







# COMPREHENSIVE ANNUAL FINANCIAL REPORT

The Indiana Public Retirement System is a component unit and a pension trust fund of the State of Indiana.





Public Employees': Defined Benefit Account and Defined Contribution Account | Teachers': Pre-1996 Defined Benefit Account, 1996 Defined Benefit Account, and Defined Contribution Account | 1977 Police Officers' and Firefighters' Retirement Fund | Judges' Retirement System | Excise, Gaming and Conservation Officers' Retirement Fund | Prosecuting Attorneys' Retirement Fund | Legislators': Defined Benefit Fund and Defined Contribution Fund | Special Death Benefit Fund | Local Public Safety Pension Relief Fund

INPRS | One North Capitol, Suite 001 | Indianapolis, IN 46204
Toll-free: (844) GO - INPRS | www.inprs.in.gov | questions@inprs.in.gov

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

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# **Introductory Section**



## 2018 COMPREHENSIVE ANNUAL FINANCIAL REPORT

For the Fiscal Year Ended June 30, 2018

- 7 Letter of Transmittal
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  - Certificate of Achievement
- 13 Public Pension Coordinating Council
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- 17 Summary of Key Data as of June 30, 2018
- 18 Fund Highlights





ONE NORTH CAPITOL, SUITE 001 A INDIANAPOLIS, IN 46204

November 16, 2018

Dear Board Members:

We are pleased to present the Comprehensive Annual Financial Report (CAFR) of the Indiana Public Retirement System (INPRS) for the year ended June 30, 2018.

#### **About the System**

s of June 30, 2018, INPRS was responsible for the investment of approximately \$34.2 billion in net position. For the year, INPRS paid approximately \$2.5 billion in retirement, disability and survivor defined benefits to 153,077 benefit recipients. INPRS received contributions of approximately \$2.5 billion from 220,505 members actively employed in public service and 1,243 participating employers statewide, and a nonemployer contributing entity (State of Indiana). INPRS also maintains accounts for 93,750 inactive members for a total membership of 467,332. Details about INPRS's members and employers are in the Statistical Section of this report.

This report provides detailed information on the performance of eleven retirement funds administered by INPRS, including:

- Public Employees' Defined Benefit Account (PERF DB)
- Teachers' Pre-1996 Defined Benefit Account (TRF Pre-'96 DB)
- Teachers' 1996 Defined Benefit Account (TRF '96 DB)
- 1977 Police Officers' and Firefighters' Retirement Fund ('77 Fund)
- Judges' Retirement System (JRS)
- Excise, Gaming and Conservation Officers' Retirement Fund (EG&C)
- Prosecuting Attorneys' Retirement Fund (PARF)
- Legislators' Defined Benefit Fund (LE DB)
- Public Employees' Defined Contribution Account (PERF DC)
- Teachers' Defined Contribution Account (TRF DC)
- Legislators' Defined Contribution Fund (LE DC)

INPRS administers an other postemployment benefit fund, the Special Death Benefit Fund for public safety officers and state employees who die in the line of duty. In addition, INPRS manages a custodial fund, the Local Public Safety Pension Relief Fund. This fund was created by the Indiana General Assembly to address the unfunded pension obligations of the police officers' and firefighters' pension systems of Indiana's cities and towns. INPRS is not responsible for the administration of those local pension funds, which have been closed to new membership since the creation of the 1977 Police Officers' and Firefighters' Retirement Fund. However, INPRS makes disbursements from funds provided by the General Assembly to the local police and firefighter plans that are still obligated to pay benefits.

Since their establishment, the laws governing the administration of INPRS-administered funds have changed and expanded in response to the needs of our members, employers, and citizens.

In 1955, the Defined Contribution Account (formerly Annuity Savings Account) was established as a supplemental benefit to members of the PERF and TRF defined benefit funds. With this change, these funds became among the first in the nation to adopt a hybrid design. Employers pay the necessary contributions to fund the defined benefit, while employees are required to contribute to the member-managed account (employer may pay on behalf of the employee). Members are immediately vested in their defined contribution account. Upon retirement, PERF and TRF members can withdraw all or part of their defined contribution balance, roll it over, or convert to an annuitized amount with a third-party provider. Non-vested inactive members (i.e., members who have not met the requirements for a defined pension benefit) may elect to withdraw their defined contribution balances upon termination of employment.

The 1995 legislative session brought several significant changes to TRF. Legislation was passed that closed the payas-you-go plan - the Teachers' Pre-1996 Defined Benefit Account - to newly hired members and created a new 1996 Defined Benefit Account. All teachers hired after June 30, 1995, are members of the Teachers' 1996 Defined Benefit Account. TRF '96 DB is actuarially pre-funded, requiring school corporations to set aside a fixed percentage of payrolls for teacher retirement benefits. Also in 1995, the General Assembly passed legislation creating the Pension Stabilization Fund (PSF), designed to fund the unfunded liability of TRF Pre-'96 DB partially. Initially, the PSF was funded from \$425 million of employer reserves from TRF Pre-'96 DB. Since that time, the PSF has received contributions from the Indiana State General Fund, the Indiana State Lottery and interest earned from the investment of PSF assets. As of June 30, 2018, the PSF had a balance of \$3.7 billion.

A public referendum held in 1996 approved an amendment to the Indiana Constitution allowing the funds to invest in equities. Since that time, INPRS has been able to diversify its investment asset classes and grow its asset base.

In 2000, legislation established that the fund's administrative bodies would no longer be state agencies, but each would be an "independent body corporate and politic." This means INPRS is not a department or agency of the State but is an independent instrument exercising essential government functions. Under Indiana law, INPRS is under the jurisdiction of the State Ethics Commission.

Effective July 1, 2011, the administration of the Indiana State Teachers' Retirement Fund (TRF), established in 1921, and the funds previously administered by the Indiana Public Employees' Retirement Fund (PERF), established in 1945, were consolidated as the Indiana Public Retirement System (INPRS).

Effective January 1, 2018, funds previously known as annuity savings accounts (which had been reported within defined benefit funds) were recategorized as defined contribution (DC) funds. DC member balances previously reported within PERF DB, TRF Pre-'96 DB, and TRF '96 DB fund totals were transferred to the appropriate DC fund as of January 1, 2018.

### Benefit Fund and Other Legislative Changes during Fiscal Year 2018

Major changes passed in fiscal year 2017 that became effective in fiscal year 2018:

- Legislation provided a one-time check (a.k.a. 13th check) to certain benefit recipients of PERF DB, TRF Pre-'96 DB, TRF '96 DB, and EG&C in various amounts based on years of service. In addition, benefit recipients of the '77 Fund and JRS are to receive a COLA increase.
- Legislation provided a special death benefit to town police reserve officers who died in the line of duty after June 30, 2017. Town police reserve officers work less than 1,000 hours and cannot participate in police pension plans.
- After July 1, 2017, a '77 Fund member is allowed to receive a disability payment equal to the monthly salary of a first-class patrolman or firefighter for the remainder of his or her life.
- Effective July 1, 2017, the State Employees' Death Benefit Fund, Public Safety Officers' Death Benefit Fund, and the in the line of duty death benefit from the Local Public Safety Pension Relief Fund were merged to form the Special Death Benefit Fund.

- For a '77 Fund member who retires due to disability 12 months or more after entering the Deferred Retirement Option Plan (DROP), the retirement benefit will be calculated using the DROP entry date, not the DROP retirement date. This applies to members who retire after January 1, 2015.
- Legislation provides a public safety officer special death benefit to an emergency medical services employee, who after June 30, 2017, dies as a direct result of personal injury or illness while performing duties as an air ambulance services provider. To receive this benefit, the air ambulance services employer, maintained by a health care system affiliated with a state educational institution, must purchase coverage at \$100 per year through INPRS for their employees.
- Legislation provides that the PARF benefit is offset by the actual PERF DB retirement benefit if a member is receiving a PERF DB retirement benefit when retiring from PARF. In other words, if there is an actual PERF DB retirement, that PERF DB benefit is used as an offset. If there is not an actual PERF DB retirement, a hypothetical PERF DB retirement benefit is used as an offset until there is an actual PERF DB retirement.

Major changes passed in fiscal year 2018 or earlier that become effective in fiscal year 2019 or later:

- Legislation provided a one-time check (a.k.a. 13th check) to certain benefit recipients of PERF DB, TRF Pre-'96 DB, TRF '96 DB, and EG&C in various amounts based on years of service. In addition, benefit recipients of the '77 Fund and JRS are to receive a COLA increase.
- TRF members who are newly hired will have a My Choice Retirement Savings Plan option.
- Legislation removes the requirement that only active members of PERF and TRF may make rollover distributions into their defined contribution account from another qualified retirement account.
- Allows any PERF or TRF member who terminates employment and is not currently employed in a covered position or for the same employer to suspend fund membership, retain the member's creditable service, and withdraw all or part of the amount in the member's defined contribution account before retirement.
- Revises the effective date of participation of a political subdivision joining PERF from the earlier of January 1 or July 1 to a date approved by the INPRS board of trustees, but not later than 60 days after the date the political subdivision's PERF participation is approved.
- Legislation provides in the case of a unit (county, city, town, or township) that begins participation in the '77 Fund, that the unit and member (firefighter, police officer, or emergency medical technician) may agree how to share the cost of acquiring credit in the '77 fund for the member's prior service as a firefighter, police officer, or emergency medical technician.
- Legislation allows a member of the '77 Fund to purchase service performed in Indiana as a full-time, fully paid police officer or firefighter for an employer that does not participate in the '77 fund.
- Provides that certain sheriffs and county police officers are granted service credit in their respective county sheriff's department retirement plans for service to those county sheriff's departments before the effective dates of the county sheriff's department retirement plans. Provides that certain sheriffs and county police officers simultaneously waive their accrued service credit in PERF for their service to those county sheriff's departments before the effective dates of the county sheriff's department retirement plans.
- Establishes the supplemental allowance reserve accounts for LE DB, EG&C, PERF DB, TRF Pre-'96 DB, and TRF '96 DB to pay postretirement benefit increases, thirteenth checks, and other benefit changes or adjustments granted by the general assembly after June 30, 2018. Requires that after June 30, 2018, the state lottery commission transfer \$7,500,000 of surplus revenue each quarter from the commission's administrative trust fund to INPRS. Requires the contribution rate established by the INPRS board for 2019 and each year thereafter to include a surcharge that is paid to the applicable reserve account in an amount not to exceed 1% of the employer's payroll that is attributable to those employees who are members of PERF DB, TRF '96 DB, or EG&C.

#### Management's Responsibility for Financial Reporting

INPRS management has the fiduciary responsibility to safeguard the system and is responsible for the contents of this report. INPRS management is also responsible for establishing and maintaining a system of adequate internal accounting controls designed to provide reasonable assurance that transactions are executed in accordance with management's general or specific authorization. INPRS management is responsible for ensuring that an adequate internal control structure is in place to provide reasonable, but not absolute, assurance regarding: (1) the safeguarding of assets against loss from unauthorized user disposition and (2) the reliability of financial records for preparing financial statements and maintaining accountability for assets. The concept of reasonable assurance recognizes that the cost of internal control should not exceed the benefits likely to be derived and that the evaluation of costs and benefits requires management to make estimates and judgments. The internal control structure is subject to periodic evaluation by management and the internal audit staff to ensure compliance with applicable laws and regulations.

INPRS's unmodified opinion, as expressed in the independent auditor's report regarding the fair presentation of the financial statements, is in the Financial Section. In addition, the Financial Section contains the Management's Discussion and Analysis, which provides in-depth discussion and analysis of the fiduciary net position, additions and deductions to net position, and funding progress.

#### **Economic Condition**

The economic condition of INPRS is based primarily upon investment results and contributions from members, employers, and nonemployer contributing entities. Verus, the general investment management consultant for INPRS, and INPRS's Chief Investment Officer (CIO) evaluated the impact of economic conditions on the investments of INPRS. The Verus Report on Investment Activities and the CIO Report are in the Investment Section of this report. In aggregate, the fiscal year 2018 contributions from members, employers, and nonemployer contributing entities to all of the INPRS administered funds were 109.8 percent of the Actuarial Determined Contribution.

#### **Investments**

In fiscal year 2018, INPRS Consolidated Defined Benefit Assets time-weighted rate of return was 9.3 percent, net of fees, and outperformed the actuarial assumed rate of return of 6.75 percent and the target asset allocation benchmark of 8.3 percent. Both the tactical asset allocation and manager selection decisions made by the team this year added value to the fund. The three-year return rate of 6.1 percent, the five-year rate of return of 6.3 percent and the 10-year rate of return of 4.6 percent are below the long-term actuarial assumed rate of 6.75 percent. INPRS implemented a risk-based asset allocation beginning in 2011. Since that time, the portfolio has performed as expected given U.S. and global market conditions. As with any long-term, forward-looking asset allocation, the true test will be time as the portfolio weathers ever-changing economic environments.

The foundation of any successful investment program is the commitment to, and execution of, disciplined decision-making policies and processes conducted by competent investment professionals. The INPRS Investment Policy Statement is an essential element of our commitment to investments excellence. Detailed investment policies and results are in the Investment Section of this report.

#### **Funding**

An actuarial analysis of all INPRS-administered retirement funds is performed on an annual basis. An assumption experience study is performed every three to five years. PricewaterhouseCoopers (PwC) completed an experience study for all DB retirement funds except TRF, and Nyhart completed an experience study for both TRF Pre-'96 DB and TRF '96 DB during the fiscal year 2015.

One purpose of the annual actuarial analysis is to measure the funding status, typically referred to as the funded percentage. The percentage is computed by dividing the actuarial value of assets by the actuarial accrued liability. This ratio indicates the funding status of the fund. Generally, the greater this percentage, the stronger the fund.

As discussed earlier in this letter, INPRS administers eight separate DB retirement funds. The aggregate funded status percentage for all of the pre-funded funds in FY 2018 is 88.3 percent compared to 84.3 percent in FY 2017. The TRF Pre'96 DB is a pay-as-you-go account, designed in 1921 for a zero funded status, has a funded status of 25.5 percent thanks to the underpinning of the Pension Stabilization Fund. Actuarial standards consider a funded percentage of 80 percent or better as being healthy. We are pleased with our overall funded status and continue to work to achieve 100 percent funding.

Details of the actuarial analysis are in the Actuarial Section of this report. The supporting statistics are in the Statistical Section. In the Statement of Changes in Fiduciary Net Position, the accumulated balance of funds derived from the excess of additions over deductions is the net position restricted for pension benefits. This is in the Financial Section of this report. The actuarial accrued liability is not disclosed in the Statement of Fiduciary Net Position but is in the Summary of INPRS's Funded Status in the Actuarial Section.

#### **Accomplishments in 2018**

The INPRS strategic plan provides the foundation from which INPRS moves towards its vision to be a 100 percent funded public retirement system trusted and valued by stakeholders. A copy of the INPRS strategic plan that includes details of accomplishments in the fiscal year 2018 can be found on the INPRS website, <a href="https://www.inprs.in.gov">www.inprs.in.gov</a>.

#### **Acknowledgements**

The compilation of this report reflects the combined efforts of INPRS staff and advisors. It is intended to demonstrate the spirit of full disclosure and to provide information for use as the basis for making management decisions, as a means of determining compliance with legal provisions, and as a means of determining responsible stewardship of the assets contributed by our members and employers.

If, after reviewing this report, you would like more information, please feel free to contact us at questions@inprs.in.gov.

We express our gratitude to the staff, advisors, and all who have contributed to the preparation of this report. The INPRS staff also wishes to express our appreciation to Indiana Governor Eric Holcomb, the Indiana General Assembly, members of the Indiana Committee on Pension Management Oversight, and the INPRS Board of Trustees who provided INPRS staff the privilege of serving the needs of our members and employers.

Sincerely,

Steve Russo
Executive Director

Chief Finance and Administration Officer

**GFOA Certificate** 



Government Finance Officers Association

Certificate of Achievement for Excellence in Financial Reporting

Presented to

### **Indiana Public Retirement System**

For its Comprehensive Annual Financial Report for the Fiscal Year Ended

June 30, 2017

Christopher P. Morrill

Executive Director/CEO

**PPCC Certificate** 



**Public Pension Coordinating Council** 

## Public Pension Standards Award For Funding and Administration 2018

Presented to

## **Indiana Public Retirement System**

In recognition of meeting professional standards for plan funding and administration as set forth in the Public Pension Standards.

Presented by the Public Pension Coordinating Council, a confederation of

National Association of State Retirement Administrators (NASRA) National Conference on Public Employee Retirement Systems (NCPERS) National Council on Teacher Retirement (NCTR)

Program Administrator

#### **Administrative Organization**

#### **VISION**

To be a 100 percent funded public retirement system trusted and valued by stakeholders.

#### **MISSION**

Efficiently collect contributions, effectively engage members, and prudently invest stakeholder assets to pay earned benefits.

#### **PRINCIPLES**

**INTEGRITY.** We hold ourselves accountable to the highest standards of ethical and professional behavior.

**STEWARDSHIP.** We prudently manage assets held in trust for current and future retirees. We are value oriented. We rigorously identify, measure, and manage risk.

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

**TRUST.** We are our stakeholders' trusted source of reliable information.

**COLLABORATION.** We seek out stakeholder input when establishing goals and setting priorities.



Eric Holcomb Governor



Suzanne Crouch Lt. Governor

#### Professional Consultants<sup>1</sup>

Ice Miller LLP
One American Square. Sui

One American Square, Suite 2900 Indianapolis, IN 46282

Krieg DeVault LLP One Indiana Square, Suite 2800 Indianapolis, IN 46204

Cavanaugh Macdonald Consulting, LLC 3802 Raynor Parkway, Suite 202 Bellevue, NE 68123

#### Verus

999 800 Fifth Avenue, Suite 3900 Seattle, WA 98104

A complete list of investment professionals that have provided services to INPRS can be found beginning on page 137 of the Investment Section.

#### Administrative Organization, continued

#### Board of Trustees<sup>1</sup>



Brian Abbott

Position:
TRF member

Nomination/Appointment:
Speaker of House/Governor
Term Expiration:
6/30/2022



Ken Cochran

Position:
PERF member

Nomination/Appointment:
Senate Pro Tempore/Governor

Term Expiration:
6/30/2020



David Frick

Position:
Executive Management and Benefits Administration

Nomination/Appointment:
Governor

Term Expiration:
6/30/2021



Tera Klutz

Position:
Auditor of State

Nomination/Appointment:
Self-nominated/Governor

Term Expiration:
6/30/2019



Kelly Mitchell

Position:
Treasurer of State
Nomination/Appointment:
Self-nominated/Governor
Term Expiration:
6/30/2019



Mike Pinkham

Position:
1977 Fund member

Nomination/Appointment:
Speaker of House/Governor

Term Expiration:
6/30/2019



Connie Plankenhorn

Position:
TRF member

Nomination/Appointment:
Senate Pro Tempore/Governor
Term Expiration:
6/30/2021



Bret Swanson

Position:
Economics, Finance,
Investments

Nomination/Appointment:
Governor

Term Expiration:
6/30/2021



Micah Vincent

Position:
OMB Director

Nomination/Appointment:
Director of State Budget
Agency/Governor

Term Expiration:
Indefinitely

#### Administrative Organization, continued

#### **Executive Team<sup>1</sup>**



Steve Russo **Executive Director** 



**Steven Barley Chief Operations** Officer and **Deputy Director** 



**Scott Davis** Chief Investment Officer



**Tom Farrer Director of Strategic** Initiatives



**Tony Green** Chief Legal and Compliance Officer



**Donna Grotz** Chief Finance and Administration Officer



Mike Hineline Chief Information and Technology Officer



**Jeffrey Hutson** Chief Communication Officer



Teresa Snedigar Chief Audit and Risk Officer

#### Summary of Key Data as of June 30, 2018

#### **Defined Benefit (DB)**

(dellare in millione)

PERF DB = Public Employees' Defined Benefit Account

TRF Pre-'96 DB = Teachers' Pre-1996 Defined Benefit Account

TRF '96 DB = Teachers' 1996 Defined Benefit Account

'77 Fund = 1977 Police Officers' and Firefighters' Retirement Fund

JRS = Judges' Retirement System

EG&C = Excise, Gaming and Conservation Officers' Retirement Fund

PARF = Prosecuting Attorneys' Retirement Fund

LE DB = Legislators' Defined Benefit Fund

#### **Defined Contribution (DC)**

PERF DC = Public Employees' Defined Contribution Account

TRF DC = Teachers' Defined Contribution Account

LE DC = Legislators' Defined Contribution Fund

#### Other Postemployment Benefit (OPEB)

SDBF = Special Death Benefit Fund

#### Custodial

LPSPR = Local Public Safety Pension Relief Fund

**Actuarial Valuation** 

(dollars ill fillilloris)		
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Fund <sup>1</sup>	Number of Employers <sup>2</sup>	Total Number of Members <sup>3</sup>	mber of Fiduciary Value of Accrue		Value of		Value of Accru		Actuarial Accrued Dility (AAL)		Infunded AL (UAAL)	Funded Status (AVA/AAL)
Defined Benefit (DI	B):											
PERF DB	1,187	252,095	\$	12,694	\$	12,823.9	\$	16,091.4	\$	3,267.5	79.7 %	
TRF Pre-'96 DB	345	67,572		3,711		3,721.3		14,583.2		10,861.9	25.5	
TRF '96 DB	373	71,281		5,452		5,478.5		5,563.3		84.8	98.5	
'77 Fund	168	19,991		5,928		5,954.0		5,839.7		(114.3)	102.0	
JRS	1	872		514		516.7		547.6		30.9	94.4	
EG&C	1	823		132		132.4		140.0		7.6	94.6	
PARF	1	575		61		61.7		103.3		41.6	59.7	
LE DB	1	95		3		3.1		3.5		0.4	87.5	
Total DB	1,243	413,304		28,495	\$	28,691.6	\$	42,872.0	\$	14,180.4	88.3 %4	
Defined Contribution	on (DC):											
PERF DC	1,188	217,652		2,868								
TRF DC	374	94,411		2,744								
LE DC	1	217		34								
Total DC	1,230	312,280		5,646								
Other Postemployr	ment Benefit (OPE	B):										
SDBF	N/A	N/A		15								
Custodial:												
LPSPR	N/A	N/A		27								

<sup>&</sup>lt;sup>1</sup>Effective January 1, 2018, DB was separated from the DC.

Total<sup>5</sup>

1,244

467,332

34,183

<sup>&</sup>lt;sup>2</sup>Sum does not equal total, as an employer may participate in multiple retirement funds.
<sup>2</sup>DB members are based on adjusted June 30, 2017 member census data. DC members are based on census data as of June 30, 2018.

<sup>\*</sup>Total DB, excluding TRF Pre-'96 DB (Pay-As-You-Go).

\*Total members is based on adjusted prior year DB member census data and prior year DC member data, excluding duplicate members as members may participate in more than one fund.

### **Public Employees' Retirement Fund**

#### **Fund Highlights**

#### **Hybrid Plan**

The membership of the Public Employees' Retirement Fund (PERF) Hybrid plan includes eligible state and local government entities.

#### **Eligibility for Pension** Benefit Payment<sup>1</sup>

- Early retirement with reduced benefits between ages 50-59 with 15 years of service
- At age 55 if age and creditable service total at least 85 ("Rule of 85")
- Age 60 with 15 years of service
- Age 65 with 10 years of service
- Age 65 with 8 years of service<sup>2</sup>
- Age 70 with 20 years of service<sup>3</sup>

#### Contribution Rates

- Employer contribution rates for the Defined Benefit (pension) are determined annually by the INPRS Board based on recommendations by the INPRS actuary.
- Members are required to contribute three percent of gross wages to their defined contribution account. Employers have the option of making all or part of this contribution on behalf of the member. Members may also make voluntary contributions to the defined contribution account up to an additional 10 percent of their gross wages, under certain limitations.

#### Benefit Formula<sup>4</sup>

Lifetime Annual Benefit = (Years of Creditable Service x Average Highest 20 Quarters of Salary x .011)

#### Cost of Living Allowance (COLA)

Cost of living adjustments are granted by the Indiana General Assembly on an ad hoc basis.

### My Choice Plan

Established on March 1. 2013. the membership of the Public Employees' Retirement Fund My Choice plan includes eligible full-time employees of the State of Indiana and quasi agencies.

#### **Eligibility for** Plan Payment

- Members are fully vested in the three percent employee share (defined contribution account) upon hire
- The member's share of the employer contribution is based on full years of participation:

1 year = 20 percent

2 years = 40 percent

3 years = 60 percent

4 years = 80 percent

5 years = 100 percent

#### **Contribution Rates**

- Mandatory three percent employee share of gross wages paid by employer, employee, or is shared by the employer and employee.
- The employer share is also paid by the employer, but the member must meet vesting requirements.5

#### Benefit Formula

Not applicable

#### Cost of Living Allowance (COLA)

Not applicable

<sup>1</sup>A member is eligible for withdrawal of the PERF DB Hybrid Plan defined contribution account benefit once he/she separates from service for 30 days. Certain restrictions may apply if the member is vested in a pension benefit.

<sup>&</sup>lt;sup>2</sup>A member who has at least eight years of PERF Plan service as a county clerk, county auditor, county recorder, county treasurer, county sheriff or county coroner is eligible for normal retirement after reaching age 65. This change in the law applies only to members retiring after June 30, 2002. Public Law 73-2002 also provides that a member serving as state auditor, state treasurer or secretary of state, and whose term commences after the November 5, 2002 election, be vested with at least eight years of creditable service.

<sup>3</sup>Actively employed members who have completed at least 20 years of service may apply for retirement benefits at age 70, remain actively employed in a PERF covered position without a separation from service, and receive monthly benefits.

Members can elect at retirement to receive their defined contribution account as a monthly supplement to their defined pension benefit via a third-party provider, or in a total or partial distribution

<sup>&</sup>lt;sup>5</sup>Contribution amounts covering unfunded pension liability are not made to member My Choice accounts.

### **Teachers' Retirement Fund**

#### Fund Highlights, continued

The membership of the Indiana State Teachers' Retirement Fund (TRF Pre-1996 Defined Benefit and 1996 Defined Benefit Accounts) includes eligible educators and administrators.

#### Eligibility for Pension Benefit Payment<sup>1</sup>

- Early retirement with reduced benefits between ages 50-59 with 15 years of service.
- At age 55 if age and creditable service total at least 85 ("Rule of 85").
- Age 60 with 15 years of service.
- Age 65 with 10 years of service.
- Age 70 with 20 years of service.<sup>2</sup>

#### **Contribution Rates**

- The Pre-1996 Account is funded primarily by State General Fund appropriations and state lottery proceeds.
- Employer contribution rates for the 1996 Account are determined annually by the INPRS Board based on recommendations by the INPRS actuary.
- Members are required to contribute three percent of gross wages to their Defined Contribution Account. Employers have the option of making all or part of this contribution on behalf of the member. Members may also make voluntary contributions to the Defined Contribution Account up to an additional 10 percent of their wages, under certain limitations.

#### Benefit Formula<sup>3</sup>

Lifetime Annual Benefit = (Years of Creditable Service x Average Highest Five-Year Annual Salary x .011)

#### Cost of Living Allowance (COLA)

Cost of living adjustments are granted by the Indiana General Assembly on an ad-hoc basis.

<sup>&#</sup>x27;A member is eligible for withdrawal of the defined contribution account benefit once he/she separates from service for 30 days. Certain restrictions may apply if the member is vested in a pension benefit.

<sup>2</sup>Actively employed members who have completed at least 20 years of service may apply for retirement benefits at age 70, remain actively employed in a TRF covered position without a separation from service, and receive monthly benefits.

<sup>&</sup>lt;sup>3</sup>Members can elect at retirement to receive their defined contribution account as a monthly supplement to their defined pension benefit via a third-party provider or in a total or partial distribution.

## 1977 Police Officers' and Firefighters' Retirement Fund

#### Fund Highlights, continued

1977 Police Officers' and Firefighters' Retirement Fund provides coverage to full-time sworn officers of a police force of an Indiana city or town and full-time firefighters employed by an Indiana city, town or township.

#### **Eligibility for Pension Benefit Payment**

- Early retirement with reduced benefits at age 50.
- Age 52 with 20 years of service.
- Deferred Retirement Option Plan (DROP) available to members who are eligible for an unreduced retirement – members continue to work and earn a salary while accumulating a DROP benefit.

#### **Contribution Rates**

- Employer contribution rate is adopted by the INPRS Board of Trustees based on recommendations by the INPRS actuary.
- Member must also contribute six percent of first-class salary for the term of the member's employment up to 32 years.
- Employers have the option of making all or part of this contribution on behalf of the member.

#### **Benefit Formula**

Annual Benefit = 50 percent of first-class salary for 20 years of service.1

#### **Cost of Living Allowance (COLA)**

Cost of living adjustment is a percentage determined by statute equal to the change in the Consumer Price Index but not in excess of a three percent increase.

<sup>1</sup>This percentage is increased by one percent for each six months of active service accumulated after 20 years of service (to a maximum of 32 years, or 74 percent).

### **Judges' Retirement System**

#### Fund Highlights, continued

The Judges' Retirement System includes any person who has served, is serving or shall serve as a regular judge or justice of the Supreme Court of the state of Indiana, Court of Appeals, Indiana Tax Court, Circuit Court of a Judicial Court, or County Courts including: Superior, Criminal, Probate, Juvenile, Municipal and County Courts. Beginning Jan. 1, 2011, full-time magistrates who are serving on July 1, 2010, may elect to be members of the 1985 System. The 1985 System is mandatory for all new judges and beginning Jan.1, 2011, all new full-time magistrates.

#### **Eligibility for Pension Benefit Payment**

- Early retirement with reduced benefits at age 62 and at least eight years of service credit.
- At age 55 if age and creditable service total at least 85 ("Rule of 85").
- Age 65 with at least eight years of service credit.

#### **Contribution Rates**

- Employer contributions are actuarially determined appropriations from the state's General Fund and certain court and docket fees.
- A member of either the 1977 or 1985 Judges' Retirement System is required to contribute six percent of the member's salary for a maximum period of 22 years.
- No contributions are due to either retirement system during the time that a member is not employed as a judge or for any period of service as a senior judge.

#### **Benefit Formula**

Annual Benefit = Salary at Retirement<sup>1</sup> x Percentage Below

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

### Cost of Living Allowance (COLA)

For participants of the 1977 System and the 1985 System (who apply for a benefit after 12/31/09), the cost of living allowance is a percentage increase equal to the increase in the salary of the participant's position from which the participant retired.

<sup>1</sup>Benefit calculations for the 1977 System (those who began service as a judge before September 1, 1985) are based on the salary being paid for the office that the participant held at the time of the participant's separation from service. The 1985 System (those who began service as a judge after August 31, 1985) uses the applicable salary determined by statute.

### **Excise, Gaming & Conservation Officers' Retirement Fund**

#### Fund Highlights, continued

Excise, Gaming and Conservation Officers' Retirement Fund includes members engaged exclusively in the performance of law enforcement duties of the (1) Indiana Department of Natural Resources, (2) Indiana Alcohol and Tobacco Commission and (3) any Indiana state excise police officer, Indiana state conservation enforcement officer or gaming agent.

#### **Eligibility for Pension Benefit Payment**

- Early retirement with reduced benefits at age 45 with at least 15 years of creditable service.
- Age 50 with 25 years of service.
- At age 55 if age and creditable service total at least 85 ("Rule of 85").
- Deferred Retirement Option Plan (DROP) continue to work and earn a salary while accumulating a DROP benefit.
- If members were employed by age 50, the mandatory retirement age is 65, and they must have 15 years of creditable service.
- If members were employed after age 50, their retirement must occur the 1st day of the month following their 65th birthday or 1st day of the month following completion of 15 years of creditable service.

#### Contribution Rates

- Employer contribution rate is adopted by the INPRS Board of Trustees based on recommendations by the INPRS actuary.
- Member is required to contribute four percent of member's annual salary. The contribution is made through payroll deduction and is deposited in member's account.

#### **Benefit Formula**

Annual Benefit = 25 percent<sup>1</sup> x Average Annual Salary<sup>2</sup>

#### Cost of Living Allowance (COLA)

Cost of living allowance is applied at the same rate as was granted by the Indiana General Assembly for the Public Employees' Retirement Fund Hybrid Plan.

<sup>&</sup>lt;sup>1</sup>This percentage is increased by 1.66 percent of average annual salary for each completed year of creditable service after 10 years. However, the total percentage may not exceed 75 percent.

<sup>&</sup>lt;sup>2</sup>Average Annual Salary is defined as the average annual salary of an officer during the five years of highest annual salary in the 10 years immediately preceding an officer's retirement date.

### **Prosecuting Attorneys' Retirement Fund**

#### Fund Highlights, continued

The Prosecuting Attorneys' Retirement Fund (PARF) includes prosecuting attorneys, chief deputy prosecuting attorneys and other deputy prosecuting attorneys paid by the state. PARF members are also members of the PERF Plan. According to statute, benefits payable from PARF are reduced by any benefits payable from the PERF Plan.

#### **Eligibility for Pension Benefit Payment**

- Early retirement with reduced benefits at age 62 and at least eight years of service credit.
- At age 55 if age and creditable service total at least 85 ("Rule of 85").
- Age 65 with at least eight years of service credit.

#### **Contribution Rates**

- Actuarially determined State General Fund appropriations.
- A prosecuting attorney or chief deputy prosecuting attorney must contribute six percent of the state-paid portion of member's salary. The State of Indiana has the option of making this contribution on behalf of the member. This six percent contribution will be withheld by the Auditor of the State.
- Prosecuting attorneys and chief deputy prosecuting attorneys are also PERF members, and the member's mandatory three percent PERF DC contributions are paid on member's behalf by the state.

#### **Benefit Formula**

Annual Benefit = Highest Annual Salary (state-paid portion only) at Retirement x Percentage Below

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

### Cost of Living Allowance (COLA)

No cost of living allowance is provided.

## Legislators' Retirement System

#### Fund Highlights, continued

The Legislators' Retirement System Defined Benefit Fund (LE DB) includes only legislators of the state of Indiana who were serving on April 30, 1989, and elected participation. Legislators elected or appointed after April 30, 1989, participate in the Legislators' Defined Contribution Fund (LE DC).

#### **Eligibility for Pension Benefit Payment**

- Early retirement at least age 55 with 10 years of creditable service, when member is no longer serving in the General Assembly and is not receiving, nor entitled to receive, compensation from the state for work in any capacity.
- At age 55 if age and creditable service equal at least 85 ("Rule of 85").
- Age 60 with at least 15 years of service as a member of the General Assembly.
- Age 65 with 10 years or more of creditable service as a member of the General Assembly (or meet the requirements for disability benefits under this plan).

#### **Contribution Rates**

- The LE DB employer contributions are actuarially determined State General Fund appropriations. There are no member contributions for the defined benefit plan.
- For LE DC, the state contribution is determined by multiplying the member's salary for that year by a percentage determined by the INPRS Board and confirmed by the State Budget Agency not to exceed the total contribution rate paid that year by the state to INPRS for state members. The member must contribute five percent of member's salary for service after June 30, 1989.

#### **Benefit Formula**

#### The lesser of:

- \$40 x Years of service before November 8, 1989 or
- Highest consecutive three-year average annual salary at termination ÷ 12

#### **Cost of Living Allowance (COLA)**

Cost of living allowance is applied at the same rate as was granted by the Indiana General Assembly for the Public Employees' Retirement Fund.



