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Indiana Public Retirement System

Teachers’ Retirement Fund
Pre-1996 Account

Actuarial Valuation as of
June 30, 2021

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The experience and dedication you deserve

December 13, 2021

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 Teachers' Retirement Fund Pre-1996 Account (TRF Pre-'96) as of June 30, 2021, for the purpose of estimating the actuarial required contribution for the plan year ending June 30, 2023. Actuarial valuations are performed annually. The major findings of the valuation are contained in this report, which reflects the benefit and funding provisions in place on June 30, 2021. While there were no changes to the ongoing benefit provisions of the plan, the Legislature approved a 1.00% COLA effective January 1, 2022 to be paid from the Supplemental Reserve Account. This report also reflects the updated economic assumptions approved by the Board in May 2021. Please refer to the May 7, 2021 meeting minutes for complete details. There were no changes in the demographic assumptions or actuarial methods from last year.

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

We certify that all costs and liabilities for TRF Pre-'96 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 2021 valuations to the Board on February 26, 2021, and the Board subsequently adopted their use at its May 7, 2021 meeting. 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.

In order to prepare the results in this report, we have utilized appropriate actuarial models that were developed for this purpose. These models use assumptions about future contingent events along with recognized actuarial approaches to develop the needed results. 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 TRF Pre-'96 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, 2021 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 Annual Comprehensive Financial Report (ACFR) for INPRS contains several exhibits that disclose the actuarial position of the System. This annual report, prepared as of June 30, 2021, provides data and tables that we prepared for use in the following sections of the ACFR:

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,

Brent A. Banister

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

Edward J. Koebel

Edward Koebel, FCA, EA, MAAA
Chief Executive Officer

Virginia Fritz

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

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This report presents the results of the June 30, 2021 actuarial valuation of the Teachers' Retirement Fund Pre-1996 Account (TRF Pre-'96). The primary purposes of performing this actuarial valuation are to:

- Determine the level of contributions for the plan year ending June 30, 2023, along with the actuarial surcharge amount for the 2022 calendar year, that will be sufficient to meet the funding policy set out by the Board to comply with Indiana statutes.
- Disclose asset and liability measurements as well as the current funded status of the plan on the valuation date.
- Compare actual and expected experience of the Fund during the plan year ending June 30, 2021.
- Analyze and report on trends in plan contributions, assets and liabilities over the past several years.

VALUATION RESULTS

Based on the results of the Asset-Liability study, which were discussed at the May 2021 Board meeting, the Board approved portfolio revisions and a new set of economic assumptions to be first used in the June 30, 2021 actuarial valuations. This resulted in a reduction of the investment return from 6.75% to 6.25%, but also impacted other assumptions such as price and wage inflation. There were no changes adopted by the Board to the demographic assumptions, actuarial methods, or funding policy. While there were no changes to the ongoing benefits of the plan, legislation granted a 1.00% cost-of-living adjustment (COLA) effective January 1, 2022 to be paid from the Supplemental Reserve Account.

The actuarial valuation results provide a "snapshot" view of the plan's financial condition on June 30, 2021. The plan's UAAL decreased from $10.3 billion last year to $9.8 billion this year and the funded ratio increased from 26.5% to 31.7%. The funded ratio increase is primarily due to contributions to the plan assets of $1.5 billion, which included a one-time additional contribution of $600 million. This additional contribution was funding that exceeded the contributions outlined by the funding policy, and it is anticipated that another additional contribution will be made for the 2022 fiscal year. Assumption changes resulted in an increase in liabilities of $582 million for base and supplemental benefits.

A summary of the key results from the June 30, 2021 actuarial valuation is shown in the following table. Further detail on the valuation results can be found in the following sections of this Board Summary. In keeping with the funding policy adopted by the Board at its October 26, 2018 meeting, the Scheduled Appropriation results shown herein reflect the funding approach set out in IC-5.10.4-2-5 that the Indiana Legislature has followed. Additional contributions show the amount of funding that has exceed that policy.

Valuation Results	June 30, 2020	June 30, 2021
Unfunded Actuarial Accrued Liability	$ 10,260,852,248	$ 9,792,180,998
Funded Ratio (Actuarial Assets)	26.54%	31.71%
Normal Cost	4.81%	5.47%
Actuarially Determined Contribution Rate	150.79%	170.09%
Scheduled Appropriation	$ 946,600,000	$ 975,000,000
Additional Contribution (Expected)	$ 600,000,000	$ 545,000,000

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, 2020 and June 30, 2021.

ASSETS

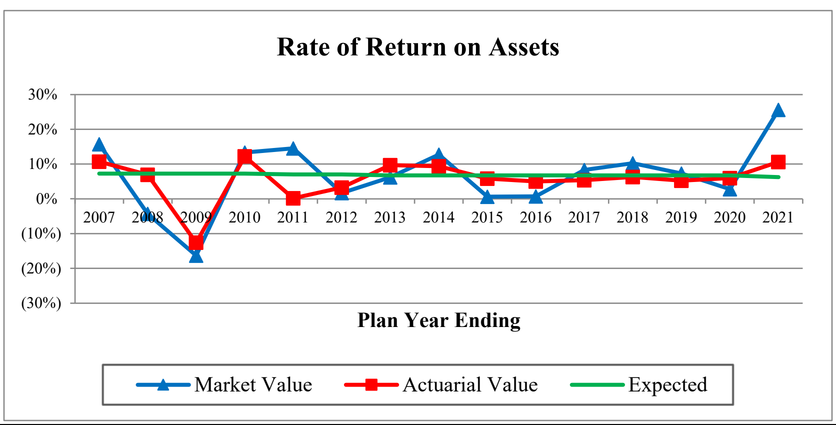
As of June 30, 2021, the plan had net assets of $5.075 billion when measured on a market value basis. This was an increase of $1.414 billion from the prior year.

The market value of assets is not used directly in the calculation of the unfunded actuarial accrued liability and the actuarial required contribution. An asset valuation method, which smoothes the effect of market fluctuations, is applied to determine the value of assets used in the valuation. The resulting amount is called the actuarial value of assets. In this year's valuation, the actuarial value of assets is $4.546 billion, an increase of $838 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, 2020	$	3,661,150,972	$	3,707,850,581
- Receipts	+	1,600,652,654	+	1,600,652,654
- Expenditures, Net of Administrative Expenses	-	1,178,774,500	-	1,178,774,500
- Net Investment Income	+	991,721,830	+	416,278,399
Net Assets, June 30, 2021	$	5,074,750,956	$	4,546,007,134
Estimated Rate of Return, Net of Expenses		25.6%		10.6%

The estimated rate of return on the actuarial value of assets was 10.6%, which was higher than the 6.75% investment return assumption applicable for the year ended June 30, 2021. As a result, there was an experience gain on assets of $152 million. The FY 2021 return on the market value of assets of 25.6% resulted in a change in the deferred investment experience from a net deferred investment loss of $47 million in last year's valuation to a net deferred investment gain of $529 million in the current valuation. See Tables 1 through 4 of this report for detailed information on the market and actuarial value of assets.



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

LIABILITIES

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

The unfunded actuarial accrued liability, including expected future COLAs, on both a market value and actuarial value of assets basis is shown as of June 30, 2021 in the following table:

	Market Value	Actuarial Value
Actuarial Accrued Liability	$ 14,338,188,132	$ 14,338,188,132
Value of Assets	5,074,750,956	4,546,007,134
Unfunded Actuarial Accrued Liability	$ 9,263,437,176	$ 9,792,180,998
Funded Ratio	35.39%	31.71%

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

The total plan UAAL (on an actuarial basis) as of June 30, 2021 was $9.792 billion, a $469 million decrease from the $10.261 billion total UAAL last year. The primary drivers were contributions in excess of the funding policy of $600 million and an actuarial gain on assets of $152 million due to higher-than-expected market returns. These gains were offset by a $582 million increase in liabilities due to economic assumption changes. The components of the change in the base UAAL are quantified in Table 7 of this report. See Table 8 and Table 9 of this report for a breakdown of the components of experience gains/losses for greater detail on the base plan benefits.

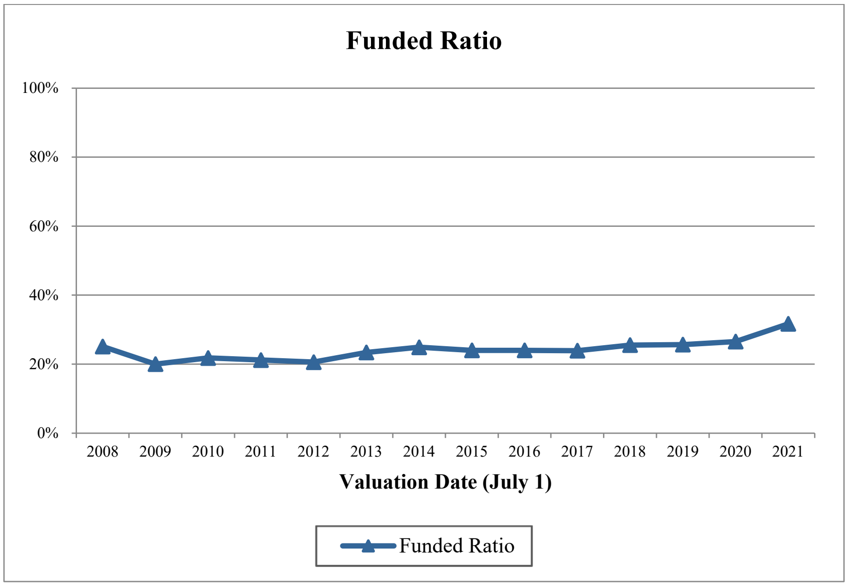
An evaluation of the UAAL on a pure dollar basis may not provide a complete analysis since only the difference between the assets and liabilities (which are both large numbers) is reflected. Another way to evaluate the UAAL and the progress made in its funding is to track the funded ratio, the ratio 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 billions).

	6/30/2017	6/30/2018	6/30/2019	6/30/2020	6/30/2021
Funded Ratio	23.9%	25.5%	25.7%	26.5%	31.7%
UAAL (in billions)	$11.8	$10.9	$10.7	$10.3	$9.8

Note: Results before 2018 restated to exclude the DC assets in the funded ratio calculation.

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.

The funded ratio over a long period of time is shown in the following graph. Because the Pre-1996 Account is intended to be funded on a "pay-as-you-go" basis, there is no expectation that the funded ratio improve significantly for many years.



Note: Funded ratios exclude DC account balances.

ACTUARIALLY DETERMINED CONTRIBUTION AMOUNT

The Plan'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 appropriating funds. The basic contribution is the lesser of 3% above the prior year's basic contribution and the anticipated benefit payments for the year. However, the contributed funds should not result in the funded ratio exceeding 100%.

In addition to the structure above that is designed to fund the guaranteed base benefit, the Board is responsible for determining the allocation of lottery proceeds to fund future COLAs and/or 13th checks. Because there are five plans that must, by law, provide the same COLA or 13th check each year, the funding strategy needs to consider the overall funding needs of the System as well as each specific Fund. The Legislature, via HEA No. 1001, authorized a 1.00% COLA effective January 1, 2022 to be paid from the Supplemental Reserve Account. No supplemental benefits were granted for fiscal year 2023. Prior funding of the Supplemental Reserve Account was determined based on an assumed COLA of 0.4% for Fiscal Years 2022 and 2023. Therefore, additional contributions were made to the Supplemental Reserve Accounts to pay for the higher-than-expected COLA and to ensure the present value of the COLA was fully funded as required by legislation. At this time, we believe the current COLA assumptions for future years remain reasonable, though ultimately the benefits are determined through legislation.

The long-term assumption is that a COLA of 0.4% will be granted starting in 2024, 0.5% starting in 2034, and then 0.6% in 2039 and beyond. Considering the biennial budgeting cycle in Indiana, the near-term goal is to accumulate funds by June 30, 2023 to fund the two COLAs in the following biennium (January 2024 and January 2025). This will require $12.3 million from January through June of 2022, and $24.6 million from July of 2022 through June of 2023. The $30 million annual allocation from lottery proceeds provides the needed funds for the next biennium and is expected to allow for a sufficient reserve to provide the accumulations in subsequent biennial periods. See Table 11 for further details.

