annually (net of administrative and investment expenses)
2. Inflation 2.25% per year
3. Salary increase 2.75% per year beginning July 1, 2021. Actual salary increases on July 1, 2019 (2.7%) and July 1, 2020 (3.3%) are reflected in the in the valuation.
4. Interest on member balances 3.50% per year
5. Cost-of-Living Adjustment (COLA) 2.75% compounded annually, beginning July 1, 2021. Actual COLA increases at July 1, 2019 (2.7%) and July 1, 2020 (3.3%) are reflected in the valuation.

Demographic Assumptions

1. Mortality
Pub-2010 Public Retirement Plans Mortality Tables (Amount-Weighted) with a fully generational projection of mortality improvements using SOA Scale MP-2019.

Healthy Employees – General Employee table with a 1 year setback for males and a 1 year setback for females.

Retirees – General Retiree table with a 1 year setback for males and a 1 year setback for females.

Beneficiaries – Contingent Survivor table with no set forward for males and a 2 year set forward for females.

Disableds – General Disabled table with a 140% load.



APPENDIX C – SUMMARY OF ACTUARIAL METHODS AND ASSUMPTIONS

2. Disability

Age	Sample Rates
20	0.057%
25	0.081%
30	0.105%
35	0.140%
40	0.210%
44-64	0.300%
65+	0.000%

3. Retirement

Age	Eligible for Reduced Benefit	Eligible for Unreduced Benefit
55-61	N/A	20%
62-64	8%	20%
65-74	N/A	30%
75+	N/A	100%

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

4. Termination

3% per year for all members prior to retirement eligibility.

Other Assumptions

1. Form of payment

Members are assumed to elect either a single life annuity or a 50% joint survivor benefit based on the marriage assumptions below.

2. Marital status

a. Percent married

90% of members are assumed to be married or to have a dependent beneficiary.

b. Spouse's age

Male members are assumed to be three (3) years older than their spouses and female members are assumed to be two (2) years younger than their spouses.

3. Decrement timing

Decrements are assumed to occur at the beginning of the year.

Changes in Assumptions since the Prior Year

As a result of the 2014-2019 Experience Study, there were changes to many assumptions. Please see that Study for complete details (available on the INPRS web site).



APPENDIX C – SUMMARY OF ACTUARIAL METHODS AND ASSUMPTIONS

Data Adjustments

Active and retired member data is reported as of June 30. Member census data as of June 30, 2019 was used in the valuation and adjusted. Standard actuarial roll-forward techniques were then used to project the liability computed as of June 30, 2019 to the June 30, 2020 valuation date. The normal cost rate is assumed to remain unchanged between June 30, 2019 and June 30, 2020.

The member total payroll and the asset information for this valuation were furnished as of June 30, 2020. Total payroll in FYE 2021 is assumed to increase by the actual salary increase as of the valuation date over the total payroll observed for FYE 2020. We did not audit the information provided, but we did review it thoroughly for reasonableness and compared it with the prior year's submission for consistency.

Other Technical Valuation Procedures

Salary increases are assumed to apply to annual amounts.

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

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



APPENDIX D – GLOSSARY OF ACTUARIAL TERMS

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