## **Financial Section**

### 2018 COMPREHENSIVE ANNUAL FINANCIAL REPORT

For the Fiscal Year Ended June 30, 2018



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#### Independent Auditor's Report



RSM US LLP

#### **Independent Auditor's Report**

Board of Trustees Indiana Public Retirement System

#### Report on the Financial Statements

We have audited the accompanying Statement of Fiduciary Net Position of the Indiana Public Retirement System (System), a component unit of the State of Indiana, as of June 30, 2018, and the related Statement of Changes in Fiduciary Net Position for the year then ended, and the related notes to the financial statements as listed in the table of contents.

#### Management's Responsibility for the Financial Statements

Management is responsible for the preparation and fair presentation of these financial statements in accordance with accounting principles generally accepted in the United States of America; this includes the design, implementation, and maintenance of internal control relevant to the preparation and fair presentation of financial statements that are free from material misstatement, whether due to fraud or error.

#### Auditor's Responsibility

Our responsibility is to express an opinion on these financial statements based on our audit. We conducted our audit in accordance with auditing standards generally accepted in the United States of America. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free from material misstatement.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the financial statements. The procedures selected depend on the auditor's judgment, including the assessment of the risks of material misstatement of the financial statements, whether due to fraud or error. In making those risk assessments, the auditor considers internal control relevant to the entity's preparation and fair presentation of the financial statements in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the entity's internal control. Accordingly, we express no such opinion. An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of significant accounting estimates made by management, as well as evaluating the overall presentation of the financial statements.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinion.

#### Opinion

In our opinion, the financial statements referred to above present fairly, in all material respects, the fiduciary net position of the Indiana Public Retirement System as of June 30, 2018, and the changes in its fiduciary net position for the year then ended in accordance with accounting principles generally accepted in the United States of America.

#### Other Matters

Prior-Year Comparative Information:

We have previously audited the System's 2017 financial statements, and we expressed an unmodified opinion in our report dated November 17, 2017. In our opinion, the summarized comparative information presented herein as of and for the year ended June 30, 2017, is consistent, in all material respects, with the audited financial statements from which it has been derived.

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#### Independent Auditor's Report, continued

#### Required Supplementary Information:

Accounting principles generally accepted in the United States of America require that the management's discussion and analysis on pages 29 through 35 and the schedules of changes in net pension liability and net pension liability, schedule of contributions, schedule of investment returns, annual money-weighted rate of return, net of investment expense and the related schedule of notes to required supplementary information on pages 84 through 95 be presented to supplement the financial statements. Such information, although not a part of the financial statements, is required by the Governmental Accounting Standards Board who considers it to be an essential part of financial reporting for placing the financial statements in an appropriate operational, economic, or historical context. We have applied certain limited procedures to the required supplementary information in accordance with auditing standards generally accepted in the United States of America, which consisted of inquiries of management about the methods of preparing the information and comparing the information for consistency with management's responses to our inquiries, the financial statements, and other knowledge we obtained during our audit of the financial statements. We do not express an opinion or provide any assurance on the information because the limited procedures do not provide us with sufficient evidence to express an opinion or provide any assurance.

#### Other Information:

Our audit for the year ended June 30, 2018 was conducted for the purpose of forming an opinion on the System's financial statements. The other supplementary information consisting of Supporting Schedules in the financial section, and the accompanying introductory, investment, actuarial, and statistical sections are presented for purposes of additional analysis and are not a required part of the financial statements.

The other supplementary information for the year ended June 30, 2018 (pages 96 through 99) is the responsibility of management and was derived from and relates directly to the underlying accounting and other records used to prepare the financial statements. The supporting schedules in the financial section have been subjected to the auditing procedures applied in the audit of the financial statements for the year ended June 30, 2018 and certain additional procedures, including comparing and reconciling such information directly to the underlying accounting and other records used to prepare the financial statements, or to the financial statements themselves, and other additional procedures in accordance with auditing standards generally accepted in the United States of America. In our opinion, the supporting schedules in the financial section, are fairly stated in all material respects, in relation to the financial statements as a whole as of and for the year ended June 30, 2018.

We have also previously audited, in accordance with auditing standards generally accepted in the United States of America, the System's financial statements as of and for the year ended June 30, 2017 (not presented herein), and have issued our report thereon dated November 17, 2017, which contained an unmodified opinion on those financial statements. The accompanying supplementary information which consists of supporting schedules in the financial section, for the year ended June 30, 2017 is presented for purposes of additional analysis and is not a required part of the financial statements. Such information is the responsibility of management and was derived from and relates directly to the underlying accounting and other records used to prepare the 2017 financial statements. The supporting schedules in the financial section have been subjected to the auditing procedures applied in the audit of the 2017 financial statements and certain additional procedures, including comparing and reconciling such information directly to the underlying accounting and other records used to prepare those financial statements or to those financial statements themselves, and other additional procedures in accordance with auditing standards generally accepted in the United States of America. In our opinion, the supplementary information is fairly stated, in all material respects, in relation to the financial statements as a whole for the year ended June 30, 2017.

The introductory, investment, actuarial, and statistical sections have not been subjected to the auditing procedures applied in the audit of the financial statements, and accordingly, we do not express an opinion or provide any assurance on them.

RSM US LLP

Indianapolis, Indiana November 16, 2018

#### Management's Discussion and Analysis (Unaudited)

anagement's Discussion and Analysis (MD&A) of the Indiana Public Retirement System (INPRS) provides a narrative overview and high-level analysis of the financial position and the financial activities for the fiscal year ended June 30, 2018 broken down as follows: Defined Benefit Retirement Funds, Defined Contribution Retirement Funds, an Other Postemployment Benefit Fund, and a Custodial Fund. Each category will include comparative data, financial and investment highlights, and when appropriate, an update on the actuarial progress.

With the implementation of GASB Statement No. 84, the Statement of Fiduciary Net Position and the Statement of Changes in Fiduciary Net Position were restated for the prior year to include the Local Public Safety Pension Relief Fund.

The Indiana General Assembly passed a series of legislative acts beginning in 2016 that paved the way for the creation of defined contribution plans separating the pension from the annuity savings account within hybrid plans. As a result, hybrid plans have separate defined benefit (DB) and defined contribution (DC) provisions. My Choice is a separate plan comprised only of a defined contribution element.

Effective January 1, 2018, funds previously known as annuity savings accounts (which had been reported within defined benefit funds) were recategorized as defined contribution funds based on Internal Revenue Service Private Letter Rulings PLR-193-2016 and PLR-110249-18. DC member balances previously reported within PERF DB, TRF Pre-'96 DB, and TRF '96 DB fund totals were transferred to the appropriate DC fund as of January 1, 2018.

The MD&A should be read in conjunction with the following items located in either the Introductory or Financial Section: the Letter of Transmittal, the Financial Statements, the Notes to the Financial Statements, the Required Supplementary Information, and the Other Supplementary Schedules. The following funds are included in the INPRS financial statements:

#### **Defined Benefit Retirement Funds:**

- Public Employees' Defined Benefit Account (PERF DB)
- Teachers' Pre-1996 Defined Benefit Account (TRF Pre-'96 DB)
- Teachers' 1996 Defined Benefit Account (TRF '96 DB)
- 1977 Police Officers' and Firefighters' Retirement Fund ('77 Fund)
- Judges' Retirement System (JRS)
- Excise, Gaming and Conservation Officers' Retirement Fund (EG&C)
- Prosecuting Attorneys' Retirement Fund (PARF)
- Legislators' Defined Benefit Fund (LE DB)

#### **Defined Contribution Retirement Funds:**

- Public Employees' Defined Contribution Account (PERF DC)
- Teachers' Defined Contribution Account (TRF DC)
- Legislators' Defined Contribution Fund (LE DC)

#### Other Postemployment Benefit Fund:

Special Death Benefit Fund (SDBF)

#### **Custodial Fund:**

Local Public Safety Pension Relief Fund (LPSPR)

Management's Discussion and Analysis (Unaudited), continued

#### **Overview of the Financial Statements**

#### Financial Statements

The Statement of Fiduciary Net Position is a point-in-time snapshot of the assets and liabilities and the resulting restricted fiduciary net position. This statement reflects investments, at fair value and contract value, along with cash, receivables, and other assets and liabilities.

The Statement of Changes in Fiduciary Net Position presents the changes in the restricted fiduciary net position during the fiscal year. Additions are primarily contributions from employers, members, and a nonemployer contributing entity, which includes state appropriations, lottery proceeds, and certain taxes, as well as net investment income. Deductions include pension, disability, survivor and death benefit disbursements, distributions of contributions and interest, and administrative expenses.

#### Notes to the Financial Statements

The Notes to the Financial Statements are an integral part of the financial statements and provide additional detailed information that is essential for a comprehensive understanding of the data provided in the INPRS financial statements.

#### ■ Required Supplementary Information

Due to the long-term nature of public defined benefit pension funds, financial statements for the past fiscal year alone cannot provide sufficient information to properly reflect the fiduciary net position as a percent of the total pension liability of the funds. Therefore, additional schedules give historical trend information that is designed to provide value for assessing accountability and increasing transparency related to measures of fiduciary net position.

#### Other Supplementary Schedules

The Other Supplementary Schedules consist of the Schedule of Administrative Expenses, Schedule of Administrative Expenses - Vendors, and Schedule of Investment Expenses.

Management's Discussion and Analysis (Unaudited), continued

#### **Financial Information**

The following schedules compare INPRS's financial results for the fiscal years of 2018 and 2017. Changes in investments are attributable to both the change in fair value, and to the purchases and sales or maturities of those investments.

#### **Summary Statement of Fiduciary Net Position**

(dollars in millions)	To	otal		rable / orable)
	2018	2017	Amount	Percent
Total Assets	\$ 43,559	\$ 40,137	\$ 3,422	8.5%
Total Liabilities	(9,376)	(8,290)	(1,086)	(13.1)
Total Fiduciary Net Position Restricted	\$ 34,183	\$ 31,847	\$ 2,336	7.3%

(dollars in millions)	Defined	l Benefit		ined bution		B and todial	To	tal	Favoi (Unfav	able / orable)
	2018	2017	2018	2017	2018	2017	2018	2017	Amount	Percent
Pooled or Non-Pooled Investments	\$ 28,476	\$ 26,365	\$ 5,634	\$ 5,412	\$ 41	\$ 46	\$ 34,151	\$ 31,823	\$ 2,328	7.3 %
Net Other Assets and Liabilities	19	14	12	9	1	1	32	24	8	33.3
Total Fiduciary Net Position Restricted	\$ 28,495	\$ 26,379	\$ 5,646	\$ 5,421	\$ 42	\$ 47	\$ 34,183	\$ 31,847	\$ 2,336	7.3 %

The total fiduciary net position of INPRS increase of \$2.3 billion for fiscal year 2018 was primarily driven by net investment income of \$2.8 billion, reflecting a money-weighted return of 8.88 percent, partially offset by net operational outflows of \$0.5 billion.

Defined benefit pooled investments increase of \$2.1 billion from fiscal year 2017 was primarily due to investment income of \$2.7 billion, partially offset by net operational cash outflows of \$0.6 billion. The money-weighted rate of return was 9.36 percent or 2.61 percentage points over the long-term actuarial-assumed rate of return for defined benefit assets of 6.75 percent. Refer to the Investment Section for additional information.

The defined contribution pooled investments increased by \$0.2 billion, primarily attributed to net investment income and net operational cash inflows. Investments in members' defined contribution assets are self-directed, as participants direct their investment allocation to the various investment options. Therefore, the impact to net investment income is a result of the members' investment choices with varying degrees of risk and return potential. Refer to the Investment Section for additional information.

OPEB and custodial fund pooled investments decreased \$5 million primarily due to operational cash outflows.

Net other assets and liabilities increased \$8 million due to higher receivable balances at year-end.

Management's Discussion and Analysis (Unaudited), continued

#### **Summary Statement of Changes in Fiduciary Net Position**

(dollars in millions)					Fa	vorable /(l	Jnfavorable)
	2018		2017		Amount		Percent
Total Additions	\$	10,821	\$	4,767	\$	6,054	127.0 %
Total Deductions		(8,485)		(2,820)		(5,665)	(200.9)
Net Increase / (Decrease) in Fiduciary Net Position		2,336		1,947		389	20.0
Beginning Fiduciary Net Position Restricted		31,847		29,900		1,947	6.5
Ending Fiduciary Net Position Restricted	\$	34,183	\$	31,847	\$	2,336	7.3 %

#### (dollars in millions)

			Favorable / (Unfavorable)							
	Defined Benefit <sup>1</sup>	C	Defined ontribution <sup>2</sup>	• • •	EB and stodial	Total	2017 Total	An	nount	Percent
Net Investment Income	\$ 2,734	\$	89	\$	1	\$ 2,824	\$ 2,347	\$	477	20.3 %
Contributions	2,099		153		207	2,459	2,403		56	2.3
Benefits and Refunds	(2,550)	)	(146)		(213)	(2,909)	(2,765)		(144)	(5.2)
Transfer To/From	(5,524)	)	5,524		-	-	-		-	-
Administrative Expenses and Net Other Additions / Deductions	(33)	<u> </u>	(5)		-	(38)	(38)			-
Net Increase / (Decrease) in Fiduciary Net Position	\$ (3,274)	\$	5,615	\$	(5)	\$ 2,336	\$ 1,947	\$	389	20.0 %

<sup>&</sup>lt;sup>1</sup>Includes the first half of the fiscal year DC activity, as the split from the Hybrid plans was effective January 1, 2018.

The total net investment income increased from the prior year by \$0.5 billion. The money-weighted rate of return for fiscal year 2018 was 8.88 percent compared to 7.85 percent in fiscal year 2017. Total contributions increased from the prior year by \$0.1 billion primarily due to increases in appropriations and employer contributions due to salary increases. Total benefits and refunds increased by \$0.2 billion primarily due to an increase of distribution of contributions and interest. In fiscal year 2018, retirees elected to take increased lump-sum distributions due to changes in the options regarding annuitizations.

Transfer To/From represents the one-time transfer of defined contribution balances from the defined benefit funds to the DC funds.

The total net other additions and deductions, which includes administrative expenses, remained flat year over year.

<sup>&</sup>lt;sup>2</sup>Represents the second half year of fiscal year activity as the DC split from the Hybrid plans was effective January 1, 2018.

Management's Discussion and Analysis (Unaudited), continued

#### **Investment Information**

Asset Class	R	ate of Retu	rn	One Ye	One Year Benchmark Return Variance				
Description	Target Allocation	2018	2017	Increase / (Decrease)	2018	Increase / (Decrease)		Increase / (Decrease)	
Public Equity	22.0 %	11.7 %	21.0 %	(9.3)	11.1 %	0.6	19.0 %	2.0	
Private Markets	14.0	16.0	12.7	3.3	15.6	0.4	21.5	(8.8)	
Fixed Income - Ex Inflation-Linked	20.0	1.2	1.9	(0.7)	1.7	(0.5)	0.6	1.3	
Fixed Income - Inflation-Linked	7.0	5.9	(0.2)	6.1	4.9	1.0	(1.3)	1.1	
Commodities	8.0	22.0	(6.7)	28.7	16.0	6.0	(7.5)	0.8	
Real Estate	7.0	12.2	10.4	1.8	(0.3)	12.5	7.4	3.0	
Absolute Return	10.0	5.5	7.8	(2.3)	3.7	1.8	4.9	2.9	
Risk Parity	12.0	8.1	4.6	3.5	7.4	0.7	10.9	(6.3)	
Cash + Cash Overlay	No Target	9.3	4.9	4.4	8.0	1.3	6.8	(1.9)	

Overall, six investment asset classes exceeded the previous year rate of return. Increases in all asset classes were linked to the passage of the Tax Cuts and Jobs Act, which reformed the federal tax structure. Other economic factors which impacted returns were reduction of federal regulations, positive employee wage growth and historically low unemployment levels.

Public Equity's rate of return decreased compared to a very strong 2017 due to increased market volatility in 2018.

Fixed Income - Inflation Linked rate of return increased 6.1 percentage points compared to 2017 due to higher wages, increasing interest rates, and rising inflation from historic lows.

Commodities increased 28.7 percentage points compared to 2017 due to favorable supply and demand dynamics across commodity markets.

#### Liquidity

Liquidity is critically important because the INPRS's defined benefit fund has a fiduciary responsibility to disburse monthly benefit payments. Liquidity needs are met through employers, members, a nonemployer contributing entity, and other contributions, as well as earnings from investments, and the diversified investment portfolio. Having sufficient cash on hand and/or the ability to quickly convert securities to cash is important for several reasons: 1) sufficient liquidity ensures INPRS does not sell high-quality, long-term assets in order to meet short-term funding needs, 2) liquidity ensures INPRS can tactically react to market opportunities and 3) liquidity enables INPRS to invest in long-term assets (private market, real estate). As of June 30, 2018, INPRS estimates 25% percent of the Consolidated Defined Benefit assets could be liquidated in one week, 66% percent of the assets could be liquidated within one month, and 78% percent of the assets could be liquidated within six months without a significant market impact.

Management's Discussion and Analysis (Unaudited), continued

#### **Fiduciary Net Position Summary by Fund**

(dollars in millions)	As of June 30					Increase/ (Decrease)			
Fund		2018		2017	A	mount	Percent		
PERF DB	\$	12,694	\$	14,644	\$	(1,950)	(13.3) %	0	
TRF Pre-'96 DB		3,711		4,818		(1,107)	(23.0)		
TRF '96 DB		5,452		6,252		(800)	(12.8)		
'77 Fund		5,928		5,401		527	9.8		
JRS		514		475		39	8.2		
EG&C		132		120		12	10.0		
PARF		61		56		5	8.9		
LE DB		3		3		-	-		
Total DB		28,495		31,769		(3,274)	(10.3)		
PERF DC		2,868		-		2,868	N/A		
TRF DC		2,744		-		2,744	N/A		
LE DC		34		31		3	9.7		
Total DC		5,646		31		5,615	18,112.9		
SDBF		15		15		-	-		
LPSPR		27		32		(5)	(15.6)		
Total Fiduciary Net Position	\$	34,183	\$	31,847	\$	2,336	7.3 %	o O	

Effective January 1, 2018, funds previously known as annuity savings accounts (which were reported within defined benefit funds) were recategorized as defined contribution funds. DC member balances previously reported within PERF DB, TRF Pre-'96 DB, and TRF '96 DB fund totals were transferred to the appropriate DC fund.

### **Actuarial Progress**

The overall objective of a pension fund is to accumulate sufficient funds to meet all expected future obligations to members. A pension fund is fully funded when it has enough money in reserve to meet all obligations incurred to date. The goal for the defined benefit retirement plans is to make progress toward achieving full funding.

In accordance with GASB Statement No. 67 the fair value of assets is used for financial reporting purposes; however, the actuarial value of assets will continue to be used for funding purposes as presented in the Actuarial Section.

#### Management's Discussion and Analysis (Unaudited), continued

The fair value funded ratios and other key data of the defined benefit retirement funds administered by INPRS as of the latest actuarial valuations were as follows:

#### **DB Key Statistics**

(dollars in millions)

Pre-Funded DB	Fair Value Fun as of Ju		Net Pension Liability/	Projected Year to be 100%	Contributions as a Percent		
Pension Funds	2018	2017	(Asset)	Funded	of ADC	Normal Cost	
PERF DB	78.9 %	72.7 %	\$ 3,397.0	2031	113.7 %	3.6 %	
TRF '96 DB	98.0	88.0	110.9	2019	111.9	5.1	
'77 Fund	101.5	100.3	(87.9)	N/A	197.4	17.4	
JRS	93.8	90.7	33.7	2036	101.8	33.5	
EG&C	93.9	84.2	8.6	2021	140.5	11.2	
PARF	59.1	57.5	42.3	2040	119.0	9.2	
LE DB	84.4	75.3	0.5	2021	100.0	N/A	
Pay-As-You-Go DB Pension Fund							
TRF Pre-'96 DB	25.4 %	23.1 %	\$ 10,871.8	2048	100.0 %	4.8 %	

Fair Value Funded Status is the fiduciary net position divided by the actuarial accrued liability. The Fair Value Funded Status improved on the funds due to higher than expected investment returns, and a change in the COLA assumption for PERF DB, TRF Pre-'96 DB, TRF '96 DB, EG&C, and LE DB.

Net pension liability represents the total pension liability as determined by the actuary, less the fiduciary net position of the fund.

Projected year to be 100% funded assumes all actuarial assumptions are precisely met.

ADC (actuarially determined contributions) is the amount necessary to maintain or improve funded status. Therefore it is important for employers to contribute the ADC each year.

Normal cost is the proportion of the present value of future benefits allocated to the current year, which represents an estimated annual cost if the fund were fully funded.

An analysis of the funding progress, contributions, and a summary of actuarial assumptions and methods are outlined in Note 7 and the Required Supplementary Information of the Financial Section. For additional actuarial-related information on a funding basis, refer to the Actuarial Section of the CAFR.

## Statement of Fiduciary Net Position As of June 30, 2018 (with Comparative Totals as of June 30, 2017)<sup>1</sup>

(dollars in thousands) Pension Trust Funds<sup>2</sup> Defined Benefit (DB) TRF Pre-'96 PERF DB DB **TRF '96 DB** '77 Fund **JRS** EG&C **PARF** LE DB **Total DB Assets** Cash 4,738 42 40 \$ 2 \$ \$ 657 \$ 1,767 \$ 1,618 \$ \$ \$ \$ 8,864 Receivables: 4,079 Contributions and Miscellaneous 8,461 2.749 4,814 3.644 21 23,768 979 22 Investments 94,372 27,625 40,569 44,103 3,799 454 211,923 3,679,338 1,077,014 1,581,672 Foreign Exchange Contracts 1,719,470 148,138 38,168 17.724 856 8,262,380 8 Interest and Dividends 33,213 9,722 14,278 15,521 1,337 345 160 74,584 Due from Other Funds 7,131 7,131 Total Receivables 3,822,515 1,117,110 1,640,598 1,783,908 156,918 39,492 18,359 886 8,579,786 Investments: Short Term Pooled Investments: Repurchase Agreements 1,616 473 695 756 65 17 8 3,630 Short Term 566,605 165,854 243,568 264,789 22,807 5,876 2,729 132 1,272,360 Fixed Income 4,313,609 1,262,678 1,854,333 2,015,886 173,676 44,748 20,779 1,003 9,686,712 13,713 Equities 2,846,578 833,249 1,223,685 1,330,295 114,609 29,530 662 6,392,321 24,790 Alternative 5,147,745 1,506,821 2,212,874 2,405,665 207,197 53,385 1,197 11,559,674 Derivatives 10,225 2.993 4.396 4.778 412 106 49 3 22,962 **Total Pooled Investments** 12,886,378 3,772,068 5,539,551 6,022,169 518,766 133,662 62,068 2,997 28,937,659 Pooled Synthetic GIC's at Contract Securities Lending Collateral 137,072 40,125 58,926 64,065 5,519 1,422 660 32 307,821 **Total Investments** 13,023,450 3,812,193 5,598,477 6,086,234 524,285 135,084 62,728 3,029 29,245,480 Other Assets 159 159 21,121 21,121 **Gross Capital Assets** Less: Accumulated Depreciation and (15,981)(15,981)Amortization 5,140 **Net Capital Assets** 5,140 **Total Assets** 4,929,960 174,616 81,089 3,915 16,856,002 7,240,842 7,871,760 681,245 37,839,429 Liabilities Administrative Payable 6,470 493 724 78 5 5 3 3 7,781 Retirement Benefits Payable 1,359 618 356 2,161 13 35 4,542 Investments Payable 212,664 62.251 91,420 99,384 8.562 2.206 1,025 49 477,561 Foreign Exchange Contracts Payable 3,671,142 1,074,615 1,578,149 1,715,640 147,808 38,083 17,684 854 8,243,975 Securities Lending Obligations 137,072 40,125 58,925 64,066 5,519 1,422 660 32 307,821 Obligations Under Reverse 132,967 38,922 57,160 62,140 5,354 1,379 641 31 298,594 Repurchase Agreement Due to Other Funds 1.589 1,756 721 32 30 22 4 4.154 Due to Other Governments **Total Liabilities** 4,161,674 1,218,613 167.293 43.125 20.070 973 9,344,428 1,788,490 1.944.190 **Total Fiduciary Net Position** \$ 12,694,328 \$ 3,711,347 \$ 5,452,352 \$ 5,927,570 \$ 513,952 \$ 131,491 \$ 61,019 \$ 2,942 \$28,495,001 Restricted

The accompanying notes are an integral part of the financial statements.

<sup>&</sup>lt;sup>2</sup>Pension Trust Fund assets are restricted solely for qualifying member benefits.

# Statement of Fiduciary Net Position, continued As of June 30, 2018 (with Comparative Totals as of June 30, 2017)<sup>1</sup>

(dollars in thousands)		Pension Tr Defined Conf	rust Funds²		OPEB	Custodial	INPRS	Totals
			, ,		Fund <sup>3</sup>	<u>Fund</u>		
Acceta	PERF DC	TRF DC	LE DC	Total DC	SDBF	LPSPR	2018	2017
Assets Cash	\$ 120	\$ 85	\$ 19	\$ 224	\$ 2	\$ -	\$ 9,090	\$ 7,562
Receivables:	,	,	,	,	,	,		
Contributions and Miscellaneous	2,626	2,355	526	5,507	83	2,879	32,237	23,746
Investments	4,283	4,096	105	8,484		_,-,-,-	220,407	185,284
Foreign Exchange Contracts	5,478	5,240	2,758	13,476	_	_	8,275,856	7,361,828
Interest and Dividends	7,382	7,061	85	14,528	-	179	89,291	82,469
Due from Other Funds	16	-	-	16	-	-	7,147	3,273
Total Receivables	19,785	18,752	3,474	42,011	83	3,058	8,624,938	7,656,600
Investments:								
Short Term	-	-	-	-	-	25,988	25,988	62,758
Pooled Investments:								
Repurchase Agreements	-	-	1	1	-	-	3,631	1,881
Short Term	49,896	47,722	830	98,448	249	-	1,371,057	1,482,940
Fixed Income	217,682	208,198	4,981	430,861	14,597	-	10,132,170	9,086,227
Equities	1,263,895	1,208,831	12,556	2,485,282	-	-	8,877,603	8,353,466
Alternative	-	-	3,794	3,794	-	-	11,563,468	10,561,011
Derivatives			8	8			22,970	(3,085
Total Pooled Investments	1,531,473	1,464,751	22,170	3,018,394	14,846	-	31,970,899	29,482,440
Pooled Synthetic GIC's at Contract Value	1,330,764	1,272,785	11,011	2,614,560	-	-	2,614,560	2,633,420
Securities Lending Collateral	-	-	101	101	-	-	307,922	288,073
Total Investments	2,862,237	2,737,536	33,282	5,633,055	14,846	25,988	34,919,369	32,466,691
Other Assets	-	-	-	-	-	-	159	102
Gross Capital Assets	-	-	-	-	-	-	21,121	21,051
Less: Accumulated Depreciation and Amortization	-	-	-	-	-	-	(15,981)	(14,927
Net Capital Assets							5,140	6,124
Total Assets	2,882,142	2,756,373	36,775	5,675,290	14,931	29,046	43,558,696	40,137,079
Liabilities				<u> </u>				
Administrative Payable	764	262	1	1,027	-	-	8,808	7,417
Retirement Benefits Payable	-	-	18	18	150	-	4,710	35,570
Investments Payable	6,111	5,845	207	12,163	2	-	489,726	289,024
Foreign Exchange Contracts Payable	5,473	5,235	2,752	13,460	-	-	8,257,435	7,388,113
Securities Lending Obligations	-	-	101	101	-	-	307,922	288,073
Obligations Under Reverse Repurchase Agreement	-	-	98	98	-	-	298,692	276,792
Due to Other Funds	2,063	928	2	2,993	-	-	7,147	3,273
Due to Other Governments						1,693	1,693	1,668
Total Liabilities	14,411	12,270	3,179	29,860	152	1,693	9,376,133	8,289,930
Total Fiduciary Net Position	\$ 2,867,731	\$ 2,744,103	\$ 33,596	\$ 5,645,430	\$ 14,779	\$ 27,353	\$ 34,182,563	\$ 31,847,149

<sup>&</sup>lt;sup>1</sup>The accompanying notes are an integral part of the financial statements. <sup>2</sup>Pension Trust Fund assets are restricted solely for qualifying member benefits. <sup>3</sup>Other postemployment benefit trust fund.

# Statement of Changes in Fiduciary Net Position For the Year Ended June 30, 2018 (with Comparative Totals for the Year Ended June 30, 2017)<sup>1</sup>

(dollars in thousands) Pension Trust Funds<sup>2</sup> **Defined Benefit (DB)** TRF Pre-**TRF '96** PERF DB<sup>3</sup> '96 DB3  $DB^3$ '77 Fund **JRS** EG&C **PARF** LE DB **Total DB Additions** Contributions: \$ \$ 982,998 Employer 571,374 4,168 235,819 \$ 147,094 15,117 6,175 \$ 3,014 237 Nonemployer Contributing Entity 917,900 917,900 Member 83,112 12,765 47,176 48,839 3,418 1,172 1,294 197,776 654,486 282,995 195,933 18,535 7,347 237 2,098,674 **Total Contributions** 934,833 4,308 Investment Income Net Appreciation / (Depreciation) Fair Value of Investments 1,107,336 384,896 490,878 461,726 40,314 10,238 4,780 242 2,500,410 Other Net Investment Income 236 299 316 28 7 3 705 1,594 1,776 Net Interest and Dividends Income 190,341 62,122 81,624 80,077 6,971 828 41 423,780 Securities Lending Income 2,018 638 853 933 81 21 10 1 4,555 Total Investment Income 1,300,400 447,892 573,654 543,052 47,394 12,042 5,621 284 2,930,339 Less Direct Investment Expenses: Investment Management Fees (25,428)(808)(377)(19)(182,543)(82,469)(33,817)(36,452)(3,173)Securities Lending Fees (365)(116)(154)(169)(15)(4) (2)(825)General Investment Expenses (2,739)(102)(41)(24)(2)(13, 156)(6,988)(1,820)(1,440)Total Direct Investment Expenses (89,822)(27,364)(36,710)(38,061)(3,290)(853)(403)(21)(196,524)Net Investment Income / (Loss) 1,210,578 420,528 536,944 504,991 44,104 11,189 5,218 263 2,733,815 Other Additions: Transfer from Defined Benefit Member Reassignments 3.208 3.107 7.131 13.446 299 18 10 677 Miscellaneous Income 121 229 **Total Other Additions** 3,329 3,336 7,430 18 10 14,123 **Total Additions** 1,868,393 1,358,697 827,369 700,942 62,639 18,546 9,526 500 4,846,612 **Deductions** Pension, Disability and Survivor Benefits 916,719 1,249,120 145,483 169,051 23,364 6,820 3,853 359 2,514,769 Special Death Benefits 884 884 Distributions of Contributions and Interest 21,490 3,404 5,135 2,973 259 115 142 33,518 Distributions of Custodial Funds Administrative Expenses 20,844 5,385 5,208 1,643 119 136 87 64 33,486 Transfer to Defined Contribution 2,849,380 1,205,277 1,469,542 5,524,199 10,238 1,678 Member Reassignments 1,530 13,446 Miscellaneous Expense 65 116 159 340 **Total Deductions** 3,818,736 2,464,980 1,627,057 174,551 23,742 7,071 4,082 423 8,120,642 Net Increase / (Decrease) (1,950,343)(1,106,283)(799,688)526,391 38,897 11,475 5,444 77 (3,274,030)475,055 Beginning Fiduciary Net Position Restricted 6.252.040 120.016 55,575 2.865 14,644,671 4,817,630 5,401,179 31,769,031 **Ending Fiduciary Net Position Restricted** \$ 12,694,328 \$ 5,452,352 \$ 5,927,570 \$ 513,952 \$ 131,491 61,019 2,942 \$ 28,495,001 \$ 3.711.347

<sup>&</sup>lt;sup>1</sup>The accompanying notes are an integral part of the financial statements.

<sup>&</sup>lt;sup>2</sup>Pension Trust Fund assets are restricted solely for qualifying member benefits.

<sup>3</sup> Effective January 1, 2018, PERF and TRF DC account balances were transferred from DB to the appropriate DC fund. First half of FY18 activity is included within the applicable DB fund.

Statement of Changes in Fiduciary Net Position, continued For the Year Ended June 30, 2018 (with Comparative Totals for the Year Ended June 30, 2017)<sup>1</sup>

(dollars in thousands)		Pension Ti	rust Funds	2			OPEB	Cus	stodial		
		Defined Con	tribution (I	DC)			Fund <sup>4</sup>		und	INPR	S Totals
	PERF DC <sup>3</sup>	TRF DC <sup>3</sup>	LE DO		Total DC		SDBF	LF	SPR	2018	2017
Additions											
Contributions:											
Employer	\$ -	\$ -	\$ 1,3	334 \$	1,334	\$	-	\$	-	\$ 984,332	\$ 967,011
Nonemployer Contributing Entity	-	-		_	-		506	4	206,408	1,124,814	1,088,559
Member	88,052	63,026	3	392	151,470		-		-	349,246	347,622
Total Contributions	88,052	63,026	1,7	726	152,804		506	- 2	206,408	2,458,392	2,403,192
Investment Income:											
Net Appreciation / (Depreciation) Fair											
Value of Investments	26,503	29,373	2,6	601	58,477		(67)		-	2,558,820	2,116,920
Other Net Investment Income	13	16		1	30		-		-	1,624	3,757
Net Interest and Dividends Income	19,224	19,883	3	384	39,491		1		1,358	464,630	426,582
Securities Lending Income				1	-		-		-	4,555	3,894
Total Investment Income	45,740	49,271	2,9	987	97,998		(66)		1,358	3,029,629	2,551,153
Less Direct Investment Expenses:											
Investment Management Fees	(3,486)	(3,087)		(91)	(6,664)		(9)		-	(189,216	(186,000)
Securities Lending Fees	-	-		-	-		-		-	(825	(618)
General Investment Expenses	(1,317)	(738)		(10)	(2,065)		-		-	(15,221	(17,462)
Total Direct Investment Expenses	(4,803)	(3,825)	(	101)	(8,729)		(9)		-	(205,262	(204,080)
Net Investment Income / (Loss)	40,937	45,446	2,8	386	89,269		(75)		1,358	2,824,367	2,347,073
Other Additions:											
Transfer from Defined Benefit	2,849,380	2,674,819		-	5,524,199		-		-	5,524,199	-
Member Reassignments	-	-		-	-		-		-	13,446	16,669
Miscellaneous Income	-	-		18	18		-		-	695	185
Total Other Additions	2,849,380	2,674,819		18	5,524,217		-		-	5,538,340	16,854
Total Additions	2,978,369	2,783,291	4,6	630	5,766,290		431	- 2	207,766	10,821,099	4,767,119
<u>Deductions</u>											
Pension, Disability and Survivor Benefits	-	-		_	-		-		-	2,514,769	2,480,404
Special Death Benefits	-	-		_	-		750		-	1,634	1,209
Distributions of Contributions and Interest	106,749	37,514	1,7	794	146,057		_		-	179,575	
Distributions of Custodial Funds	-	-		-	-		_	2	212,634	212,634	213,256
Administrative Expenses	3,839	1,652		12	5,503		-		2	38,991	38,365
Transfer to Defined Contribution	-	-		-	-		_		-	5,524,199	
Member Reassignments	-	-		-	-		-		-	13,446	
Miscellaneous Expense	50	22		-	72		-		25	437	
Total Deductions	110,638	39,188	1,8	306	151,632		750	2	212,661	8,485,685	2,820,248
Net Increase / (Decrease)	2,867,731	2,744,103	2,8	324	5,614,658		(319)		(4,895)	2,335,414	1,946,871
Beginning Fiduciary Net Position Restricted			30,7	772	30,772	_	15,098		32,248	31,847,149	29,900,278
Ending Fiduciary Net Position Restricted	\$ 2,867,731	\$ 2,744,103	\$ 33,5	596	\$ 5,645,430	\$	14,779	\$	27,353	\$ 34,182,563	\$ 31,847,149

<sup>&</sup>lt;sup>1</sup>The accompanying notes are an integral part of the financial statements.