See Table 12 of this report for the detailed development of the contribution amounts which are summarized in the following table:

		June 30, 2020		June 30, 2021
Normal Cost		4.81%		5.47%
Scheduled Appropriation	$	946,600,000	$	975,000,000
Estimated Payroll	$	627,740,402	$	573,238,565
Actuarially Determined Contribution Rate		150.79%		170.09%
Semi-Annual Lottery Proceeds for Anticipated COLA	$	0	$	12,299,721

The actuarially determined contribution, based on the funding policy, is expected to increase 3% for the next fiscal year. The annual allocation from lottery proceeds is expected to be $30 million, which will help fund a reserve for future cost of living increases. In addition to the scheduled appropriation, an additional contribution of $600 million was made for FY 2021, for a total of $1,546,600,000. It is expected that an additional contribution of $545 million will be made during FY 2022, for a total of $1,520,000,000.

SUMMARY OF PRINCIPAL RESULTS

	June 30, 2019	June 30, 2020	June 30, 2021
MEMBERSHIP			
Active Members	10,497	9,338	8,375
Retired Members and Beneficiaries	53,498	53,415	53,537
Inactive Vested Members	2,382	2,272	1,964
Total Members	66,377	65,025	63,876
Projected Annual Salaries of Active Members	$ 681,805,830	$ 627,740,402	$ 573,238,565
Annual Retirement Payments for Retired Members, Disabled Members and Beneficiaries	$ 1,133,527,800	$ 1,140,770,774	$ 1,152,667,249
ASSETS AND LIABILITIES			
Net Assets			
Market Value of Assets (MVA)	$ 3,759,145,182	$ 3,661,150,972	$ 5,074,750,956
Actuarial Value of Assets (AVA)	3,694,211,101	3,707,850,581	4,546,007,134
Actuarial Accrued Liability (AAL)	14,389,164,104	13,968,702,829	14,338,188,132
Unfunded Actuarial Accrued Liability (UAAL): AAL - AVA	$ 10,694,953,003	$ 10,260,852,248	$ 9,792,180,998
Funded Ratios			
AVA / AAL	25.67%	26.54%	31.71%
MVA / AAL	26.12%	26.21%	35.39%
CONTRIBUTIONS			
Normal Cost	4.75%	4.81%	5.47%
Actuarially Determined Contribution Rate	134.79%	150.79%	170.09%
Estimated Contribution Amount	$ 919,000,000	$ 946,600,000	$ 975,000,000

Note: Liability and funded ratio results include both the base benefits and the supplemental benefits.

This report presents the actuarial valuation results of the Teachers' Retirement Fund Pre-1996 Account as of June 30, 2021. 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, 2021.
- Appendix C — A summary of the actuarial methods and assumptions used to estimate liabilities and determine contribution rates.
- Appendix D — A glossary of actuarial terms.

In many respects, an actuarial valuation can be thought of as an inventory process. The inventory is taken as of the actuarial valuation date, which for this valuation is June 30, 2021. On that date, the assets available for the payment of benefits are appraised. The assets are compared with the liabilities of the plan, which are generally in excess of assets. The actuarial process then leads to a method of determining the contributions needed by members and the employer in the future to balance the plan assets and liabilities.

Market Value of Assets

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

Table 1 summarizes the changes in the market value of assets for the last two years for the base benefits, whereas Table 2 shows the changes for the supplemental benefit reserve account. Table 14 (in the GASB section) provides detail regarding the allocation of investments in the trust.

Actuarial Value of Assets

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

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

TABLE 1

DEVELOPMENT OF MARKET VALUE OF ASSETS
(Base Benefits)

		June 30, 2020		June 30, 2021
1. Market Value of Assets, Beginning of Year	$	3,727,228,987	$	3,598,132,303
2. Receipts				
a. Member (Includes Purchased Service) [1]	$	21,051	$	22,897
b. Employer (Includes Purchased Service) [2]		2,355,930		2,254,282
c. Non-Employer Entity Contributions		941,132,000		1,546,600,000
d. Member Reassignment Transfers		484,347		0
e. Miscellaneous Income		25,121		475
f. Total	$	944,018,449	$	1,548,877,654
3. Expenditures				
a. Benefit Payments	$	1,174,418,789	$	1,178,739,780
b. Refund of Contributions		0		0
c. Member Reassignment Transfers		0		34,720
d. Administrative Expense		5,341,285		5,039,517
e. Miscellaneous Expenditures		0		0
f. Total	$	1,179,760,074	$	1,183,814,017
4. Investment Return				
a. Investment Income	$	106,428,994	$	976,600,846
b. Securities Lending Income		215,947		202,480
c. Total	$	106,644,941	$	976,803,326
5. Market Value of Assets, End of Year: (1) + (2f) - (3e) + (4c)	$	3,598,132,303	$	4,939,999,266
6. Rate of Return on Market Value of Assets, Net of Expenses [3]		2.80%		25.69%

[1] Includes $21,051 of member service purchases during fiscal year 2020 and $22,897 of member service purchases during fiscal year 2021.

[2] There were no employer service purchases for fiscal year 2020 or fiscal year 2021.

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

TABLE 2

DEVELOPMENT OF MARKET VALUE OF ASSETS
(Supplemental Benefits)

	June 30, 2020	June 30, 2021
1. Market Value of Assets, Beginning of Year	$ 31,916,195	$ 63,018,669
2. Receipts		
a. Employer Surcharge	$ 0	$ 0
b. Lottery Allocation	30,000,000	30,000,000
c. Non-Employer Entity Contributions		21,775,000
d. Miscellaneous	0	0
e. Total	$ 30,000,000	$ 51,775,000
3. Expenditures		
a. Benefit Payments	$ 0	$ 0
b. Administrative Expense	0	0
c. Miscellaneous Expenditures	0	0
d. Total	$ 0	$ 0
4. Investment Return		
a. Investment Income	$ 1,099,997	$ 19,954,002
b. Securities Lending Income	2,477	4,019
c. Total Investment Return	$ 1,102,474	$ 19,958,021
5. Market Value of Assets, End of Year: (1) + (2e) - (3d) + (4c)	$ 63,018,669	$ 134,751,690
6. Rate of Return on Market Value of Assets, Net of Expenses [1]	2.35%	22.45%

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

TABLE 3

DEVELOPMENT OF ACTUARIAL VALUE OF ASSETS
(Base Benefits)

		For Plan Year Ending June 30, 2021
1. Market Value, as of June 30, 2020	$	3,598,132,303
2. Receipts [1]	$	1,548,877,654
3. Expenditures, Net of Administrative Expenses [2]	$	(1,178,774,500)
4. Expected Return on Assets [3]	$	255,364,912
5. Expected Market Value as of June 30, 2021: (1) + (2) + (3) + (4)	$	4,223,600,369
6. Actual Market Value as of June 30, 2021	$	4,939,999,266
7. Year end 2021 asset gain/(loss): (6) - (5)	$	716,398,897

8. Deferred Investment Gains and Losses

	Year Ended June 30:		Gain/(Loss)	Factor		Deferred Amount
a.	2018	$	115,113,140	20%	$	23,022,628
b.	2019		19,546,771	40%		7,818,708
c.	2020		(142,508,289)	60%		(85,504,973)
d.	2021		716,398,897	80%		573,119,118
e.	Total				$	518,455,481

9. Initial Actuarial Value as of June 30, 2021: (6) - (8e)	$	4,421,543,785
10. Constraining Values		
a. 80% of Market Value: (6) x 0.8	$	3,951,999,413
b. 120% of Market Value: (6) x 1.2	$	5,927,999,119
11. Actuarial Value as of June 30, 2021	$	4,421,543,785
12. Actuarial Rate of Return, Net of Expenses [4]		10.65%
13. Actuarial Value of Assets as a Percent of Market Value: (11) / (6)		89.5%
14. Actuarial Value of Assets		
a. Base Benefits	$	4,421,543,785
b. Supplemental Benefits	$	124,463,349
c. Total	$	4,546,007,134

[1] Includes Employer Contributions, Employee Service Purchases, and Miscellaneous Receipts.
[2] Includes DB Benefit Payments, Member Reassignment Transfers, and Miscellaneous Expenses.
[3] Assumes cash flows occur at mid-year and a return assumption of 6.75%.
[4] Assumes cash flows occur at mid-year.

TABLE 4

DEVELOPMENT OF ACTUARIAL VALUE OF ASSETS
(Supplemental Benefits)

		For Plan Year Ending June 30, 2021
1. Market Value, as of June 30, 2020	$	63,018,669
2. Receipts	$	51,775,000
3. Expenditures, Net of Administrative Expenses	$	0
4. Expected Return on Assets [1]	$	6,001,166
5. Expected Market Value as of June 30, 2021: (1) + (2) + (3) + (4)	$	120,794,835
6. Actual Market Value as of June 30, 2021	$	134,751,690
7. Year end 2021 asset gain/(loss): (6) - (5)	$	13,956,855

8. Deferred Investment Gains and Losses

	Year Ended June 30:		Gain/(Loss)	Factor		Deferred Amount
a.	2018	$	0	20%	$	0
b.	2019		903,695	40%		361,478
c.	2020		(2,064,369)	60%		(1,238,621)
d.	2021		13,956,855	80%		11,165,484
e.	Total				$	10,288,341

9. Initial Actuarial Value as of June 30, 2021: (6) - (8e)	$	124,463,349
10. Constraining Values		
a. 80% of Market Value: (6) x 0.8	$	107,801,352
b. 120% of Market Value: (6) x 1.2	$	161,702,028
11. Actuarial Value as of June 30, 2021	$	124,463,349
12. Actuarial Rate of Return, Net of Expenses [2]		9.51%
13. Actuarial Value of Assets as a Percent of Market Value: (11) / (6)		92.4%

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

In the previous section, an actuarial valuation was compared with an inventory process, and an analysis was given of the inventory of assets of the Teachers' Retirement Fund Pre-1996 Account as of the valuation date, June 30, 2021. 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, 2021 Teachers' Retirement Fund Pre-1996 Account valuation are based on census data collected as of June 30, 2020. Standard actuarial techniques are used to adjust these results from June 30, 2020 to June 30, 2021. 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 significant events that would affect the results occur, we would make adjustments in the roll-forward methods to compensate.

All liabilities reflect the benefit provisions and actuarial assumptions in place as of June 30, 2021.

Actuarial Accrued Liability

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

(1) that which is attributable to the past and

(2) that which is attributable to the future.

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

Table 5 contains the calculation of actuarial accrued liability for the Plan under the Entry Age Normal actuarial cost. This amount is split between the base benefit and the supplemental COLA benefit. Granted supplemental benefits are the present value of legislated benefits, whereas future supplemental benefits represent those assumed to occur based on the Plan's COLA assumption.

TABLE 5

ACTUARIAL ACCRUED LIABILITY
(Base and Supplemental Benefits)

As of June 30, 2021	Base Benefits	Supplemental Benefits *Granted*	Supplemental Benefits *Future*	Total
1. Actuarial Accrued Liability				
a. Active & Inactive Members	$ 2,704,939,565	$ 7,746,627	$ 124,046,174	$ 2,836,732,366
b. In-pay Members	11,124,582,145	95,418,341	281,455,280	11,501,455,766
c. Total	$ 13,829,521,710	$ 103,164,968	$ 405,501,454	$ 14,338,188,132
2. Actuarial Value of Assets	$ 4,421,543,785	$ 103,164,968	$ 21,298,381	$ 4,546,007,134
3. Unfunded Actuarial Accrued Liability: (1c) - (2)	$ 9,407,977,925	$ 0	$ 384,203,073	$ 9,792,180,998
4. Funded Ratio: (2) / (1c)	32.0%	100.0%	5.3%	31.7%

TABLE 6

SOLVENCY TEST
(Base and Supplemental Benefits)

	Actuarial Accrued Liabilities (AAL)					Portion of AAL Covered by Assets			
Actuarial Valuation as of June 30	Active Member Contributions	Retirees and Beneficiaries	Active Member (Employer Financed Portion)	Total Actuarial Accrued Liabilities	Actuarial Value of Assets	Active Member Contributions	Retirees and Beneficiaries	Active Member (Employer Financed Portion)	Total Actuarial Accrued Liabilities
2021	$0	$11,501,456	$2,836,732	$14,338,188	$4,546,007	N/A	39.5%	0.0%	31.7%
2020	0	11,053,143	2,915,560	13,968,703	3,707,851	N/A	33.5	0.0	26.5
2019	0	11,245,919	3,143,245	14,389,164	3,694,211	N/A	32.8	0.0	25.7
2018	0	11,160,975	3,422,214	14,583,189	3,721,323	N/A	33.3	0.0	25.5
2017	1,242,230	11,653,674	3,840,865	16,736,769	4,951,100	100.0	31.8	0.0	29.6
2016	1,161,803	11,461,481	4,216,916	16,840,200	5,008,989	100.0	33.6	0.0	29.7
2015	1,303,468	10,606,053	5,108,225	17,017,746	5,171,639	100.0	36.5	0.0	30.4
2014	1,525,192	9,876,539	4,953,485	16,355,216	5,358,351	100.0	38.8	0.0	32.8
2013	1,636,978	10,254,953	4,570,448	16,462,379	5,235,104	100.0	35.1	0.0	31.8
2012	1,782,353	9,451,792	5,287,870	16,522,015	4,978,107	100.0	33.8	0.0	30.1

Note: Dollar amounts are in thousands of dollars. Amounts before 2018 reflect the inclusion of DC balances in both the active member contributions and the assets.