<sup>&</sup>lt;sup>2</sup>Pension Trust Fund assets are restricted solely for qualifying member benefits.
<sup>3</sup>Effective January 1, 2018, PERF and TRF DC account balances were transferred from DB to the appropriate DC fund. First half of FY18 activity is included within the applicable DB fund. <sup>4</sup>Other postemployment benefit trust fund.

Notes to the Financial Statements June 30, 2018

# Note 1. Descriptions of System and Funds

## **Administration of System and Funds**

NPRS administers 11 pension trust funds consisting of eight defined benefit and three defined contribution retirement funds, one other postemployment benefit fund, and one custodial fund. In accordance with Indiana Code (IC) 5-10.5, INPRS is governed by a nine-member Board of Trustees, appointed by the Governor pursuant to the following criteria:

- One trustee with experience in economics, finance, or investments
- One trustee with experience in executive management or benefits administration
- One trustee who is an active or retired member of the '77 Fund
- Two trustees who are TRF members with at least 10 years of creditable service
- One trustee who is a PERF member with at least 10 years of creditable service
- Director of the State Budget Agency, or designee
- Auditor of State, or nominee
- Treasurer of State, or nominee

### (A) Defined Benefit Retirement Funds

## **Fund Descriptions**

#### Public Employees' Defined Benefit Account

PERF DB is a cost-sharing, multiple-employer defined benefit fund which is generally administered in accordance with IC 5-10.2, IC 5-10.3, and 35 IAC 1.2. The account provides retirement, disability, and survivor benefits to full-time employees of the State of Indiana not covered by another plan and those political subdivisions that elect to participate in the retirement fund. Political subdivisions mean a county, city, town, township, political body corporate, public school corporation, public library, public utility of a county, city, town, or township, and any department of, or associated with, a county, city, town, or township, which department receives revenue independently of, or in addition to, funds obtained from taxation.

New employees hired by the State or a participating political subdivision have a one-time election to join either the Public Employees' Hybrid Plan (PERF Hybrid) or the My Choice: Retirement Savings Plan for Public Employees (My Choice) which is covered in the Defined Contribution Funds section. A new hire that is an existing member of PERF Hybrid and was not given the option for My Choice is given the option to elect My Choice or remain in PERF Hybrid. PERF Hybrid consists of two components: PERF DB, the employer-funded monthly defined benefit component, and the Public Employees' Hybrid Members Defined Contribution Account (see Defined Contribution Funds section), the defined contribution component.

Members consist of officers and employees of units of the State and participating political subdivisions. The political subdivisions become participants by ordinance or resolution of the governing body, which specifies the classifications of employees who will become members of the fund. The ordinance or resolution is filed with and approved by INPRS. To be a member, employees hired after June 30, 1982, except employees of a participating school corporation, must occupy positions requiring performance of service of more than 1,000 hours during a year. Effective July 1, 2008, members who have at least one (1) year of service in both PERF DB and the Teachers' Retirement Fund (TRF Pre-'96 DB or TRF '96 DB) have the option of choosing from which of these funds they would like to retire.

# Notes to the Financial Statements, continued June 30, 2018

#### Teachers' Pre-1996 Defined Benefit Account

The Teachers' Pre-1996 Defined Benefit Account is a pay-as-you-go, cost-sharing, multiple-employer defined benefit fund providing retirement, disability, and survivor benefits for teachers, administrators and certain INPRS employees. Administration of the account is generally in accordance with IC 5-10.2, IC 5-10.4, and 35 IAC 14. TRF Pre-'96 DB is the employer-funded defined benefit component of the Teachers' Hybrid Plan, and the Teachers' Hybrid Members Defined Contribution Account (see Defined Contribution Funds section) is the other component.

Membership in TRF Pre-'96 DB is closed to new entrants. Membership is required for all legally qualified and regularly employed licensed teachers who serve in the public schools of Indiana, teachers employed by the State at State institutions, and certain INPRS employees. Generally, members hired before 1996 participate in TRF Pre-'96 DB, and members hired after 1995 participate in TRF '96 DB.

#### Teachers' 1996 Defined Benefit Account

TRF '96 DB is a cost-sharing, multiple-employer defined benefit fund providing retirement, disability, and survivor benefits. Administration of the account is generally in accordance with IC 5-10.2, IC 5-10.4, and 35 IAC 14. TRF '96 DB is the employer-funded defined benefit component of the Teachers' Hybrid Plan, and the Teachers' Hybrid Members Defined Contribution Account (see Defined Contribution Funds section) is the other component.

Membership in TRF '96 DB is required for all legally qualified and regularly employed licensed teachers who serve in the public schools of Indiana, teachers employed by the State at State institutions, and certain INPRS employees. Additionally, faculty members and professional employees at Ball State University and Vincennes University have the option of selecting membership in the Fund or an alternate University plan not administered by INPRS. Membership in TRF '96 DB is optional for teachers employed by charter schools, employees and officials of the Indiana State Board of Education who were Indiana licensed teachers before their employment with the Board, and teachers employed by special management teams as defined under IC 20-31.

## 1977 Police Officers' and Firefighters' Retirement Fund

The 1977 Police Officers' and Firefighters' Retirement Fund is a cost-sharing, multiple-employer defined benefit fund providing retirement, disability, and survivor benefits to full-time police officers and firefighters hired (or rehired) after April 30, 1977. The '77 Fund administration is generally in accordance with IC 36-8 and provides coverage to full-time sworn officers of a police force of an Indiana city or town and full-time firefighters employed by an Indiana city, town, township, or county.

Members of the '77 Fund have an option to participate in a Deferred Retirement Option Plan (DROP), in accordance with IC 36-8-8.5. Members that are eligible to retire (with an unreduced benefit) may elect to accumulate a DROP benefit while continuing to work. At the time of their election, the members execute an irrevocable election to retire on a DROP retirement date and remain in active service while contributing to the fund until that date. The DROP retirement date must be not less than 12 months and not more than 36 months after their DROP entry date and not after the date they reach any mandatory retirement age. The members may make an election to enter the DROP only once in their lifetime. The DROP and future retirement monthly benefit are calculated as of the members' DROP entry date. At the time of retirement, the members must choose among the available options for distribution of the accumulated benefit under the DROP. As of June 30, 2018, the amount held by the fund under the DROP is \$82 million.

# Notes to the Financial Statements, continued June 30, 2018

#### Judges' Retirement System

JRS is a single-employer (the State of Indiana) defined benefit fund providing retirement, disability, and survivor benefits to judges and magistrates. Administration is generally in accordance with IC 33-38. Coverage is for any person who has served, is serving, or shall serve, as a regular judge, magistrate, or justice of the (1) Supreme Court of the State of Indiana, (2) Court of Appeals, (3) Indiana Tax Court, (4) Circuit Court of a Judicial Circuit, or (5) county courts including: Superior, Criminal, Probate, Juvenile, Municipal, and County.

#### Excise, Gaming and Conservation Officers' Retirement Fund

The Excise, Gaming and Conservation Officers' Retirement Fund is a single-employer (the State of Indiana) defined benefit fund providing retirement, disability, and survivor benefits to certain employees of the (1) Indiana Department of Natural Resources, (2) Indiana Alcohol and Tobacco Commission, and (3) any Indiana State excise police officer, Indiana State conservation enforcement officer, gaming agent, or any gaming control officer who is engaged exclusively in the performance of law enforcement duties. Administration of EG&C is generally in accordance with IC 5-10-5.5.

Members of EG&C have an option to participate in a Deferred Retirement Option Plan (DROP), in accordance with IC 5-10-5.5-22. Members that are eligible to retire at an unreduced annual retirement allowance may elect to accumulate a DROP benefit while continuing to work. At the time of their election, the members execute an irrevocable election to retire on a DROP retirement date and remain in active service while contributing to the fund until that date. The DROP retirement date must be not less than 12 months and not more than 36 months after their DROP entry date and not after the date they reach any mandatory retirement age. The members may make an election to enter the DROP only once in their lifetime. The DROP and future retirement monthly benefit are calculated as of the members' DROP entry date. At the time of retirement, the members must choose among the available options for distribution of the accumulated benefit under the DROP. As of June 30, 2018, the amount held by the fund under the DROP is \$1.6 million.

### Prosecuting Attorneys' Retirement Fund

PARF is a single-employer (the State of Indiana) defined benefit fund that provides retirement, disability, and survivor benefits to prosecuting attorneys. Administration of PARF is generally in accordance with IC 33-39-7. Coverage is for individuals who: (1) serve as a prosecuting attorney or a chief deputy prosecuting attorney, or (2) serve as the executive director or assistant executive director of the Indiana Prosecuting Attorneys Council or as a State-paid deputy prosecuting attorney. These individuals' salaries are paid from the General Fund of the State of Indiana.

#### Legislators' Defined Benefit Fund

The Legislators' Defined Benefit Fund is a single-employer (the State of Indiana) defined benefit fund providing retirement, disability, and survivor benefits to members of the General Assembly who were serving on April 30, 1989, and who filed an election under IC 2-3.5-3-1(b). The fund is closed to new entrants and administration is generally in accordance with IC 2-3.5.

Notes to the Financial Statements, continued June 30, 2018

### **Employers and Members**

#### Number of Members<sup>1</sup>

Fund	Number of Employers	Active	Annuitant <sup>2</sup>	Inactive Vested	Inactive Non-Vested With Balance	Total
PERF DB	1,187	132,181	87,990	31,924	-	252,095
TRF Pre-'96 DB	345	11,710	53,227	2,635	-	67,572
TRF '96 DB	373	59,996	6,289	4,996	-	71,281
'77 Fund	168	13,879	4,751	225	1,136	19,991
JRS	1	439	365	26	42	872
EG&C	1	443	234	5	141	823
PARF	1	209	145	87	134	575
LE DB	1	9	76	10	-	95

<sup>&</sup>lt;sup>1</sup>Based on census data as of June 30, 2017 used for the June 30, 2018 actuarial valuations. <sup>2</sup>Includes retiree, survivor, and disabled.

#### **Contributions**

Contributions are determined by the INPRS Board of Trustees based on actuarial valuation, except for TRF Pre-'96 DB, which is based on statute. Employers may pay all or part of the member contribution for the member.

	Employer					
		Appropriation				
Fund	Contribution	Amount <sup>2</sup> ADC <sup>3</sup>		Contribution		
PERF DB <sup>1</sup>	11.2 percent of covered payroll for hybrid members, and for My Choice members a supplemental cost of 7.8 percent for the State and 7.1 percent for political subdivisions.		N/A			
TRF Pre-'96 DB1	\$4.2 million of reimbursement of grants.	\$922.1 million <sup>4</sup> \$3,188.5 million				
TRF '96 DB1	7.5 percent of covered payroll.	N	/A			
'77 Fund	17.5 percent of the salary of a first class officer or firefighter.	N/A		6.0 percent of the salary of a first class officer or firefighter up to 32 years of service.		
JRS	\$7.1 million in docket and court fees.	\$15.1 million <sup>5</sup>	\$14.9 million	6.0 percent of salary up to 22 years of service.		
EG&C	20.75 percent of covered payroll.	N/A		4.0 percent of salary.		
PARF	N/A	\$3.0 million \$2.5 million		6.0 percent of salary up to 22 years of service.		
LE DB	N/A	\$0.2 million	\$0.2 million	N/A		

PERF DB, TRF Pre-'96 DB, and TRF '96 DB member contributions are included with the DB in the first half of the fiscal year and with the applicable DC account effective January 1, 2018.

<sup>&</sup>lt;sup>2</sup>Appropriated by the State of Indiana from the General Fund. <sup>3</sup>Actuarially determined contribution.

<sup>&</sup>lt;sup>4</sup>Appropriation includes \$4.2 million of employer contributions and \$917.9 million of non-employer contributing entity contributions. <sup>5</sup>Appropriation includes \$7.1 million of docket and court fees.

# Notes to the Financial Statements, continued June 30, 2018

# Retirement, Disability and Survivor Benefits

The following table is a summary of key information for the DB funds administered by INPRS. For a complete list of fund rules, please reference the applicable Indiana Code at http://iga.in.gov/

		Full Retirement Benefit
Fund	Eligibility	Annual Pension Benefit
PERF DB	Age 65 and 10 years (eight years for certain elected officials) of	Equals 1.1 percent X Average Annual Compensation X Years of Creditable Service
TRF Pre-'96 DB	creditable service, Age 60 and 15 years of creditable	Average annual compensation uses the 20 highest calendar quarters (or only four quarters for an elected official), in groups of four consecutive calendar quarters with no quarter used
TRF '96 DB	service, and Age 55 if age and creditable service total at least 85.	more than once (includes member contributions paid for by the employer and up to \$2,000 of severance). TRF average annual compensation is subject to additional stipulations.
'77 Fund	Age 52 and 20 years of creditable service.	Equals 50 percent of a first-class officer salary as reported by the employer, plus one percent for each six months of active service over 20 years up to a maximum of 12 years (for a total of 32 years of service and 74 percent of salary).
JRS	Age 65 and eight years of creditable service, and Age 55 if age and creditable service total at least 85.	Equals the salary of the office, times the respective percentage for years of service: 24 percent for eight years of service, plus three percent per year for years nine through 11, 50 percent at 12 years, plus one percent per year for years 13 through 22 with a maximum of 60 percent.
EG&C	Age 65 (mandatory retirement), Hired after age 50 with 10+ years of creditable service, Age 50 and 25 years of creditable service, and Age 55 if age and creditable service total at least 85.	Equals 25 percent of the officer's average annual salary (the average annual salary of the five highest years in the 10 years immediately preceding an officer's retirement date), plus 1 and 2/3 percent for each completed year of creditable service over 10 years up to a maximum of 75 percent of salary.
PARF	Age 65 and eight years of creditable service, and Age 55 if age and creditable service total at least 85.	Equals the member's highest annual salary paid before separation from service, times the respective percentage for years of service (24 percent for eight years of service, plus three percent per year for years nine through 11, 50 percent at 12 years, plus one percent per year for years 13 through 22 with a maximum of 60 percent), less any PERF DB benefit.
LE DB	Age 65 and 10 years of creditable service, Age 60 and 15 years of creditable, and Age 55 if age and creditable service total at least 85.	Equals the lesser of: \$40 times 12 months times the years of service before November 8, 1989 or The highest consecutive three year average annual salary.

Notes to the Financial Statements, continued June 30, 2018

Fund	Early Retirement Benefit	Nonvested Termination	Disability Benefit		
PERF DB			An active member qualifying for Social Security disability with five years of creditable service		
TRF Pre-'96 DB	Age 50 and minimum of 15 years of creditable service (44 percent of full benefit at age 50,	Refer to Defined	may receive an unreduced retirement benefit for the duration of their disability (minimum of \$180		
TRF '96 DB	increasing 5 percent per year up to 89 percent at age 59).	Contribution Funds.	per month for PERF DB and \$185 per month for both TRF DB funds). Under certain conditions, active TRF members may qualify for a classroom disablility benefit of at least \$125 per month.		
'77 Fund	Age 50 and 20 years of creditable service (reduce full benefit by 7 percent for each year less than age 52).		An active member may qualify for a benefit with the amount based on the type of impairment and other factors, and as determined by the local pension board for a covered impairment.		
JRS	Age 62 and eight years of creditable service (reduce full benefit by 0.1 percent for each month less than age 65).	The sum total of the	A qualified member with 22+ years of creditable service receives full benefit. Less than 22 years of creditable service receives the full benefit reduced by one percent for each year under 22 (benefit to be no lower than 50 percent).		
EG&C	Age 45 and 15 years of creditable service (reduce full benefit by 0.25 percent for each month less than age 60).	member's contributions plus interest at a rate set by the Board.	If disability occurs in the line of duty, the benefit is the member's salary times the degree of impairment without a reduction for early commencement. If not in the line of duty, the member's salary used to calculate the benefit is reduced 50%. A minimum benefit may apply.		
PARF	Age 62 and eight years of creditable service (reduce full benefit by 0.25 percent for each month less than age 65). Reduced for any PERF DB benefit.		A member with 22+ years of creditable service receives full benefit. Less than 22 years of creditable service receives the full benefit reduced by one percent for each year under 22 (benefit to be no lower than 50 percent). Reduced for any PERF DB benefit.		
LE DB	Age 55 and 10 years of creditable service (reduce full benefit by 0.1 percent per month between ages 60 and 65, and by 5/12 percent per month between ages 55 and 60).	N/A	An active member that qualifies for social security disability with at least five years of creditable service may receive an unreduced benefit for the duration of their disability.		

# Notes to the Financial Statements, continued June 30, 2018

	Surviv	COLA Coot of Living	
Fund	While in Active Service	While Receiving a Benefit	COLA - Cost of Living Adjustment
PERF DB	Minimum of 15 years of service or member was at least age 65 with 10 to 14 years of service. A	If the member selected one of the following forms of payment: Five	Ad hoc. No COLA, but a one-time check (13th
TRF Pre-'96 DB	spouse or dependent beneficiary immediately receives a benefit as if the member retired the later	Year Guaranteed, Joint with Full, Joint with Two-Thirds, or Joint with One-Half, a spouse or dependent receives the benefit associated with	check) by October 1, 2017 for members retired before December 1, 2016 of \$150 to \$450
TRF '96 DB	of age 50 or the age the day before the member's death.	the selected form of payment.	depending on service.
'77 Fund	For death in the line of duty, spouse receives 100 percent of member's benefit (at least 20 years of service and age 52). Otherwise, similar to "While Receiving a Benefit".	Surviving spouse or parent (for their lifetimes) or dependent (until at least age 18) receives up to 60 percent of the member's benefit. Heirs or estate may be entitled to receive \$12,000.	Consumer Price Index (January-March), limited between 0.0 and 3.0 percent. Effective July 1, 2017 2.5 percent.
JRS	With 8+ years of service, spouse or dependent child(ren) receive the greater of \$12,000 annually or 50% of benefit entitled at the date of death.	Surviving spouse (for lifetime) or dependent child(ren) (until age 18 unless disabled) receive the greater of \$12,000 annually or 50% of the member's benefit.	Percent increase of the salary of the position held at separation. Effective July 1, 2017 2.0 percent.
EG&C	For 15+ years of service, spouse or dependent beneficiary receives a monthly annuity. Less than 15 years of service, the benefit consists of contributions plus interest.	Surviving spouse or parent (for their lifetime), or dependent(s) (until age 18) receive 50 percent of the member's benefit. If spouse is more than five years younger than the member, the benefit is actuarially adjusted.	Ad hoc. No COLA, but a one-time check (13th check) by October 1, 2017 for members retired before December 1, 2016 of \$150 to \$450 depending on service.
PARF	Spouse or dependent child(ren) receive greater of \$12,000 annually or 50% of the benefit for the later of age 62 or age the day before death. Reduced for any PERF DB benefit.	Surviving spouse (for lifetime) or dependent child(ren) (until age 18 unless disabled) receive the greater of \$12,000 annually or 50% of the member's benefit. Reduced for any PERF DB benefit.	N/A
LE DB	Spouse or dependent child(ren) receive 50% of the benefit for the later of age 55 or age the day before the member's death.	Surviving spouse (for their lifetime), or dependent(s) (until age 18 unless disabled) receive 50 percent of member's benefit.	Ad hoc and equal to PERF DB. No COLA for the year ended June 30, 2018.

Notes to the Financial Statements, continued June 30, 2018

## (B) Defined Contribution Retirement Funds

#### **Fund Descriptions**

## Public Employees' Defined Contribution Account

PERF DC is a multiple-employer defined contribution fund and is generally administered in accordance with IC 5-10.2, IC 5-10.3, and 35 IAC 1.2. The fund provides supplemental retirement benefits to PERF DB members and serves as the primary retirement benefit for the My Choice: Retirement Savings Plan for Public Employees (My Choice) members.

New employees hired by the State, or a participating political subdivision, have a one-time election to join either the Public Employees' Defined Benefit Account (Hybrid Plan) or My Choice. A new hire that is an existing member of the Public Employees' Defined Benefit Account (Hybrid Plan), and was not given the option for My Choice, is given the option to elect My Choice or remain in the Public Employees' Defined Benefit Account (Hybrid Plan).

#### PERF DC consists of two tiers:

- The Public Employees' Hybrid Members Defined Contribution Account (PERF Hybrid DC) is the defined contribution component of the Public Employees' Hybrid Plan. The Public Employees' Defined Benefit Account (see Defined Benefit Funds section) is the other component of the Public Employees' Hybrid Plan. Member contributions are set by statute at three percent of compensation, and the employer may choose to make these contributions on behalf of the member. Members are 100 percent vested in their account balance, which includes all contributions and earnings.
- My Choice: Retirement Savings Plan for Public Employees (My Choice) is for members who are full-time employees of the State of Indiana or a participating political subdivision that elected to become members of My Choice. Member contributions are set by statute at three percent of compensation, plus these members may receive additional employer contributions in lieu of the Public Employees' Defined Benefit Account. Members are 100 percent vested in all member contributions and are vested in employer contributions (see Contributions section), which includes all employer contributions and earnings as follows:

		Years of Service						
	1	2	3	4	5+			
Percent Vested	20%	40%	60%	80%	100%			

#### Teachers' Defined Contribution Account

TRF DC is a multiple-employer defined contribution fund providing supplemental retirement benefits to TRF Pre-'96 DB and TRF-'96 DB members. Administration of the fund is generally in accordance with IC 5-10.2, IC 5-10.4 and 35 IAC 14. TRF DC is the defined contribution component of the Teachers' Hybrid Plan. The Teachers' Pre-1996 Defined Benefit Account and the Teachers' 1996 Defined Benefit Account (see Defined Benefit Funds section) are the defined benefit component.

### Legislators' Defined Contribution Fund

LE DC is a single-employer (the State of Indiana) defined contribution fund that provides retirement benefits to members of the General Assembly. Administration of LE DC is generally in accordance with IC 2-3.5.

Notes to the Financial Statements, continued June 30, 2018

## **Employers and Members**

<sup>1</sup>Includes My Choice members of 3,334.

	Number of —	Nı	umber of Members	
Fund	Employers	Active	Inactive	Total
PERF DC <sup>1</sup>	1,188	128,678	88,974	217,652
TRF DC	374	69,193	25,218	94,411
LE DC	1	150	67	217

Contributions

Contributions are determined by statute and the INPRS Board of Trustees. For PERF DC and TRF DC, employers may pay the member contribution for the member. Voluntary member contributions are paid for solely by the member.

	Emp	Memb	er	
Fund	Contribution Voluntary		Contribution	Voluntary
PERF DC:	N	/A		
PERF Hybrid DC	IN			
My Choice	3.4 percent for State and up to 4.1 percent for political subdivision members.	Political subdivision's may match 50% of their member's voluntary contribution.	3.0 percent.	Up to 10.0
TRF DC	N	N/A		
LE DC	14.2 percent of covered payroll (sum of State PERF Hybrid DB and PERF Hybrid DC contribution rates).	N/A	5.0 percent.	

## Notes to the Financial Statements, continued June 30, 2018

#### Retirement, Disability and Survivor Benefits

Members may withdraw their account balance upon retirement, termination, disability, or death. As of January 1, 2018, MetLife is an available option for members that choose to annuitize their defined contribution balance.

Fund	Retirement & Termination Benefit	Disability Benefit	Survivor Benefit
PERF DC:	After 30 day separation from		
PERF Hybrid DC	employment, the member is entitled to the sum total of vested	Upon providing proof of the	
My Choice	contributions plus earnings. Amount may be paid in a lump sum, partial	member's qualification for social security disability	Beneficiary is entitled to
TRF DC	lump sum, direct rollover to another eligible retirement plan, or a monthly annuity (in accordance with INPRS requirements).	benefits, the member is entitled to the sum total of vested contributions plus earnings. Amount can	the sum total of vested contributions plus earnings. Amount can be paid in a lump sum, direct rollover to
LE DC	The member is entitled to the sum total of vested contributions plus earnings. Amount may be paid in a lump sum, partial lump sum, direct rollover to another eligible retirement plan or monthly annuity, or monthly installment options.	be paid in a lump sum, direct rollover to another eligible retirement plan, or a monthly annuity (in accordance with INPRS requirements).	another eligible retirement plan, or a monthly annuity (in accordance with INPRS requirements).

## **DC Investment Options**

Investments are self-directed, members may make changes daily, and investments are reported at fair value. Market risk is assumed by the member, and the member may choose among the following eight investment options with varying degrees of risk and return potential:

- Stable Value Fund Objective is to provide a market rate of return consistent with the preservation of principal through a shorter maturity, high-quality portfolio.
- Large Cap Equity Index Fund Objective is to seek investment growth/capital appreciation through passive investment in the stocks of the 500 largest U.S. companies.
- Small/Mid Cap Equity Fund Objective is to seek investment growth/capital appreciation through both active and passive investment in stocks of small- and mid-sized U.S. companies.
- International Equity Fund Objective is to seek investment growth/capital appreciation through both active and passive investment in stocks of non-U.S. companies in both developed and emerging markets.
- Fixed Income Fund Objective is to seek total return, consisting of income and capital appreciation.
- Inflation-Linked Fixed Income Fund Objective is to provide investors inflation protection and income consistent with investment in inflation-indexed securities. Principal and interest payments are adjusted in response to changes in inflation.
- Target Date Funds Objective is to seek an appropriate amount of total return, commensurate with risk, given the specific time horizon of each fund. The Target Date Funds provide members with a one-stop shop for investing. Members choose the fund most appropriate for them based on the year in which they plan to withdraw their money (usually their retirement year). Once a member selects the appropriate fund, the underlying asset allocation automatically adjusts over time.

# Notes to the Financial Statements, continued June 30, 2018

Money Market Fund – Objective is to provide a market rate of return consistent with the preservation of capital through a shorter maturity, high-quality portfolio.

LE DC members are also allowed to invest in the Consolidated Defined Benefit Assets.

## (C) Other Postemployment Benefit Fund (OPEB)

#### Special Death Benefit Fund (SDBF)

Effective July 1, 2017, the State Employees' Death Benefit Fund, Public Safety Officer's Death Benefit Fund, and the in the line of duty death benefit from the Local Public Safety Pension Relief Fund were merged to form the Special Death Benefit Fund. The fund is a multiple-employer, cost-sharing plan with approximately 50,000 members.

The Special Death Benefit Fund is an other postemployment benefit fund and is generally administered in accordance with IC 5-10-10, IC 5-10-11, IC 35-33-8 and IC 36-8-8. Funds are restricted for the purpose of providing surviving spouses, children, or parents a benefit of \$100,000 for state employees and \$150,000 for public safety officers or other eligible officers who die in the line of duty.

Funding is derived from bail bond fees, payments under IC 5-10-10-4.5, and investment income earned. The measurement of potential liability and the related disclosures required for other postemployment benefit plans have been excluded, as they would not be material to the INPRS system.

#### (D) Custodial Fund

## Local Public Safety Pension Relief Fund (LPSPR)

LPSPR is a custodial fund and is generally administered in accordance with IC 5-10.3 and IC 36-8. Funds are restricted for the purpose of providing financial relief to pension funds maintained by units of local government for their police officers' and firefighters' retirement plan benefits.

Funding for LPSPR is derived from contributions from the State of Indiana from a portion of cigarette and alcohol taxes, a portion of the State's lottery proceeds, investment income earned, and appropriations from the General Assembly.

Distributions are made from LPSPR to units of local government in two equal installments before July 1 and before October 2 of each year. The distribution is determined by an estimate of the total amount of pension, disability and survivor benefits paid by the local government units from the 1925 Police Pension Fund, the 1937 Firefighters' Pension Fund, and the 1953 Police Pension Fund (before the establishment of the '77 Fund). The estimate is prepared by the actuary on a city-by-city basis and a departmental basis.

Local government units may deposit funds with INPRS and funds are maintained in separate accounts for each local governmental unit. The amounts remain invested in the fund and are available for withdrawal at their request. As of June 30, 2018, the liability had a fair value of approximately \$1.7 million.

Notes to the Financial Statements, continued June 30, 2018

# **Note 2. Summary of Significant Accounting Policies**

## (A) Reporting Entity

ndiana Public Retirement System (INPRS) is an independent body, both corporate and politic, and is not a department or agency of the State of Indiana. INPRS exercises essential government functions as established by Indiana Public Law 23-2011 effective July 2011. INPRS is a pension trust fund for the State of Indiana for financial statement reporting purposes.

The financial statements presented in this report represent the funds for which the INPRS Board of Trustees has responsibility, and are not intended to present the financial position or results of operations for the State of Indiana or the retirement and benefit plans administered by the State.

The INPRS Board of Trustees administers 11 pension trust funds [eight defined benefit funds and three defined contribution funds], one death benefit fund accounted for an other postemployment benefit fund, and a custodial fund. These fiduciary funds account for assets held by the government in a trustee capacity or as an agent on behalf of others.

See Note 1 for descriptions of these funds.

## (B) Basis of Accounting

The financial statements of INPRS have been prepared using the accrual basis of accounting in conformity with generally accepted accounting principles (GAAP) as applied to governmental units. Under the accrual basis, revenues are recognized when earned, and expenses are recognized when liabilities are incurred, regardless of the timing of related cash flows. The Governmental Accounting Standards Board (GASB) is the accepted standards-setting body for established governmental accounting and financial reporting principles. INPRS adopts all applicable GASB pronouncements in accounting and reporting for its operations.

### (C) Use of Estimates

In preparing the financial statements to conform to generally accepted accounting principles, INPRS makes estimates and assumptions. These estimates and assumptions affect the reported amounts of assets and liabilities and disclosures of contingent assets and liabilities at the date of the financial statements, as well as the reported amounts of revenue and expenses during the reporting period. Actual results could differ from estimates and assumptions.

#### (D) Reclassifications

The financial statements include summarized comparative totals from the prior fiscal year, but do not include all comparative disclosures to constitute comparative financial reporting. In the current year, assets with the Indiana Treasurer of State that were classified as cash were reclassified to contributions and miscellaneous receivables. The prior year was updated to reflect this change.

Adoption of GASB 84 in the current year reclassified the Local Public Safety Pension Relief Fund (LPSPR) from an Agency Fund to a Custodial Fund. This change was incorporated into the Statement of Fiduciary Net Position and the Statement of Changes in Fiduciary Net Position.

# Notes to the Financial Statements, continued June 30, 2018

The prior year has been updated as follows:

(dollars in thousands)

Statement of Fiduciary Net Position	A	s Originally Stated	R	eclassed	 Adjusted Balance
<u>Assets</u>					
Cash	\$	8,405	\$	(843)	\$ 7,562
Contributions and Miscellaneous Receivables		22,903		843	23,746
Net Unadjusted Assets		40,105,771		-	40,105,771
		40,137,079		-	40,137,079
<u>Liabilities</u>					
Due to Other Governments		33,916		32,248	1,668
Net Unadjusted Liabilities		8,288,262		-	8,288,262
Total	\$	31,814,901	\$	32,248	\$ 31,847,149
Statement of Changes in Fiduciary Net Position					
Additions					
Nonemployer Contributing Entity	\$	871,564	\$	216,995	\$ 1,088,559
Securities Lending Income		3,163		731	3,894
Direct Investment Expenses		(17,457)		(5)	(17,462)
Total Additions		857,270		217,721	1,074,991
<u>Deductions</u>					
Special Death Benefits		909		300	1,209
Distributions of Custodial Funds		-		213,256	213,256
Administrative Expenses		38,334		31	38,365
Miscellaneous Expenses		-		13	 13
Total Deductions		39,243		213,600	252,843
Net Increase / (Decrease)		818,027		4,121	822,148
Net Unadjusted Additions / Deductions		1,124,723		-	1,124,723
Beginning Net Position Restricted		29,872,151		28,127	 29,900,278
Total	\$	31,814,901	\$	32,248	\$ 31,847,149

### (E) Contributions and Miscellaneous Receivables

Contribution receivables represent employer and member contributions due at and received after year-end, for wages paid before year-end, based upon employers' payroll date. The estimate for contribution receivables at year-end were calculated utilizing employer and member contributions from the last reported payroll period before year-end. If an employer subsequently elects to limit participation in their pension plan, an unfunded actuarial liability is calculated and recognized at that time. In addition, contribution receivables include Indiana Treasurer of State allotments that are due at and received after year-end.

Miscellaneous receivables include defined contribution member loans and service purchase contracts. Service purchase revenues are recognized in full when employers elect to participate in a fund or enlarge participation, or members elect to purchase additional

# Notes to the Financial Statements, continued June 30, 2018

service. Service purchase contracts allow for payment of the actuarially determined cost, with interest, over a specified period. As of June 30, 2018, the miscellaneous receivables primarily represents an outstanding balance of \$967 thousand for a purchase service contract. The employer makes quarterly installment payments, including interest at 7.25 percent per year. This agreement was effective July 1, 2000, to be amortized over 40 years.

## (F) Deposit and Investment Policies and Provisions

The oversight of assets is the responsibility of the INPRS Board of Trustees. Indiana law requires the Board to establish investment guidelines and limits on all types of investments and take other actions necessary to fulfill its duty as a fiduciary for all assets under its control. The INPRS Board of Trustees is required to diversify investments in accordance with the prudent investor standards.

On June 30, 2018, cash and investments of the funds were held by banks or trust companies under custodial agreements with INPRS. The INPRS Board of Trustees contracts with investment counsel, trust companies or banks to assist INPRS in its investment program. The Investment Policy Statement adopted by the INPRS Board of Trustees includes target asset allocations and allowable ranges that are expected to meet rates of return over a period while minimizing risk. See Note 3 for more information.

In February 2018, the Board of Trustees approved a revised Investment Policy Statement that did not contain any significant changes.

Investment purchases and sales of securities are recorded as of their trade date.

### (G) Method Used to Value Investments

Investments are generally reported at fair value. Fair value is the price that would be received to sell an asset in an orderly transaction between market participants at the measurement date.

Short-term investments consist primarily of cash, money market funds, certificates of deposits, and fixed-income instruments with maturities of less than one year. Short-term investments are generally reported using cost-based measures, which approximates fair value.

Fixed income securities consist primarily of the U.S. government, U.S. government-sponsored agencies, publicly traded debt, and commingled investment debt instruments. Equity securities consist primarily of domestic and international stocks in addition to commingled equity instruments. Fixed income and equity securities are generally valued based on published market prices and quotations from national security exchanges and security pricing services. Securities that are not traded on a national security exchange are valued using modeling techniques that include observable market inputs. Commingled funds are valued using the net asset value (NAV) of the entity.

Alternative investments include limited partnership interests in private market, absolute return, real estate, and risk parity investment strategies. Publicly traded alternative investments are valued based on quoted market prices. In the absence of readily determinable public fair values, alternative investments are valued using current estimates of fair value obtained from the general partner or investment manager. Holdings are generally valued by a general partner or investment manager on a quarterly or semi-annual basis. Valuation assumptions are based on the nature of the investment and the underlying business. Additionally, valuation techniques will vary by investment type and involve a certain degree of expert judgment.

# Notes to the Financial Statements, continued June 30, 2018

Alternative investments, such as investments in private market or real estate, are generally considered to be illiquid long-term investments. Due to the inherent uncertainty that exists in the valuation of alternative investments, the realized value upon the sale of an asset may differ significantly from the fair value.