TABLE 7

RECONCILIATION OF UNFUNDED ACTUARIAL ACCRUED LIABILITY
(Base and Supplemental Benefits)

For Year Ending June 30, 2021

	Base	Base and Supplemental
1. Unfunded Actuarial Accrued Liability as of June 30, 2020	$ 9,907,189,586	$ 10,260,852,248
2. Normal Cost	30,194,313	31,512,568
3. Actuarially Determined Contribution	(946,600,000)	(946,600,000)
4. Interest	606,877,913	630,839,125
5. Expected Unfunded Actuarial Accrued Liability as of June 30, 2021	$ 9,597,661,812	$ 9,976,603,941
6. Actuarial Value of Asset Changes		
a. Investment Experience (Gain)/Loss	$ (149,275,738)	$ (151,760,097)
b. Contributions (Above)/Below the Actuarially Determined Contribution and Other (Gain)/Loss	$ (590,410,849)	$ (643,933,256)
7. Actuarial Accrued Liability Changes		
a. Actuarial Accrued Liability Experience (Gain)/Loss	$ 2,752,530	$ 6,192,220
b. Additional Liability Due to Benefit Changes	0	22,604,566
c. Additional Liability Due to Assumption Changes	547,250,170	582,473,624
8. Total Experience (Gain)/Loss	$ (189,683,887)	$ (184,422,943)
9. Unfunded Actuarial Accrued Liability as of June 30, 2021: (5) + (8)	$ 9,407,977,925	$ 9,792,180,998

TABLE 8

ACTUARIAL GAIN/(LOSS)
(Base and Supplemental Benefits)

Liabilities		Base		Base and Supplemental
1. Actuarial Accrued Liability as of June 30, 2020	$	13,550,912,220	$	13,968,702,829
2. Normal Cost for Plan Year Ending June 30, 2021		30,194,313		31,512,568
3. Benefit Payments During Plan Year[1]		(1,178,524,781)		(1,178,524,781)
4. Service Purchases (employee and employer)		22,897		22,897
5. Member Reassignment Transfers		(34,720)		(34,720)
6. Interest at 6.75%		876,949,081		905,238,929
7. Change Due to Benefit Changes		0		22,604,566
8. Change Due to Assumption Changes		547,250,170		582,473,624
9. Expected Actuarial Accrued Liability as of June 30, 2021	$	13,826,769,180	$	14,331,995,912
10. Actuarial Accrued Liability as of June 30, 2021	$	13,829,521,710	$	14,338,188,132
Assets				
11. Actuarial Value of Assets as of June 30, 2020	$	3,643,722,634	$	3,707,850,581
12. Receipts During Plan Year		1,548,877,654		1,600,652,654
13. Expenditures, Excluding Expenses, During Plan Year		(1,178,774,500)		(1,178,774,500)
14. Interest at 6.75%		258,442,259		264,518,302
15. Expected Actuarial Value of Assets as of June 30, 2021	$	4,272,268,047	$	4,394,247,037
16. Actuarial Value of Assets as of June 30, 2021	$	4,421,543,785	$	4,546,007,134
Experience Gain / (Loss)				
17. Liability Actuarial Experience Gain/(Loss): (9) - (10)	$	(2,752,530)	$	(6,192,220)
18. Asset Actuarial Experience Gain/(Loss): (16) - (15)		149,275,738		151,760,097
19. Total Actuarial Experience Gain/(Loss): (17) + (18)	$	146,523,208	$	145,567,877

[1] Does not include miscellaneous expenses or benefit overpayments.

TABLE 9

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

Liability Sources (in thousands)		**Gain/(Loss)**
Retirement	$	7,667
Termination		(16,675)
Disability		16
Mortality		(13,209)
Salary		(734)
New Entrants/Rehires		(5,637)
Miscellaneous/COLA		25,819
Total Liability Experience Gain/(Loss)	$	(2,753)
as a % of AAL		(0.0%)
Asset Experience Gain/(Loss)	$	149,276
Net Actuarial Experience Gain/(Loss)	$	146,523

TABLE 10

PROJECTED BENEFIT PAYMENTS
(Base and Supplemental Benefits)

Plan Year Ending June 30	Benefit Amount
2022	$ 1,194,790,189
2023	1,202,923,950
2024	1,204,622,306
2025	1,205,663,509
2026	1,202,500,956
2027	1,196,859,490
2028	1,187,666,483
2029	1,174,573,758
2030	1,157,943,327
2031	1,137,660,365
2032	1,113,699,073
2033	1,085,986,251
2034	1,055,036,914
2035	1,021,280,783
2036	984,524,393
2037	945,067,009
2038	903,336,627
2039	860,164,274
2040	815,966,131
2041	770,782,149
2042	725,027,903
2043	679,099,525
2044	633,378,369
2045	588,234,520
2046	544,015,780
2047	501,046,382
2048	459,611,295
2049	419,953,252
2050	382,262,505
2051	346,674,050

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

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

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

Description of Contribution 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.

TRF Pre-'96 does not follow a traditional funding model as described above. This is partially because the benefits have been historically provided through a pay-as-you-go strategy with some accumulated assets. As the Fund moves toward pre-funding the remaining benefits, a contribution allocation strategy has been developed. 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 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%.

Contribution Summary

Unlike other Funds in INPRS, the funding policy for TRF Pre-'96 does not require a directly calculated amortization payment related to the unfunded actuarial accrued liability/(surplus). The portion of the lottery proceeds needed to fund the assumed COLAs is developed in Table 11. Table 12 develops the actuarially determined contribution for the Plan. The contribution amount shown in this report are based on the actuarial assumptions and cost methods described in Appendix C. Additionally, in Table 13 the funded status and normal cost under alternative discount rates are provided to illustrate the sensitivity of these items relative to the selection of the investment return assumption.

TABLE 11

DEVELOPMENT OF SUPPLEMENTAL RESERVE FUNDING
(Supplemental Benefits)

Projected COLAs in Next Biennium Beginning July 1, 2023

First Anticipated COLA		
1. Date of COLA commencement		January 1, 2024
2. Rate of COLA		0.4%
3. Value as of July 1, 2023 of COLA	$	41,111,971
Second Anticipated COLA		
4. Date of COLA commencement		January 1, 2025
5. Rate of COLA		0.4%
6. Value as of July 1, 2023 of COLA		38,257,296
7. Total COLA Funding Requirement as of July 1, 2023: (3) + (6)	$	79,369,267

Funding Sources for Projected COLAs

8. Assets as of June 30, 2021 Available for Future COLAs	$	21,298,381
9. Projected Contributions from 7/1/2021 to 12/31/2021		15,000,000
10. Expected Earnings through July 1, 2023		4,430,065
11. Projected Available Assets at July 1, 2023	$	40,728,446
12. Required Additional Funding for Anticipated COLAs: (7) - (11)	$	38,640,821

Minimum Lottery Allocation Amount

13. Remaining Payment for FYE 2022 [1]	$	12,299,721
14. Annual Payment for FYE 2023 [1]	$	24,599,441

[1] Assumes payment on March 31, 2022 and January 1, 2023.

TABLE 12

ACTUARIALLY DETERMINED CONTRIBUTION
(Base and Supplemental Benefits)

	Base Benefits	Supplemental Benefits	Total
1. Projected Payroll for FY 2022	$ 573,238,565		
2. Normal Cost Rate as of June 30, 2020	5.47%	0.25%	5.72%
3. Scheduled Contribution for FYE June 30, 2021 [1]	$ 946,600,000		
4. Scheduled Contribution for FYE June 30, 2022			
a. Prior year increased by 3%	$ 975,000,000		
b. Expected benefit payments for FYE June 30, 2022	1,194,790,189		
5. Actuarially Determined Contribution Amount: Lesser of (4a) and (4b)	$ 975,000,000		
6. Supplemental Benefits Lottery Proceeds		$ 12,299,721	
7. Actuarially Determined Contribution Amount for FYE 2022 [2]	$ 975,000,000	$ 12,299,721	
8. Estimated Actuarially Determined Contribution Amount for FYE 2023	$ 1,005,000,000	$ 24,599,441	

[1] Excludes a one-time additional contribution of $600 million. Total FYE 2021 contributions were $1,546,600,000.
[2] There is an additional contribution of $545 million planned to be made in FYE 2022, for a total of $1,520,000,000 for the base plan, along with $30 million in lottery proceeds for the supplemental benefits.

TABLE 13

INVESTMENT RETURN SENSITIVITY
(Base and Supplemental Benefits)

	1.00% Decrease: (5.25%)	0.75% Decrease: (5.50%)	0.50% Decrease: (5.75%)	0.25% Decrease: (6.00%)	Current Assumption: (6.25%)
Funded Status					
Actuarial Accrued Liability	$15,652,419,064	$15,304,718,693	$14,970,201,665	$14,648,226,374	$14,338,188,132
Actuarial Value of Assets	4,546,007,134	4,546,007,134	4,546,007,134	4,546,007,134	4,546,007,134
Unfunded Actuarial Accrued Liability	$11,106,411,930	$10,758,711,559	$10,424,194,531	$10,102,219,240	$9,792,180,998
Funded Ratio	29.0%	29.7%	30.4%	31.0%	31.7%
Actuarially Determined Contribution Amount					
Normal Cost	$44,756,918	$41,391,480	$38,288,827	$35,427,869	$32,789,246

	0.25% Increase: (6.50%)	0.50% Increase: (6.75%)	0.75% Increase: (7.00%)	1.00% Increase: (7.25%)	1.25% Increase: (7.50%)
Funded Status					
Actuarial Accrued Liability	$14,039,516,740	$13,751,674,245	$13,474,152,852	$13,206,473,002	$12,948,181,573
Actuarial Value of Assets	4,546,007,134	4,546,007,134	4,546,007,134	4,546,007,134	4,546,007,134
Unfunded Actuarial Accrued Liability	$9,493,509,606	$9,205,667,111	$8,928,145,718	$8,660,465,868	$8,402,174,439
Funded Ratio	32.4%	33.1%	33.7%	34.4%	35.1%
Actuarially Determined Contribution Amount					
Normal Cost	$30,355,181	$28,109,353	$26,036,771	$24,123,667	$22,357,388

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

GASB NO. 67 AND GASB NO. 68

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

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

The discount rate used for these disclosures is the assumed return on assets of 6.25%. 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 14

STATEMENT OF FIDUCIARY NET POSITION

			June 30, 2021
1. Assets			
a. Cash		$	5,702
b. Receivables			
i.	Contributions and Miscellaneous Receivables	$	2,914,847
ii.	Investments Receivable		40,000,794
iii.	Foreign Exchange Contracts Receivable		916,405,674
iv.	Interest and Dividends		10,698,213
v.	Receivables Due From Other Funds		0
vi.	Total Receivables	$	970,019,528
c. Investments			
i.	Short-Term Investments	$	0
ii.	Pooled Repurchase Agreements		45,622,345
iii.	Pooled Short-Term Investments		320,521,206
iv.	Pooled Fixed Income		1,572,901,487
v.	Pooled Equity		1,098,531,285
vi.	Pooled Alternative Investments		2,371,158,860
vii.	Pooled Derivatives		13,930,799
viii.	Pooled Investments		0
ix.	Securities Lending Collateral		26,697,518
x.	Total Investments	$	5,449,363,500
d. Net Capital Assets			0
e. Other Assets			0
f. Total Assets: a + b(vi) + c(x) + d + e		$	6,419,388,730
2. Liabilities			
a. Administrative Payable		$	758,747
b. Retirement Benefits Payable			95,384,572
c. Investments Payable			249,464,292
d. Foreign Exchange Contracts Payable			909,727,960
e. Securities Lending Obligations			26,697,518
f. Securities Sold Under Agreement to Repurchase			62,137,905
g. Due To Other Funds			466,780
h. Due to Other Governments			0
i. Total Liabilities: a + b + c + d + e + f + g + h		$	1,344,637,774
3. Fiduciary Net Position Restricted for Pensions: (1)(f) - (2)(i)		**$**	**5,074,750,956**

TABLE 15

STATEMENT OF CHANGES IN FIDUCIARY NET POSITION

			For Fiscal Year Ending June 30, 2021
1. Fiduciary Net Position as of June 30, 2020		**$**	**3,661,150,972**
2. Additions			
a. Contributions			
i.	Member Contributions	$	0
ii.	Employer Contributions		2,254,282
iii.	Service Purchases (Employer and Member) [1]		22,897
iv.	Non-Employer Contributing Entity Contributions		1,598,375,000
v.	Total Contributions	$	1,600,652,179
b. Investment Income/(Loss)			
i.	Net Appreciation/(Depreciation)	$	975,604,037
ii.	Net Interest and Dividend Income		53,615,881
iii.	Securities Lending Income		260,413
iv.	Other Net Investment Income		274,806
v.	Investment Management Expenses		(31,326,799)
vi.	Direct Investment Expenses		(1,613,077)
vii.	Securities Lending Expenses		(53,914)
viii.	Total Investment Income/(Loss)	$	996,761,347
c. Other Additions			
i.	Member Reassignments		2,616,382
ii.	Miscellaneous Receipts		475
iii.	Total Other Additions	$	2,616,857
d. Total Revenue (Additions): a(v) + b(viii) + c(iii)		$	2,600,030,383
3. Deductions			
a. Pension, Survivor and Disability Benefits		$	1,178,739,780
b. Death and Funeral Benefits			0
c. Distributions of Contributions and Interest			0
d. Administrative Expenses			5,039,517
e. Member Reassignments			2,651,102
f. Miscellaneous Expenses			0
g. Total Expenses (Deductions)		$	1,186,430,399
4. Net Increase (Decrease) in Fiduciary Net Position: (2)(d) - (3)(g)		**$**	**1,413,599,984**
5. Fiduciary Net Position as of June 30, 2021: (1) + (4)		**$**	**5,074,750,956**

[1] Service purchases paid by employer of $0 and employee of $22,897.

TABLE 16

SCHEDULE OF CHANGES IN NET PENSION LIABILITY

	For Fiscal Year Ending June 30, 2021		
	Total Pension Liability (a)	Plan Fiduciary Net Position (b)	Net Pension Liability (a) – (b)
1. Balance at June 30, 2020	$ 13,968,702,829	$ 3,661,150,972	$ 10,307,551,857
2. Changes for the Year:			
Service Cost (SC) [1]	31,512,568		31,512,568
Interest Cost	905,231,673		905,231,673
Experience (Gains)/Losses	6,414,475		6,414,475
Assumption Changes	582,473,624		582,473,624
Plan Amendments	22,604,566		22,604,566
Benefit Payments	(1,178,739,780)	(1,178,739,780)	0
Service Purchases			
Employer Contributions	0	0	0
Employee Contributions	22,897	22,897	0
Member Reassignments [2]	(34,720)	(34,720)	0
Employer Contributions		2,254,282	(2,254,282)
Non-employer Contributions		1,598,375,000	(1,598,375,000)
Employee Contributions		0	0
Net Investment Income		996,761,347	(996,761,347)
Administrative Expenses		(5,039,517)	5,039,517
Other		475	(475)
Net Changes	$ 369,485,303	$ 1,413,599,984	$ (1,044,114,681)
3. Balance at June 30, 2021	$ 14,338,188,132	$ 5,074,750,956	$ 9,263,437,176

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

[2] Includes net interfund transfers of employer contributed amounts.

TABLE 17

DEFERRED OUTFLOWS OF RESOURCES

	June 30, 2020	Remaining Period	Recognition	June 30, 2021
1. Liability Experience				
June 30, 2021 Loss	$ 6,414,475	1.00	$ 6,414,475	$ 0
June 30, 2020 Loss	0	0.00	0	0
June 30, 2019 Loss	0	0.00	0	0
June 30, 2018 Loss	0	0.00	0	0
June 30, 2017 Loss	0	0.00	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, 2021 Loss	$ 582,473,624	1.00	$ 582,473,624	$ 0
June 30, 2020 Loss	0	0.00	0	0
June 30, 2019 Loss	0	0.00	0	0
June 30, 2018 Loss	0	0.00	0	0
June 30, 2017 Loss	0	0.00	0	0
June 30, 2016 Loss	0	0.00	0	0
June 30, 2015 Loss	0	0.00	0	0
3. Investment Experience				
June 30, 2021 Loss	$ 0	5.00	$ 0	$ 0
June 30, 2020 Loss	111,240,884	4.00	27,810,221	83,430,663
June 30, 2019 Loss	0	3.00	0	0
June 30, 2018 Loss	0	2.00	0	0
June 30, 2017 Loss	0	1.00	0	0
Total Outflows: (1)+(2)+(3)	**$ 700,128,983**		**$ 616,698,320**	**$ 83,430,663**

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 18

DEFERRED INFLOWS OF RESOURCES

	June 30, 2020	Remaining Period	Recognition	June 30, 2021
1. Liability Experience				
June 30, 2021 Gain	$ 0	1.00	$ 0	$ 0
June 30, 2020 Gain	0	0.00	0	0
June 30, 2019 Gain	0	0.00	0	0
June 30, 2018 Gain	0	0.00	0	0
June 30, 2017 Gain	0	0.00	0	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, 2021 Gain	$ 0	1.00	$ 0	$ 0
June 30, 2020 Gain	0	0.00	0	0
June 30, 2019 Gain	0	0.00	0	0
June 30, 2018 Gain	0	0.00	0	0
June 30, 2017 Gain	0	0.00	0	0
June 30, 2016 Gain	0	0.00	0	0
June 30, 2015 Gain	0	0.00	0	0
3. Investment Experience				
June 30, 2021 Gain	$ 735,565,352	5.00	$ 147,113,071	$ 588,452,281
June 30, 2020 Gain	0	4.00	0	0
June 30, 2019 Gain	15,575,760	3.00	5,191,920	10,383,840
June 30, 2018 Gain	48,272,096	2.00	24,136,050	24,136,046
June 30, 2017 Gain	11,930,210	1.00	11,930,210	0
Total Inflows: (1)+(2)+(3)	**$ 811,343,418**		**$ 188,371,251**	**$ 622,972,167**

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 19

DEFERRED INFLOWS / OUTFLOWS TO BE RECOGNIZED IN PENSION EXPENSE

Fiscal Year Ending June 30	Deferred Outflows	Deferred Inflows	Net Deferred Outflows/(Inflows)
Current Year:			
2021	$ 616,698,320	$ 188,371,251	$ 428,327,069
Future Years:			
2022	$ 27,810,221	$ 176,441,037	$ (148,630,816)
2023	27,810,221	152,304,991	(124,494,770)
2024	27,810,221	147,113,071	(119,302,850)
2025	0	147,113,068	(147,113,068)
2026	0	0	0
Thereafter	0	0	0

TABLE 20

PENSION EXPENSE UNDER GASB NO. 68

		For Fiscal Year Ending June 30, 2021
1. Service Cost, beginning of year		$ 31,512,568
2. Interest Cost, including interest on service cost		905,231,673
3. Member Contributions [1]		0
4. Administrative Expenses		5,039,517
5. Expected Return on Assets [2]		(261,195,995)
6. Plan Amendments		22,604,566
7. Recognition of Deferred Inflows / Outflows of Resources Related to:		
a. Liability Experience (Gains) / Losses	6,414,475	
b. Assumption Change (Gains) / Losses	582,473,624	
c. Investment Experience (Gains) / Losses	(160,561,030)	
d. Total: (7a)+(7b)+(7c)		428,327,069
8. Miscellaneous (Income) / Expense		(475)
9. Total Collective Pension Expense: (1)+(2)+(3)+(4)+(5)+(6)+(7d)+(8)		1,131,518,923
10. Employer Service Purchases		0
Pension Expense / (Income): (9) + (10)		**$ 1,131,518,923**

[1] Excludes member paid service purchases of $22,897.
[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 Teachers' Retirement Fund Pre-1996 Account is a cost-sharing multiple-employer plan for GASB accounting purposes.
Measurement Date	June 30, 2021
Valuation Date	
Assets:	June 30, 2021
Liabilities:	June 30, 2020 – The TPL as of June 30, 2021 was determined based on an actuarial valuation prepared as of June 30, 2020 rolled forward one year to June 30, 2021, using the following key actuarial assumptions and other inputs, such as benefit accruals and actual benefit payments during that time period.
Inflation	2.00%
Future Salary Increases	2.65% - 11.90% based on service
Cost-of-Living Increases	As of June 30, 2021: Members in pay were granted a 1.00% COLA on January 1, 2022 and no COLA on January 1, 2023. Thereafter, the following COLAs, compounded annually, were assumed: 0.4% beginning on January 1, 2024 0.5% beginning on January 1, 2034 0.6% beginning on January 1, 2039 As of June 30, 2020: In lieu of a COLA on January 1, 2021 members in pay were provided a 13th check on October 1, 2020 Thereafter, the following COLAs, compounded annually, were assumed: 0.4% beginning on January 1, 2022 0.5% beginning on January 1, 2034 0.6% beginning on January 1, 2039

Mortality Assumption	Pub-2010 Public Retirement Plans Mortality Tables (Amount-Weighted) with a fully generational projection of mortality improvements using SOA Scale MP-2019. *Healthy Employees* – Teacher Employee table with a 1 year set forward for males and a 1 year set forward for females. *Retirees* – Teacher Retiree table with a 1 year set forward for males and a 1 year set forward 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.
Experience Study	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 used beginning with the June 30, 2020 actuarial valuation. Economic assumptions were updated and approved by the Board in May 2021 following the completion of an Asset-Liability study and first used in the June 30, 2021 actuarial valuation.
Discount Rate	6.25%, net of investment expenses The discount rate is equal to the expected long-term rate of return on plan investments, net of investment expense and including price inflation. The discount rate decreased from the 6.75% used on the prior measurement date. The plan is funded on a pay-as-you-go basis where 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, 2021 actuarial valuation assumes a long-term rate of return on assets of 6.25% and a 5-year smoothing method for recognizing investment gains and losses in the actuarial value of assets. In the past several years, the Board has followed its current funding policy and the State has complied in its contributions to the plan. While the expected benefit payments are currently greater than the contributions, the State is anticipated to increase their contributions at a steady level of 3% per year until they are fully funding the benefit payments, ensuring the plan maintains it path towards full funding based on the Board's funding policy. As a result, it is presumed that the projected plan assets will be sufficient to cover the future benefit payments for current members and a detailed projection of plan assets and cash flows has not been prepared.

Discount Rate Sensitivity

	1% Decrease 5.25%	Current Rate 6.25%	1% Increase 7.25%
Net Pension Liability	$10,577,668,108	$9,263,437,176	$8,131,722,046

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, 2020	
1. Currently Receiving Benefits:	
Retired Members, Disabled Members, and Beneficiaries	53,537
2. Inactive Members Entitled To But Not Yet Receiving Benefits	1,964
3. Inactive Non-vested Members Entitled to a Refund of Member Contributions	0
4. Active Members	8,375
Total Covered Plan Members: (1)+(2)+(3)+(4)	63,876

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, 2021, the money-weighted return on the plan assets is 25.7%.