Derivative instruments are marked to market daily with changes in fair value recognized as part of investments and investment income.

Fully benefit-responsive synthetic Guaranteed Investment Contracts (GIC's) are reported at contract value.

## (H) Pooled Investment Unit Trust Accounting

Pooled unit trust accounting involves assigning units to each fund based on the share of the fund's investment fair value to the total fair value of the consolidated investments. The per-unit net asset value of all participating funds will increase or (decrease) based on investment earnings or (losses) and appreciation or (depreciation). Deposits and withdrawals for each fund change the number of units held by each fund. These changes are recorded at the unit value on the transaction date. Investment earnings or losses and fees for the total consolidated fund are allocated to each of the pension funds on a daily basis.

In accordance with GAAP, the assets and liabilities for internal investment pools are allocated pro rata to each of the funds within the pool. Internal investment pools include investments receivables, foreign exchange contract receivables, interest and dividends receivables, securities lending collateral, investments payable, foreign exchange contracts payable, securities lending obligations, obligations under reverse repurchase agreement, and the pooled investment holdings.

The INPRS Board of Trustees approved unitizing investment assets to provide for a consolidated rate of return and to invest in a diversified manner. The INPRS Board of Trustees unitized, into a consolidated pool, the defined benefit assets of the following retirement funds and an investment option in the Legislators' Defined Contribution Fund (LE DC) known collectively as the Consolidated Defined Benefit Assets:

- Public Employees' Defined Benefit Account (PERF DB)
- Teachers' Pre-1996 Defined Benefit Account (TRF Pre-'96 DB)
- Teachers' 1996 Defined Benefit Account (TRF '96 DB)
- 1977 Police Officers' and Firefighters' Retirement Fund ('77 Fund)
- Judges' Retirement System (JRS)
- Excise, Gaming and Conservation Officers' Retirement Fund (EG&C)
- Prosecuting Attorneys' Retirement Fund (PARF)
- Legislators' Defined Benefit Fund (LE DB)
- Legislators' Defined Contribution Fund (LE DC)

The INPRS Board of Trustees also unitized the following defined contribution assets:

- Public Employees' Defined Contribution Account (PERF DC)
- Teachers' Defined Contribution Account (TRF DC)
- Legislators' Defined Contribution Fund (LE DC)

# Notes to the Financial Statements, continued June 30, 2018

A summary of the pooled unit trust investments held by unitized value and fund is as follows:

(dollars in thousands)

Trust Fund	 onsolidated fined Benefit Assets	Defined Intribution Assets	Pooled Jnit Trust vestments
PERF DB	\$ 12,676,528	\$ -	\$ 12,676,528
TRF Pre-'96 DB	3,710,641	-	3,710,641
TRF '96 DB	5,449,342	-	5,449,342
'77 Fund	5,924,098	-	5,924,098
JRS	510,316	-	510,316
EG&C	131,486	-	131,486
PARF	61,056	-	61,056
LE DB	2,949	-	2,949
PERF DC	-	2,867,796	2,867,796
TRF DC	-	2,742,853	2,742,853
LE DC <sup>1</sup>	9,344	23,728	 33,072
Total Unitized Investments	\$ 28,475,760	\$ 5,634,377	\$ 34,110,137

<sup>&</sup>lt;sup>1</sup>The LE DC Plan allows members to invest in the Consolidated Defined Benefit Assets.

# (I) Investments and Foreign Exchange Contracts Receivables and Investments and Foreign Exchange Contracts Payable

Investments and foreign exchange contracts receivable in addition to investments and foreign exchange contracts payable consist primarily of receivables or payables for securities purchased or sold, but not settled as of June 30, 2018.

See Note 4 for additional information related to foreign exchange contract receivables and payables.

### (J) Capital Assets

Assets are capitalized if the expense is \$50 thousand or more. The cost of maintenance and repairs that add service capacity to the asset or materially extend the life of the asset are capitalized. Depreciation is calculated using the straight-line method over the estimated useful life of the asset.

Amortization of software is computed over five years when assets are placed in service. Costs for purchase and development of computer software meeting minimum cost and service life estimates are capitalized as incurred.

Buildings and related improvements are depreciated over their useful life or 20 years, whichever is less. Land is not treated as a depreciable asset.

Depreciation and amortization are recognized as administrative expenses when the asset is placed in service. Capital assets are disposed of when no longer in service.

# Notes to the Financial Statements, continued June 30, 2018

A summary of capital assets compared to the prior fiscal year is as follows:

#### (dollars in thousands)

Capital Assets	June	30, 2017	Ad	ditions	Dispo	sals	June	30, 2018
Equipment	\$	65	\$	-	\$	-	\$	65
Software		15,989		-		-		15,989
Building and Related Improvements		4,141		70		-		4,211
Land		856				-		856
Total Capital Assets		21,051		70		-		21,121
Less Accumulated Depreciation / Amortization								
Equipment		65		-		-		65
Software		14,785		828		-		15,613
Building and Related Improvements		77		226		-		303
Total Accumulated Depreciation / Amortization		14,927		1,054		-		15,981
Total Net Capital Assets	\$	6,124	\$	(984)	\$	-	\$	5,140

## (K) Administrative Payable

Administrative payables are recorded in the period when goods are received and / or services are rendered and have not been paid.

Accruals are also calculated for full-time employees who accumulate earned but unused vacation, sick pay, compensatory time, and personal time each pay period. Upon separation from service, employees in good standing will be paid for a maximum of 225 vacation hours. No liability is calculated for unpaid accumulated sick leave since it is not probable that sick leave will be paid.

For the defined contribution funds, a liability is recorded for the amount owed to members as a result of the timing between submission to the record keeper for contribution and distribution trades and recording in the member's account.

## (L) Benefits and Distributions

Retirement benefits (including pension, disability, and survivor) and death benefits are recognized when due and payable to members or beneficiaries. Benefits are paid upon approval of the benefit application.

Distributions of contributions and interest are refunds from qualified inactive members' defined contribution funds. These distributions may be requested by members or are automatically distributed by the fund when certain criteria are met.

Notes to the Financial Statements, continued June 30, 2018

## (M) Due To/From Other Funds and Member Reassignments

Total due to/from other funds represent transfers between funds for retirements and payments of shared administrative expenses as part of the agency's operations. Interfund balances are routinely funded based on the availability of funds. Interfund balances that are not routinely funded are subject to an annual interest charge of 6.75 percent.

When the statute allows, member reassignments result in the transfer of member and employer reserves between funds when a retiring member has service credit in multiple funds. Once the member selects the fund to retire from, the cost of creditable service is transferred to the applicable fund. Annuity savings accounts were also allowed to be transferred up until December 31, 2017, at which point the annuity savings accounts were no longer allowed to be transferred to the retirement fund selected.

## (N) Transfer from Defined Benefit and Transfer to Defined Contribution

Effective January 1, 2018, funds previously known as annuity savings accounts (which were reported within defined benefit funds) were recategorized as defined contribution funds based on Internal Revenue Service Private Letter Rulings PLR-193-2016 and PLR-110249-18. DC member balances previously reported within PERF DB, TRF Pre-'96 DB, and TRF '96 DB fund totals were transferred to the appropriate DC fund as of January 1, 2018. Within the Statement of Changes in Fiduciary Net Position, Transfer from Defined Benefit and Transfer to Defined Contribution reflect the one-time transfer of member balances.

#### (O) Due to Other Governments

Represents funds payable to local police and fire departments that are maintained in separate accounts. Interest is payable monthly to the local units based on current money market rates. Local government units may make deposits or withdraw all or part of the balance to pay pension benefits or contributions.

## (P) Administrative and Direct Investment Expenses

An annual budget for the administrative and direct investment expenses of INPRS is reviewed and approved by the INPRS Board of Trustees. Expenses are paid from plan assets and investment earnings and are allocated to each of the funds based on the respective portion of total assets or member counts.

### (Q) Federal Income Tax Status

The funds qualify under Section 401(a) of the Internal Revenue Code (IRC) and are exempt from federal income taxes under Section 501(a) of the IRC.

### (R) Defined Benefit Reserves and Designations

The required reserves per IC 5-10.5-4-2 for the defined benefit pension trust funds are as follows:

#### **Benefits in Force**

The reserve represents the actuarially determined present value of future benefits for all members who are currently retired. disabled or survivors.

# Notes to the Financial Statements, continued June 30, 2018

#### **Employer Reserve**

This reserve consists of total contributions from employers and includes investment earnings / (losses), less transfers made to the Benefits in Force reserve for retirement benefits.

#### **Member Reserve**

The member reserve represents contributions made by or on behalf of members and include earned interest.

The following are the balances of the defined benefit fund reserves as of June 30, 2018:

#### (dollars in thousands)

Pension Trust Funds	Benefit in Force	Employer Reserve	Member Reserve	Tot	al Reserves
PERF DB	\$ 7,768,231	\$ 4,926,097	N/A	\$	12,694,328
TRF Pre-'96 DB1	11,160,975	(7,449,628)	N/A		3,711,347
TRF '96 DB	1,232,059	4,220,293	N/A		5,452,352
'77 Fund	1,910,154	3,150,865	\$ 866,551		5,927,570
JRS	258,255	217,156	38,541		513,952
EG&C	68,750	52,026	10,715		131,491
PARF	39,034	(5,635)	27,620		61,019
LE DB	2,783	159	N/A		2,942

<sup>&</sup>lt;sup>1</sup>The employer reserve for TRF Pre-<sup>9</sup>6 DB is a pay-as-you-go plan funded by the State through appropriations. The appropriations are recorded to Benefits in Force.

## (S) Future GASB Accounting Statements

#### GASB Statement No. 75, Accounting and Financial Reporting for Postemployment Benefits Other Than Pensions

Improves accounting and financial reporting by state and local governments for postemployment benefits other than pensions (other postemployment benefits or OPEB). The requirements of this Statement are effective for financial reporting periods beginning after June 15, 2017. GASB Statement No. 75 requires employers to record their proportionate share of net pension liability, deferred outflows and inflows of resources, pension expense, more extensive note disclosures, and required supplementary information. Independent schedules for employers were not issued as INPRS determined the employers' potential liability and the extent of the note disclosures were not material to the employers.

#### GASB Statement No. 81, Irrevocable Split-Interest Agreements

Improves financial reporting for irrevocable split-interest agreements by providing recognition and measurement guidance for situations in which a government is beneficiary of the agreement. The requirements of this Statement are effective for financial statements for periods beginning after December 15, 2016. Management has evaluated GASB No. 81 and determined the statement does not apply to the financial statements as presented.

#### GASB Statement No. 83, Certain Asset Retirement Obligations

Addresses accounting and financial reporting for certain asset retirement obligations. An asset retirement obligation is a legally enforceable liability associated with the retirement of a tangible capital asset. The requirements of this Statement are effective for reporting periods beginning after June 15, 2018. Management is currently evaluating GASB Statement No. 83 and, if applicable, will implement in the appropriate period.

# Notes to the Financial Statements, continued June 30, 2018

#### GASB Statement No. 84, Fiduciary Activities

Improves guidance regarding the identification of fiduciary activities for accounting and financial reporting purposes and how those activities should be reported. The primary purpose is to enhance consistency and comparability by (1) establishing specific criteria for identifying activities that should be reported as fiduciary activities and (2) clarifying whether and how business-type activities should report their fiduciary activities. The requirements of this Statement are effective for reporting periods beginning after December 15, 2018, with early adoption encouraged. Management has evaluated GASB Statement No. 84 and has implemented in the financial statements as presented.

#### GASB Statement No. 85, Omnibus 2017

Addresses practice issues that have been identified during the implementation and application of certain GASB Statements. This Statement addresses a variety of topics including issues related to blending component units, goodwill, fair value measurement and application, and postemployment benefits (pensions and other postemployment benefits [OPEB]). The provisions of this Statement are effective for periods beginning after June 15, 2017. Management has evaluated GASB Statement No. 85 and implemented in the financial statements as presented.

### GASB Statement No. 86, Certain Debt Extinguishment Issues

Increases consistency in accounting and financial reporting for debt extinguishments by establishing uniform guidance for derecognizing debt. The requirements of this Statement are effective for reporting periods beginning after June 15, 2017. Management has evaluated GASB Statement No. 86 and determined the statement does not apply to the financial statements as presented.

#### GASB Statement No. 87, Leases

Improves the accounting and financial reporting for leases by governments. The requirements of this statement are effective for reporting periods beginning after December 15, 2019. Management is currently evaluating GASB Statement No. 87 and will implement in the appropriate period.

#### GASB Statement No. 88, Certain Disclosures Related to Debt, Including Direct Borrowings and Direct Placements

Improves information disclosed in the notes to government financial statements related to debt, including direct borrowings and direct placements. It also clarifies which liabilities governments should include when disclosing information related to debt. The requirements of this statement are effective for reporting periods beginning after June 15, 2018. Management is currently evaluating GASB Statement No. 88 and, if applicable, will implement in the appropriate period.

#### GASB Statement No. 89, Accounting for Interest Cost Incurred Before the End of a Construction Period

Enhances the relevance and comparability of information on capital assets and the cost of borrowing for a reporting period and simplifies the accounting of interest cost incurred prior to the end of a construction period. The requirements of this statement are effective for reporting periods beginning after December 15, 2019. Management is currently evaluating GASB Statement No. 89 and if applicable, will implement in the appropriate period.

#### GASB Statement No. 90, Majority Equity Interests

Improves the consistency and comparability of reporting a government's majority equity interest in a legally separate organization and to improve the relevance of financial statement information for certain component units. The requirements of this statement are effective for reporting periods beginning after December 15, 2018. Management is currently evaluating GASB Statement No. 90 and if applicable, will implement in the appropriate period.

Notes to the Financial Statements, continued June 30, 2018

### Note 3. Cash and Investments

## (A) Investment Guidelines and Limitations

The Indiana General Assembly enacted the prudent investor standard to apply to the INPRS Board of Trustees and govern all its investments. Under statutes (IC 5-10.3-5-3(a)) and (IC 5-10.4-3-10(a)), the Board of Trustees must "invest its assets with the care, skill, prudence, and diligence that a prudent person acting in a like capacity and familiar with such matters would use in the conduct of an enterprise of a like character with like aims." The INPRS Board of Trustees is required to diversify such investments in accordance with the prudent investor standard.

Within these governing statutes, the INPRS Board of Trustees has broad authority to invest the assets of the funds. The INPRS Board of Trustees contracts with external investment managers, to collectively achieve the investment objectives of the fiduciary funds. Depending on the contractual agreement with the investment manager, investments may be managed in separate accounts, commingled accounts, mutual funds or other structures acceptable to the INPRS Board of Trustees. An asset allocation review is conducted every five years.

The INPRS Board of Trustees adopted the current Investment Policy Statement (IPS), effective February 23, 2018. The strategic asset allocation for the consolidated defined benefit assets is as follows:

Global Asset Classes	Target Allocation	Target Range
Public Equity	22.0 %	19.5 to 24.5 %
Private Markets	14.0	10.0 to 18.0
Fixed Income - Ex Inflation-Linked	20.0	17.0 to 23.0
Fixed Income - Inflation-Linked	7.0	4.0 to 10.0
Commodities	8.0	6.0 to 10.0
Real Estate	7.0	3.5 to 10.5
Absolute Return	10.0	6.0 to 14.0
Risk Parity	12.0	7.0 to 17.0

The asset allocations shown above will differ for investments in the defined contribution plans of PERF DC, TRF DC, and LE DC, as these plan allocations are self-directed by the members.

LPSPR is invested 100 percent in high-quality, short-term money market instruments, including, but not limited to, high-quality commercial paper and securities issued or guaranteed by the U.S. government.

The SDBF is 100 percent invested in short-term and fixed income investments in a commingled fund.

Notes to the Financial Statements, continued June 30, 2018

## (B) Defined Benefit Rate of Return

The money-weighted rate of return expresses investment performance, net of investment expenses, adjusted for the changing amounts invested. For the year ended June 30, 2018, the annual money-weighted rate of return on the Defined Benefit Pension Trust Fund investments, net of pension plan investment expenses is as follows:

Defined Benefit Pension Trust Funds	2018 Annual Money Weighted Rate of Return
PERF DB	9.33 %
TRF Pre-'96 DB	9.46
TRF '96 DB	9.28
'77 Fund	9.30
JRS	9.32
EG&C	9.30
PARF	9.31
LE DB	9.39

## (C) Cash in Bank and Deposits

Cash balances represent both operational demand deposit accounts held at the bank, and investment-related cash and short-term investments, both pooled and non-pooled, on deposit with the investment custodian.

The table below presents total cash deposits, which includes short-term investment funds as of June 30, 2018.

### (dollars in thousands)

Cash Deposits	 Total
Demand Deposit Account – Bank Balances (Insured by FDIC up to \$250 thousand per financial institution)	\$ 8,840
Held with Custodian Bank (Uncollateralized)	239,760
Short Term Investment Funds held at Bank (Collateralized)	 891,021
Total	\$ 1,139,621

## (D) Custodial Credit Risk

Deposits, investment securities, and collateral securities are exposed to custodial credit risk if they are uninsured and uncollateralized. Custodial credit risk is the risk that, in the event of a failure of the counterparty, INPRS will not be able to recover the value of its deposits, investments or collateral securities that are in possession of an outside party. Investment securities are exposed to risk if the securities are uninsured and held by either the counterparty or the counterparty trust department's agent, and are not registered in the name of INPRS.

# Notes to the Financial Statements, continued June 30, 2018

Deposits are exposed to custodial credit risk if they are not covered by depository insurance, and the deposits are uncollateralized or collateralized with securities held by the pledging financial institution. At June 30, 2018, \$249 million of cash on deposit was uninsured and uncollateralized and therefore exposed to credit risk as disclosed in (C) Cash in Bank and Deposits.

Per IC 5-10.3-5-4(a), IC 5-10.3-5-5, IC 5-10.4-3-13, and IC 5-10.4-3-14(a), securities are required to be held for the fund under custodial agreements. INPRS's custody agreement with the custodian requires the custodian to segregate the securities on the custodian's books and records from the custodian's property. In addition, investment managers are not allowed, under any circumstances, to take possession, custody, title, or ownership of any managed assets.

### (E) Interest Rate Risk

Interest rate risk is that risk changes in interest rates adversely affect the fair value of the investments. Duration is a measure of interest rate risk. The longer a fixed-income investment is to maturity, the more susceptible the value of the fixed-income investment is to market interest rate changes. INPRS does not have a formal stated policy regarding interest rate risk. The Investment Policy Statement recognizes interest rate risk as a market risk factor. INPRS reviews and monitors market risk factors within investment mandates regularly as part of achieving the long-term actuarial rate of return.

Portfolio Weighted

As of June 30, 2018 debt security duration is as follows:

(dollars in thousands)

Debt Security Type	Fair Value	% of All Debt Securities	Average Effective Duration (Years)
Short Term Investments			
Short Term Investment Fund	\$ 891,021	7.7 %	0.08
Corporate Bonds	733	-	0.08
Commercial Paper	47,438	0.4	0.22
Certificate of Deposit	2,785	-	0.25
U.S. Treasury Obligations	213,619	1.9	0.25
Non-U.S. Government	4,164	-	0.32
Duration Not Available <sup>1</sup>	237,285	2.1	N/A
Total Short Term Investments	1,397,045	12.1	
Fixed Income Investments			
U.S. Governments	3,934,739	34.1	10.62
U.S. Agencies	269,663	2.4	7.76
Non-U.S. Government	3,322,345	28.8	7.38
Corporate Bonds	1,141,718	9.9	7.04
Asset-Backed Securities	167,785	1.5	2.43
Duration Not Available <sup>1</sup>	1,295,920	11.2	N/A
Total Fixed Income Investments	10,132,170	87.9	
Total Debt Securities	\$ 11,529,215	100.0 %	

<sup>&</sup>lt;sup>1</sup>Primarily includes cash and commingled debt funds.

# Notes to the Financial Statements, continued June 30, 2018

## (F) Credit Risk

The credit risk of investments is the risk that the issuer will default and will no longer meet their obligations. INPRS does not have a formal stated policy regarding credit (quality) risk. The Investment Policy Statement recognizes credit (quality) risk as a market and strategic risk factor. INPRS reviews and monitors market risk factors within investment mandates regularly as a part of achieving the long-term actuarial rate of return.

The credit rating represents the lowest rating of the three rating investment services used; Standard and Poor's, Moody's, and Fitch.

#### (dollars in thousands)

Credit Rating	 nort Term estments <sup>1</sup>	 ced Income Securities	 Total	% of All Debt Securities
AAA	\$ -	\$ 755,486	\$ 755,486	6.7 %
U.S. Government Guaranteed	-	4,201,427	4,201,427	37.2
AA	215,451	1,385,732	1,601,183	14.2
A	1,395	780,794	782,189	6.9
BBB	44,211	901,457	945,668	8.4
BB	-	274,038	274,038	2.4
В	-	259,146	259,146	2.3
Below B	-	206,944	206,944	1.8
Unrated <sup>2</sup>	 899,013	 1,367,146	 2,266,159	20.1
Total	\$ 1,160,070	\$ 10,132,170	\$ 11,292,240	100.0 %

<sup>&</sup>lt;sup>1</sup>Excludes cash with brokers of \$237 million.

The concentration of credit risk is the risk of loss which may arise in the event of default by a single issuer. The Investment Policy Statement recognizes issuer risk as a strategic risk factor that is monitored on an absolute and relative basis. At June 30, 2018, single issuer exposure in the portfolio did not exceed 5.0 percent of the Fiduciary Net Position.

INPRS's Investment Policy Statement places concentration limits on assets placed with an investment manager. The concentration limits are as follows:

- No investment manager shall manage more than 10.0 percent of the assets in actively managed portfolios at the time of funding. Through capital appreciation and additional purchases, no investment manager will be allowed to manage more than 15.0 percent of the system's assets in actively managed portfolios without Board approval.
- No investment manager will manage more than 15.0 percent of the assets in passively managed portfolios at the time of funding. Through capital appreciation and additional purchases, no investment manager will be allowed to manage more than 20.0 percent of the system's assets in passively managed portfolios without Board approval.
- No investment manager will manage more than 25.0 percent of the assets in a combination of actively and passively managed portfolios.

### (G) Foreign Currency Risk

Foreign currency risk is the risk that changes in exchange rates adversely affect the fair value of an investment or a deposit. Foreign currency exposure is focused primarily in international fixed income and equity holdings.

<sup>&</sup>lt;sup>2</sup>Primarily consists of the following security types: money market sweep vehicles, private placement, term loans and asset-backed securities, commercial mortgages, CMO/REMIC's, and commingled debt funds.

# Notes to the Financial Statements, continued June 30, 2018

At June 30, 2018, there was no currency hedging program at the total fund level. At the manager level, hedging currency risk is allowed, and certain managers actively manage currency exposure. INPRS monitors currency risk at the total fund level, portfolio level, and asset class level.

The foreign currency exposure consists of unhedged assets within the investment portfolio. The short-term investment, debt securities, and equity securities include income accruals. Other investments include foreign holdings of other investments, derivatives, and receivables/payables.

Exposure to foreign currency risk at June 30, 2018, is as follows:

(dollars in thousands)

Foreign Currency Held at June 30, 2018

(dollars in thousands)		Foreign Currency Held at June 30, 2018							
Currency	Short Term	Fixed Income	Equity	Other Investments	Total	% of Total <sup>1</sup>			
Argentina Peso	\$ 671	\$ 12,089	\$ -	\$ 15,477	\$ 28,237	0.1 %			
Australian Dollar	342	100,632	111,723	(102,090)	110,607	0.3			
Brazilian Real	(287)	20,000	32,147	7,576	59,436	0.2			
Canadian Dollar	1,812	145,678	159,924	(150,799)	156,615	0.5			
Chilean Peso	-	6,153	634	2,392	9,179	-			
Chinese R Yuan HK	-	-	-	(13,573)	(13,573)	-			
China Yuan Renminbi	-	251	-	-	251	-			
Colombian Peso	713	22,593	-	4,354	27,660	0.1			
Czech Koruna	23	6,489	991	4,013	11,516	-			
Danish Krone	1,466	20,538	39,866	(21,119)	40,751	0.1			
Dominican Rep Peso	-	3,079	-	=	3,079	-			
Egyptian Pound	2,252	2,835	670	1,886	7,643	-			
Euro Currency Unit	11,197	1,410,051	701,798	(1,347,236)	775,810	2.3			
Hong Kong Dollar	396	-	174,231	(20)	174,607	0.5			
Hungarian Forint	(16)	5,829	4,606	15,069	25,488	0.1			
Indian Rupee	-	41	18,284	(5,014)	13,311	-			
Indonesian Rupiah	(96)	42,344	785	(734)	42,299	0.1			
Israeli Shekel	23	· -	4,170	-	4,193	-			
Japanese Yen	10,447	480,493	562,953	(482,063)	571,830	1.7			
Malaysian Ringgit	456	17,226	-	(6,000)	11,682	-			
Mexican Peso	1,333	40,906	-	(1,414)	40,825	0.1			
Taiwan New Dollar	-	1	68,363	(19,223)	49,141	0.1			
New Zealand Dollar	98	5,875	2,914	(5,930)	2,957	-			
Nigerian Naira	2,645	· -	-	-	2,645	-			
Norwegian Krone	471	4,104	12,981	981	18,537	-			
Peruvian Nuevo Sol	100	10,762	-	(5,063)	5,799	-			
Polish Zloty	928	25,451	9,166	19,101	54,646	0.2			
British Pound Sterling	4,646	631,335	360,555	(634,455)	362,081	1.1			
Romania Leu	-	2,124	-	1,623	3,747	-			
Russian Ruble	119	29,211	-	5,460	34,790	0.1			
Singapore Dollar	1,384	7,024	23,838	(10,100)	22,146	0.1			
South African Rand	835	36,578	41,896	8,114	87,423	0.3			
South Korean Won	675	(4)	102,344	(8,035)	94,980	0.3			
Swedish Krona	824	77,318	58,551	(73,518)	63,175	0.2			
Swiss Franc	4,816	2,291	178,877	(2,548)	183,436	0.5			
Thai Baht	42	15,518	18,423	(2,473)	31,510	0.1			
Turkish Lira	71	19,378	9,661	4,543	33,653	0.1			
UAE Dirham	-		363	-,510	363	-			
Uruguayan Peso		2,297			2,297				
Held in Foreign Currency	\$ 48,386	\$ 3,206,490	\$ 2,700,714	\$ (2,800,818)	\$ 3,154,772	9.2 %			

¹Total of foreign currency risk, as a percentage of all pooled investments. See Note 2 (H) Pooled Investment Unit Trust Accounting.

## Notes to the Financial Statements, continued June 30, 2018

## (H) Securities Lending

Indiana Code 5-10.2-2-13(d) provides the INPRS Board of Trustees to authorize its custodian bank to enter into a securities lending program agreement under which certain securities held by the custodian on behalf of INPRS may be loaned. The statute requires collateral pledged to be more than the total fair value of the loaned securities at all times.

The purpose of such a program is to provide additional revenue for the consolidated defined benefits assets. The Investment Policy Statement requires that collateral securities and/or cash be initially pledged at 102.0 percent of the fair value of the securities lent for domestic securities and 105.0 percent for international securities. No more than 40.0 percent of the consolidated defined benefit assets may be lent in aggregate. The custodian bank and/or its securities lending sub-agents provide 100.0 percent indemnification of the assets against borrower default, overnight market risk, and failure to return loaned securities. Securities received as collateral cannot be pledged or sold unless the borrower defaults.

At June 30, 2018, there was no security lending credit risk exposure as the collateral pledged of \$715 million exceeded the fair value of securities on loan, as shown below.

#### (dollars in thousands)

Security Type	 r Value of ties on Loan
U.S. Governments	\$ 261,557
Corporate Bonds	10,059
International Bonds	8,050
Domestic Equities	364,372
International Equities	51,743
Total	\$ 695,781

Cash collateral can be reinvested and is subject to the investment guidelines specified by the Investment Policy Statement. It states all collateral investments will have a maturity of the next business day. INPRS retains the fair value risk concerning the investment of the cash collateral. However, the custodian bank provides 100 percent indemnification to INPRS of all collateral invested in repurchase agreements against borrower default and overnight market risk.

All reinvested cash collateral investments consist of repurchase agreements which are not rated by any of the rating agencies.

#### (I) Repurchase Agreements

A repurchase agreement is an agreement in which cash is transferred to a broker-dealer or financial institution. The brokerdealer or financial institution transfers securities as collateral to our custodian and promises to repay cash plus interest. Repurchase agreements are assets whereby security collateral is held by our custodian.

An obligation under a reverse repurchase agreement is the same as a repurchase agreement but from the perspective of the buyer rather than the seller. Obligations under reverse repurchase agreements are liabilities whereby security collateral is held at the broker-dealer or financial institution's custodian bank.

# Notes to the Financial Statements, continued June 30, 2018

Cash received and reinvested in securities is not required to match the maturities of the securities posted as collateral.

Repurchase agreements and obligations and reverse repurchase agreements are considered allowable investments. Moreover, investment managers that possess recognized expertise in managing these types of investments will be permitted to utilize these investment tools as part of the overall investment mandate for the benefit of INPRS.

The amounts held at June 30, 2018, exclusive of securities lending reinvested cash collateral, are as follows:

### (dollars in thousands)

Repurchase Agreements by Collateral Type	Cash Coll	lateral Received	Fa	ir Value
U.S. Treasury	\$	3,631	\$	3,631
Obligations Under Reverse Repurchase Agreements by Collateral Type	Cash Co	llateral Posted	Fa	nir Value

At June 30, 2018, there was no reverse repurchase credit risk exposure since the cash collateral value posted was less than the fair value of the liability held.

## (J) Fair Value Measurement

In accordance with GASB Statement No. 72, investments are measured and generally reported at fair value and are classified according to the following hierarchy:

Level 1 – Investments reflect prices quoted in active markets for identical assets.

Level 2 – Investments reflect prices that are based on a similar observable asset either directly or indirectly in an active market and inputs in markets that are not considered to be active for identical or similar assets.

Level 3 – Investments reflect prices based upon unobservable inputs.

The categorization of investments within the hierarchy is based upon the pricing transparency of the instrument and should not be perceived as the particular investment's risk.

Short-term investment funds (STIF's) are classified at amortized cost.

Equity and fixed income securities classified in Level 1 of the fair value hierarchy are valued using prices quoted in active markets for those securities. Equity and fixed income securities classified in Level 2 of the fair value hierarchy are valued using a matrix pricing technique. Matrix pricing is used to value securities based on the securities' relationship to benchmark quoted prices. Corporate bonds classified in Level 3 are valued using discounted cash flow techniques. International equities classified in Level 3 are not traded in an active market and are valued using internally generated unobservable inputs.

Derivative instruments classified in Level 1 of the fair value hierarchy are valued using prices quoted in active markets for those securities. Derivative instruments classified as Level 2 are valued using a market approach that considers benchmarks.

# Notes to the Financial Statements, continued June 30, 2018

At June 30, 2018, the fair value of investments categorized by Level 1, 2 and 3 is as follows:

(dollars in thousands)	Fair Value Measurements Using								
Investment Type <sup>1</sup>	Ju	June 30, 2018		Quoted Prices in Active Markets for Identical Assets (Level 1)		Significant Other Observable Inputs (Level 2)		Significant Unobservable Inputs (Level 3)	
Investments Measured at Amortized Cost									
Cash at Brokers	\$	236,974							
Repurchase Agreements		3,631							
Pooled Short Term Investments <sup>2</sup>		798,418							
Total Investments Measured at Amortized Cost		1,039,023							
Investments by Fair Value Level									
Pooled Short Term Investments <sup>2</sup>									
BNY - Mellon Cash Reserves		37,197	\$	-	\$	37,197	\$		
Certificate of Deposit		2,785		-		2,785			
Commercial Paper		47,438		-		47,438			
Corporate Bonds (Short Term)		1,519		-		1,519			
U.S. Treasury Obligations		213,619		213,619		_			
Non-U.S. Governments		3,378		-		3,378			
Total Pooled Short Term Investments		305,936		213,619		92,317			
Fixed Income Investments									
U.S. Governments		3,927,857		3,927,597		260			
Non-U.S. Governments		3,577,804		643		3,577,161			
U.S. Agencies		245,684		-		245,684			
Corporate Bonds		994,051		7,491		985,560		1,00	
Asset-Backed Securities		225,318		-		225,318			
Total Fixed Income Investments		8,970,714		3,935,731		5,033,983		1,00	
Equity Investments									
Domestic Equities		3,992,734		3,991,066		1,668			
International Equities		3,268,248		3,265,456		2,785			
Total Equity Investments		7,260,982		7,256,522		4,453			
Total Investments by Fair Value Level	\$	16,537,632	\$	11,405,872	\$	5,130,753		1,00	
Investments Measured at the Net Asset Value (NAV)									
Commingled Short Term Funds		29,728							
Commingled Fixed Income Funds		1,161,456							
Commingled Equity Funds		1,616,622							
Private Markets		3,772,994							
Absolute Return		2,871,274							
Real Estate		1,481,450							
Risk Parity		3,437,750							
Total Investments Measured at the Net Asset Value (NAV)		14,371,274	-						
Investment Derivatives									
Total Futures		12,421	\$	12,421	\$	-	\$		
Total Options		(1,586)		-		(1,586)			
Total Swaps		12,135				12,135			
Total Investment Derivatives		22,970	\$	12,421	\$	10,549	\$		
Total Pooled Investments	\$	31,970,899	_						

<sup>&</sup>lt;sup>1</sup>Amounts disclosed above differ from the Asset Allocation Summary shown in the Investment Section. The investment type combines assets according to the security type assigned to each investment by the Custodian. The Asset Allocation Summary groups assets according to the investment objective of each investment manager.

<sup>2</sup> Short Term Investments include highly liquid assets, both pooled and non-pooled that are an integral part of the pension investments.

# Notes to the Financial Statements, continued June 30, 2018

The valuation method for investments measured at the net asset value (NAV) per share or equivalent, at June 30, 2018, is presented as follows:

(dollars in thousands)	Fair Value		Jnfunded mmitments	Redemption Frequency (if Currently Eligible)	Redemption Notice Period		
Commingled Short Term Funds	\$	29,728	\$ -	Daily	1 day		
Commingled Fixed Income Funds		1,161,456	-	Daily	1 day		
Commingled Equity Funds		1,616,622	-	Daily	1 day		
Private Markets		3,772,994	1,783,476	Not Eligible	N/A		
Absolute Return		2,871,274	-	Monthly, Quarterly, Semi-Annually	30-120 days		
Real Estate Funds		1,481,450	562,126	Quarterly	30-90 days		
Risk Parity		3,437,750	-	Daily, Weekly, Monthly	3-5 days		
Total	\$	14,371,274	\$ 2,345,602				

### Commingled Funds

There are three short-term funds, 16 fixed income funds, and three equity funds, which are considered to be comingled in nature. Comingled fund strategies include short-term, fixed income, and equity fund investments. These investments are valued at the net asset value of the units held at June 30, 2018, based upon the fair value of the underlying securities.

#### **Private Markets**

Private markets consist of 269 private market funds that invest across a range of strategies, geographies, and industries within private equity and private credit. The underlying portfolio investments cannot be redeemed with each fund, but rather the fund will make distributions of capital as the fund liquidates the underlying portfolio investments over the average 10 year life of the fund in the case of private equity, and the average 7 year life of the fund in the case of private credit.

#### Absolute Return

The absolute return portfolio attempts to generate returns in excess of the plan's target actuarial rate of return over a full market cycle with minimal beta to the plan's primary long-only market exposures (equities, credit, rates, and commodities). The portfolio tends to rely less heavily on traditional long/short equity and event-driven strategies, but instead focuses on relative value/arbitrage and tactical trading strategies. The portfolio consists of 39 fund holdings that cover a broad spectrum of investment strategies and investment horizons, which results in distinct fund redemption terms to prevent asset-liability mismatches. Fund redemption periods range from weeks (alternative beta) to years (drawdown vehicles), but as a whole, on a weighted-average basis, the portfolio maintains a liquidity profile of less than one year. Most of the funds' investments are classified as fair value Level 1 and 2 assets, which allow for independent verification of NAV's / fair values by the funds' administrators. Funds with a drawdown strategy, represent 7.8 percent of the absolute return portfolio and the majority of the fund's investments consists of Level 3 assets. The valuation process for the funds are comparable to private market valuations, with quarterly valuations.

#### Real Estate Funds

The real estate portfolio consists of 35 real estate funds that invest primarily in U.S. commercial real estate. There are 30 real estate funds classified as illiquid as these investments cannot be redeemed directly with those real estate funds. Distributions of capital from illiquid real estate funds will be received as the underlying real estate assets are liquidated over the average 10 year life of the fund. There are five real estate funds that have been classified as liquid real estate funds due to the openend structure of the fund. Open-end funds generally offer periodic distributions of net cash flow, which can be reinvested, as well as quarterly redemption windows. Illiquid real estate funds represent approximately 54.0 percent of the value of the real estate fund investments.

# Notes to the Financial Statements, continued June 30, 2018

### Risk Parity

Consisting of four fund investments, this portfolio is constructed to accrue various asset class risk premiums, including equity, without long-term reliance on any single asset class. The structure of these investments provides a reasonable level of liquidity and investments may be redeemed in accordance to the terms set forth by each investment management agreement. The risk parity fund investments are considered to be liquid, market-priced instruments, and 100 percent of the NAV is independently calculated by the fund administrators. Fair values are reported as NAV per share.

As of June 30, 2018, it is probable \$3.8 billion and \$1.5 billion of the investments in the private market and real estate funds type, respectively, will be sold at an amount different from the NAV of the ownership interest in partners' capital. Therefore, the fair values of the investments in this type have been estimated using recent observable transaction information for similar investments and non-binding bids received from potential buyers of the investments (one quarter in arrears plus current quarter cash flows). As of June 30, 2018, a buyer (or buyers) for these investments has not yet been identified. Once a buyer has been identified, the investee fund's management must approve the buyer before the sale of the investments can be completed.

## (K) Synthetic GIC's

The Defined Contribution stable value fund consists of fully benefit-responsive synthetic guaranteed investment contracts (GIC's). The stable value fund is an investment option that seeks to provide safety of principal and a stable credited rate of interest, while generating competitive returns over time compared to other comparable investments. As of June 30, 2018, the stable value fund portfolio of well-diversified high-quality investment grade fixed income securities had a fair value of \$2.6 billion, which was \$41 million less than the fair value protected by the wrap contract.

Notes to the Financial Statements, continued June 30, 2018

#### **Note 4. Derivative Financial Instruments**

## (A) Overview of Derivatives

Derivative instruments are financial contracts whose values depend on the values of one or more underlying assets, reference rates, or financial indices. The fair value of all derivative financial instruments is reported in the Statement of Fiduciary Net Position as either assets or liabilities, and the change in the fair value is recorded in the Statement of Changes in Fiduciary Net Position as investment income. A derivative instrument could be a contract negotiated on behalf of the Master Trust and a specific counterparty. This would typically be referred to as an "OTC contract" (Over the Counter) such as swaps and forward contracts. Alternatively, a derivative instrument, such as futures, could be listed and traded on an exchange and referred to as "exchange traded." Due to the level of risk associated with certain derivative investment securities, it is reasonably possible that changes in the value of investment securities will occur in the near term, and such changes could affect the amounts reported in the financial statements. Investments in limited partnerships may include derivatives that are not shown in the derivative total.

The derivative instruments are considered investments and not hedges for accounting purposes. The gains and losses arising from this activity are recognized as incurred in the Statement of Changes in Fiduciary Net Position.

All investment derivatives discussed below are included within the investment risk schedules, which precede this section. Investment derivative instruments are disclosed separately to provide a comprehensive and distinct view of this activity and its impact on the overall investment portfolio. INPRS holds investments in limited partnership and comingled investment funds, which may utilize derivatives from time to time for hedging purposes, and any derivatives held by these types of investment vehicles are not included in the information describing the derivatives.

#### **Futures**

A futures contract is an agreement between two parties to buy and sell a financial instrument at a set price on a future date. Investment managers use financial futures to replicate an underlying security or index they intend to hold or sell in the portfolio. In certain instances, it may be beneficial to own a futures contract rather than the underlying security. Additionally, investment managers use futures contracts to adjust the portfolio risk exposure. Futures contracts may be used to invest cash flows or modifying duration, but in no event may leverage be created by any individual security or combination of securities. No short sales of equity securities or equity index derivatives are permitted.

As the fair value of the futures contract varies from the original contract price, a gain or loss is recognized and paid to, or received from, the clearinghouse. The cash or securities to fulfill these obligations are held in the investment portfolio.

### **Options**

Options are agreements that give the owner of the option the right, but not the obligation, to buy (in the case of a call) or to sell (in the case of a put) a specific amount of an asset for a specific price on or before the specified expiration date.

The purchaser of put options pays a premium at the outset of the agreement and stands to gain from an unfavorable change (i.e., a decrease) in the price of the instrument underlying the option. The writer of a call option receives a premium at the outset of the agreement and bears the risk of an unfavorable change (i.e., an increase) in the price of the instrument underlying the option. An interest rate swaption is the option to enter into an interest rate swap based off a set of predetermined conditions.

# Notes to the Financial Statements, continued June 30, 2018

Options are generally used to manage interest rate risk, adjust portfolio duration, or rebalance the total portfolio to the target asset allocation. The fair value of exchange-traded options is determined based upon quoted market prices.

The fair value of over the counter options is determined by external pricing services, using various proprietary methods, based upon the type of option.

#### **Swaps**

Interest rate swaps are derivative instruments in which one party exchanges a stream of fixed interest rate cash flows for floating interest rate cash flows. A notional amount of principal is required to compute the actual cash amounts and is determined at the inception of the contract.

Interest rate swaps are generally used to manage interest rate risk, adjust portfolio duration, or rebalance the total portfolio to the target asset allocation. The fair value is determined by external pricing services using various proprietary methods.

An inflation swap is a derivative used to transfer inflation risk from one party to another through an exchange of cash flows. In an inflation swap, one party pays a fixed rate on a notional principal amount, while the other party pays a floating rate linked to an inflation index, such as the Consumer Price Index (CPI) or an inflation bond.

Credit default swap agreements involve one party (referred to as the buyer of protection) making a stream of payments to another party (the seller of protection) in exchange for the right to receive a specified return in the event of a default or other predetermined credit event for the referenced entity, obligation or index.

Credit default swaps are used to achieve the desired credit exposure of a security or basket of securities. One of the main advantages of a credit default swap is it allows for exposure to credit risk while limiting exposure to other risks, such as interest rate and currency risk. The fair value is determined by external pricing services using various proprietary methods.

#### **Forwards**

A forward currency exchange contract is a commitment to purchase or sell a foreign currency at a future date at a negotiated forward rate. A contract is classified as a forward contract when the settlement date is more than two days after the trade date. Risks associated with such contracts include movement in the value of a foreign currency relative to the U.S. dollar. The contracts are valued at forward exchange rates and include net appreciation / depreciation in the Statement of Fiduciary Net Position. Realized gains or losses on forward currency contracts is the difference between the original contract and the closing value of such contract and is included in the Statement of Changes in Fiduciary Net Position.

The Fund enters into foreign currency forwards to manage exposure to fluctuations in foreign currency exchange rates on portfolio holdings and to settle future obligations.

Notes to the Financial Statements, continued June 30, 2018

# (B) Derivative Contracts

The table below summarizes the derivative contracts for the fiscal year ended June 30, 2018:

(dollars in thousands)

Investment Derivatives		Change in Fair Value		Fair Value		Notional	
Futures:							
Index Futures – Long	\$	20,723	\$	20,723	\$	958,651	
Commodity Futures – Long		(14,092)		(14,092)		1,666,993	
Fixed Income Futures – Long		(739)		(739)		1,182,177	
Fixed Income Futures – Short		6,529		6,529		(1,135,166)	
Total Futures		12,421		12,421		2,672,655	
Options:							
Interest Rate Options Bought		(1,117)		1,969		541,450	
Interest Rate Options Written		(541)		(3,532)		431,900	
Fixed Income Options Written		97		(21)		(21)	
Credit Default Index Swaptions Written		15		(2)		11,500	
Total Options		(1,546)		(1,586)		984,829	
Swaps:							
Interest Rate Swaps - Pay Fixed Receive Variable		10,257		17,090		1,456,957	
Interest Rate Swaps - Pay Variable Receive Fixed		(2,940)		(3,927)		1,217,734	
Overnight Index Interest Rate Swaps - Pay Variable Receive Fixed		(9)		41		12,543	
Inflation Swaps - Pay Fixed Receive Variable		(113)		(188)		8,900	
Inflation Swaps - Pay Variable Receive Fixed		(15)		7		2,220	
Total Return Swaps		458		458		4,799	
Credit Default Swaps Single Name - Buy Protection		(517)		(430)		34,690	
Credit Default Swaps Single Name - Sell Protection		72		(27)		14,188	
Credit Default Swaps Index - Buy Protection		171		(996)		34,747	
Credit Default Swaps Index - Sell Protection		(91)		107		28,060	
Total Swaps		7,273		12,135		2,814,838	
Total Derivatives		18,148	\$	22,970	\$	6,472,322	

## Notes to the Financial Statements, continued June 30, 2018

The table below summarizes the swap maturity profile as of June 30, 2018.

(dollars in thousands)	Swap Maturity Profile at June 30, 2018													
Swap Type	<	1 yr	_1	-5 yrs	5-	10 yrs	10	-20 yrs	2	0+ yrs		Γotal		
Interest Rate Swaps - Pay Fixed Receive Variable	\$	283	\$	3,033	\$	8,374	\$	(590)	\$	5,990	\$	17,090		
Interest Rate Swaps - Pay Variable Receive Fixed		1		(3,632)		(238)		(77)		19		(3,927)		
Overnight Index Interest Rate Swaps - Pay Variable Receive Fixed		-		41		-		-		-		41		
Inflation Swaps - Pay Fixed Receive Variable		-		-		-		(188)		-		(188)		
Inflation Swaps - Pay Variable Receive Fixed		-		-		-		7		-		7		
Total Return Swaps		458		-		-		-		-		458		
Credit Default Swaps Single Name - Buy Protection		(87)		(343)		-		-		-		(430)		
Credit Default Swaps Single Name - Sell Protection		6		(13)		(20)		-		-		(27)		
Credit Default Swaps Index - Buy Protection		-		(996)		-		-		-		(996)		
Credit Default Swaps Index - Sell Protection		-		117		-		-		(10)		107		
Total Swap Fair Value	\$	661	\$	(1,793)	\$	8,116	\$	(848)	\$	5,999	\$	12,135		

### (C) Credit Risk

Counterparty credit risk exists on all open OTC positions. Counterparty credit risk is the risk that a derivative counterparty may fail to meet its payment obligation under the derivative contract.

Investment managers use International Swaps and Derivative Association Master Agreements to further reduce counterparty risk by specifying credit protection mechanisms and providing standardization that improves legal certainty, thereby reducing the probability of unforeseen losses. Furthermore, the master agreements can provide additional credit protection through the requirement of collateral exchange and certain event of default and mutual termination provisions. Securities eligible as collateral are typically United States government bills and U.S. dollar cash.

The maximum amount of loss due to credit risk that the agency would incur if the counterparty to the derivative instrument failed to perform according to the terms of the contract, without respect to any collateral or other security, or netting arrangements, is the total unrealized gain of derivatives at the end of the reporting period. The aggregate fair value of investment derivative instruments in an unrealized gain position at June 30, 2018, was \$21 million, of which \$20 million was uncollateralized.

# Notes to the Financial Statements, continued June 30, 2018

The table below summarizes the counterparty positions as of June 30, 2018:

(dollars in thousands)		Fair Value						Collateral							
Swaps Counterparty	S&P Rating	Receivable Payable Unrealized (Unrealized Loss)					Total ir Value	Posted	Received						
Bank of America	A-	\$	121	\$	(100)	\$	66	\$ 1,100	\$ (749)						
Banque Nationale De Paris	Α		4		-		1	1,800	-						
Barclays	BBB		50		(23)		(18)	440	-						
Citigroup Inc.	BBB+		3,049		(2,617)		356	3,401	(1,000)						
CME Group	AA-		7,374		(5,257)		5,782	-	-						
Credit Suisse	BBB+		-		(4)		(4)	1,344	(202)						
Deutsche Bank	BBB+		2,211		(2,456)		(122)	450	(70)						
Goldman Sachs	BBB+		91		(91)		14	300	(170)						
HSBC Securities Inc.	Α		49		(56)		(51)	350	(340)						
Intercontinental Exchange Inc.	Α		1,341		(1,281)		(906)	558	-						
JPMorgan Chase Bank	A-		73		(103)		17	469	(1,350)						
London Clearing House	A-		6,958		(2,134)		6,912	865	-						
Morgan Stanley	BBB+		81		(10)		88	50	(360)						
Total		\$	21,402	\$	(14,132)	\$	12,135	\$ 11,127	\$ (4,241)						

## Notes to the Financial Statements, continued June 30, 2018

## (D) Interest Rate Risk

INPRS has exposure to interest rate risk due to investments in interest rate and inflation swaps and forward mortgage-backed securities (TBAs). The required risk disclosures are included in the Interest Rate Risk schedule in Note 3 (E).

The table below summarizes investments that are highly sensitive to interest rate changes:

Reference Currency	Pays	Receives	Fa	ir Value	 Notional
Interest Rate Swap - Pay	Fixed Receive Variable:				
U.S. Dollar	1.25% to 3.25%	3M USD LIBOR	\$	18,141	\$ 1,241,990
Pound Sterling	1.25% to 2.00%	6M GBP LIBOR BBA		(252)	58,461
Swedish Krona	0.10% to 2.00%	3M SEK STIBOR SIDE		(244)	43,499
Japanese Yen	0.30% to 1.00%	6M JPY LIBOR BBA		(272)	25,566
Euro Currency Unit	0.00% to 1.50%	6M EURIBOR REUTERS		(208)	24,974
Indian Rupee	6.50% to 7.00%	INR MIBOR OIS COMPOUND		41	22,427
Mexican Peso	5.18% to 8.35%	28D MXN TIIE BANXICO		(31)	16,898
Polish Zloty	2.55% to 2.96%	6M PLN WIBOR WIBO		(54)	8,750
Chilean Peso	3.25% to 3.50%	6M IRSR CLP CLICP BLOOMBERG		5	7,867
Czech Koruna	0.0165	6M CZK PRIBOR PRBO		2	3,231
New Zealand Dollar	2.75% to 3.25%	3M NZD BBR FRA		(32)	2,648
Colombian Peso	5.11%	90 DAYS DTF RATE		(4)	423
Colombian Peso	5.19%	1D COP COOVIBR		(2)	223
			\$	17,090	\$ 1,456,957
Interest Rate Swap - Pay	Variable Receive Fixed:				
U.S. Dollar	3M USD LIBOR BBA	2.14% to 3.00%	\$	(4,246)	\$ 957,370
Euro Currency Unit	6M EURIBOR REUTERS	0.10% to 0.75%		373	66,270
South Korean Won	3M KRW KWCDC COD	0.02		(4)	37,604
Polish Zloty	6M WIBOR WIBO	2.00%		(2)	37,314
Mexican Peso	28D MXN TIIE BANXICO	7.35% to 8.33%		182	26,946
Hungarian Forint	6M BUBOR REUTERS	0.06% to 1.44%		(163)	20,228
Chinese Yuan Renminbi	7D CHINA FIXING REPO RATES	0.0375		251	19,145
Pound Sterling	6M GBP LIBOR BBA	1.00% to 1.20%		(52)	11,909
Brazilian Real	1M BRL CDI	8.05% to 8.90%		(29)	10,124
South African Rand	3M ZAR JIBAR SAFEX	7.33%		7	6,779
Canadian Dollar	3M CAD BA CDOR	2.00 % to 2.25%		(95)	5,534
New Taiwan Dollar	3M TWD TWCPBA	0.75%		1	4,357
Swedish Krona	3M SEK STIBOR SIDE	0.33%		1	4,192
Mexican Peso	1M MXN TIIE BANXICO	5.50% to 7.50%		(143)	3,651
Norwegian Krone	3M NOK NIBOR NIBR	1.45%		1	3,316
Norwegian Krone	6M NOK NIBOR BBG CM	0.016		3	1,650
Australian Dollar	6M AUD BBR BBSW	2.75%		(12)	1,345
			\$	(3,927)	\$ 1,217,734

Notes to the Financial Statements, continued June 30, 2018

### (E) Foreign Currency Risk

Foreign currency forward contracts and futures contracts are exposed to foreign currency risk. The required risk disclosures are included in the Foreign Currency Risk schedule in Note 3 (G).

At June 30, 2018, INPRS's investments included a foreign currency contract receivable balance of \$8.3 billion and an offsetting foreign currency contract payable of \$8.3 billion

The net gain recognized for the fiscal year ended June 30, 2018, due to foreign currency transactions was \$28 million.

### Note 5. Risk Management

INPRS is exposed to various risks that could lead to loss and disruption to its operations, including damage to property owned by INPRS; personal injury or property damage liabilities; errors, omissions, and theft by employees; certain employee death benefits, employee health benefits and unemployment and worker's compensation costs for INPRS employees; and breach of fiduciary responsibility.

For risks related to physical loss and liability, employee benefits and fiduciary responsibility, INPRS purchases commercial insurance for property, general liability, employee crime, employee health and unemployment, and fiduciary responsibility. No settlements have exceeded the insurance coverage for each of the past three years. INPRS records expenses for losses, if any, as the liabilities are incurred or replacement items are purchased.

## Note 6. Contingent Liabilities

INPRS is subject to lawsuits that, in management's opinion, will not have a material effect on the financial statements.

Notes to the Financial Statements, continued June 30, 2018

## Note 7. Net Pension Liability and Actuarial Information – Defined Benefit Plans

**Fiduciary Net** 

The components of the net pension liability of each defined benefit retirement plan as of June 30, 2018:

(dollars in thousands)

Pre-Funded Defined Benefit Pension Trust Funds	Total Pension Liability (a)			Fiduciary et Position (b)		et Pension Liability (a) - (b)	Position as a Percent of Total Pension Liability (b) / (a)
PERF DB	\$	16,091,373	\$	12,694,328	\$	3,397,045	78.9 %
TRF '96 DB		5,563,264		5,452,352		110,912	98.0
'77 Fund		5,839,659		5,927,570		(87,911)	101.5
JRS		547,694		513,952		33,742	93.8
EG&C		140,056		131,491		8,565	93.9
PARF		103,284		61,019		42,265	59.1
LE DB		3,484		2,942		542	84.4
Pay-As-You-Go Defined Benef	it Pen \$	sion Trust Fur 14,583,189	nd \$	3.711.347	\$	10,871,842	25.4 %
110 110 00 00	Ψ	1-1,000,100	Ψ	0,7 11,047	Ψ	10,011,072	25.4 /0

The total pension liability is determined by actuaries in accordance with GASB Statement No. 67, as part of their annual actuarial valuation for each defined benefit retirement plan. Actuarial valuations of an ongoing plan involve estimates of the value of reported amounts (e.g., salaries, credited service) and assumptions about the probability of occurrence of events far into the future (e.g., mortality, disabilities, retirements, employment terminations). Actuarially determined amounts are subject to continual review and potential modifications, as actual results are compared with past expectations and new estimates are made about the future. In 2018, the following actuarial assumptions and methods were changed: the COLA assumption was changed due to the passage of Senate Enrolled Act No. 373. In lieu of a 1.0% COLA beginning on January 1, 2020, INPRS now assumes that the COLA will be replaced by a thirteenth check for 2020 and 2021. The COLA assumption thereafter would be 0.4% beginning on January 1, 2022, changing to 0.5% beginning on January 1, 2034, and ultimately 0.6% beginning on January 1, 2039.

The accompanying Schedule of Contributions in the Required Supplementary Information presents trend information about the amounts contributed to the plan by employers and a nonemployer contributing entity in comparison to the Actuarially Determined Contribution (ADC). The ADC represents a level of funding that, if paid on an ongoing basis, is projected to cover the normal cost for each year and the amortization of any unfunded actuarial accrued liability (or funding excess).

Projections of benefits for financial reporting purposes are based on the substantive plan (the plan as understood by the employers and plan members) and include the types of benefits provided at the time of each valuation and the historical pattern of sharing benefit costs between the employers and plan members to that point. The projection of benefits for financial reporting purposes does not explicitly incorporate the potential effects of legal or contractual funding limitations.

Actuarial calculations reflect a long-term perspective. For a newly hired employee, actuarial calculations will take into account the employee's entire career with the employer and also take into consideration the benefits, if any, paid to the employee after termination of employment until the death of the employee and any applicable contingent annuitant. In many cases, actuarial calculations reflect several decades of service with the employer and the payment of benefits after termination.

# Notes to the Financial Statements, continued June 30, 2018

Key methods and assumptions used in calculating the total pension liability in the latest actuarial valuations are presented below:

Description	PERF DB	TRF Pre-'96 DB	TRF '96 DB	'77 Fund	JRS	EG&C	PARF	LE DB				
Asset Valuation Date					June 30, 2018							
Liability Valuation Date	reflect change	s betwee	n June 30	), 2017 and June	30, 2018. Standa	d in the valuation and adj rd actuarial roll forward t 017 to the June 30, 2018	echniqu	es were then used to				
Actuarial Cost Method (Accounting)				Entry Age N	lormal (Level Perd	cent of Payroll)						
Actuarial Assumptions:  Experience Study Date	Period of four years ended June 30, 2014	years	of three ended 0, 2014		Period of	four years ended June 30	0, 2014					
Investment Rate of Return (Accounting)				6.75%, includes ir	flation and net of	investment expenses						
Cost of Living Increases (COLA), see Note 1.		32 - 0.40% 37 - 0.50%	, , ,	2.0%	2.5%	2019-2020 - 13th check, 2021-2032 - 0.40%, 2033-2037 - 0.50%, 2038 and on - 0.60%	N/A	2019-2020 - 13th check, 2021-2032 - 0.40%, 2033-2037 - 0.50%, 2038 and on - 0.60%				
Future Salary Increases, including Inflation	2.50% - 4.25%	2.50% -	12.50%		2.50%		4.00%	2.25%				
Inflation					2.25%							
Mortality - Healthy	RP-2014 Total Data Set Mortality Table, with Social Security Administration generational improvement scale from 2006	Collar M Table Social S Admini genera improv	4 White Mortality e, with Security stration ational vement om 2006	RP-2014 Blue Collar Mortality Table, with Social Security Administration generational improvement scale from 2006  RP-2014 Blue Collar Mortality Table Collar Mortality Table, with Social Security Administration generational improvement scale from 2006  RP-2014 Blue Collar Mortality Table, with Social Security Administration generational improvement scale from 2006								
Mortality - Disabled	RP-2014 Disabled Mortality Table, with Social Security Administration generational improvement scale from 2006											

The long-term return expectation for the INPRS defined benefit retirement plans has been determined by using a building-block approach and assumes a time horizon, as defined in the INPRS Investment Policy Statement. A forecasted rate of inflation serves as the baseline for the return expectation. Various real return premiums over the baseline inflation rate have been established for each asset class. The long-term expected nominal rate of return has been determined by calculating a weighted average of the expected real return premiums for each asset class, adding the projected inflation rate, and adding the expected return from rebalancing uncorrelated asset classes.

## Notes to the Financial Statements, continued June 30, 2018

Geometric Basis	
Long-Term Expected Real Rate of Return	Target Asset Allocation
4.4 %	22.0 %
5.4	14.0
2.2	20.0
0.8	7.0
2.3	8.0
6.5	7.0
2.7	10.0
5.2	12.0
	Long-Term Expected Real Rate of Return  4.4 % 5.4 2.2 0.8 2.3 6.5 2.7

Total pension liability for each defined benefit pension plan was calculated using the discount rate of 6.75%. The projection of cash flows used to determine the discount rate assumed the contributions from employers and where applicable from the members, would at the minimum be made at the actuarially determined required rates computed in accordance with the current funding policy adopted by the Board, and contributions required by the State of Indiana (the non-employer contributing entity) would be made as stipulated by State statute. Projected inflows from investment earnings were calculated using the 6.75% longterm assumed investment rate of return. Based on those assumptions, each defined benefit pension plan's fiduciary net position were projected to be available to make all projected future benefit payments of current plan members, therefore, the long-term expected rate of return on pension plan investments was applied to all periods of projected benefits to determine the total pension liability for each plan.

Net pension liability is sensitive to changes in the discount rate. To illustrate the potential impact, the following table presents the net pension liability of the defined benefit pension plans calculated using the discount rate of 6.75%, as well as what each plan's net pension liability would be if it were calculated using a discount rate that is one percentage point lower or one percentage point higher than the current rate:

	Discount Rate													
Pre-Funded Defined Benefit Pension Trust Funds	1%	Decrease 5.75%		Current 6.75%	19	% Increase 7.75%								
PERF DB	\$	5,347,495	\$	3,397,045	\$	1,770,582								
TRF '96 DB		1,072,148		110,912		(666,533)								
'77 Fund		835,239		(87,911)		(834,121)								
JRS		96,481		33,742		(18,955)								
EG&C		26,831		8,565		(6,486)								
PARF		55,290		42,265		31,528								
LE DB		781		542		331								
Pay-As-You-Go Defined Benefit Pension Trust Fund														
TRF Pre-'96 DB	\$	12,228,232	\$	10,871,842	\$	9,706,327								

Notes to the Financial Statements, continued June 30, 2018

## Note 8. Subsequent Events: Financial Statement and Legislative Changes

#### **Financial Statement**

Before the issuance of the financial statements, there were no known events or transactions that were material in nature that would have affected the financial results as of June 30, 2018. All events and transactions have been recognized or disclosed in the financial statements and notes as it pertains to the period ending June 30, 2018.

### **Legislative Changes**

Below is the summary of legislative changes that are effective July 1, 2018. These changes have been reflected in the actuarial valuations as of June 30, 2018.

### House Enrolled Act (HEA) 1001

TRF members who are newly hired will have a defined contribution account only option similar to PERF My Choice.

### House Enrolled Act (HEA) 1109

The act discloses various pension matters:

Removes the requirement that only active members of PERF and TRF may make rollover distributions into their defined contribution account from another qualified retirement account. Allows any PERF or TRF member who terminates employment and is not currently employed in a covered position or for the same employer to suspend fund membership, retain the member's creditable service, and withdraw all or part of the amount in the member's defined contribution account before retirement. Revises effective date of participation of a political subdivision joining PERF from the earlier of January 1 or July 1 to a date approved by the INPRS board of trustees, but not later than 60 days after the date the political subdivision's PERF participation is approved.

#### House Enrolled Act (HEA) 1537

In the 2017 legislative session PERF DB, TRF Pre-'96 DB, TRF '96 DB, and EG&C members, beneficiaries, and survivors were allocated a 13th check to be paid by October 1, 2018. To qualify members must be retired or disabled on or before December 1, 2017, and must be eligible for a monthly benefit on July 1, 2018. The amount of the check will be based on the members' years of creditable service at retirement.

At least five years, but less than 10 years (disability): \$150

At least 10 years, but less than 20 years: \$275

At least 20 years, but less than 30 years: \$375

At least 30 years: \$450

#### Senate Enrolled Act (SEA) 27

Provides in the case of a unit (county, city, town, or township) that begins participation in the '77 Fund, that the unit and member (firefighter, police officer, or emergency medical technician) may agree how to share the cost of acquiring credit in the '77 fund for the member's prior service as a firefighter, police officer, or emergency medical technician.

### Senate Enrolled Act (SEA) 119

Allows a member of the '77 Fund to purchase service performed in Indiana as a full-time, fully paid police officer or firefighter for an employer that does not participate in the '77 fund.

## Notes to the Financial Statements, continued June 30, 2018

#### Senate Enrolled Act (SEA) 281

Provides that certain sheriffs and county police officers are granted service credit in their respective county sheriff's department retirement plans for service to those county sheriff's departments before the effective dates of the county sheriff's department retirement plans. Provides that certain sheriffs and county police officers simultaneously waive their accrued service credit in PERF for their service to those county sheriff's departments before the effective dates of the county sheriff's department retirement plans.

### Senate Enrolled Act (SEA) 373

Establishes the supplemental allowance reserve accounts for LE DB, EG&C, PERF DB, TRF Pre-'96 DB, and TRF '96 DB to pay postretirement benefit increases, thirteenth checks, and other benefit changes or adjustments granted by the general assembly after June 30, 2018. Requires that after June 30, 2018, the state lottery commission transfer \$7,500,000 of surplus revenue each quarter from the commission's administrative trust fund to INPRS. Requires the contribution rate established by the INPRS board for 2019 and each year thereafter to include a surcharge that is paid to the applicable reserve account in an amount not to exceed 1% of the employer's payroll that is attributable to those employees who are members of PERF DB, TRF '96 DB, or EG&C.



## Introduction to Required Supplementary Information (Unaudited) and Other Supplementary Information

Historical trend information is designed to provide decision-usefulness of the financial reports, improved value for assessing accountability, and greater transparency related to measures of net pension liabilities impacting INPRS. The Schedules of Changes in Net Pension Liability and Net Pension Liability, Schedule of Contributions, Schedule of Investment Returns, and Schedule of Notes to Required Supplemental Information are required in addition to the Financial Statements. Other Supplementary Schedules are presented for the purpose of additional analysis and are not required for the Financial Statements. These supplemental reports are the Schedule of Administrative Expenses, Schedule of Administrative Expenses - Vendors, and the Schedule of Direct Investment Expenses.

## Required Supplementary Information (Unaudited) For the Year Ended June 30

### Schedules of Changes in Net Pension Liability and Net Pension Liability<sup>1,2</sup> **Public Employees' Defined Benefit Account**

(dollars in thousands)

Changes in Net Pension Liability	2018	_	2017		2016	_	2015	2014			_	2013	_
Total Pension Liability - Beginning of Year	\$ 16,335,253	\$	15,752,055		\$ 15,263,395		\$ 13,880,722	,	13,349,578		\$ 1	3,034,791	
Service Cost	202,324		194,101		191,055		273,910		258,070			270,974	
Interest Cost	1,088,503		1,051,217		1,018,993		936,404		895,454			875,616	
Experience (Gains) / Losses	20,103		82,964		(4,870)		247,978		(15,161)			(104,471)	,
Assumption Changes	(731,601)		22,809		-		488,354		-			-	
Plan Amendments	-		(22,766)		-		-		(42,985)			(167,486)	,
Benefit Payments	(860,613)		(820,721)		(786,607)		(752,896)		(680,203)			(662,283)	,
ASA Annuitizations <sup>3</sup>	43,874		78,793		75,036		196,788		119,094			107,520	
Net Member Reassignment	(7,030)		(3,618)		(5,441)		(8,155)		(3,125)			(5,083)	
Other	560		419		494		290		-			-	
Net Change in Total Pension Liability	(243,880)		583,198		488,660		1,382,673		531,144			314,787	_
Total Pension Liability - End of Year	\$ 16,091,373	\$	16,335,253		\$ 15,752,055	=	\$ 15,263,395		13,880,722	=	\$ 1	3,349,578	=
Fiduciary Net Position - Beginning of Year	\$ 11,873,709	9	\$ 11,213,610		\$ 11,190,493		\$ 11,252,787	,	9,924,498		\$	9,494,306	
Employer Contributions <sup>4,5</sup>	571,374		558,891		615,773		538,059		526,090			455,658	
Member Contributions	708		590		443		-		-			-	
Net Investment Income / (Loss)	1,093,094		870,592		147,106		(10,667)		1,393,814			563,530	
Benefit Payments	(860,613)		(820,721)		(786,607)		(752,896)		(680,203)			(662,283)	
ASA Annuitizations³	43,874		78,793		75,036		196,788		119,094			107,520	
Net Member Reassignment	(7,030)		(3,618)		(5,441)		(8,155)		(3,125)			(5,083)	
Administrative Expenses <sup>6</sup>	(20,844)		(24,483)		(24,098)		(25,506)		(27,433)			(29,181)	
Other	56		55	_	905	_	83	_	52	_	_	31	
Net Change in Fiduciary Net Position	820,619		660,099		23,117		(62,294)		1,328,289			430,192	
Fiduciary Net Position - End of Year	\$ 12,694,328	9	\$ 11,873,709		\$ 11,213,610	=	\$ 11,190,493	;	\$ 11,252,787	=	\$	9,924,498	=
Net Pension Liability													
Total Pension Liability	\$ 16,091,373	\$	16,335,253		\$ 15,752,055		\$ 15,263,395	(	13,880,722		\$ 1	3,349,578	
Fiduciary Net Position	12,694,328		11,873,709		11,213,610		11,190,493		11,252,787			9,924,498	
Net Pension Liability	\$ 3,397,045	\$	4,461,544		\$ 4,538,445	_	\$ 4,072,902	,	2,627,935	_	\$	3,425,080	_
Fiduciary Net Position as a Percentage of the Total Pension Liability	78.9 %	6	72.7	%	71.2	%	73.3	%	81.1	%		74.3	%
Covered Payroll <sup>7</sup>	\$ 5,083,131	\$	4,997,555		\$ 4,868,709		\$ 4,804,145	Ç	4,896,635		\$	4,700,000	
Net Pension Liability as a Percentage of Covered Payroll	66.8 %	6	89.3	%	93.2	%	84.8	%	53.7	%		72.9	%

<sup>12013 - 2017</sup> were adjusted to reflect DB activity only due to the DB/DC split effective January 1, 2018.

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<sup>&</sup>lt;sup>3</sup>2018 represents only a half year of activity as ASA annuities were outsourced to a third party effective January 1, 2018.

<sup>4</sup>Includes \$275 thousand for 2018, \$232 thousand for 2017, \$317 thousand for 2016 and \$290 thousand for 2015 of employer service purchases.

<sup>52016</sup> includes \$67,772 thousand in one-time contributions.

<sup>6</sup> Includes \$1,465 thousand for 2018, \$1,307 thousand for 2017, \$1,302 thousand for 2016, \$1,213 thousand for 2015 and \$1,072 thousand for 2014 of contributions by INPRS for its employees.
72013 covered payroll was adjusted to reflect actual contribution rates.