Components of Net Pension Liability

As of June 30, 2021	
Total Pension Liability	$ 14,338,188,132
Fiduciary Net Position	5,074,750,956
Net Pension Liability	$ 9,263,437,176
Ratio of Fiduciary Net Position to Total Pension Liability	35.39%

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	2017	2018	2019	2020	2021
Total Pension Liability					
Total Pension Liability - beginning	$16,840,200,410	$16,736,769,005	$14,583,189,033	$14,389,164,104	$13,968,702,829
DC Account Balances - beginning [1]	1,265,128,371	1,242,229,627	0	0	0
DB Pension Liability - beginning	$15,575,072,039	$15,494,539,378	$14,583,189,033	$14,389,164,104	$13,968,702,829
Service Cost (SC), beginning-of-year	43,204,075	44,602,627	37,234,272	33,749,389	31,512,568
Interest Cost, including interest on SC	1,016,915,164	1,010,564,919	947,606,953	933,927,084	905,231,673
Experience (Gains)/Losses	22,415,814	(162,413,866)	(15,072,685)	(43,561,639)	6,414,475
Assumption Changes	(61,548,006)	(668,484,272)	0	(170,662,718)	582,473,624
Plan Amendments	4,212,840	0	(189,903)	0	22,604,566
DC Annuitizations	30,502,555	16,301,373	0	0	0
Actual Benefit Payments	(1,135,661,960)	(1,153,373,784)	(1,165,133,828)	(1,174,418,789)	(1,178,739,780)
Member Reassignments	(573,143)	1,428,141	1,493,825	484,347	(34,720)
Service Purchases	0	24,517	36,437	21,051	22,897
Net Change in Total Pension Liability	(80,532,661)	(911,350,345)	(194,024,929)	(420,461,275)	369,485,303
DB Pension Liability - ending	$15,494,539,378	$14,583,189,033	$14,389,164,104	$13,968,702,829	$14,338,188,132
DC Account Balances - ending [1]	1,242,229,627	0	0	0	0
(a) Total Pension Liability - ending	$16,736,769,005	$14,583,189,033	$14,389,164,104	$13,968,702,829	$14,338,188,132
Plan Fiduciary Net Position					
Plan Fiduciary Net Position – beginning	$4,787,528,950	$4,817,629,523	$3,711,346,539	$3,759,145,182	$3,661,150,972
DC Account Balances - beginning [1]	1,265,128,371	1,242,229,627	0	0	0
DB Plan Fiduciary Net Position – beginning	$3,522,400,579	$3,575,399,896	$3,711,346,539	$3,759,145,182	$3,661,150,972
Contributions – employer	4,524,443	4,168,409	3,504,801	2,355,930	2,254,282
Contributions – non-employer	871,000,000	917,900,000	943,900,000	971,132,000	1,598,375,000
Contributions – member	9,951	155,926	36,437	21,051	22,897
Net investment income	288,850,452	354,638,876	269,009,621	107,747,415	996,761,347
Actual benefit payments	(1,135,661,960)	(1,153,373,784)	(1,165,133,828)	(1,174,418,789)	(1,178,739,780)
Net member reassignments	0	1,428,141	1,493,825	484,347	(34,720)
DC Annuitizations	30,502,450	16,301,373	0	0	0
Administrative expense	(6,226,019)	(5,385,350)	(5,329,271)	(5,341,285)	(5,039,517)
Other	0	113,052	317,058	25,121	475
Net change in Plan Fiduciary Net Position	52,999,317	135,946,643	47,798,643	(97,994,210)	1,413,599,984
DB Plan Fiduciary Net Position – ending	$3,575,399,896	$3,711,346,539	$3,759,145,182	$3,661,150,972	$5,074,750,956
DC Account Balances - ending [1]	1,242,229,627	0	0	0	0
(b) Plan Fiduciary Net Position - ending	$4,817,629,523	$3,711,346,539	$3,759,145,182	$3,661,150,972	$5,074,750,956
Net Pension Liability - ending, (a) - (b)	$11,919,139,482	$10,871,842,494	$10,630,018,922	$10,307,551,857	$9,263,437,176

[1] Effective January 1, 2018, DC account balances are handled by a third party annuity provider and are treated as a separate defined contribution plan.

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 CHANGES IN THE TOTAL PENSION LIABILITY AND PLAN FIDUCIARY NET POSITION (continued)

Fiscal Year Ending June 30	2013	2014	2015	2016
Total Pension Liability				
Total Pension Liability - beginning	$16,522,014,519	$16,463,598,481	$16,355,216,031	$17,017,746,329
DC Account Balances - beginning [1]	1,974,075,962	1,814,049,671	1,715,340,174	1,421,455,452
DB Pension Liability - beginning	$14,547,938,557	$14,649,548,810	$14,639,875,857	$15,596,290,877
Service Cost (SC), beginning-of-year	81,343,107	68,860,011	57,750,841	46,787,226
Interest Cost, including interest on SC	957,228,337	961,628,534	959,894,924	1,019,403,246
Experience (Gains)/Losses	(40,718,985)	(70,517,351)	(140,465,814)	(5,793,718)
Assumption Changes	0	0	1,033,157,373	0
Plan Amendments	0	(25,523,806)	0	0
DC Annuitizations	86,941,060	93,981,713	143,225,034	35,185,531
Actual Benefit Payments	(988,335,242)	(1,034,563,166)	(1,100,434,461)	(1,118,121,746)
Member Reassignments	0	(3,801,799)	3,265,736	1,320,623
Service Purchases	5,151,976	262,911	21,387	0
Net Change in Total Pension Liability	101,610,253	(9,672,953)	956,415,020	(21,218,838)
DB Pension Liability - ending	$14,649,548,810	$14,639,875,857	$15,596,290,877	$15,575,072,039
DC Account Balances - ending [1]	1,814,049,671	1,715,340,174	1,421,455,452	1,265,128,371
(a) Total Pension Liability - ending	$16,463,598,481	$16,355,216,031	$17,017,746,329	$16,840,200,410
Plan Fiduciary Net Position				
Plan Fiduciary Net Position – beginning	$5,058,910,388	$5,215,201,405	$5,501,866,875	$5,099,909,470
DC Account Balances - beginning [1]	1,974,075,962	1,814,049,671	1,715,340,174	1,421,455,452
DB Plan Fiduciary Net Position – beginning	$3,084,834,426	$3,401,151,734	$3,786,526,701	$3,678,454,018
Contributions – employer	9,484,114	6,325,502	5,810,942	5,048,222
Contributions – non-employer	1,003,596,233	825,616,000	845,615,950	887,500,000
Contributions – member	0	5,486	0	131,562
Net investment income	212,553,417	504,802,035	953,124	40,767,462
Actual benefit payments	(988,335,491)	(1,034,563,166)	(1,100,434,460)	(1,118,121,745)
Net member reassignments	(384)	(3,801,516)	3,265,890	0
DC Annuitizations	86,940,500	93,982,450	143,225,000	35,185,500
Administrative expense	(7,926,278)	(7,010,722)	(6,530,516)	(6,564,440)
Other	5,197	18,898	21,387	0
Net change in Plan Fiduciary Net Position	316,317,308	385,374,967	(108,072,683)	(156,053,439)
DB Plan Fiduciary Net Position – ending	$3,401,151,734	$3,786,526,701	$3,678,454,018	$3,522,400,579
DC Account Balances - ending [1]	1,814,049,671	1,715,340,174	1,421,455,452	1,265,128,371
(b) Plan Fiduciary Net Position - ending	$5,215,201,405	$5,501,866,875	$5,099,909,470	$4,787,528,950
Net Pension Liability - ending, (a) - (b)	$11,248,397,076	$10,853,349,156	$11,917,836,859	$12,052,671,460

[1] Effective January 1, 2018, DC account balances are handled by a third party annuity provider and are treated as a separate defined contribution plan.

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

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

SCHEDULE OF THE NET PENSION LIABILITY

Fiscal Year Ending June 30	2017	2018	2019	2020	2021
Total Pension Liability	$16,736,769,005	$14,583,189,033	$14,389,164,104	$13,968,702,829	$14,338,188,132
Plan Fiduciary Net Position	4,817,629,523	3,711,346,539	3,759,145,182	3,661,150,972	5,074,750,956
Net Pension Liability	$11,919,139,482	$10,871,842,494	$10,630,018,922	$10,307,551,857	$9,263,437,176
Ratio of Plan Fiduciary Net Position to Total Pension Liability	28.78%	25.45%	26.12%	26.21%	35.39%
Covered-employee payroll [1]	$912,684,850	$824,769,947	$753,354,999	$693,965,233	$625,812,197
Net Pension Liability as a percentage of covered-employee payroll	1,305.94%	1,318.17%	1,411.02%	1,485.31%	1,480.23%

Fiscal Year Ending June 30	2013	2014	2015	2016
Total Pension Liability	$16,463,598,481	$16,355,216,031	$17,017,746,329	$16,840,200,410
Plan Fiduciary Net Position	5,215,201,405	5,501,866,875	5,099,909,470	4,787,528,950
Net Pension Liability	$11,248,397,076	$10,853,349,156	$11,917,836,859	$12,052,671,460
Ratio of Plan Fiduciary Net Position to Total Pension Liability	31.68%	33.64%	29.97%	28.43%
Covered-employee payroll [1]	$1,383,428,000	$1,262,828,000	$1,074,826,991	$989,093,421
Net Pension Liability as a percentage of covered-employee payroll	813.08%	859.45%	1,108.81%	1,218.56%

[1] As provided by INPRS.

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

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

SCHEDULE OF EMPLOYER CONTRIBUTIONS

Fiscal Year Ending June 30	2017	2018	2019	2020	2021
Actuarially Determined Contribution [1]	$875,524,443	$922,068,409	$947,404,801	$973,487,930	$1,600,629,282
Actual employer contributions	$875,524,443	$922,068,409	$947,404,801	$973,487,930	$1,600,629,282
Annual contribution (deficiency) / excess	$0	$0	$0	$0	$0
Covered-employee payroll [2]	$912,684,850	$824,769,947	$753,354,999	$693,965,233	$625,812,197
Actual contributions as a percentage of covered-employee payroll	95.93%	111.80%	125.76%	140.28%	255.77%

Fiscal Year Ending June 30	2013	2014	2015	2016
Actuarially Determined Contribution [1]	$1,013,079,780	$831,941,502	$851,426,892	$892,548,222
Actual employer contributions	$1,013,079,780	$831,941,502	$851,426,892	$892,548,222
Annual contribution (deficiency) / excess	$0	$0	$0	$0
Covered-employee payroll [2]	$1,383,428,000	$1,262,828,000	$1,074,826,991	$989,093,421
Actual contributions as a percentage of covered-employee payroll	73.23%	65.88%	79.22%	90.24%

[1] The plan is funded on a pay-as-you-go basis, therefore the actuarially determined contribution was set equal to the state appropriation to fund the plan.

[2] As provided by INPRS.

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

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

SCHEDULE OF MONEY-WEIGHTED RETURNS

For Fiscal Year Ending June 30	Money-Weighted Return
2021	25.7%
2020	2.8%
2019	7.6%
2018	9.5%
2017	8.1%
2016	1.0%
2015	0.6%
2014	12.7%
2013	5.1%

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

Appendix **Page**

Appendix A – Membership Data 41

Schedules of valuation data classified by various categories of members.

Appendix B – Summary of Plan Provisions 52

A summary of the current benefit structure, as determined by the provisions of governing law on June 30, 2021.

Appendix C – Summary of Actuarial Methods and Assumptions 55

A summary of the actuarial methods and assumptions used to estimate liabilities and determine contribution rates.

Appendix D – Glossary of Actuarial Terms 61

A glossary of actuarial terms used in the valuation report.

MEMBER DATA RECONCILIATION
For June 30, 2020 Data used in the June 30, 2021 Valuation

	Active Members	Inactive Vested	Inactive Deceased	Disabled	Retired	Beneficiary	Total
1. As of June 30, 2019	**9,338**	**2,202**	**70**	**102**	**48,009**	**5,304**	**65,025**
2. Data Adjustments							
New Participants	69	0	0	0	0	0	69
Rehires	53	(53)	0	0	0	0	0
Terminations:							
Not Vested	0	0	0	0	0	0	0
Deferred Vested	(335)	335	0	0	0	0	0
Disability	(4)	0	0	4	0	0	0
Retirements	(701)	(541)	0	0	1,242	0	0
Refund / Benefits Ended	(26)	0	(14)	0	0	(6)	(46)
Transfer	(2)	(27)	0	0	0	0	(29)
Deaths:							
With Beneficiary	(5)	(4)	0	0	(428)	437	0
Without Beneficiary	(9)	(9)	0	(2)	(923)	(262)	(1,205)
Entitled to Future Pension Benefit	(3)	0	3	0	0	0	0
Data Corrections [1]	0	2	0	6	13	41	62
Net Change	(963)	(297)	(11)	8	(96)	210	(1,149)
3. As of June 30, 2020 [2]	**8,375**	**1,905**	**59**	**110**	**47,913**	**5,514**	**63,876**

[1] Data corrections reflect the movement between Disabled and Retired status, along with other movements in the INPRS data.