## Required Supplementary Information (Unaudited), continued For the Year Ended June 30

### Schedules of Changes in Net Pension Liability and Net Pension Liability<sup>1,2</sup> Teachers' Pre-1996 Defined Benefit Account

Changes in Net Pension Liability	2018	2017	2016	2015	2014	2013
Total Pension Liability - Beginning of Year	\$ 15,494,539	\$ 15,575,072	\$ 15,596,292	\$ 14,639,876	\$ 14,649,549	\$ 14,547,939
Service Cost	44,603	43,204	46,787	57,751	68,860	81,343
Interest Cost	1,010,565	1,016,915	1,019,403	959,895	961,628	957,228
Experience (Gains) / Losses	(162,414)	22,416	(5,794)	(140,466)	(70,517)	(40,719)
Assumption Changes	(668,484)	(61,548)	-	1,033,158	-	-
Plan Amendments	-	4,213	-	-	(25,524)	-
Benefit Payments	(1,153,374)	(1,135,662)	(1,118,122)	(1,100,434)	(1,034,563)	(988,335)
ASA Annuitizations <sup>3</sup>	16,301	30,502	35,185	143,225	93,982	86,941
Net Member Reassignment	1,428	-	-	3,266	(3,802)	-
Other	25	(573)	1,321	21	263	5,152
Net Change in Total Pension Liability	(911,350)	(80,533)	(21,220)	956,416	(9,673)	101,610
Total Pension Liability - Ending	\$ 14,583,189	\$ 15,494,539	\$ 15,575,072	\$ 15,596,292	\$ 14,639,876	\$ 14,649,549
Fiduciary Net Position - Beginning of Year	\$ 3,575,400	\$ 3,522,401	\$ 3,678,455	\$ 3,786,527	\$ 3,401,153	\$ 3,084,834
Employer Contributions	4,168	4,525	5,048	5,811	6,325	9,484
Nonemployer Contributing Entity Contributions	917,900	871,000	887,500	845,616	825,617	1,003,596
Member Contributions	156	10	132	-	5	-
Net Investment Income / (Loss)	354,639	288,850	40,767	953	504,801	212,554
Benefit Payments	(1,153,374)	(1,135,662)	(1,118,122)	(1,100,434)	(1,034,563)	(988,335)
ASA Annuitizations <sup>3</sup>	16,301	30,502	35,185	143,225	93,982	86,941
Net Member Reassignment	1,429	-	-	3,266	(3,802)	-
Administrative Expenses	(5,385)	(6,226)	(6,564)	(6,530)	(7,010)	(7,926)
Other	113			21	19	5
Net Change in Fiduciary Net Position	135,947	52,999	(156,054)	(108,072)	385,374	316,319
Fiduciary Net Position - End of Year	\$ 3,711,347	\$ 3,575,400	\$ 3,522,401	\$ 3,678,455	\$ 3,786,527	\$ 3,401,153
Net Pension Liability						
Total Pension Liability	\$ 14,583,189	\$ 15,494,539	\$ 15,575,072	\$ 15,596,292	\$ 14,639,876	\$ 14,649,549
Fiduciary Net Position	3,711,347	3,575,400	3,522,401	3,678,455	3,786,527	3,401,153
Net Pension Liability	\$ 10,871,842	\$ 11,919,139	\$ 12,052,671	\$ 11,917,837	\$ 10,853,349	\$ 11,248,396
Fiduciary Net Position as a Percentage of the Total Pension Liability	25.4 %	6 23.1 %	6 22.6 %	% 23.6 %	% 25.9 °	% 23.2 %
Covered Payroll <sup>4</sup>	\$ 824,770	\$ 912,685	\$ 989,093	\$ 1,074,827	\$ 1,262,828	\$ 1,383,428
Net Pension Liability as a Percentage of Covered Payroll	1,318.2 %	6 1,305.9 %	6 1,218.6 %	% 1,108.8 %	% 859.4 °	% 813.1 %

<sup>&</sup>lt;sup>1</sup>2013 - 2017 were adjusted to reflect DB activity only due to the DB/DC split effective January 1, 2018. <sup>2</sup>Information is not available prior to 2013. Additional years will be added until 10 years of historical data are shown. <sup>3</sup>2018 represents only a half year of activity as ASA annuities were outsourced to a third party effective January 1, 2018. <sup>4</sup>2013 represents anticipated covered payroll.

## Required Supplementary Information (Unaudited), continued For the Year Ended June 30

### Schedules of Changes in Net Pension Liability and Net Pension Liability<sup>1,2</sup> Teachers' 1996 Defined Benefit Account

Changes in Net Pension Liability	2018		2017		2016	_	_	2015		2014		2013	
Total Pension Liability - Beginning of Year	\$ 5,536,094	,	\$ 5,174,317		\$ 4,734,776		\$	4,116,264		\$ 3,757,444	;	\$ 3,438,970	
Service Cost	182,558		168,651		167,836			170,892		155,314		147,337	
Interest Cost	382,298		357,392		328,018			287,264		262,263		240,282	
Experience (Gains) / Losses	(142,275)		46,460		29,876			(40,857)		504		(15,995)	
Assumption Changes	(285,442)		(115,506)		-			263,991		-		-	
Plan Amendments	-		1,353		-			-		(4,504)		-	
Benefit Payments	(122,239)		(109,335)		(99,507)	)		(90,267)		(77,253)		(68,793)	
ASA Annuitizations <sup>3</sup>	6,504		8,504		8,932			22,575		15,151		11,621	
Net Member Reassignment	5,601		4,258		4,370			4,890		6,922		-	
Other	165		-		16	_		24		423		4,022	
Net Change in Total Pension Liability	27,170		361,777		439,541	_	_	618,512		358,820		318,474	
Total Pension Liability - Ending	\$ 5,563,264	= ;	\$ 5,536,094	= :	\$ 5,174,317	=	\$	4,734,776		\$ 4,116,264	= =	\$ 3,757,444	
Fiduciary Net Position - Beginning of Year	\$ 4,873,897	;	\$ 4,393,797		\$ 4,208,198		\$	4,068,713		\$ 3,442,972	:	\$ 3,118,810	
Employer Contributions	235,819		227,207		215,626			205,763		194,751		180,714	
Member Contributions	130		58		43			-		-		-	
Net Investment Income / (Loss)	457,708		354,927		61,722			2,684		492,856		207,098	
Benefit Payments	(122,239)		(109,335)		(99,507)	)		(90,267)		(77,253)		(68,793)	
ASA Annuitizations <sup>3</sup>	6,504		8,504		8,932			22,575		15,151		11,621	
Net Member Reassignment	5,601		4,258		4,370			4,890		6,922		-	
Administrative Expenses	(5,208)		(5,553)		(5,603)	)		(6,184)		(6,707)		(6,482)	
Other	140		34		16	_		24		21		4	
Net Change in Fiduciary Net Position	578,455		480,100		185,599	_		139,485		625,741		324,162	
Fiduciary Net Position - End of Year	\$ 5,452,352	= =	\$ 4,873,897	= :	\$ 4,393,797	=	\$	4,208,198	= =	\$ 4,068,713	= =	\$ 3,442,972	
Net Pension Liability													
Total Pension Liability	\$ 5,563,264	(	\$ 5,536,094		\$ 5,174,317		\$	4,734,776		\$ 4,116,264	(	\$ 3,757,444	
Fiduciary Net Position	5,452,352		4,873,897		4,393,797			4,208,198		4,068,713		3,442,972	
Net Pension Liability	\$ 110,912		\$ 662,197	= :	\$ 780,520	=	\$	526,578		\$ 47,551	 ; = =	\$ 314,472	
Fiduciary Net Position as a Percentage of the Total Pension Liability	98.0	%	88.0	%	84.9	%		88.9	%	98.8	%	91.6 %	6
Covered Payroll	\$ 3,129,070	(	\$ 3,020,463		\$ 2,881,397		\$	2,742,187		\$ 2,598,115	(	\$ 2,442,496	
Net Pension Liability as a Percentage of Covered Payroll	3.5	%	21.9	%	27.1	%		19.2	%	1.8	%	12.9 %	6

<sup>&</sup>lt;sup>1</sup>2013 - 2017 were adjusted to reflect DB activity only due to the DB/DC split effective January 1, 2018. <sup>2</sup>Information is not available prior to 2013. Additional years will be added until 10 years of historical data are shown. <sup>3</sup>2018 represents only a half year of activity as ASA annuities were outsourced to a third party effective January 1, 2018.

## Required Supplementary Information (Unaudited), continued For the Year Ended June 30

### Schedules of Changes in Net Pension Liability and Net Pension Liability<sup>1</sup> 1977 Police Officers' and Firefighters' Retirement Fund

Changes in Net Pension Liability	_	2018	_	2017	_	2016	_	_	2015	_	2014	_	_	2013	_
Total Pension Liability - Beginning of Year	\$	5,385,753	,	\$ 5,039,836	,	4,680,695		\$	4,706,998	\$	4,392,947		\$	4,122,436	
Service Cost		136,640		134,489		129,369			138,204		133,075			130,912	
Interest Cost		366,932		344,397		320,218			323,129		301,824			283,733	
Experience (Gains) / Losses		123,069		33,409		41,723			(61,640)		(11,754)			(39,592)	)
Assumption Changes		-		(23,399)		-			(309,801)		-			(4,810)	)
Plan Amendments		-		1,323		-			-		-			-	
Benefit Payments <sup>2</sup>		(172,908)		(148,865)		(132,746)			(116,490)		(109,094)			(99,803)	)
Net Member Reassignment <sup>3</sup>		-		-		(74)			-		-			71	
Other		173		4,563		651			295		-			-	
Net Change in Total Pension Liability		453,906		345,917	_	359,141			(26,303)		314,051		_	270,511	_
Total Pension Liability - End of Year	\$	5,839,659	=	\$ 5,385,753	,	5,039,836	=	\$	4,680,695	\$	4,706,998	=	\$	4,392,947	=
Fiduciary Net Position - Beginning of Year	\$	5,401,179	,	\$ 4,950,999	,	4,828,415		\$	4,757,978	\$	4,116,861		\$	3,817,013	
Employer Contributions <sup>4</sup>		147,094		150,857		151,674			146,697		140,119			137,111	
Member Contributions		48,839		51,521		44,918			43,523		41,791			40,786	
Net Investment Income / (Loss)		504,991		398,196		60,320			(1,600)		570,058			223,510	
Benefit Payments <sup>2</sup>		(172,908)		(148,865)		(132,746)			(116,490)		(109,094)			(99,803)	)
Net Member Reassignment <sup>3</sup>		-		-		(74)			-		-			71	
Administrative Expenses		(1,643)		(1,607)		(1,651)			(1,708)		(1,787)			(1,845)	)
Other		18		78		143	_		15		30	_	_	18	_
Net Change in Fiduciary Net Position		526,391		450,180		122,584			70,437		641,117			299,848	_
Fiduciary Net Position - End of Year	\$	5,927,570	=	\$ 5,401,179		4,950,999	_	\$	4,828,415	\$	4,757,978	=	\$	4,116,861	=
Net Pension Liability / Asset															
Total Pension Liability	\$	5,839,659	(	\$ 5,385,753	9	5,039,836		\$	4,680,695	9	4,706,998		\$	4,392,947	
Fiduciary Net Position		5,927,570		5,401,179		4,950,999			4,828,415		4,757,978			4,116,861	
Net Pension Liability / Asset	\$	(87,911)	,	\$ (15,426)	=	\$ 88,837	=	\$	(147,720)	\$	(50,980)	=	\$	276,086	=
Fiduciary Net Position as a Percentage of the Total Pension Liability		101.5 %	6	100.3	%	98.2	%		103.2	%	101.1	%		93.7	%
Covered Payroll <sup>5</sup>	\$	842,179		\$ 809,382	;	\$ 771,949		\$	745,336	(	710,581		\$	695,000	
Net Pension Liability / Asset as a Percentage of Covered Payroll		(10.4) %	6	(1.9)	%	11.5	%		(19.8)	%	(7.2)	%		39.7	%

<sup>&</sup>lt;sup>1</sup>Information is not available prior to 2013. Additional years will be added until 10 years of historical data are shown. <sup>2</sup>Includes \$173 thousand for 2018, \$159 thousand for 2017, \$375 thousand for 2016, and \$295 thousand for 2015 of employer service purchases.

<sup>&</sup>lt;sup>3</sup>Includes refunds of employee contributions.

<sup>4</sup>Includes net interfund transfers.
52013 covered payroll was adjusted to reflect actual contribution rates.

## Required Supplementary Information (Unaudited), continued For the Year Ended June 30

### Schedules of Changes in Net Pension Liability and Net Pension Liability<sup>1</sup> Judges' Retirement System

Changes in Net Pension Liability	 2018		2017	_	2016	_	2015	_	2014		2013	
Total Pension Liability - Beginning of Year	\$ 523,735	\$	501,126	\$	468,944	\$	464,855	\$	453,110		\$ 437,854	
Service Cost	14,886		14,762		13,870		15,283		15,302		16,084	
Interest Cost	35,567		34,083		31,889		31,753		30,992		30,047	
Experience (Gains) / Losses	(3,090)		(3,107)		7,182		8,411		(16,026)		(13,603)	
Assumption Changes	-		(1,213)		_		(31,926)		-		186	
Plan Amendments	-		-		-		-		-		-	
Benefit Payments <sup>2</sup>	(23,623)		(22,099)		(20,922)		(19,432)		(18,527)		(17,579)	
Net Member Reassignment <sup>3</sup>	-		-		-		-		4		121	
Other	219		183		162		-		-		-	
Net Change in Total Pension Liability	23,959		22,609		32,181		4,089		11,745		15,256	
Total Pension Liability - End of Year	\$ 547,694	\$	523,735	\$	501,125	\$	468,944	\$	464,855	= :	\$ 453,110	
Fiduciary Net Position - Beginning of Year	\$ 475,055	\$	441,790	\$	437,352	\$	432,730	\$	375,752		\$ 262,326	
Employer Contributions	15,117		16,824		16,946		21,020		20,895		111,419	
Member Contributions	3,418		3,468		3,239		3,292		2,856		2,631	
Net Investment Income / (Loss)	44,104		35,196		5,323		(102)		51,890		16,955	
Benefit Payments <sup>2</sup>	(23,623)		(22,099)		(20,922)		(19,432)		(18,527)		(17,579)	
Net Member Reassignment <sup>3</sup>	-		-		-		-		4		121	
Administrative Expenses	(119)		(124)		(148)		(165)		(146)		(126)	
Other	 _						9	_	6		5	
Net Change in Fiduciary Net Position	38,897		33,265		4,438		4,622		56,978		113,426	
Fiduciary Net Position - End of Year	\$ 513,952	\$	475,055	\$	441,790	\$	437,352	\$	432,730	_ =	\$ 375,752	
Net Pension Liability												
Total Pension Liability	\$ 547,694	\$	523,735	\$	501,125	\$	468,944	\$	464,855		\$ 453,110	
Fiduciary Net Position	513,952		475,055		441,790		437,352		432,730		375,752	
Net Pension Liability	\$ 33,742	\$	48,680	\$	59,335	\$	31,592	\$	32,125		\$ 77,358	
Fiduciary Net Position as a Percentage of the Total Pension Liability	93.8 %	6	90.7	%	88.2	%	93.3	%	93.1	%	82.9 %	%
Covered Payroll <sup>4</sup>	\$ 53,350	\$	54,755	\$	51,382	\$	48,582	9	46,041		\$ 47,595	
Net Pension Liability / Asset as a Percentage of Covered Payroll	63.2 %	6	88.9	%	115.5	%	65.0	%	69.8	%	162.5 %	%

<sup>&</sup>lt;sup>1</sup>Information is not available prior to 2013. Additional years will be added until 10 years of historical data are shown.

<sup>&</sup>lt;sup>2</sup>Includes refunds of employee contributions. <sup>3</sup>Includes net interfund transfers.

<sup>&</sup>lt;sup>4</sup>2013 represents anticipated covered payroll.

## Required Supplementary Information (Unaudited), continued For the Year Ended June 30

## Schedules of Changes in Net Pension Liability and Net Pension Liability<sup>1</sup> Excise, Gaming and Conservation Officers' Retirement Fund

Changes in Net Pension Liability	2018		2017		2016		2015	2014		2013	
Total Pension Liability - Beginning of Year	\$ 142,603	\$	138,965	\$	132,796	\$	123,601	\$	118,097	\$	113,282
Service Cost	3,369		3,550		3,011		3,905		3,841		3,811
Interest Cost	9,619		9,389		8,955		8,384		8,031		7,740
Experience (Gains) / Losses	(587)		120		470		845		(430)		(1,845)
Assumption Changes	(8,015)		(2,578)		-		2,669		-		(40)
Plan Amendments	-		-		-		-		-		-
Benefit Payments <sup>2</sup>	(6,935)		(6,826)		(6,267)		(6,608)		(5,938)		(4,836)
Net Member Reassignment <sup>3</sup>	-		(26)		-		-		-		(15)
Other	2		9		-		-		-		-
Net Change in Total Pension Liability	(2,547)		3,638		6,169		9,195		5,504		4,815
Total Pension Liability - End of Year	\$ 140,056	\$	142,603	\$	138,965	\$	132,796	\$	123,601	\$	118,097
Fiduciary Net Position - Beginning of Year	\$ 120,016	\$	111,329	\$	110,038	\$	110,657	\$	97,019	\$	76,543
Employer Contributions	6,175		5,691		5,367		5,215		5,359		19,740
Member Contributions	1,172		1,102		1,016		1,004		1,019		1,006
Net Investment Income / (Loss)	11,189		8,869		1,313		(71)		13,339		4,702
Benefit Payments <sup>2</sup>	(6,935)		(6,826)		(6,245)		(6,608)		(5,938)		(4,836)
Net Member Reassignment <sup>3</sup>	-		(26)		(21)		-		-		(15)
Administrative Expenses	(136)		(123)		(139)		(159)		(141)		(121)
Other	 10				-						-
Net Change in Fiduciary Net Position	11,475		8,687		1,291		(619)		13,638		20,476
Fiduciary Net Position - End of Year	\$ 131,491	\$	120,016	\$	111,329	\$	110,038	\$	110,657	\$	97,019
Net Pension Liability											
Total Pension Liability	\$ 140,056	\$	142,603	\$	138,965	\$	132,796	\$	123,601	\$	118,097
Fiduciary Net Position	131,491		120,016		111,329		110,038		110,657		97,019
Net Pension Liability	\$ 8,565	\$	22,587	\$	27,636	\$	22,758	\$	12,944	\$	21,078
Fiduciary Net Position as a Percentage of the Total Pension Liability	93.9 %	, 0	84.2	<b>%</b>	80.1 %	<b>/</b> o	82.9	%	89.5	<b>%</b>	82.2 %
Covered Payroll <sup>4</sup>	\$ 29,387	\$	27,428	\$	25,526	\$	25,133	\$	25,825	\$	24,675
Net Pension Liability as a Percentage of Covered Payroll	29.1 %	, 0	82.3	%	108.3 %	6	90.6	%	50.1	%	85.4 %

<sup>&</sup>lt;sup>1</sup>Information is not available prior to 2013. Additional years will be added until 10 years of historical data are shown. <sup>2</sup>Includes refunds of employee contributions. <sup>3</sup>Includes net interfund transfers. <sup>4</sup>2013 covered payroll was adjusted to reflect actual contribution rates.

# Required Supplementary Information (Unaudited), continued For the Year Ended June 30

# Schedules of Changes in Net Pension Liability and Net Pension Liability<sup>1</sup> Prosecuting Attorneys' Retirement Fund

Changes in Net Pension Liability	_	2018		2017		2016		2015		2014		2013
Total Pension Liability - Beginning of Year	\$	96,655	\$	85,033	\$	77,861	\$	65,336	\$	61,940	\$	56,080
Service Cost		1,947		1,650		1,626		1,603		1,587		1,568
Interest Cost		6,521		5,714		5,239		4,409		4,207		3,816
Experience (Gains) / Losses		2,156		1,996		4,058		4,551		-		1,474
Assumption Changes		-		(216)		-		5,216		-		(109)
Plan Amendments		-		6,547		-		-		-		1,346
Benefit Payments <sup>2</sup>		(3,995)		(4,069)		(3,747)		(3,254)		(2,398)		(2,235)
Net Member Reassignment <sup>3</sup>		-		-		-		-		-		-
Other		-				(4)		-		-		
Net Change in Total Pension Liability		6,629		11,622		7,172		12,525		3,396		5,860
Total Pension Liability - End of Year	\$	103,284	\$	96,655	\$	85,033	\$	77,861	\$	65,336	\$	61,940
Fiduciary Net Position - Beginning of Year	\$	55,575	\$	52,792	\$	53,424	\$	54,507	\$	47,920	\$	27,689
Employer Contributions		3,014		1,486		1,440		1,063		1,174		19,443
Member Contributions		1,294		1,357		1,279		1,269		1,334		1,271
Net Investment Income / (Loss)		5,218		4,167		589		(34)		6,581		1,897
Benefit Payments <sup>2</sup>		(3,995)		(4,069)		(3,747)		(3,254)		(2,398)		(2,235)
Net Member Reassignment <sup>3</sup>		-		-		-		-		-		-
Administrative Expenses		(87)		(158)		(193)		(127)		(108)		(145)
Other										4		
Net Change in Fiduciary Net Position		5,444		2,783		(632)		(1,083)	. <u></u>	6,587		20,231
Fiduciary Net Position - End of Year	\$	61,019	\$	55,575	\$	52,792	\$	53,424	\$	54,507	\$	47,920
Net Pension Liability												
Total Pension Liability	\$	103,284	\$	96,655	\$	85,033	\$	77,861	\$	65,336	\$	61,940
Fiduciary Net Position		61,019		55,575		52,792		53,424		54,507		47,920
Net Pension Liability	\$	42,265	\$	41,080	\$	32,241	\$	24,437	\$	10,829	\$	14,020
Fiduciary Net Position as a Percentage of the Total Pension Liability		59.1 %	<b>%</b>	57.5	%	62.1	<b>%</b>	68.6	%	83.4	%	77.4 %
Covered Payroll <sup>4</sup>	\$	21,578	\$	22,635	\$	21,372	\$	21,145	\$	20,608	\$	18,805
Net Pension Liability as a Percentage of Covered Payroll		195.9 %	%	181.5	%	150.9	%	115.6	%	52.5	%	74.6 %

<sup>&</sup>lt;sup>1</sup>Information is not available prior to 2013. Additional years will be added until 10 years of historical data are shown.

<sup>&</sup>lt;sup>2</sup>Includes refunds of employee contributions.

<sup>&</sup>lt;sup>3</sup>Includes net interfund transfers.

<sup>&</sup>lt;sup>4</sup>2013 represents anticipated covered payroll.

## Required Supplementary Information (Unaudited), continued For the Year Ended June 30

### Schedules of Changes in Net Pension Liability and Net Pension Liability<sup>1</sup> Legislators' Defined Benefit Plan

Changes in Net Pension Liability	2018		2017		2016		2015		2014		2013
Total Pension Liability - Beginning of Year	\$ 3,804	\$	4,015	\$	4,325	\$	4,166	\$	4,285	\$	4,497
Service Cost	-		1		2		3		3		2
Interest Cost	245		258		280		269		277		291
Experience (Gains) / Losses	(85)		(113)		(233)		(68)		(36)		(140)
Assumption Changes	(121)		-		-		325		-		-
Plan Amendments	-		-		-		-		-		-
Benefit Payments <sup>2</sup>	(359)		(357)		(359)		(370)		(363)		(365)
Net Member Reassignment <sup>3</sup>	-		-		-		-		-		-
Other	-		-		-		-		-		-
Net Change in Total Pension Liability	 (320)		(211)		(310)		159		(119)		(212)
Total Pension Liability - End of Year	\$ 3,484	\$	3,804	\$	4,015	\$	4,325	\$	4,166	\$	4,285
Fiduciary Net Position - Beginning of Year	\$ 2,865	\$	2,919	\$	3,174	\$	3,489	\$	3,337	\$	3,385
Employer Contributions	237		135		138		131		138		150
Member Contributions	-		-		-		-		-		-
Net Investment Income / (Loss)	263		221		27		(5)		439		201
Benefit Payments <sup>2</sup>	(359)		(357)		(359)		(370)		(363)		(365)
Net Member Reassignment <sup>3</sup>	-		-		-		-		-		-
Administrative Expenses	(64)		(53)		(61)		(71)		(62)		(34)
Other									-		-
Net Change in Fiduciary Net Position	 77		(54)		(255)		(315)		152		(48)
Fiduciary Net Position - End of Year	\$ 2,942	\$	2,865	\$	2,919	\$	3,174	\$	3,489	\$	3,337
Net Pension Liability											
Total Pension Liability	\$ 3,484	\$	3,804	\$	4,015	\$	4,325	\$	4,166	\$	4,285
Fiduciary Net Position	2,942		2,865		2,919		3,174		3,489		3,337
Net Pension Liability	\$ 542	\$	939	\$	1,096	\$	1,151	\$	677	\$	948
Fiduciary Net Position as a Percentage of the Total Pension Liability	84.4 %	6	75.3 %	%	72.7 %	6	73.4 %	6	83.7	%	77.9 %
Covered Payroll <sup>4</sup>	N/A		N/A		N/A		N/A		N/A		N/A
Net Pension Liability as a Percentage of Covered Payroll <sup>4</sup>	N/A		N/A		N/A		N/A		N/A		N/A

<sup>&</sup>lt;sup>1</sup>Information is not available prior to 2013. Additional years will be added until 10 years of historical data are shown.

<sup>&</sup>lt;sup>2</sup>Includes refunds of employee contributions. <sup>3</sup>Includes net interfund transfers.

<sup>&</sup>lt;sup>4</sup>LE DB is a closed plan with no payroll.

# Required Supplementary Information (Unaudited), continued

#### **Schedule of Contributions**

(dollars in thousands)

For the Year Ended June 30	De	ctuarially etermined ntribution (ADC)		ntributions Relation to ADC¹		ontribution deficiency (Excess)	Contributions as a Percentage of ADC		Covered Payroll	Contributions as a Percentage of Covered Payroll
						PERF DB				
2018 <sup>2,3</sup>	\$	502,206	\$	571,099	\$	(68,893)	113.7 %	\$	5,083,131	11.2 %
2017 <sup>2,3</sup>		496,867		558,659		(61,792)	112.4		4,997,555	11.2
2016 <sup>2,3,4</sup>		492,000		547,684		(55,684)	111.3		4,868,709	11.2
2015 <sup>2,3</sup>		517,717		536,467		(18,750)	103.6		4,804,145	11.2
2014 <sup>2,3</sup>		528,562		519,576		8,986	98.3		4,896,635	10.6
2013 <sup>2</sup>		464,047		455,658		8,389	98.2		4,700,000	9.7
2012 <sup>2</sup>		449,388		397,843		51,545	88.5		4,550,000	8.7
2011 <sup>2</sup>		351,000		342,779		8,221	97.7		4,500,000	7.6
2010 <sup>2</sup>		329,731		331,090		(1,359)	100.4		4,800,000	6.9
2009 <sup>2</sup>		326,170		323,151		3,019	99.1		4,850,000	6.7
					•	TRF Pre-'96 [	)B			
20185	\$	922,068	\$	922,068	\$	-	100.0 %	\$	824,770	111.8 %
2017 <sup>5</sup>		875,525		875,525		-	100.0		912,685	95.9
2016⁵		892,548		892,548		-	100.0		989,093	90.2
2015⁵		851,427		851,427		-	100.0		1,074,827	79.2
20145		831,942		831,942		-	100.0		1,262,828	65.9
2013 <sup>5,6</sup>		1,013,080		1,013,080		-	100.0		1,383,428	73.2
2012 <sup>5</sup>		764,423		764,423		-	100.0		1,637,066	46.7
2011 <sup>5</sup>		748,978		748,978		_	100.0		1,762,750	42.5
2010		731,149		731,149		-	100.0		1,865,102	39.2
20095		706,366		706,366		_	100.0		2,030,484	34.8
		. 00,000		. 00,000		TRF '96 DB			_,000,.0.	00
2018 <sup>2,3</sup>	\$	210,586	\$	235,675	\$	(25,089)	111.9 %	\$	3,129,070	7.5 %
2017 <sup>2</sup>	*	198,444	,	227,207	*	(28,763)	114.5	*	3,020,463	7.5
2016 <sup>2</sup>		180,375		215,626		(35,251)	119.5		2,881,397	7.5
2015 <sup>2</sup>		178,260		205,763		(27,503)	115.4		2,742,187	7.5
2014 <sup>2</sup>		177,711		194,751		(17,040)	109.6		2,598,115	7.5
2013 <sup>2</sup>		167,311		180,714		(13,403)	108.0		2,442,496	7.4
2012 <sup>2</sup>		154,800		181,067		(26,267)	117.0		2,400,000	7.5
2011 <sup>2</sup>		135,057		166,633		(31,576)	123.4		2,225,000	7.5
2010 <sup>2</sup>		99,000		154,491		(55,491)	156.1		2,200,000	7.0
2009 <sup>2</sup>		125,330		147,425		(22,095)	117.6		2,075,000	7.1
						'77 Fund				
2018 <sup>2,3</sup>	\$	74,491	\$	147,074	\$	(72,583)	197.4 %	\$	842,179	17.5 %
2017 <sup>2,3</sup>		91,258		150,698		(59,440)	165.1		809,382	18.6
2016 <sup>2,3</sup>		113,438		151,299		(37,861)	133.4		771,949	19.6
2015 <sup>2,3</sup>		118,881		146,402		(27,521)	123.2		745,336	19.6
2014 <sup>2</sup>		103,425		140,119		(36,694)	135.5		710,581	19.7
2013 <sup>2</sup>		112,590		137,111		(24,521)	121.8		695,000	19.7
2012 <sup>2</sup>		132,549		135,605		(3,056)	102.3		690,000	19.7
2011 <sup>2</sup>		117,820		133,726		(15,906)	113.5		687,000	19.5
2010 <sup>2</sup>		94,135		130,775		(36,640)	138.9		670,000	19.5
2009 <sup>2,7</sup>		64,285		64,285		(,)	100.0		330,000	19.5

<sup>&</sup>lt;sup>1</sup>Contributions are from employers except for TRF Pre-<sup>1</sup>96 DB, which are predominantly from a nonemployer contributing entity.

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<sup>&</sup>lt;sup>2</sup>Actuarially determined contribution and covered payroll were adjusted to reflect actual covered payroll.

<sup>&</sup>lt;sup>3</sup>Contributions exclude specific financed liabilities.

<sup>&</sup>lt;sup>4</sup>For PERF DB in 2016, contributions exclude one-time payments of \$59.1 million and \$8.7 million.

<sup>&</sup>lt;sup>5</sup>The Actuarially Determined Contribution (ADC) matches the Contributions since the Contributions are the Nonemployer Contributing Entity Appropriation as determined by State Statute.

<sup>&</sup>lt;sup>6</sup>In FY2013, the State of Indiana contributed \$206,796 thousand in additional monies to TRF Pre-'96 DB.

<sup>&</sup>lt;sup>7</sup>Represents only a half year of activity.

# Required Supplementary Information (Unaudited), continued

### **Schedule of Contributions**

For the Year Ended June 30	Det Con	tuarially termined ntribution (ADC)		ntributions Relation to ADC <sup>1</sup>	D	ntribution eficiency Excess)	Contributions as a Percentage of ADC		Covered Payroll	Contributions as a Percentage of Covered Payroll
						JRS				
20188	\$	14,853	\$	15,117	\$	(264)	101.8 %	\$	53,350	28.3 %
20178		14,335		16,824		(2,489)	117.4		54,755	30.7
20168		17,485		16,946		539	96.9		51,382	33.0
2015 <sup>8</sup>		18,865		21,020		(2,155)	111.4		48,582	43.3
20148		27,648		20,895		6,753	75.6		46,041	45.4
20138,9		25,458		111,419		(85,961)	437.7		47,595	234.1
2012 <sup>8</sup>		19,664		18,896		768	96.1		45,138	41.9
2011 <sup>8</sup> 2010 <sup>8</sup>		18,910 16,077		19,200		(290)	101.5 115.9		45,764	42.0
				18,631		(2,554)			36,722	50.7
2009 <sup>8</sup>		16,131		20,861		(4,730) <b>EG&amp;C</b>	129.3		36,196	57.6
00402	Φ.	4.000	Φ.	C 475	Φ.		440.5.0/	Φ.	00 207	04.0.0
2018 <sup>2</sup>	\$	4,393	\$	6,175	\$	(1,782)	140.5 %	\$	29,387	21.0 %
20172		4,033		5,691		(1,658)	141.1		27,428	20.7
2016 <sup>2,10</sup>		4,078		5,297		(1,219)	129.9		25,526	20.8
2015 <sup>2</sup> 2014 <sup>2</sup>		4,820		5,215		(395)	108.2 100.3		25,133	20.7
2014 <sup>2</sup> 2013 <sup>2,10</sup>		5,341		5,359 19,740		(18)	411.8		25,825	20.8 80.0
2013 <sup>2</sup> , 3		4,794 4,556		•		(14,946)	110.9		24,675 24,300	20.8
2012 <sup>-</sup> 2011 <sup>2</sup>		4,336		5,054 5,197		(498) (1,085)	126.4		25,000	20.8
2011 <sup>2</sup>		4,112		5,197		(1,056)	125.1		25,300	20.8
2010 2009 <sup>2</sup>		5,294		5,294		(1,000)	100.0		25,500	20.8
2000		0,20 .		0,=0 .		PARF			_0,000	_0.0
2018 <sup>8</sup>	\$	2,533	\$	3,014	\$	(481)	119.0 %	\$	21,578	14.0 %
20178	*	2,148	*	1,486	*	662	69.2	*	22,635	6.6
20168		1,381		1,440		(59)	104.3		21,372	6.7
2015 <sup>8</sup>		1,419		1,063		356	74.9		21,145	5.0
2014 <sup>8</sup>		2,345		1,174		1,171	50.1		20,608	5.7
20138,11		2,542		19,443		(16,901)	764.9		18,805	103.4
2012 <sup>8</sup>		2,037		1,839		198	90.3		21,705	8.5
20118		1,960		170		1,790	8.7		18,082	0.9
20108		1,663		170		1,493	10.2		21,016	0.8
20098		1,340		170		1,170	12.7		20,782	0.8
						LE DB <sup>12</sup>				
2018	\$	237	\$	237	\$	-	100.0 %		N/A	N/A
2017		170		135		35	79.4		N/A	N/A
2016		138		138		- (10)	100.0		N/A	N/A
2015		119		131		(12)	110.1		N/A	N/A
2014		138		138		- (40)	100.0		N/A	N/A
2013		140		150		(10)	107.1		N/A	N/A
2012		113		112		1	99.1		N/A	N/A
2011		113		-		113	-		N/A	N/A
2010		63 45		100		63			N/A	N/A
2009		45		100		(55)	222.2		N/A	N/A

<sup>&</sup>lt;sup>1</sup>Contributions are from employers except for TRF Pre-'96 DB, which are predominantly from a nonemployer contributing entity.

<sup>2</sup>Actuarially determined contribution and covered payroll were adjusted to reflect actual payroll.

<sup>8</sup>Covered payroll represents anticipated covered payroll except for 6/30/2017, 6/30/2016, 6/30/2015 and 6/30/2014, which represents actual covered payroll.

<sup>9</sup>In FY2013, the State of Indiana contributed \$90,187 thousand in additional monies to JRS.

<sup>10</sup>The State of Indiana contributed \$70 thousand in FY2016 and \$14,619 thousand in FY2013 in additional monies to EG&C.

<sup>11</sup>In FY2013, the State of Indiana contributed \$17,363 thousand in additional monies to PARF.

<sup>12</sup>LE DB is a closed plan with no payroll.