[2] Valuation results as of June 30, 2021 were calculated using June 30, 2020 census data, adjusted for certain activity before the valuation date. Headcounts may include multiple records for individuals, such as members with multiple periods of service.

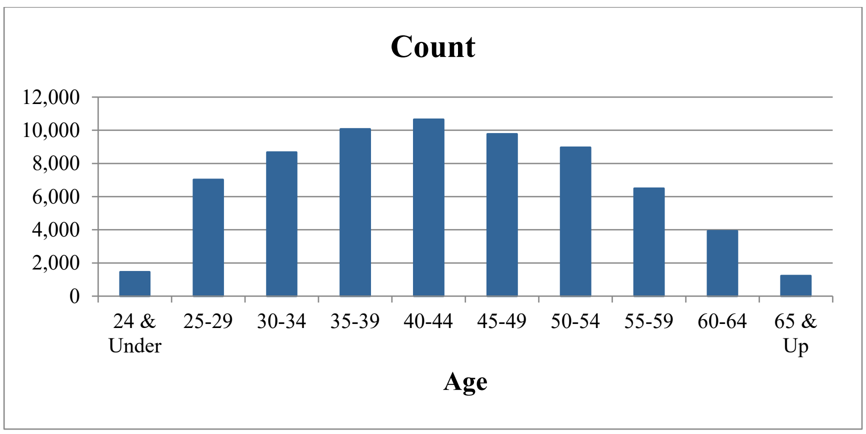
SUMMARY OF MEMBERSHIP DATA

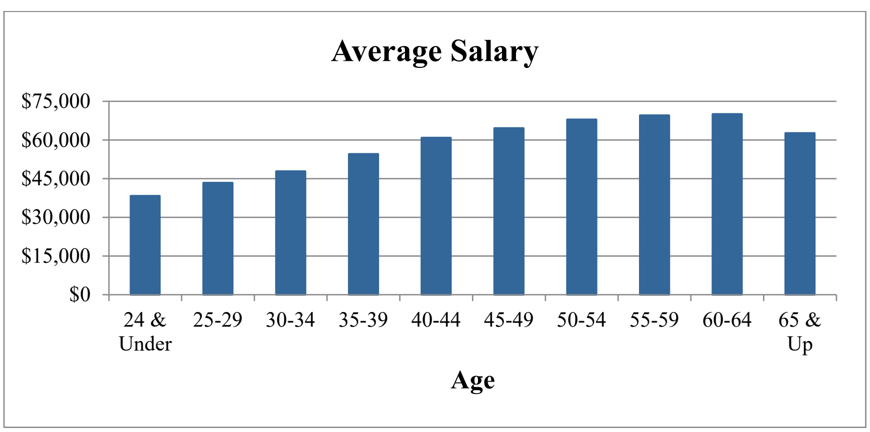
	Combined TRF Plans		Pre-1996 Account
Valuation Date	**June 30, 2020**	**June 30, 2021**	**June 30, 2021**
Date of Membership Data [1]	June 30, 2019	June 30, 2020	June 30, 2020
ACTIVE MEMBERS			
Number of Active Members	67,788	68,241	8,375
Annual Membership Data Salary [2]	$ 3,870,822,192	$ 4,014,573,154	$ 625,741,723
Anticipated Payroll for Next Fiscal Year	$ 4,179,833,109	$ 4,354,360,329	$ 573,238,565
Active Member Averages			
Age	43.0	43.1	56.4
Service	13.6	13.7	29.1
Annual Membership Data Salary	$ 57,102	$ 58,829	$ 74,715
INACTIVE MEMBERS			
Number of Inactive Members	8,881	8,791	1,964
Inactive Member Averages			
Age	51.7	51.6	59.1
Service	14.5	14.1	18.2
RETIREES, DISABLEDS, AND BENEFICIARIES			
Number of Members			
Retired	55,163	55,701	47,913
Disabled	237	260	110
Beneficiaries	5,611	5,863	5,514
Total	61,011	61,824	53,537
Annual Benefits			
Retired	$ 1,186,691,022	$ 1,204,475,617	$ 1,066,531,812
Disabled	2,374,974	2,721,880	1,394,505
Beneficiaries	83,708,657	89,159,775	84,740,932
Total	$ 1,272,774,653	$ 1,296,357,272	$ 1,152,667,249
Annual Benefits			
Pension	$ 1,138,731,406	$ 1,165,138,525	$ 1,032,969,948
DC Plan Annuities	134,043,247	131,218,747	119,697,301
Total	$ 1,272,774,653	$ 1,296,357,272	$ 1,152,667,249

[1] The valuation results were calculated using the prior year's census data and were adjusted for certain activity during fiscal year.
[2] The 2020 amount for the combined TRF Plans includes 68 records from the 1996 Account with less than a year of service who are missing a salary. Their salaries were defaulted to the average salary of $54,561. The 2021 amount for the combined TRF Plans includes 30 records from the 1996 Account with less than a year of service who are missing a salary. Their salaries were defaulted to the average salary of $56,607.

ACTIVE MEMBERS[1]
As of June 30, 2020 for the June 30, 2021 Valuation
Combined TRF Plans

	Count of Members			FY 2020 Annual Membership Data Salary		
Age	Male	Female	Total	Male	Female	Total
24 & Under	217	1,243	1,460	$ 8,364,634	$ 47,524,589	$ 55,889,223
25-29	1,532	5,487	7,019	68,327,398	236,014,511	304,341,909
30-34	2,212	6,459	8,671	113,765,262	301,264,612	415,029,874
35-39	2,656	7,414	10,070	158,697,452	390,717,260	549,414,712
40-44	2,886	7,768	10,654	192,684,911	455,619,675	648,304,586
45-49	2,611	7,156	9,767	188,765,627	441,643,677	630,409,304
50-54	2,335	6,626	8,961	175,372,571	433,143,716	608,516,287
55-59	1,702	4,787	6,489	130,077,967	321,068,481	451,146,448
60-64	1,001	2,925	3,926	76,453,967	198,379,382	274,833,349
65 & Up	368	856	1,224	23,901,885	52,785,577	76,687,462
Total	17,520	50,721	68,241	$ 1,136,411,674	$ 2,878,161,480	$ 4,014,573,154





[1] Includes 30 records from the 1996 Account with less than a year of service who are missing a salary. Their salaries were defaulted to the average salary of $56,607.

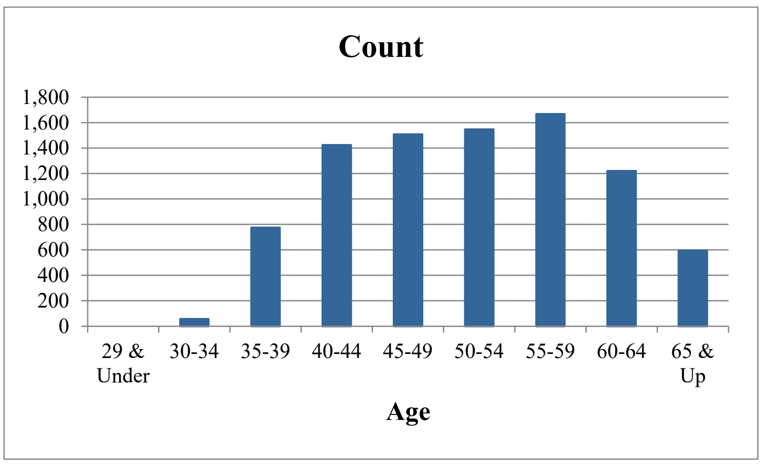
AGE AND SERVICE DISTRIBUTION[1]
As of June 30, 2020 for the June 30, 2021 Valuation
Combined TRF Plans

Age		0-4	5-9	10-14	15-19	20-24	25-29	30-34	Over 34	Total
24 & Under	Number	1,459	1	0	0	0	0	0	0	1,460
	Total Salary	$ 55,846,979	$ 42,244	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 55,889,223
	Average Sal.	$ 38,278	$ 42,244	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 38,280
25-29	Number	5,339	1,679	1	0	0	0	0	0	7,019
	Total Salary	$ 226,406,030	$ 77,883,153	$ 52,726	$ 0	$ 0	$ 0	$ 0	$ 0	$ 304,341,909
	Average Sal.	$ 42,406	$ 46,387	$ 52,726	$ 0	$ 0	$ 0	$ 0	$ 0	$ 43,360
30-34	Number	2,213	5,504	953	1	0	0	0	0	8,671
	Total Salary	$ 95,302,347	$ 266,580,917	$ 53,091,367	$ 55,243	$ 0	$ 0	$ 0	$ 0	$ 415,029,874
	Average Sal.	$ 43,065	$ 48,434	$ 55,710	$ 55,243	$ 0	$ 0	$ 0	$ 0	$ 47,864
35-39	Number	1,618	2,627	4,464	1,359	2	0	0	0	10,070
	Total Salary	$ 70,400,713	$ 133,183,569	$ 257,917,038	$ 87,812,350	$ 101,042	$ 0	$ 0	$ 0	$ 549,414,712
	Average Sal.	$ 43,511	$ 50,698	$ 57,777	$ 64,615	$ 50,521	$ 0	$ 0	$ 0	$ 54,560
40-44	Number	1,307	1,690	1,941	4,387	1,325	4	0	0	10,654
	Total Salary	$ 58,012,445	$ 86,473,895	$ 113,839,754	$ 293,266,332	$ 96,414,771	$ 297,389	$ 0	$ 0	$ 648,304,586
	Average Sal.	$ 44,386	$ 51,168	$ 58,650	$ 66,849	$ 72,766	$ 74,347	$ 0	$ 0	$ 60,851
45-49	Number	1,027	1,273	1,213	1,733	3,702	818	1	0	9,767
	Total Salary	$ 45,828,818	$ 64,249,020	$ 69,932,629	$ 112,620,702	$ 271,835,853	$ 65,824,736	$ 117,546	$ 0	$ 630,409,304
	Average Sal.	$ 44,624	$ 50,471	$ 57,653	$ 64,986	$ 73,429	$ 80,470	$ 117,546	$ 0	$ 64,545
50-54	Number	722	920	953	1,203	1,802	2,662	694	5	8,961
	Total Salary	$ 32,438,538	$ 47,470,239	$ 54,039,157	$ 77,997,368	$ 131,615,019	$ 208,398,243	$ 56,227,760	$ 329,963	$ 608,516,287
	Average Sal.	$ 44,929	$ 51,598	$ 56,704	$ 64,836	$ 73,038	$ 78,286	$ 81,020	$ 65,993	$ 67,907
55-59	Number	403	468	608	788	951	996	1,744	531	6,489
	Total Salary	$ 16,829,782	$ 23,820,249	$ 34,244,442	$ 50,473,395	$ 67,465,167	$ 76,170,624	$ 139,243,793	$ 42,898,996	$ 451,146,448
	Average Sal.	$ 41,761	$ 50,898	$ 56,323	$ 64,053	$ 70,941	$ 76,477	$ 79,842	$ 80,789	$ 69,525
60-64	Number	234	259	343	435	600	484	499	1,072	3,926
	Total Salary	$ 9,651,074	$ 13,087,565	$ 18,964,394	$ 27,828,617	$ 41,757,732	$ 36,323,732	$ 39,818,084	$ 87,402,151	$ 274,833,349
	Average Sal.	$ 41,244	$ 50,531	$ 55,290	$ 63,974	$ 69,596	$ 75,049	$ 79,796	$ 81,532	$ 70,003
65 & Up	Number	139	126	118	135	135	101	97	373	1,224
	Total Salary	$ 3,347,145	$ 4,356,090	$ 5,671,377	$ 8,341,585	$ 9,336,235	$ 7,642,602	$ 7,508,021	$ 30,484,407	$ 76,687,462
	Average Sal.	$ 24,080	$ 34,572	$ 48,063	$ 61,790	$ 69,157	$ 75,669	$ 77,402	$ 81,728	$ 62,653
Total	Number	14,461	14,547	10,594	10,041	8,517	5,065	3,035	1,981	68,241
	Total Salary	$ 614,063,871	$ 717,146,941	$ 607,752,884	$ 658,395,592	$ 618,525,819	$ 394,657,326	$ 242,915,204	$ 161,115,517	$ 4,014,573,154
	Average Sal.	$ 42,463	$ 49,299	$ 57,368	$ 65,571	$ 72,622	$ 77,919	$ 80,038	$ 81,330	$ 58,829

[1] Includes 30 records from the 1996 Account with less than a year of service who are missing a salary. Their salaries were defaulted to the average salary of $56,607.