# Required Supplementary Information (Unaudited), continued For the Year Ended June 30

# Schedule of Investment Returns<sup>1</sup> Annual Money-Weighted Rate of Return, Net of Investment Expense

Pension Trust Funds	2018	2017	2016	2015	2014	2013
PERF DB	9.33 %	7.60 %	1.11 %	0.32 %	12.33 %	5.79 %
TRF Pre-'96 DB	9.46	8.14	1.01	0.57	12.71	5.11
TRF '96 DB	9.28	8.14	1.01	0.57	12.71	5.11
'77 Fund	9.30	7.97	1.22	(0.07)	13.70	5.85
JRS	9.32	7.96	1.18	(0.06)	13.69	5.24
EG&C	9.30	7.97	1.17	(0.09)	13.69	5.48
PARF	9.31	7.94	1.10	(0.08)	13.70	4.84
LE DB	9.39	7.91	0.84	(0.13)	13.65	6.16
Total INPRS <sup>2</sup>	8.88	7.85	1.10	0.44	12.69	5.57

¹Information is not available prior to 2013. Additional years will be added until 10 years of historical data are shown. ²Rate of return includes PERF DC, TRF DC, LE DC, SDBF, and LPSPR.

Required Supplementary Information (Unaudited), continued For the Year Ended June 30

## Schedule of Notes to Required Supplementary Information

### Schedules of Changes in Net Pension Liability and Net Pension Liability

#### **Plan Amendments**

In 2018, there were no changes to the Plan that impacted the pension benefits during the fiscal year.

#### **Assumption Changes**

In 2018, the COLA assumption was changed due to passage of Senate Enrolled Act No. 373. In lieu of a 1.0% COLA beginning on January 1, 2020, INPRS now assumes that the COLA will be replaced by a thirteenth check for 2020 and 2021. The COLA assumption thereafter, would be 0.4% beginning on January 1, 2022, changing to 0.5% beginning on January 1, 2034, and ultimately 0.6% beginning on January 1, 2039.

#### Schedule of Contributions<sup>1</sup>

#### Methods and Assumptions Used in Calculating Actuarially Determined Contributions

The following actuarial methods and assumptions were used to determine the Actuarially Determined Contribution Rates for the Fiscal Year Ending June 30, 2017:

Description	PERF DB	TRF Pre- '96 DB	TRF '96 DB	'77 Fund	JRS	EG&C	PARF	LE DB		
Valuation Date: Assets		June 30, 2016								
Liabilities	where appro	June 30, 2015 - Member census data as of June 30, 2015 was used in the valuation and adjusted, where appropriate, to reflect changes between June 30, 2015 and June 30, 2016. Standard actuarial roll forward techniques were then used to project the total pension liability computed as of June 30, 2015 to the June 30, 2016 measurement date.								
Actuarial Cost Method (Funding)		Entry Age Normal (Level Percent of Payroll)  Traditional Unit Credit								
Actuarial Amortization Method for Unfunded Liability		Level Dollar								
Actuarial Amortization Period for Unfunded Liability	20 years, closed	5 years, closed	20 years, closed	30 years, open	2	0 years, clos	ed	5 years, closed		
Remaining Amortization Period in Years (Weighted) <sup>2</sup>	25	5	24	30 years, open	14	23	25	5		
Asset Valuation Method	Five-yea	r smoothing	of gains and	losses on the Fair	Value of ass	ets subject t	o a 20% cor	ridor		
Investment Rate of Return (Funding)		6.75%, includes inflation, and net of administrative and investment expenses								
Cost of Living Increases	1.00%	1.0	0%	2.00%	2.50%	1.00%	N/A	1.0%		
Future Salary Increases, including Inflation	2.50% - 4.25%	2.50% -	12.50%		2.50%		4.00%	2.25%		
Inflation	2.25%									

#### **Trends**

TRF Pre-'96 DB and LE DB are closed to new members and the population will continue to decline over time.

In accordance with statute for TRF Pre-'96 DB, the nonemployer contributing entity contributions increase three percent each year. In 2013, additional contributions were made in accordance with the 2012 House Enrolled Act No. 1376 to the following pension trust funds: TRF Pre-'96 DB - \$206,796 thousand, JRS - \$90,187 thousand, EG&C - \$14,619 thousand, and PARF - \$17,363 thousand.

In 2015, an experience study was performed resulting in an update to several assumptions. These assumption changes included a change in the mortality assumptions, retirement assumptions, withdrawal assumptions, disability assumptions, ASA annuitization assumptions (PERF DB, TRF Pre-'96 DB and TRF '96 DB only), dependent assumptions, future salary increase assumptions, inflation assumptions and COLA assumptions. For further details refer to the Actuarial Section of the CAFR.

In 2018, SEA 373 replaced the 1% COLA assumption for five funds (PERF DB, TRF Pre-'96, TRF '96, EG&C, LE DB) with a COLA of 0.40/0.50/0.60%, which lowered the actuarial accrued liabilities for those funds.

<sup>&</sup>lt;sup>1</sup>Differs from Note 7 schedule as this table is for funding purposes and Note 7 is for financial reporting purposes. The Actuarially Determined Contributions in a given year are determined based on the actuarial valuation dated two fiscal years prior (i.e., rates effective 7-1-16 are based on the 6-30-15 valuation).

<sup>2</sup>The remaining amortization period becomes 30 years, open when a plans reaches 100% funded status.

# Other Supplementary Schedules For the Year Ended June 30

# **Schedule of Administrative Expenses**

(dollars in thousands)	2018			2017		
Personnel Services						
Salaries and Wages	\$	13,616	\$	12,853		
Employee Benefits		6,131		5,822		
Temporary Services		1,221		1,669		
Total Personnel Services		20,968		20,344		
Professional Services						
Benefit Payment Processing Fees		2,319		2,984		
Consulting Services		2,254		2,583		
Actuarial Services		614		821		
Legal Services		263		209		
Recordkeeper Expenses		3,147				
Total Professional Services		8,597		6,597		
Information Technology Services						
Data Processing		2,411		2,271		
Software and Licenses		1,949		1,968		
Other Computer Services		1,919		2,214		
Total Information Technology Services		6,279		6,453		
Communications						
Postage		358		657		
Telephone		404		431		
Printing		133		186		
E-communications		71		165		
Total Communications		966		1,439		
<u>Miscellaneous</u>						
Depreciation and Amortization		1,055		1,970		
Office Rent and Expenses		496		853		
Memberships and Training		232		186		
Travel		132		137		
Equipment Rental		62		63		
Other Administrative Expenses		204		323		
Total Miscellaneous		2,181		3,532		
Total Administrative Expenses	\$	38,991	\$	38,365		

# Other Supplementary Schedules, continued For the Year Ended June 30

# **Schedule of Administrative Expenses - Vendors**

Vendor		2018	2	2017	Nature of Services
Voya Institutional Plan Services LLC	\$	4,006	06 \$ 249		Recordkeeper Services
Conduent HR Services LLC		1,967		3,634	Recordkeeper Services
Bluelock LLC		1,894		1,753	Servers - Offsite
iLab LLC	1,564 1,871		1,871	Quality Assurance	
Cherry Road		1,108		1,230	INPAS Pension System Support
Oracle		785		962	EBS Support
Mythics		664		446	Oracle Support
Indiana Office of Technology		559		635	Desktop & Network Services, Software
RSM US LLP		432		385	Auditing Services
Level 3 Communications LLC		362		414	Telephones
Guidesoft Inc.		467		389	Third Party Contractors
PricewaterhouseCoopers LLP		322		666	Actuarial Services
JLL Property Management		284		542	Property Management
Cavanaugh Macdonald Consulting LLC		243		-	Actuarial Services
Service Now		170		169	IT Desktop Support Software
Paganelli Law Group LLC		160		142	Legal Services
Brown & Brown Of Indiana Inc.		141		136	Insurance
Loyalty Research Center		92		86	Research Services
Omkar N Markand		84		69	Medical Consulting
Ice Miller LLP		78		56	Legal Services
Indiana State Personnel Department		76		73	HR Shared Services
Gartner Inc.		69		67	IT Project Research & Advisory Services
Allclear ID, Inc.		64		64	Identity Theft Protection Services
Fineline Printing Group		57		78	Printing
Glenroy Construction Company Inc.		54		105	Building Renovations
Enterprise Rent-A-Car		53		53	Car Rental Services
United States Postal Service		50		271	Postage
Nyhart		49		155	Actuarial Services
Cvent Inc.		47		46	Scheduling Application for Retirements
CEM Benchmarking Inc.		45		45	Benchmarking Services
Automatic Data Processing, Inc.		44		46	Payroll Processing Services
Ricoh USA Inc.		37		40	Printer & Copier Lease
Business Furniture LLC		35		5	Office Furniture
Pidalia		34		-	Expanded DB Services
Advisa		33		12	Training / HR Consulting
DLT Solutions		31		32	Software for Database Dev. & Administration
Audit Command Language Services Ltd		29		91	Risk Management Software and Licenses
Looker Data Sciences Inc.		27		-	Data Analytics & Reporting Software
University Of Indianapolis		26		1	Training
Navex Global Inc.		26		25	Governance, Risk, Compliance Software
Avio Consulting		25		-	Cloud Services
Lexisnexis A Division Of Reed Elsevier Inc.		23		20	Information & Risk Management Services
Westcomm Inc.		21		22	Publishing Services
		20		98	Business Continuity & Disaster Recovery

# Other Supplementary Schedules, continued For the Year Ended June 30

# Schedule of Administrative Expenses - Vendors, continued

Vendor	2018		:	2017	Nature of Services
Pitney Bowes Global Financial Services LLC	\$	18	\$	17	Postage
Winklevoss Technologies LLC		18		18	Software for Pensions
Appextremes LLC DBA Conga		18		_	Cloud-based Reporting
Saltstack Inc.		17		17	Software Configuration & Management
Bonfire Training		16		-	Training
Callan LLC		15		-	Defined Contribution Consulting Firm
State Commission on Public Records Micrographics		14		7	Record Retention & Document Imaging
Rook Security LLC		14		10	IT Security Services
Orion Development Group		14		-	Training / Consulting
Phire Inc.		13		13	Application Change Management
Staples Advantage		12		14	Office Supplies
Moser Consulting Inc.		11		-	IT Consulting
McLagan Partners Inc.		11		5	Compensation & Performance Consultant
Insightsoftware.Com Inc.		10		34	Financial Reporting Software
Boardeffect LLC		10		10	Board of Directors Portal
The Remi Group LLC		8		7	Contract Management Services
Wright Express FSC		8		9	Travel Expense
Delivra Inc.		8		-	Email Marketing Automation
Briljent		8		12	Training
Serena Software Inc.		8		-	IT Management Products
Iron Mountain		7		5	Data & Records Management
Safari Books Online LLC		7		6	Training & Research Materials
Towers Watson Delaware Inc.		5		33	Human Resources Consulting
Dell Marketing LP		3		21	Computers & Printers
Sensory Technologies		1		11	Digital Signage, Video Conferencing
Momentum LLC		-		59	Employment Agency - IT
Airvan Consulting LLC		-		49	Survey Services
IBM Corporation		-		37	Filenet
Microsoft		-		37	Software
SC International LTD		-		29	Actuary Staffing
Novatus Inc.		-		17	Contract Management Services
Flashpoint Inc.		-		16	HR Consulting Training
Other		336		375	-
Total	16,9	967		16,051	
Personnel Services	20,9	969		20,344	
Depreciation and Amortization	1,0	055		1,970	
Total Administrative Expenses	\$ 38,	991_	\$	38,365	

## Other Supplementary Schedules, continued For the Year Ended June 30

# **Schedule of Direct Investment Expenses**

Investment Management Fees'         \$ 189,216         \$ 186,000           Securities Lending Fees         825         618           General Investment Expenses         Investment Consultants:           Verus (formerly Wurts)         653         620           TorreyCove         575         575           Aksia         450         450           Mercer         350         335           Capital Cities         85         85           MSCI/ISS         63         61           Other         172         50           Total Investment Consultants         2,348         2,176           Investment Custodian (BNY Mellon)         1,348         1,437           Broker Commissions:         ************************************	(dollars in thousands)	2018	2017
Investment Consultants:   Verus (formerly Wurts)   653   620     TorreyCove   575   575     Aksia   450   450     Mercer   350   335     Capital Cities   85   85     MSCI/ISS   63   61     Other   172   50     Total Investment Consultants   2,348   2,176     Investment Custodian (BNY Mellon)   1,348   1,437     Broker Commissions:   Worgan Stanley & Co. Inc.   1,025   993     Goldman Sachs & Co.   612   653     Newedge USA LLC   471   457     Merriill Lynch International   100   80     Pershing LLC, Jersey City   96   131     J.P. Morgan Clearing Corp, New York   95   37     J P Morgan Secs LTD, London   89   70     Merrill Lynch Pierce Fenner Smith Inc.   82   209     Instinet Europe Limited, London   69   78     Hsbc Securities (USA) Inc, New York   51   18     Credit Suisse, New York   42   312     Jefferies & Co. Inc., New York   50   111     Sanford C. Bernstein & Co.   26   87     Other Brokers   1,256   1,162     Total Broker Commissions   4,064   4,218     Investment Recordkeeper Fees (Conduent)   4,109   6,296     Investment Staff Expenses   2,278   2,380     Investment Administrative Expenses:   8     Bloomberg   179   179     Foster Pepper LLC   234   142     Ice Miller LLP   40   58     Pertrac   47   45     Other   181   148     Total Investment Administrative Expenses   1,074   955     Total General Investment Expenses   1,074   955     Total General Investment Expenses   15,221   17,462	Investment Management Fees <sup>1</sup>	\$ 189,21	6 \$ 186,000
Investment Consultants:   Verus (formerly Wurts)   653   620     TorreyCove   575   575     Aksia   450   450     Mercer   350   335     Capital Cities   85   85     MSCI/ISS   63   61     Other   172   50     Total Investment Consultants   2,348   2,176     Investment Custodian (BNY Mellon)   1,348   1,437     Broker Commissions:   Worgan Stanley & Co. Inc.   1,025   993     Goldman Sachs & Co.   612   653     Newedge USA LLC   471   457     Merriill Lynch International   100   80     Pershing LLC, Jersey City   96   131     J.P. Morgan Clearing Corp, New York   95   37     J.P. Morgan Secs LTD, London   89   70     Merrill Lynch Pierce Fenner Smith Inc.   82   209     Instinet Europe Limited, London   69   78     Hsbc Securities (USA) Inc, New York   51   18     Credit Suisse, New York   42   132     Jefferies & Co. Inc., New York   50   111     Sanford C. Bernstein & Co.   26   87     Other Brokers   1,256   1,162     Total Broker Commissions   4,064   4,218     Investment Recordkeeper Fees (Conduent)   4,109   6,296     Investment Staff Expenses   2,278   2,380     Investment Administrative Expenses:     Barra   393   383     Bloomberg   179   179     Foster Pepper LLC   234   142     Lee Miller LLP   40   58     Pertrac   47   45     Other   181   148     Total Investment Administrative Expenses   1,074   955     Total General Investment Expenses   15,221   17,462     Total General Investment Expense	Securities Lending Fees	82	618
Verus (formerly Wurts)         653         620           TorreyCove         575         575           Aksia         450         450           Mercer         350         335           Capital Cities         85         85           MSCI/ISS         63         61           Other         1722         50           Total Investment Consultants         2,348         2,176           Investment Custodian (BNY Mellon)         1,348         1,437           Broker Commissions:         ***         ***           Morgan Stanley & Co. Inc.         1,025         993           Goldman Sachs & Co.         612         653           Newedge USA LLC         471         457           Merriill Lynch International         100         80           Pershing LLC, Jersey City         96         131           J.P. Morgan Clearing Corp, New York         95         37           J P Morgan Secs LTD, London         89         70           Merriill Lynch Pierce Fenner Smith Inc.         82         209           Instinct Europe Limited, London         69         78           Hsbc Securities (USA) Inc, New York         51         18           Credit Suisse, New	General Investment Expenses		
TorreyCove         575         575           Aksia         450         450           Mercer         350         335           Capital Cities         85         85           MSCI/ISS         63         61           Other         1722         50           Total Investment Consultants         2,348         2,176           Investment Custodian (BNY Mellon)         1,348         1,437           Broker Commissions:         ***         ***           Morgan Stanley & Co. Inc.         1,025         993           Goldman Sachs & Co.         612         653           Newedge USA LLC         471         457           Merriill Lynch International         100         80           Pershing LLC, Jersey City         96         131           J.P. Morgan Clearing Corp, New York         95         37           J.P. Morgan Secs LTD, London         89         70           Merriill Lynch Pierce Fenner Smith Inc.         82         209           Instinat Europe Limited, London         69         78           Hsbc Securities (USA) Inc, New York         51         18           Credit Suisse, New York         50         111           Sanford C. Bernste	Investment Consultants:		
Aksia         450         450           Mercer         350         335           Capital Cities         85         85           MSCI/ISS         63         61           Other         172         50           Total Investment Consultants         2,348         2,176           Investment Custodian (BNY Mellon)         1,348         1,437           Broker Commissions:             Morgan Stanley & Co. Inc.         1,025         993           Goldman Sachs & Co.         612         653           Newedge USA LLC         471         457           Merriill Lynch International         100         80           Pershing LLC, Jersey City         96         131           J.P. Morgan Clearing Corp, New York         95         37           J P Morgan Secs LTD, London         89         70           Merriill Lynch Pierce Fenner Smith Inc.         82         209           Instinet Europe Limited, London         69         78           Hsbc Securities (USA) Inc, New York         51         18           Credit Suisse, New York         42         132           Jefferies & Co. Inc., New York         50         111           S	Verus (formerly Wurts)	65	620
Mercer         350         335           Capital Cities         85         85           MSCI/ISS         63         61           Other         172         50           Total Investment Consultants         2,348         2,176           Investment Custodian (BNY Mellon)         1,348         1,437           Broker Commissions:	TorreyCove	57	5 575
Capital Cities         85         85           MSCI/ISS         63         61           Other         172         50           Total Investment Consultants         2,348         2,176           Investment Custodian (BNY Mellon)         1,348         1,437           Broker Commissions:         Were Commissions:         30           Morgan Stanley & Co. Inc.         1,025         993           Goldman Sachs & Co.         612         653           Newedge USA LLC         471         457           Merrill Lynch International         100         80           Pershing LLC, Jersey City         96         131           J.P. Morgan Clearing Corp, New York         95         37           J P Morgan Secs LTD, London         89         70           Merrill Lynch Pierce Fenner Smith Inc.         82         209           Instinet Europe Limited, London         69         78           Hsbc Securities (USA) Inc, New York         51         18           Credit Suisse, New York         51         18           Credit Suisse, New York         50         111           Sanford C. Bernstein & Co.         26         87           Other Brokers         1,256         1,162	Aksia	45	50 450
MSCI/ISS         63         61           Other         172         50           Total Investment Consultants         2,348         2,176           Investment Custodian (BNY Mellon)         1,348         1,437           Broker Commissions:         ***         ***           Morgan Stanley & Co. Inc.         1,025         993           Goldman Sachs & Co.         612         653           Newedge USA LLC         471         457           Merriill Lynch International         100         80           Pershing LLC, Jersey City         96         131           J.P. Morgan Clearing Corp, New York         95         37           J P Morgan Secs LTD, London         89         70           Merrill Lynch Pierce Fenner Smith Inc.         82         209           Instinet Europe Limited, London         69         78           Hsbc Securities (USA) Inc, New York         51         18           Credit Suisse, New York         42         132           Jefferies & Co. Inc., New York         50         111           Sanford C. Bernstein & Co.         26         87           Other Brokers         1,256         1,162           Total Broker Commissions         4,064 <t< td=""><td>Mercer</td><td>35</td><td>335</td></t<>	Mercer	35	335
Other         172         50           Total Investment Consultants         2,348         2,176           Investment Custodian (BNY Mellon)         1,348         1,437           Broker Commissions:	Capital Cities	8	85 85
Total Investment Consultants         2,348         2,176           Investment Custodian (BNY Mellon)         1,348         1,437           Broker Commissions:	MSCI/ISS	6	61
Investment Custodian (BNY Mellon)	Other	17	<u></u>
Broker Commissions:         1,025         993           Goldman Sachs & Co.         612         653           Newedge USA LLC         471         457           Merriill Lynch International         100         80           Pershing LLC, Jersey City         96         131           J.P. Morgan Clearing Corp, New York         95         37           J.P. Morgan Secs LTD, London         89         70           Merrill Lynch Pierce Fenner Smith Inc.         82         209           Instinet Europe Limited, London         69         78           Hsbc Securities (USA) Inc, New York         51         18           Credit Suisse, New York         51         18           Credit Suisse, New York         50         111           Sanford C. Bernstein & Co.         26         87           Other Brokers         1,256         1,162           Total Broker Commissions         4,064         4,218           Investment Recordkeeper Fees (Conduent)         4,109         6,296           Investment Administrative Expenses:         2,278         2,380           Bloomberg         179         179           Foster Pepper LLC         234         142           Ice Miller LLP         40 <td>Total Investment Consultants</td> <td>2,34</td> <td>2,176</td>	Total Investment Consultants	2,34	2,176
Morgan Stanley & Co. Inc.         1,025         993           Goldman Sachs & Co.         612         653           Newedge USA LLC         471         457           Merrill Lynch International         100         80           Pershing LLC, Jersey City         96         131           J.P. Morgan Clearing Corp, New York         95         37           J P Morgan Secs LTD, London         89         70           Merrill Lynch Pierce Fenner Smith Inc.         82         209           Instinet Europe Limited, London         69         78           Hsbc Securities (USA) Inc, New York         51         18           Credit Suisse, New York         42         132           Jefferies & Co. Inc., New York         50         111           Sanford C. Bernstein & Co.         26         87           Other Brokers         1,256         1,162           Total Broker Commissions         4,064         4,218           Investment Recordkeeper Fees (Conduent)         4,109         6,296           Investment Administrative Expenses:         2,278         2,380           Bloomberg         179         179           Foster Pepper LLC         234         142           Ice Miller LLP	Investment Custodian (BNY Mellon)	1,34	1,437
Goldman Sachs & Co.         612         653           Newedge USA LLC         471         457           Merriill Lynch International         100         80           Pershing LLC, Jersey City         96         131           J.P. Morgan Clearing Corp, New York         95         37           J P Morgan Secs LTD, London         89         70           Merrill Lynch Pierce Fenner Smith Inc.         82         209           Instinet Europe Limited, London         69         78           Hsbc Securities (USA) Inc, New York         51         18           Credit Suisse, New York         42         132           Jefferies & Co. Inc., New York         50         111           Sanford C. Bernstein & Co.         26         87           Other Brokers         1,256         1,162           Total Broker Commissions         4,064         4,218           Investment Recordkeeper Fees (Conduent)         4,109         6,296           Investment Staff Expenses         2,278         2,380           Investment Administrative Expenses:         393         383           Bloomberg         179         179           Foster Pepper LLC         234         142           Ice Miller LLP	Broker Commissions:		
Newedge USA LLC         471         457           Merrill Lynch International         100         80           Pershing LLC, Jersey City         96         131           J.P. Morgan Clearing Corp, New York         95         37           J P Morgan Secs LTD, London         89         70           Merrill Lynch Pierce Fenner Smith Inc.         82         209           Instinet Europe Limited, London         69         78           Hsbc Securities (USA) Inc, New York         51         18           Credit Suisse, New York         42         132           Jefferies & Co. Inc., New York         50         111           Sanford C. Bernstein & Co.         26         87           Other Brokers         1,256         1,162           Total Broker Commissions         4,064         4,218           Investment Recordkeeper Fees (Conduent)         4,109         6,296           Investment Staff Expenses         2,278         2,380           Investment Administrative Expenses:         393         383           Bloomberg         179         179           Foster Pepper LLC         234         142           Ice Miller LLP         40         58           Pertrac         47	Morgan Stanley & Co. Inc.	1,02	993
Merrill Lynch International         100         80           Pershing LLC, Jersey City         96         131           J.P. Morgan Clearing Corp, New York         95         37           J P Morgan Secs LTD, London         89         70           Merrill Lynch Pierce Fenner Smith Inc.         82         209           Instinet Europe Limited, London         69         78           Hsbc Securities (USA) Inc, New York         51         18           Credit Suisse, New York         42         132           Jefferies & Co. Inc., New York         50         111           Sanford C. Bernstein & Co.         26         87           Other Brokers         1,256         1,162           Total Broker Commissions         4,064         4,218           Investment Recordkeeper Fees (Conduent)         4,109         6,296           Investment Staff Expenses         2,278         2,380           Investment Administrative Expenses:         393         383           Bloomberg         179         179           Foster Pepper LLC         234         142           Ice Miller LLP         40         58           Pertrac         47         45           Other         181         1	Goldman Sachs & Co.	61	2 653
Pershing LLC, Jersey City         96         131           J.P. Morgan Clearing Corp, New York         95         37           J P Morgan Secs LTD, London         89         70           Merrill Lynch Pierce Fenner Smith Inc.         82         209           Instinet Europe Limited, London         69         78           Hsbc Securities (USA) Inc, New York         51         18           Credit Suisse, New York         42         132           Jefferies & Co. Inc., New York         50         111           Sanford C. Bernstein & Co.         26         87           Other Brokers         1,256         1,162           Total Broker Commissions         4,064         4,218           Investment Recordkeeper Fees (Conduent)         4,109         6,296           Investment Staff Expenses         2,278         2,380           Investment Administrative Expenses:         393         383           Bloomberg         179         179           Foster Pepper LLC         234         142           Ice Miller LLP         40         58           Pertrac         47         45           Other         181         148           Total General Investment Expenses         15,221	Newedge USA LLC	47	1 457
J.P. Morgan Clearing Corp, New York       95       37         J P Morgan Secs LTD, London       89       70         Merrill Lynch Pierce Fenner Smith Inc.       82       209         Instinet Europe Limited, London       69       78         Hsbc Securities (USA) Inc, New York       51       18         Credit Suisse, New York       42       132         Jefferies & Co. Inc., New York       50       111         Sanford C. Bernstein & Co.       26       87         Other Brokers       1,256       1,162         Total Broker Commissions       4,064       4,218         Investment Recordkeeper Fees (Conduent)       4,109       6,296         Investment Staff Expenses       2,278       2,380         Investment Administrative Expenses:       393       383         Bloomberg       179       179         Foster Pepper LLC       234       142         Ice Miller LLP       40       58         Pertrac       47       45         Other       181       148         Total General Investment Expenses       1,074       955	Merriill Lynch International	10	00 80
J P Morgan Secs LTD, London       89       70         Merrill Lynch Pierce Fenner Smith Inc.       82       209         Instinet Europe Limited, London       69       78         Hsbc Securities (USA) Inc, New York       51       18         Credit Suisse, New York       42       132         Jefferies & Co. Inc., New York       50       111         Sanford C. Bernstein & Co.       26       87         Other Brokers       1,256       1,162         Total Broker Commissions       4,064       4,218         Investment Recordkeeper Fees (Conduent)       4,109       6,296         Investment Staff Expenses       2,278       2,380         Investment Administrative Expenses:       393       383         Bloomberg       179       179         Foster Pepper LLC       234       142         Ice Miller LLP       40       58         Pertrac       47       45         Other       181       148         Total Investment Administrative Expenses       1,074       955         Total General Investment Expenses       15,221       17,462	Pershing LLC, Jersey City	g	131
Merrill Lynch Pierce Fenner Smith Inc.       82       209         Instinet Europe Limited, London       69       78         Hsbc Securities (USA) Inc, New York       51       18         Credit Suisse, New York       42       132         Jefferies & Co. Inc., New York       50       111         Sanford C. Bernstein & Co.       26       87         Other Brokers       1,256       1,162         Total Broker Commissions       4,064       4,218         Investment Recordkeeper Fees (Conduent)       4,109       6,296         Investment Staff Expenses       2,278       2,380         Investment Administrative Expenses:       393       383         Bloomberg       179       179         Foster Pepper LLC       234       142         Ice Miller LLP       40       58         Pertrac       47       45         Other       181       148         Total Investment Administrative Expenses       1,074       955         Total General Investment Expenses       15,221       17,462	J.P. Morgan Clearing Corp, New York	g	95 37
Instinet Europe Limited, London       69       78         Hsbc Securities (USA) Inc, New York       51       18         Credit Suisse, New York       42       132         Jefferies & Co. Inc., New York       50       111         Sanford C. Bernstein & Co.       26       87         Other Brokers       1,256       1,162         Total Broker Commissions       4,064       4,218         Investment Recordkeeper Fees (Conduent)       4,109       6,296         Investment Staff Expenses       2,278       2,380         Investment Administrative Expenses:       393       383         Bloomberg       179       179         Foster Pepper LLC       234       142         Ice Miller LLP       40       58         Pertrac       47       45         Other       181       148         Total Investment Administrative Expenses       1,074       955         Total General Investment Expenses       15,221       17,462	J P Morgan Secs LTD, London	8	70
Hsbc Securities (USA) Inc, New York       51       18         Credit Suisse, New York       42       132         Jefferies & Co. Inc., New York       50       111         Sanford C. Bernstein & Co.       26       87         Other Brokers       1,256       1,162         Total Broker Commissions       4,064       4,218         Investment Recordkeeper Fees (Conduent)       4,109       6,296         Investment Staff Expenses       2,278       2,380         Investment Administrative Expenses:       393       383         Bloomberg       179       179         Foster Pepper LLC       234       142         Ice Miller LLP       40       58         Pertrac       47       45         Other       181       148         Total Investment Administrative Expenses       1,074       955         Total General Investment Expenses       15,221       17,462	Merrill Lynch Pierce Fenner Smith Inc.	8	209
Credit Suisse, New York       42       132         Jefferies & Co. Inc., New York       50       111         Sanford C. Bernstein & Co.       26       87         Other Brokers       1,256       1,162         Total Broker Commissions       4,064       4,218         Investment Recordkeeper Fees (Conduent)       4,109       6,296         Investment Staff Expenses       2,278       2,380         Investment Administrative Expenses:       393       383         Bloomberg       179       179         Foster Pepper LLC       234       142         Ice Miller LLP       40       58         Pertrac       47       45         Other       181       148         Total Investment Administrative Expenses       1,074       955         Total General Investment Expenses       15,221       17,462	Instinet Europe Limited, London	6	59 78
Jefferies & Co. Inc., New York       50       111         Sanford C. Bernstein & Co.       26       87         Other Brokers       1,256       1,162         Total Broker Commissions       4,064       4,218         Investment Recordkeeper Fees (Conduent)       4,109       6,296         Investment Staff Expenses       2,278       2,380         Investment Administrative Expenses:       393       383         Bloomberg       179       179         Foster Pepper LLC       234       142         Ice Miller LLP       40       58         Pertrac       47       45         Other       181       148         Total Investment Administrative Expenses       1,074       955         Total General Investment Expenses       15,221       17,462	Hsbc Securities (USA) Inc, New York	5	51 18
Sanford C. Bernstein & Co.       26       87         Other Brokers       1,256       1,162         Total Broker Commissions       4,064       4,218         Investment Recordkeeper Fees (Conduent)       4,109       6,296         Investment Staff Expenses       2,278       2,380         Investment Administrative Expenses:       393       383         Bloomberg       179       179         Foster Pepper LLC       234       142         Ice Miller LLP       40       58         Pertrac       47       45         Other       181       148         Total Investment Administrative Expenses       1,074       955         Total General Investment Expenses       15,221       17,462	Credit Suisse, New York	4	2 132
Other Brokers         1,256         1,162           Total Broker Commissions         4,064         4,218           Investment Recordkeeper Fees (Conduent)         4,109         6,296           Investment Staff Expenses         2,278         2,380           Investment Administrative Expenses:         393         383           Bloomberg         179         179           Foster Pepper LLC         234         142           Ice Miller LLP         40         58           Pertrac         47         45           Other         181         148           Total Investment Administrative Expenses         1,074         955           Total General Investment Expenses         15,221         17,462	Jefferies & Co. Inc., New York	5	50 111
Total Broker Commissions       4,064       4,218         Investment Recordkeeper Fees (Conduent)       4,109       6,296         Investment Staff Expenses       2,278       2,380         Investment Administrative Expenses:       393       383         Bloomberg       179       179         Foster Pepper LLC       234       142         Ice Miller LLP       40       58         Pertrac       47       45         Other       181       148         Total Investment Administrative Expenses       1,074       955         Total General Investment Expenses       15,221       17,462	Sanford C. Bernstein & Co.	2	26 87
Investment Recordkeeper Fees (Conduent)       4,109       6,296         Investment Staff Expenses       2,278       2,380         Investment Administrative Expenses:       393       383         Bloomberg       179       179         Foster Pepper LLC       234       142         Ice Miller LLP       40       58         Pertrac       47       45         Other       181       148         Total Investment Administrative Expenses       1,074       955         Total General Investment Expenses       15,221       17,462	Other Brokers	1,25	1,162
Investment Staff Expenses         2,278         2,380           Investment Administrative Expenses:         393         383           Bloomberg         179         179           Foster Pepper LLC         234         142           Ice Miller LLP         40         58           Pertrac         47         45           Other         181         148           Total Investment Administrative Expenses         1,074         955           Total General Investment Expenses         15,221         17,462	Total Broker Commissions	4,06	4,218
Investment Administrative Expenses:       393       383         Bloomberg       179       179         Foster Pepper LLC       234       142         Ice Miller LLP       40       58         Pertrac       47       45         Other       181       148         Total Investment Administrative Expenses       1,074       955         Total General Investment Expenses       15,221       17,462	Investment Recordkeeper Fees (Conduent)	4,10	9 6,296
Barra       393       383         Bloomberg       179       179         Foster Pepper LLC       234       142         Ice Miller LLP       40       58         Pertrac       47       45         Other       181       148         Total Investment Administrative Expenses       1,074       955         Total General Investment Expenses       15,221       17,462	Investment Staff Expenses	2,27	2,380
Barra       393       383         Bloomberg       179       179         Foster Pepper LLC       234       142         Ice Miller LLP       40       58         Pertrac       47       45         Other       181       148         Total Investment Administrative Expenses       1,074       955         Total General Investment Expenses       15,221       17,462	Investment Administrative Expenses:		
Foster Pepper LLC         234         142           Ice Miller LLP         40         58           Pertrac         47         45           Other         181         148           Total Investment Administrative Expenses         1,074         955           Total General Investment Expenses         15,221         17,462	•	39	383
Ice Miller LLP         40         58           Pertrac         47         45           Other         181         148           Total Investment Administrative Expenses         1,074         955           Total General Investment Expenses         15,221         17,462	Bloomberg	17	9 179
Ice Miller LLP         40         58           Pertrac         47         45           Other         181         148           Total Investment Administrative Expenses         1,074         955           Total General Investment Expenses         15,221         17,462	Foster Pepper LLC	23	142
Other         181         148           Total Investment Administrative Expenses         1,074         955           Total General Investment Expenses         15,221         17,462		4	.0 58
Total Investment Administrative Expenses1,074955Total General Investment Expenses15,22117,462	Pertrac	4	7 45
Total General Investment Expenses 15,221 17,462	Other	18	148
	Total Investment Administrative Expenses	1,07	<u>'4</u> 955
Total Direct Investment Expenses \$ 205,262 \$ 204,080	Total General Investment Expenses	15,22	17,462
	Total Direct Investment Expenses	\$ 205,26	\$ 204,080

<sup>&</sup>lt;sup>1</sup>A complete list of investment professionals that have provided services to INPRS can be found beginning on page 137 of the Investment Section.

# **Investment Section**



# **2018 COMPREHENSIVE ANNUAL FINANCIAL REPORT**For the Fiscal Year Ended June 30, 2018

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**Investment Summary** 

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117	Asset Allocation Summary: June 30,
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### Report on Investment Activities



August 6, 2018

**Board of Trustees** Indiana Public Retirement System One North Capitol Avenue Indianapolis, IN 46204

### Dear Trustees:

Verus is pleased to provide the Board of Trustees of the Indiana Public Retirement System (INPRS) with an overview of the market environment, an update on performance, and a summary of recent developments for the fiscal year ended June 30, 2018.