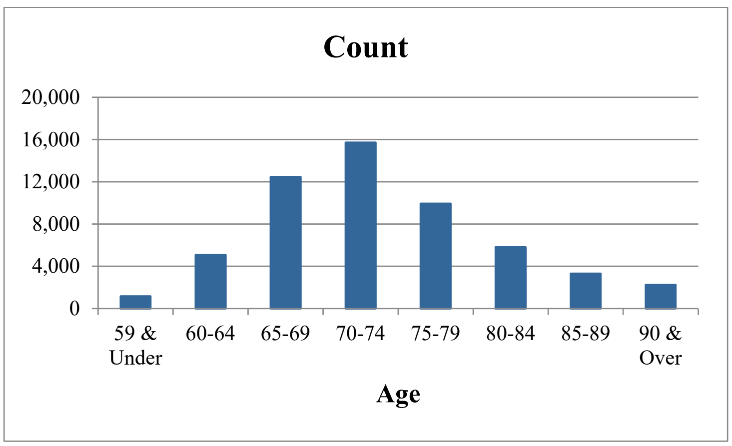
INACTIVE VESTED MEMBERS
As of June 30, 2020 for the June 30, 2021 Valuation
Combined TRF Plans

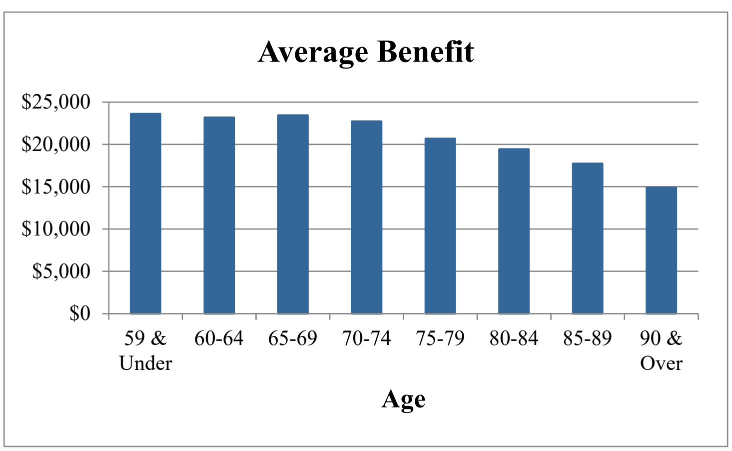
	Count of Members		
Age	Male	Female	Total
29 & Under	0	0	0
30-34	13	44	57
35-39	186	589	775
40-44	380	1,043	1,423
45-49	477	1,031	1,508
50-54	458	1,089	1,547
55-59	370	1,298	1,668
60-64	252	968	1,220
65 & Up	134	459	593
Total	2,270	6,521	8,791



RETIRED MEMBERS
As of June 30, 2020 for the June 30, 2021 Valuation
Combined TRF Plans

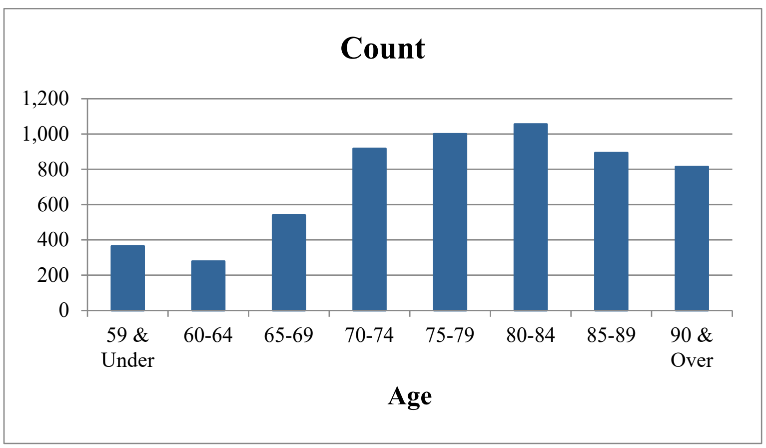
	Count of Members			Annual Benefits		
Age	Male	Female	Total	Male	Female	Total
59 & Under	327	827	1,154	$ 7,888,326	$ 19,374,254	$ 27,262,580
60-64	1,275	3,802	5,077	31,989,784	85,703,117	117,692,901
65-69	3,166	9,298	12,464	82,511,060	209,692,431	292,203,491
70-74	4,668	11,051	15,719	119,747,891	237,421,317	357,169,208
75-79	3,552	6,383	9,935	83,772,830	121,640,271	205,413,101
80-84	2,208	3,600	5,808	49,113,675	63,752,748	112,866,423
85-89	1,281	2,018	3,299	26,465,713	32,008,496	58,474,209
90 & Over	682	1,563	2,245	12,774,944	20,618,760	33,393,704
Total	17,159	38,542	55,701	$ 414,264,223	$ 790,211,394	$ 1,204,475,617

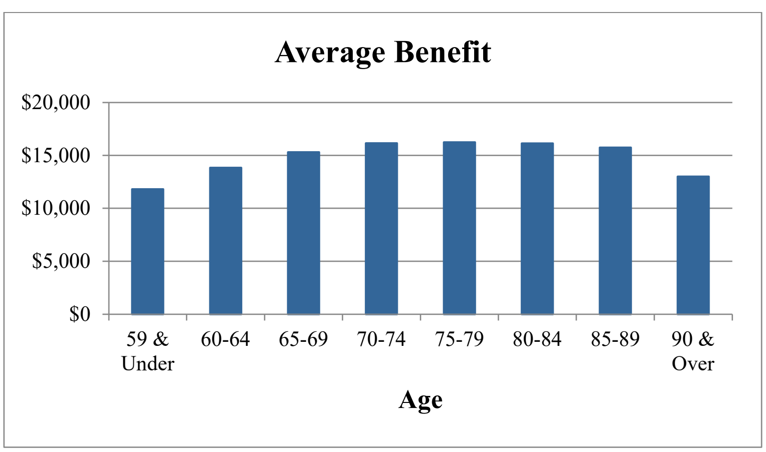




BENEFICIARIES RECEIVING BENEFITS
As of June 30, 2020 for the June 30, 2021 Valuation
Combined TRF Plans

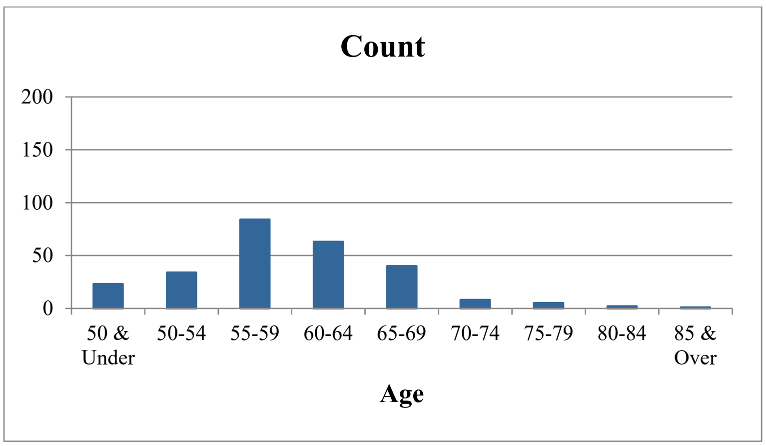
	Count of Members			Annual Benefits		
Age	Male	Female	Total	Male	Female	Total
59 & Under	154	210	364	$ 1,698,807	$ 2,598,580	$ 4,297,387
60-64	112	166	278	1,453,675	2,392,053	3,845,728
65-69	218	322	540	2,845,352	5,418,042	8,263,394
70-74	328	589	917	4,863,864	9,950,273	14,814,137
75-79	287	713	1,000	3,963,553	12,276,299	16,239,852
80-84	229	826	1,055	3,101,400	13,917,268	17,018,668
85-89	170	724	894	2,082,634	11,996,160	14,078,794
90 & Over	105	710	815	984,649	9,617,166	10,601,815
Total	1,603	4,260	5,863	$ 20,993,934	$ 68,165,841	$ 89,159,775

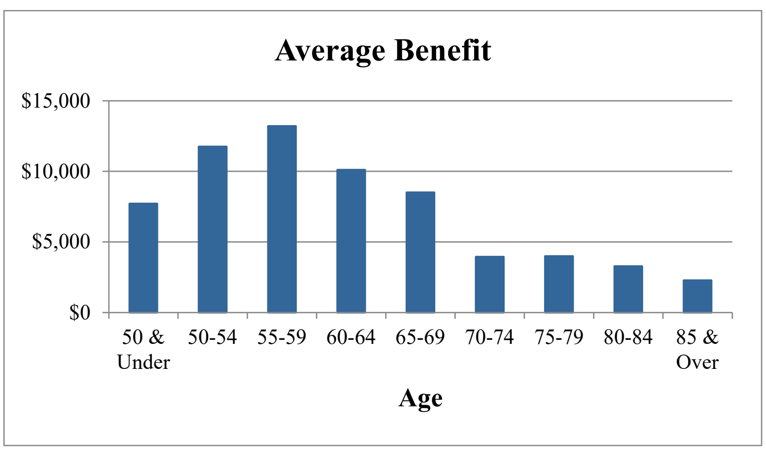




DISABLED MEMBERS
As of June 30, 2020 for the June 30, 2021 Valuation
Combined TRF Plans

	Count of Members			Annual Benefits		
Age	Male	Female	Total	Male	Female	Total
50 & Under	2	21	23	$ 14,259	$ 162,979	$ 177,238
50-54	9	25	34	91,762	307,535	399,297
55-59	21	63	84	298,275	810,447	1,108,722
60-64	15	48	63	150,840	485,396	636,236
65-69	8	32	40	97,280	242,857	340,137
70-74	2	6	8	9,893	21,653	31,546
75-79	1	4	5	3,637	16,263	19,900
80-84	0	2	2	0	6,530	6,530
85 & Over	0	1	1	0	2,274	2,274
Total	58	202	260	$ 665,946	$ 2,055,934	$ 2,721,880





MEMBERS AND BENEFICIARIES RECEIVING BENEFITS
As of June 30, 2020 for the June 30, 2021 Valuation
Pre-1996 Account

Schedule of Average Benefit Payments [1,2]

	Years of Credited Service						
For the Year Ended June 30, 2021	< 10	10 - 14	15 - 19	20 - 24	25 - 29	30 +	Total
Average Monthly Defined Benefit	$87	$316	$567	$942	$1,339	$1,937	$1,608
Average Monthly DC Annuity [3]	$23	$215	$217	$297	$396	$642	$505
Average Final Average Salary [4]	$30,995	$26,238	$40,903	$50,994	$56,884	$62,098	$57,815
Number of Benefit Recipients	147	1,383	3,314	5,434	8,608	34,651	53,537

[1] Calculated using the prior year census data, adjusted for certain activity during the fiscal year.
[2] Members with less than 10 years of service are primarily members receiving a disability benefit.
[3] This represents those retirees who elected to receive their DC account as a supplemental monthly payment in addition to the monthly Defined Benefit payment.
[4] Excludes the 309 in-pay members who are missing a final average salary in the data.

MEMBERS AND BENEFICIARIES RECEIVING BENEFITS
As of June 30, 2020 for the June 30, 2021 Valuation
Pre-1996 Account

Schedule of Benefit Recipients by Type of Benefit Option [1,2]

Amount of Monthly Benefit (in dollars)	5-Year Certain & Life	Straight Life	Joint with 100% Survivor Benefits	Joint with Two-Thirds Survivor Benefits	Joint with One-Half Survivor Benefits	Survivors	Disability	Total Benefit Recipients
	Number of Recipients by Benefit Option							
1 - 500	1,008	565	545	67	119	775	32	3,111
501 - 1,000	1,496	963	1,065	243	353	1,420	19	5,559
1,001 - 1,500	2,713	1,859	2,520	704	1,009	1,418	28	10,251
1,501 - 2,000	3,420	3,064	3,821	1,354	1,627	1,067	24	14,377
2,001 - 2,500	2,490	2,829	2,966	1,063	1,447	521	6	11,322
2,501 - 3,000	1,142	1,517	1,186	470	646	186	1	5,148
Over 3,000	797	1,104	885	396	460	127	0	3,769
Total	13,066	11,901	12,988	4,297	5,661	5,514	110	53,537

[1] Calculated using the prior year census data, adjusted for certain activity during the fiscal year.
[2] Members who elected Social Security Integration were included in their selected benefit option of either 5-Year Certain & Life, Straight Life, Modified Cash Refund Plus 5-Year Certain & Life, Joint With 100% Survivor Benefits, Joint With Two-Thirds Survivor Benefits, or Joint With One-Half Survivor Benefits.

MEMBERS AND BENEFICIARIES RECEIVING BENEFITS
As of June 30, 2020 for the June 30, 2021 Valuation
Pre-1996 Account

Schedule of Retirees and Beneficiaries [1]

	Added to Rolls		Removed from Rolls		Rolls - End of Year				
	Number	Annual Benefits[2]	Number	Annual Benefits[2]	Number	Total Annual Benefits[2]	Percent Change In Total Annual Benefits	Average Annual Benefit	Percent Change In Average Annual Benefit
2021 [3]	1,315	$32,981	1,193	$19,207	53,537	$1,152,667	1.0%	$21,530	0.8%
2020 [3]	1,195	29,710	1,278	20,560	53,415	1,140,771	0.6	21,357	0.8
2019 [3]	1,514	37,102	1,243	19,005	53,498	1,133,528	1.4	21,188	0.9
2018 [3]	1,483	33,330	1,496	20,240	53,227	1,117,463	0.9	20,994	1.0
2017 [3]	1,953	47,305	1,288	18,257	53,240	1,106,961	2.3	20,792	1.0
2016 [3]	3,466	95,994	1,105	14,677	52,575	1,082,306	7.8	20,586	3.0
2015 [3]	1,886	50,261	1,017	14,293	50,214	1,003,910	3.1	19,993	1.3
2014 [3]	0	93,605	0	14,524	49,345	973,635	0.0	19,731	0.0
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

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

Definitions

Fiscal year	Twelve month period ending June 30.
Participation	Any full-time Indiana teachers in a public school corporation, certain INPRS employees, and some employees in charter schools, innovation schools, turnaround schools and public universities who were hired on or before June 30, 1995.
Average annual compensation	Average of highest five years of compensation. Years do not need to be consecutive.
Member contributions	All Fund members are required by state law to contribute 3% of salary contributions to their Defined Contribution Account. These 3% contributions are generally "picked up" by the employer and contributed on a pre-tax basis on behalf of the employee. Extra voluntary contributions by the member are also possible, but on a post-tax basis. At retirement, there are six alternatives for receiving the proceeds of this account, including lump sums, full and partial rollovers, full and partial annuitization of the balance, and deferred distribution.
Minimum pension benefit	The minimum pension benefit paid to a regularly retired member receiving an unreduced pension benefit is $185 per month effective July 1, 2017 per SEA 46.

Eligibility for Benefits

Deferred vested	Ten years of service. Benefit commences at regular or early retirement eligibility.
Disability retirement	
Regular disability benefit	Five years of service.
Disability retirement benefit	Five years of service and determined to be disabled by the Social Security Administration. Annual verification of Social Security disability is required.
Early retirement	Age 50 with 15 years of service.
Normal retirement	Age 65 with ten years of service, or age 60 with 15 years of service, or if age is at least 55 and the sum of age plus credited service is at least 85.
Pre-retirement death	10 years of service. Spouse to whom member had been married for two or more years is automatically eligible, or a dependent may be designated as beneficiary.

Monthly Benefits Payable

Normal retirement	State pension equal to total service times 1.1% of Average Annual Compensation. Beginning July 1, 2017, the minimum pension benefit is $185 per month.
Early retirement	State pension is computed as regular retirement benefit, but reduced for each month between age at early retirement and attainment of age 65. The age reduction factor is calculated as the sum of the following: • 1/10 of 1% for each month from age 60 to 65. • 5/12 of 1% for each month from age at early retirement to 60.
Deferred retirement	Computed as a regular retirement benefit with state pension based on service and Average Annual Compensation at termination.
Disability	
Regular disability benefit	$125 per month plus $5 per month for each year of service credit over five years.
Disability retirement benefit	Computed as a regular retirement benefit using creditable service to the date of disability and without reduction for early retirement. The minimum benefit is $180 per month.
Pre-retirement death	The spouse or dependent beneficiary is entitled to receive the monthly life benefit payable immediately under the assumption that the member retired on the later of age 50 or the date before the date of death and elected the joint and full survivor option. If eligible for normal retirement at death, the minimum pension benefit is $185 per month.
Cost-of-Living-Adjustments	The employer-funded monthly pension benefits for members in pay status are increased periodically to preserve purchasing power that is diminished due to inflation. Such increases are not guaranteed by Statute and will only be provided by legislative action. A "13th check" was paid to each member in pay status during fiscal year 2018, 2019, 2020 and 2021. The amount of the 13th check varied based on the years of creditable service the member had earned prior to retirement. Legislation passed in the 2018 legislative session creates a funding mechanism to provide for future benefit increases or 13th checks. Under the law, the INPRS Board may designate

	a portion of the proceeds from lottery revenues into TRF Pre-'96. Increases or payments are made upon passed legislation subject to the availability of funds to provide the benefit. Legislation passed in 2021 provided for a 1% increase effective January 1, 2022 and no increase through the remainder of the biennium.
Forms of payment	The normal form of benefit payment (Option A-1) is a single life annuity with a five-year certain period. There are five optional forms of payment available, as listed below. Additionally, members retiring between ages 50 and 62 may integrate their pension benefit with their Social Security benefit by choosing Social Security Integration (Option A-4) in conjunction with the normal form or any other optional form selected. Optional forms of payment are calculated on an actuarially equivalent basis.
Additional Forms of Payment	
Option A-2:	Straight Life benefit with no certain period
Option A-3:	Modified Cash Refund Annuity (operates in conjunction with the Defined Contribution Account)
Option B-1:	100% Survivorship
Option B-2:	66 2/3% Survivorship
Option B-3:	50% Survivorship
	State law provides for actuarially-adjusted and re-calculated benefits based on a new optional form election in the event of the death of the member's spouse after retirement.

Changes in Plan Provisions since the Prior Year

House Enrolled Act No. 1001 was passed in April 2021 and granted a 1.00% cost-of-living adjustment effective January 1, 2022 to be paid from the Supplemental Reserve Account. No supplemental benefits were granted for fiscal year 2023.

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.

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 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 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 than 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, 2020 was used in the valuation and adjusted, where appropriate, to reflect changes between June 30, 2020 and June 30, 2021. The valuation results from June 30, 2020 were rolled-forward to June 30, 2021 to reflect benefit accruals during the year less benefits paid.

2. 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 amount needed.

3. Asset Valuation Method

Actuarial Value of Assets is equal to a five-year smoothing of gains and losses on the Market Value of Assets subject to a 20% corridor.

4. Anticipated Payroll

The Anticipated Payroll for the fiscal year beginning July 1, 2021 is equal to the actual payroll during the year ending June 30, 2021, increased with one year of salary scale.

5. 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.

Changes in Methods since the Prior Year

None.

ACTUARIAL ASSUMPTIONS

Valuation Date — June 30, 2021

Economic Assumptions

1. Investment return — 6.25% per year, compounded annually (net of administrative and investment expenses)

2. Inflation — 2.00% per year

3. Salary increase

Service	Wage Inflation	Merit	Salary Increase
0-1	2.65%	9.25%	11.90%
2	2.65%	4.25%	6.90%
3	2.65%	2.75%	5.40%
4-14	2.65%	1.75%	4.40%
15	2.65%	1.50%	4.15%
16	2.65%	1.25%	3.90%
17	2.65%	1.00%	3.65%
18	2.65%	0.75%	3.40%
19	2.65%	0.50%	3.15%
20	2.65%	0.25%	2.90%
21+	2.65%	0.00%	2.65%

4. Cost-of-Living Adjustment (COLA) — Members in pay were granted a 1.00% COLA effective January 1, 2022 for the next biennium. Thereafter, the following COLAs, compounded annually, were assumed:

0.4% beginning on January 1, 2024
0.5% beginning on January 1, 2034
0.6% beginning on January 1, 2039

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 – Teacher Employee table with a 1 year set forward for males and a 1 year set forward for females.

Retirees – Teacher Retiree table with a 1 year set forward for males and a 1 year set forward 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.

2. Disability

Age	Sample Rates
<=36	0.005%
40	0.009%
45	0.014%
50	0.034%
55	0.061%
56-65	0.070%
66+	0.000%

3. Retirement

Age	Eligible for **Reduced** Benefit	Eligible for **Unreduced** Benefit
50-53	2.0%	N/A
54	5.0%	N/A
55-56	5.0%	15%
57	6.5%	15%
58	8.0%	15%
59	12.0%	15%
60	N/A	15%
61	N/A	20%
62	N/A	25%
63	N/A	30%
64	N/A	35%
65-74	N/A	40%
75+	N/A	100%

Active members: 30% commence benefit immediately (reduced for early retirement, if applicable). 70% defer to earliest unreduced retirement date.

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

4. Termination

Service	Male	Female
0	15.00%	12.50%
1	13.00%	11.50%
2	11.00%	10.50%
3	9.00%	9.50%
4	8.00%	8.50%
5	7.00%	7.50%
6	6.00%	6.50%
7	5.00%	5.50%
8	4.50%	5.00%
9	4.00%	4.50%
10	3.75%	4.00%
11	3.50%	3.50%
12	3.25%	3.25%
13	3.00%	3.00%
14	2.75%	2.75%
15	2.50%	2.50%
16+	2.25%	2.25%

Other Assumptions

1. Form of payment

100% of members are assumed to elect the normal form of benefit payment (Option A-1), a single life annuity with a five-year certain period.

2. Marital status

a. Percent married

80% of male members and 75% of female members are assumed to be married and 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.

4. Miscellaneous adjustments

For active members, the Average Annual Compensation was increased by $200 for additional wages received upon termination, such as severance or unused sick leave.

Changes in Assumptions since the Prior Year

As a result of the Asset-Liability work completed and discussed at the May 7, 2021 Board meeting, the Board made portfolio revisions and adopted a new set of economic assumptions for the June 30, 2021 actuarial valuations as follows:

- The investment return assumption was lowered from 6.75% (as of June 30, 2020) to 6.25%.
- Price inflation was lowered from 2.25% (as of June 30, 2020) to 2.00%.
- General wage inflation was lowered from 2.75% (as of June 30, 2020) to 2.65%.

Legislation granted a 1.00% cost-of-living adjustment effective January 1, 2022 to be paid from the Supplemental Reserve Account. No supplemental benefits were granted for fiscal year 2023. This replaces the COLA assumption of 0.4% for Fiscal Years 2022 and 2023 but does not change the assumption for future years.

Data Adjustments

Active and retired member data is reported as of June 30. Member census data as of June 30, 2020 was used in the valuation and adjusted, where appropriate, to reflect changes between June 30, 2020 and June 30, 2021. Standard actuarial roll-forward techniques were then used to project the total pension liability computed as of June 30, 2020 to the June 30, 2021 measurement date.

The member census data and the asset information for this valuation were furnished as of June 30, 2021. 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.

Actives and inactives with no date of birth are assumed to be the average age of the member population with their respective status. Additionally, payroll for new hires is annualized, and actives missing a salary are assumed to earn the average active salary amount. For members reported with no gender, the member is assumed to be female.

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.

Accrued Service	Service credited under the system 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 system 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 system 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 system benefits allocated to the current year by the actuarial cost method.
Unfunded Actuarial Accrued Liability	The difference between actuarial liability and the actuarial value of assets. Sometimes referred to as "unfunded accrued liability" or "unfunded liability". Most retirement systems have unfunded actuarial liability. They arise anytime new benefits are added and anytime an actuarial loss is realized.