## **Investment Landscape**

The dominant theme from the end of fiscal year 2017 was one of synchronized global growth; this trend continued into fiscal year 2018. While on an absolute basis, global growth has been stronger during other cycles, the fact that every major economy experienced strengthening growth rates at roughly the same time proved to be a powerful tailwind for markets to start the fiscal year.

While there were periods of heightened volatility stemming from geopolitical risk in the Korean Peninsula, the market largely shrugged off these concerns and the low volatility positive momentum environment continued. The labor market in the U.S. continued to strengthen as U3 unemployment hit 4.2 percent, its lowest level since March of 2001. In Europe, third guarter real GDP grew at 2.6 percent, its fastest pace since 2011. Business and consumer sentiment improved, as did earnings growth rates across equity markets. For the quarter ending September 30, 2017, U.S. large cap stocks returned 4.5 percent, small cap stocks returned 5.7 percent, international developed market stocks returned 5.4 percent, and emerging market equities were up 7.9 percent.

The Federal Reserve continued its steady path normalizing interest rates with a third increase in calendar 2017 culminating in a fed funds target rate of 1.5 percent in December. By June 2018 the Fed had raised interest rates twice more, targeting a fed funds rate of 2 percent. Despite slightly higher inflation expectations, the long end of the curve remained relatively anchored, resulting in a very flat yield curve environment. During the fourth quarter the Fed also began reducing the size of its balance sheet, approximately \$30 billion in Treasuries and mortgage-backed securities were trimmed during the quarter.

While the Fed's monetary policy continued in a hawkish manner, Congress took steps to support the expansion by passing a major overhaul to the U.S. tax system, signed into law by President Trump in December. The most widely publicized aspect of the bill was lowering the statutory tax rate for corporations from 35 percent to 21 percent. The passing of this legislation provided a

### Report on Investment Activities, continued

further boon to equity earnings (both realized and forward-looking estimates) heading into 2018, leading to an almost-parabolic rally in January.

Sentiment in markets took an abrupt shift in February; the sell-off in equities led to the largest-ever one-day change in the VIX. Somewhat ironically, the widely accepted narrative surrounding this sell-off was a stronger-than-expected wage growth print that led to concerns that higher inflation may lead to further tightening by the Fed. The sell-off was also likely exacerbated by the growth in popularity of volatility-selling strategies. The net impact of this was that global stock markets were down between 1-2 percent during the third quarter, the exception being emerging market equities, which were up 1.2 percent. The increase in intra-quarter volatility was a U.S. focused event rather than a global phenomenon; volatility remained relatively benign in international developed and emerging markets.

International trade took center-stage towards the end of the fiscal year. The Trump Administration enacted a 25 percent tariff on steel and a 10 percent tariff on aluminum which went into effect in March. While trade re-negotiations were initially proposed as broad-based, many U.S. trade partners were exempted, and the issue evolved into a more focused U.S.-China trade dispute. The actions of both governments did little to quell fears of a global trade war igniting; we view the relative amounts of current and proposed tariffs as less consequential to the overall economy than the risk of escalation or the knock-on effects on investor sentiment.

During the final quarter of the fiscal year there was a strong divergence in performance across equity markets; while the Russell 3000 (U.S stocks) gained 3.9 percent, international developed markets lost 1.1 percent and emerging markets depreciated 7.8 percent. The sell-off in emerging markets was driven by the ongoing trade war fears, weaker oil prices, and a stronger U.S. dollar.

#### Plan Performance<sup>1</sup>

The INPRS Consolidated Defined Benefit investment portfolio (the Portfolio) earned a 9.3 percent return net of fees for the fiscal year ending June 30, 2018. This return outperformed the policy target index² return by 1.0 percent and the long-term actuarial assumed return of 6.75 percent, by 2.6 percent. Portfolio risk as measured by standard deviation, remained relatively consistent during the year, falling from 7.3 percent at the beginning of the fiscal year to 6.7 percent in June. Total portfolio active risk remained below 2.0 percent, hovering consistently around 1.0 percent throughout fiscal year 2018.

The continued positive momentum in risk markets during the fiscal year led to strong performance; while all asset classes generated positive absolute returns, public and private equity, commodities, and real estate generated double-digit returns. On a relative basis, all asset class composites exceeded their respective benchmarks. The fixed income ex inflation-linked portfolio returned 1.2 percent, outperforming the benchmark by 0.2 percent. The public equity strategies returned 11.7

<sup>&</sup>lt;sup>1</sup>Rates of return are net of fees and based on calculations made by the System's custodian, Bank of New York Mellon, and are presented using a time weighted rate of return methodology based upon fair value.

<sup>&</sup>lt;sup>2</sup>The target index weights for each asset class benchmark are set by the target asset allocation. The return for Risk Parity, Real Estate, and Private Equity are equal to the asset class returns and not the benchmark.

### Report on Investment Activities, continued

percent in aggregate, beating the benchmark by 0.6 percent. The private equity portfolio returned 16.0 percent, outperforming its custom public-markets-equivalent benchmark by 0.4 percent. The real estate portfolio was up 12.2 percent for the fiscal year, finishing 12.5 percent above its custom public-markets-equivalent benchmark. Absolute return assets generated a return of 5.5 percent, outperforming the benchmark by 1.8 percent, and risk parity strategies generated an 8.1 percent return, outperforming the custom index by 0.7 percent.

The inflation hedging components of the portfolio performed well; global inflation-linked bonds were up 5.9 percent outperforming the asset class benchmark by 1.0 percent while commodities experienced a strong recovery, up 22 percent and outperforming the benchmark by 6.0 percent.

On a longer-term annualized basis, the Portfolio has performed well relative to the policy index. For the three years ending June 30, 2018, the Portfolio returned 6.1 percent, outperforming the target index by 0.7 percent. Over the five-year period, the Portfolio returned 6.3 percent, outperforming the target index by 0.6 percent. For the trailing ten-year period, the Portfolio returned 4.6 percent, exceeding the policy index return by 0.5 percent.

## **Plan Activity**

During the 2018 fiscal year, Verus and INPRS's staff collaborated on a number of projects. Together we further refined the liquidity management framework that was initially established in 2017. We launched a board risk dashboard to include the most salient risks within the portfolio, and we developed an active risk budget to coincide with the investment teams active/passive positioning.

Verus performed a benchmark audit to review consistency across performance reporting and risk measurement and completed other risk related projects such as using position level risk to aide in the investment team's manager selection and termination decisions. Ongoing work also involved an annual manager fee benchmarking, rebalancing policy, Investment Due Diligence on existing managers, ESG board education, and initial work involving the index and emerging manager request for proposals.

All of us here at Verus appreciate the opportunity to assist the INPRS Board in meeting the System's investment objectives. We are confident in the direction of the Portfolio given the System's demographics and fiscal strength. We look forward to continuing our partnership as we navigate ever-changing capital markets.

Sincerely,

Jeffrey J. MacLean Chief Executive Officer

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### Report from the Chief Investment Officer

## INPRS's Defined Benefit Investment Imperatives<sup>1</sup>

Established in fiscal year 2012, three long-term imperatives that are vital to the continued health of the System's defined benefit plans have served as the guide for the investment team. Every strategic, tactical, and operational decision that is made must have the expectation of positively contributing to at least one of these imperatives.

- 1. Achieve the long-term rate of return assumption. Effective fiscal year 2013, INPRS's Board set the long-term rate of return assumption at 6.75 percent, and again in fiscal year 2015, the Board reaffirmed 6.75 percent as the appropriate long-term assumption. In order for the System to maintain a healthy funded status, it is essential to achieve this rate of return over the long-term (defined as 10+ years in INPRS's Investment Policy Statement).
- 2. Accomplish the first imperative as effectively and efficiently as possible. While it is important to establish an asset allocation that is expected to meet the target rate of return over a long time horizon, as fiduciaries, it is also important to maintain focus on maximizing the return per unit of risk, limiting return volatility, and maximizing cost efficiency.
- 3. <u>Maintain enough liquidity to make retirement payments on time</u>. As the System matures, retirement payments will be a greater cash outflow each year. As a result, it is critical to maintain an appropriate level of liquidity to ensure payments are made on time without causing undue stress to the investment portfolio.

### The Year in Review<sup>2</sup>

The consolidated defined benefit assets returned 9.3 percent net of all fees over the past fiscal year, exceeding the target rate of return, and ended with a fair value of \$28.5 billion. While the more traditional growth-oriented strategies (e.g. public equities, private equity, and real estate) continued to perform well, commodities were the top performing asset class, returning 22.0 percent for the year and reversing the negative performance trend from the past few years. Commodities were not the only inflation-sensitive asset class that performed well though. The inflation-linked fixed income portfolio outperformed the fixed income portfolio by 4.7 percent this year (5.9 percent vs. 1.2 percent, respectively).

The lack of volatility has been a hallmark across most markets following the 2008 financial crisis. More recently, the S&P 500 had not posted a loss in 15 straight months from November 2016 through January 2018<sup>3</sup>. However, with developed economies transitioning to tighter monetary policy and global growth moderating, public equities across the various regions experienced intra-year drawdowns from 9 to 17 percent in the second half of fiscal year 2018. The absolute return portfolio was constructed to limit correlation to equity, credit, and fixed income markets and help provide smoother performance for the overall portfolio during these difficult periods. In the third quarter of fiscal year 2018, the absolute return portfolio provided the intended diversification as it produced a positive 1.4 percent return while the public equity portfolio had a negative return.

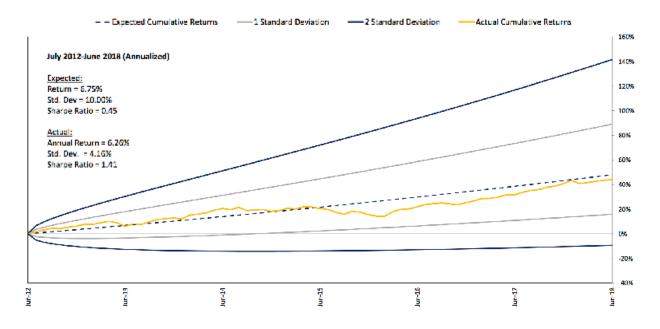
Based on extensive research of the various asset classes and their performance in different economic environments through time, it was determined starting in 2012 that a new risk-balanced framework better fits the first two imperatives. Developed from that research, the following chart illustrates the projected range of outcomes for INPRS's asset allocation around the 6.75 percent return target (blue dotted line). This visual is meant to track the cumulative performance of the actual portfolio (yellow solid line) versus those expectations along the way. Although the portfolio has underperformed the return target since adopting the new asset allocation strategy in 2012, the cumulative return is well within INPRS's range of expected outcomes and trending toward the target.

<sup>&</sup>lt;sup>1</sup>For more detail, see the INPRS's Investment Policy Statement, Section 4 – Guiding Principles.

<sup>&</sup>lt;sup>2</sup>Rates of return specific to INPRS's portfolio are based on calculations made by INPRS's custodian, Bank of New York Mellon, and are presented using a time-weighted rate of return methodology based upon fair value.

### Report from the Chief Investment Officer, continued

### **INPRS Net of Fee Cumulative Return**



The following table shows INPRS's annual net-of-fees returns over the same time period. Since inception of the revised strategy, the portfolio has generated an annual return of 5.9 percent above the return of cash and outperformed the average historical spread for the asset allocation over cash, 4.5 percent<sup>4</sup>.

## **INPRS Annual Returns (Net of Fees)**

	Excess Return	+	Cash Return	=	Total Return
FY2013	5.9 %		0.1 %		6.0 %
FY2014	13.6		0.1		13.7
FY2015	0.0		0.0		0.0
FY2016	1.0		0.2		1.2
FY2017	7.5		0.5		8.0
FY2018	8.0		1.3		9.3
INPRS Annual Return	5.9		0.3		6.2
Avg. Annual Return of INPRS Target Asset Allocation (since 1937) <sup>5</sup>	4.5		3.6		8.1

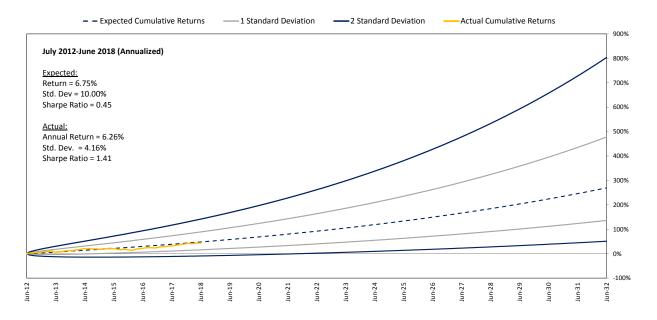
The prior charts highlight the recent challenges from the historically low interest rate environment. Due to the low return on cash since 2012, the portfolio's total performance has fallen short of the target rate of return assumption of 6.75 percent thus far. However, the target rate of return was established based on a much longer time horizon. As such, the asset allocation that was constructed to meet the return objective will ultimately be measured over decades rather than a few years.

<sup>&</sup>lt;sup>4</sup>Cash return based on Citigroup 3mo Treasury (Source: INPRS's custodian, Bank of New York Mellon). FINPRS's current target asset allocation was approximated historically using available indices. (Source: Verus, INPRS Board meeting - June 2015). Cash return based on the one-month US Treasury bill return from 1937 - 2016 (Source: Dimensional Fund Advisors' Matrix Book 2017 of Historical Returns Data).

### Report from the Chief Investment Officer, continued

The chart below is better aligned with that long-term focus as it shows the expected range of outcomes for the investment portfolio over twenty years. INPRS is very early into the period over which the asset allocation was selected to produce, but the short-term results allow us to be optimistic that INPRS is on the correct path.

#### INPRS Net of Fees Cumulative Return



#### **Performance Attribution**

Looking closer at fiscal year 2018, the returns of INPRS's separate asset classes are shown in the chart below. All asset classes had positive returns as global growth was largely healthy throughout the year, inflation continued to be held in check across major developed markets, and monetary policy was slowly becoming less supportive. Equities (public and private) as well as real estate continued to post strong returns net of all fees as tax reform and strong economic growth supported U.S. markets in particular.

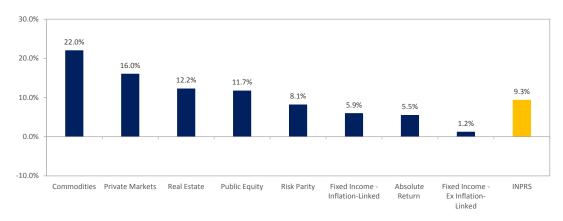
In a complete reversal from last year, commodities were the top performing asset class with a 22.0 percent return. Energy commodities led the way as evident by comparing the 30.0 percent return of the energy-heavy GSCI Index versus the 7.4 percent return of the more diversified Bloomberg Commodity Index over the course of the year. While each commodity has its own idiosyncratic drivers, synchronized global growth over the past few years has broadly produced a positive demand backdrop and spending on new production has been slow on the back of a few years of negative returns. These dynamics are producing a positive demand-supply imbalance that is pushing prices higher, particularly in oil markets.

The risk parity and absolute return portfolios have been constructed with the most diversified collection of beta and alpha exposure INPRS can find, respectively. INPRS believes these exposures will become even more important as equity markets come off one of the greatest runs of all-time, but they were also accretive in the past fiscal year. Given the strong returns across public asset classes, the risk parity portfolio produced an 8.1 percent return this year and, as a result, outperformed the 6.75 percent return target. The absolute return portfolio returned 5.5 percent and outperformed its target of cash plus four percent this year (5.3 percent). While the return was a positive contributor, the absolute return portfolio also provided the targeted diversification from traditional public markets with a correlation of 0.20 to global public equities<sup>6</sup> and (0.30) to global bonds<sup>7</sup> in fiscal year 2018.

<sup>&</sup>lt;sup>6</sup>Global public equities represented by the MSCI ACWI Index. <sup>7</sup>Global bonds represented by the Barclays Global Aggregate Index.

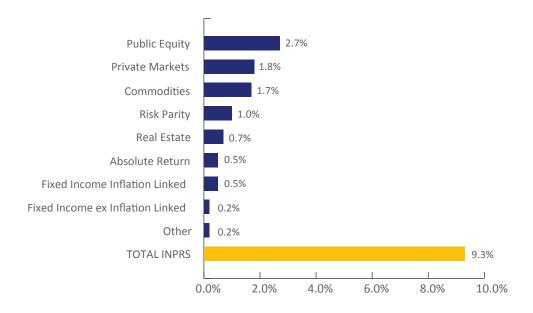
### Report from the Chief Investment Officer, continued

## 1-Year Asset Class Returns as of June 30, 2018



The chart above provides an incomplete picture as it does not reflect the modifications INPRS has made to the allocation across asset classes to better balance their varying levels of risk. The 1-Year Contribution to Total Return chart adjusts for this by taking into account the weight of each asset class in the portfolio as well as its return over the past year. By linking these components, we are able to observe the contribution to total return that each asset class provided. This view serves as a better representation of performance given that INPRS's risk-balanced strategy produces an allocation that invests less in more volatile asset classes (e.g. commodities) and more in less volatile asset classes (e.g. fixed income).

### 1-Year Contribution to Total Return as of June 30, 2018

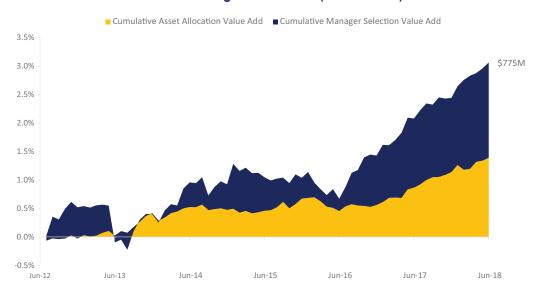


In fiscal year 2018, the investment team achieved a return that was 1.0 percent above the target asset allocation benchmark, net of all fees. The benchmark is meant to reflect what performance would have been had the portfolio been at target weights in each asset class the entire year and invested in passive strategies (e.g. index funds). Both the tactical asset allocation and manager selection decisions made by the team this year added value to the portfolio. This has continued the positive trend of the past five years as the outperformance generated by the investment team has produced

## Report from the Chief Investment Officer, continued

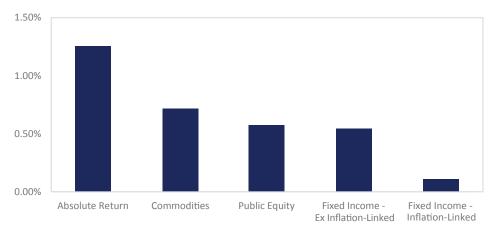
approximately \$775 million in added value (asset allocation + manager selection) over a portfolio of merely passive investments since July 2012. To put this into perspective, these additional returns have been large enough to cover over half of the TRF retirement payments made in fiscal year 2018.

## **Cumulative Excess Returns over the Target Allocation (Net of Fees)**



Breaking that result down further, it can be seen that manager selection has created a majority of the outperformance over the past five years because each public asset class has outperformed its benchmark.

## Annualized Performance Relative to Benchmarks July 2012 - June 2018

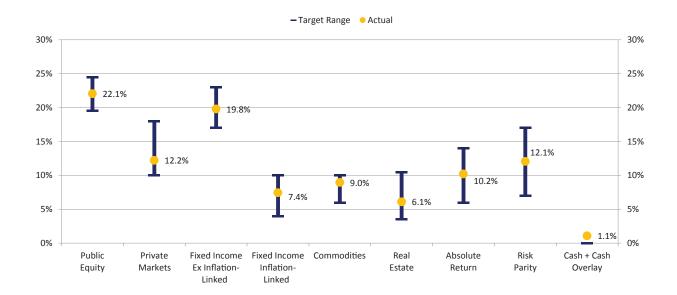


Although it would be easy to maintain the existing line-up of active strategies after they have collectively performed so well over the past six years, the investment team decided it was worthwhile to complete a comprehensive study of active management across each of the public asset classes and re-evaluate where it makes sense to pay additional fees for active management. The study was intended to take a fresh look at the historical probability of success in each sub-asset class, the associated risks of being active in those spaces, and the opportunity sets going forward. After reviewing the findings, the investment team determined that INPRS's defined benefit portfolio largely lines-up with where INPRS believes the best opportunities for active outperformance lie going forward.

### Report from the Chief Investment Officer, continued

### **Current Portfolio Exposures**

As previously mentioned, INPRS set out on a course seeking more balance across economic and market environments starting in fiscal year 2012 with the approval of a new asset allocation strategy. Despite slight revisions to the asset allocation during the last asset-liability study in fiscal year 2015 that resulted in a marginally higher expected return and return-risk ratio, the outcome reaffirmed the path of diversification INPRS had previously chosen and continues to pursue. As such, INPRS rebalanced as needed over the course of the fiscal year to stay within the Board-approved allocation bands for each asset class. The allocation as of June 30, 2018 can be found in the chart below.



As you can see from the chart, INPRS has meaningful exposure to less liquid asset classes with 29 percent allocated across private markets, real estate, and absolute return. INPRS believes each of these asset classes serves a unique purpose within the construct of the allocation. However, with these benefits come other risks, namely a lack of liquidity. Many of these private market funds have a lock-up of ten years or longer and many of the absolute return funds only allow for quarterly liquidity. Regardless of how good INPRS thinks these exposures are, INPRS wants to ensure the portfolio has enough liquidity to meet retirement payments as they come due without unnecessary fire-selling of assets in turbulent markets (see the third imperative listed above). As a result, the investment team worked with INPRS's general consultant, Verus, in fiscal year 2018 to develop a liquidity measure that would assess the System's ability to take on illiquidity risk at any point in time. The metric compares the amount of liquid assets and cash inflows available over the next five years to the expected cash out flows (e.g. retirement payments, plan expenses, etc.) over the same time frame. Through strenuous stress testing, the investment staff is comfortable that there is adequate liquidity in various negative market environments, and as of June 30, 2018, INPRS's liquid assets and projected inflows are 2.6 times the projected liabilities over the next five years.

### Report from the Chief Investment Officer, continued

### **Defined Contribution Plans**

The Public Employees' Defined Contribution Account (PERF DC), Teachers' Defined Contribution Account (TRF DC), and Legislators' Defined Contribution Fund, the defined contribution plans at INPRS provide members the ability to select their own asset allocation from a line-up of investment options approved by the Board. Established in fiscal year 2017, three long-term imperatives that are vital to the continued health of the System's defined contribution plans have served as the guide for the investment team.

- 1. Provide a simple and diversified default option ("Allocate it for me" Target Date Options). Effective fiscal year 2011, INPRS's Board changed the default investment option for the Defined Contribution (DC) plans to target date funds. This fund line-up was established to provide members with an auto-pilot allocation that targets an appropriate risk and return profile for their particular time horizon and automatically becomes more conservative as they approach retirement. Given how many members rely on INPRS to make their asset allocation for them by defaulting to this option, it is crucial that INPRS construct a target date fund line-up that is easy to understand yet sophisticated enough to help members achieve their savings goals.
- 2. Provide a simple and diversified menu of stand-alone options ("Allocate it myself" Core and Specialty Options). For those members that want to select an allocation that is different than those offered in the target date funds, INPRS offers investment options for individual asset classes. This line-up of options allows members to construct an asset allocation that better suits their specific needs and objectives.
- 3. Leverage the defined benefit asset base to provide low cost investment options. One reason the multiple retirement plans under INPRS's management were originally consolidated was to reduce fees for all plans. As a result, it is critical that INPRS maintains focus on utilizing the large asset base across the defined benefit and defined contribution plans to continually drive costs lower.

In addition to the ongoing monitoring and operation of the investment options, the investment team formally conducts quarterly reviews of the defined contribution plans and presents annual updates to the Board on fund line-up, performance, and fees. This year's fee review confirmed that INPRS's defined contribution line-up remains one of the most competitive in the country. It is estimated that INPRS's members save approximately \$6.8 million per year versus similar investment fund offerings from other institutional providers<sup>8</sup> and \$9.0 million per year versus similar retail fund offerings<sup>9</sup>.

INPRS's target date fund line-up continues to add value for members while offering low fees relative to other target date fund alternatives. By including a moderate amount of active management within the fund line-up, the investment team was able to beat the benchmarks over the past five years by 0.37 to 0.52 percent annually, depending on the fund. While at the same time, the fees on the funds were similar to the all passive target date fund line-up offered by Vanguard, one of the world leaders in low-cost investing (0.13 percent on average for both plans<sup>10</sup>).

As mentioned above, the investment staff conducted a review of active versus passive management, which also included the defined contribution fund line-up. The investment team determined that there was only one change that should be made to align with the findings of the study. The Inflation-Linked Fixed Income Fund was changed from active to passive management as the breadth of the investable universe did not seem to be large enough to consistently produce returns in excess of the benchmark.

<sup>&</sup>lt;sup>8</sup>Source: CEM Benchmarking, 2017.

<sup>&</sup>lt;sup>9</sup>Source: Capital Cities, INPRS Board Meeting – December 2017.

### Report from the Chief Investment Officer, continued

### **Investment Team and Culture**

As new talent was added to the team this year, INPRS thought it was an important time to take a step back and re-define what a successful team looks like to us. To better describe this future state, the entire investment team collaborated to develop a culture statement this year that specifies the type of people and behaviors INPRS wants to see across the INPRS team in the years to come. INPRS hopes this is a tool that both guides the current staff as well as gives anyone considering joining INPRS a better feel for what to expect once a part of the investment team.

#### The INPRS Investment Team...

- Works to advance retirement security for current and future members and retirees;
- Focuses on efficiently and effectively managing investments with a risk-focused orientation over a long-term investment horizon;
- Operates cohesively, transparently, and in pursuit of continuous improvement;
- Comprises a group of intellectually-curious professionals who pride themselves on working diligently and collaboratively as fiduciaries;
- Comprises team members who are constantly supportive of one another, regularly offer feedback and mentorship to each other, and always show respect to each other as well as to other internal and external parties;
- Sets high expectations for what it can achieve while simultaneously fostering a fun and collegial working environment in which team members can develop and grow as professionals.

### No Time for Complacency

While fiscal year 2018 was a successful year from a performance standpoint, the INPRS investment team is focused on continually evolving to improve the team, culture, and processes to ensure that the recent successes are continued more often than they are not in the future. It is important to remember that there are going to be years with disappointing performance as all markets inevitably have their rough patch. Whether re-focusing efforts on recruiting top talent from local universities to be INPRS's future successors or changing a strategy from active to passive even when it has performed well in the past, the INPRS's investment team is battling complacency every day to ensure the imperatives are met over INPRS's long time horizon.

Sincerely,

Scott B. Davis, CFA Chief Investment Officer

#### **Outline of Investment Policies**

he Indiana Public Retirement System's (INPRS) Board of Trustees (Board) serves as the ultimate fiduciary of INPRS. Indiana Code Article 5-10.5 provides that a nine-member Board of Trustees will oversee INPRS. The nine trustees shall be appointed by the Governor, four of whom must be members of an INPRS fund. The INPRS Board of Trustees appoints the executive director of INPRS.

The Board establishes investment policies; however, Indiana law establishes guidelines on the investment of the System's assets. At all times, INPRS must invest its assets in accordance with the "Prudent Investor" standard. Under this standard, investment decisions are based upon the same degree of care that a prudent person acting in a like capacity and familiar with such matters would use in the conduct of an enterprise of a similar character with similar aims.

The objective of the Board's Investment Policy Statement (IPS) is to maintain adequate funding for each retirement fund and the pension system in order to provide for the payment of such fund's actuarially determined liabilities over time in a cost-effective manner. The purpose of the IPS is to support this general objective by:

- Setting forth the investment policies which the Board judges to be appropriate and prudent, in consideration of the needs and legal requirements applicable to direct investment of the assets;
- Making a clear distinction between the roles and responsibilities of the Board, staff, and each service provider;
- Establishing formalized criteria to measure, monitor, and evaluate the performance results of the investment managers;
- Communicating the investment policies, objectives, guidelines, and performance criteria of the Board to the staff, investment managers, consultants, service providers, employers, members and all other interested parties; and
- Serving as a review document to guide the ongoing oversight of the investments by INPRS and demonstrating that the Board is fulfilling its fiduciary responsibilities in the administration and management of each retirement fund's assets solely in the interests of such retirement fund's members and beneficiaries.

The Board intends for the IPS to be a dynamic document, and, as such, expects to conduct periodic reviews utilizing input from INPRS staff, consultants, and other knowledgeable parties. The Board anticipates approving changes from time to time to reflect changes in any or all of: economic and market conditions, investment opportunities, INPRS's investment strategy, benefit provisions, and INPRS's governance.

The Board employs investment managers to implement the asset allocation through a selective and thorough search process that embodies the principles of procedural due diligence. It is the intent of the Board to encourage the participation of all qualified organizations in this process. The Board encourages investment managers to develop long-term investment strategies consistent with the guidelines outlined in the IPS, as well as governing Indiana statutes. Additionally, investment managers will adhere to and comply with the CFA Institute Global Investment Performance Standards in calculating and reporting investment performance. Performance of each manager is measured against the rate of return associated with appropriate market index benchmarks and an appropriate universe or style peer group of investment managers.

The Board recognizes that the allocation of defined benefit assets is the most important determinant of investment rates of returns over long periods of time. The procedure for determining the allocation will consider the relevant characteristics of the liabilities and the potential assets of the funds. An asset liability study will be conducted no less than every five years and will analyze the expected returns of various asset classes, projected liabilities, risks associated with alternative asset mix strategies and their effect on the projected fair value of assets, funded status, and contributions to the funds.

### Outline of Investment Policies, continued

With a long-term investment focus, the defined benefit portfolio is invested across the following asset classes: Public Equity, Private Markets (i.e. Private Equity and Private Credit), Fixed Income - Ex Inflation-Linked, Fixed Income - Inflation-Linked, Commodities, Real Estate, Absolute Return, and Risk Parity. The current asset allocation, approved by the Board in February 2018 is as follows:

Defined Benefit Asset Allocation	Target Allocation	Target Range	Benchmark
Public Equity	22.0 %	19.5 to 24.5 %	MSCI All Country World IMI Index
Private Markets	14.0	10.0 to 18.0	Custom Benchmarks
Fixed Income – Ex Inflation-Linked	20.0	17.0 to 23.0	Custom Benchmark
Fixed Income – Inflation-Linked	7.0	4.0 to 10.0	Custom Benchmark
Commodities	8.0	6.0 to 10.0	Custom Benchmark
Real Estate	7.0	3.5 to 10.5	Custom Benchmark
Absolute Return	10.0	6.0 to 14.0	HFRI Fund of Funds Composite
Risk Parity	12.0	7.0 to 17.0	Custom Benchmark

The defined contribution plans have been structured to provide members with a choice of several diverse investment options that offer a range of risk and return characteristics appropriate for members. Defined contribution fund members can self-direct their investment options or leave their contributions invested in the default target date retirement fund. The defined contribution investment options currently include:

- 1. Large Cap Equity Index Fund
- 2. Small/Mid Cap Equity Fund
- 3. International Equity Fund
- 4. Fixed Income Fund
- 5. Inflation Linked Fixed Income Fund
- 6. Target-Date Retirement Funds
- 7. Money Market Fund
- 8. Stable Value Fund
- Consolidated Defined Benefit Assets (Legislators Defined Contribution Fund only)

The number and types of defined contribution investment funds offered will be periodically reviewed by the Board in order to ensure diversity of investment alternatives, adequate and reasonable availability of investment types, and clarity and usefulness of the investment choices. Defined contribution performance data is included in the Investment Results of this section.

Fund Fact Sheets for the aforementioned defined contribution investment options, are available online at: http://www.in.gov/inprs/fundfactsheets.htm

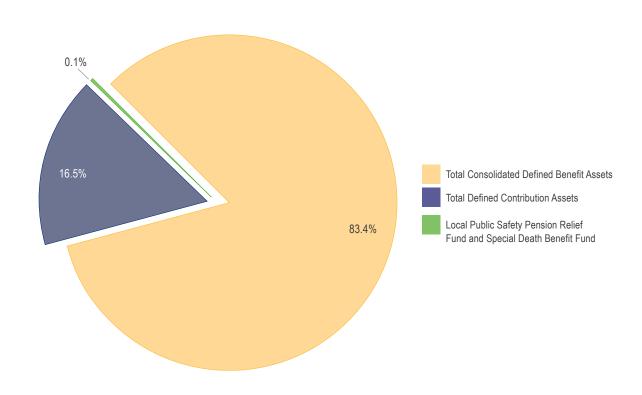
**Investment Summary** As of June 30, 2018

(dollars in millions)	Actual Assets		Percent
Consolidated Defined Benefit Assets			
Defined Benefit Retirement Funds	\$	28,466.5	83.4 %
Legislators' Defined Contribution Fund (LE DC) <sup>1</sup>		9.3	-
Total Consolidated Defined Benefit Assets		83.4	
Defined Contribution Assets			
Public Employees' Defined Contribution Account (PERF DC)		2,867.8	8.4
Teachers' Defined Contribution Account (TRF DC)		2,742.8	8.0
Legislators' Defined Contribution Fund 23.7			0.1
Total Defined Contribution Assets		5,634.3	16.5
Local Public Safety Pension Relief Fund <sup>2</sup>		26.2	0.1
Special Death Benefit Fund		14.8	-
Total Investments <sup>3</sup>	\$	34,151.1	100.0 %

<sup>&</sup>lt;sup>1</sup>Self directed investment option only available to LE DC members.

<sup>2</sup>Assets are invested in high-quality, short-term money market instruments, including, but not limited to commercial paper and securities issued or guaranteed by the U.S. government.

<sup>3</sup>Includes Investment Receivables, Foreign Exchange Contracts Receivables, Interest and Dividend Receivables, Securities Lending Collateral, Investment Payables, Foreign Exchange Contracts Payables, Securities Lending Obligations, and Obligations Under Reverse Repurchase Agreements.

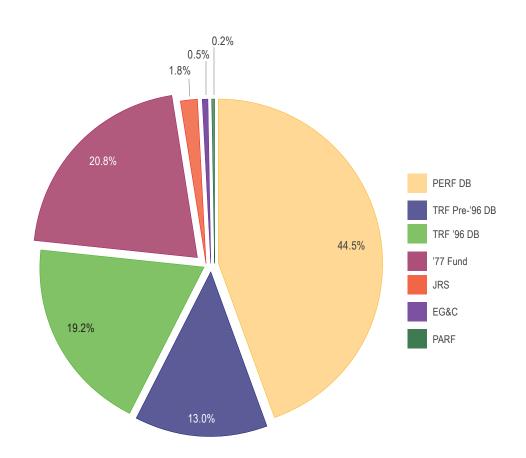


### Assets by Retirement Plan As of June 30, 2018

#### (dollars in millions)

Retirement Plan		Amount	Percent
Public Employees' Defined Benefit Account (PERF DB)	\$	12,676.5	44.5 %
Teachers' Pre-1996 Defined Benefit Account (TRF Pre-'96 DB)		3,710.6	13.0
Teachers' 1996 Defined Benefit Account (TRF '96 DB)		5,449.4	19.2
1977 Police Officers' and Firefighters' Retirement Fund ('77 Fund)		5,924.1	20.8
Judges' Retirement System (JRS)		510.3	1.8
Excise, Gaming and Conservation Officers' Retirement Fund (EG&C)		131.5	0.5
Prosecuting Attorneys' Retirement Fund (PARF)		61.1	0.2
Legislators' Defined Benefit Fund (LE DB)		3.0	-
Legislators' Defined Contribution Fund (LE DC)		9.3	-
Total Consolidated Defined Benefit Assets <sup>1</sup>		28,475.8	100.0 %

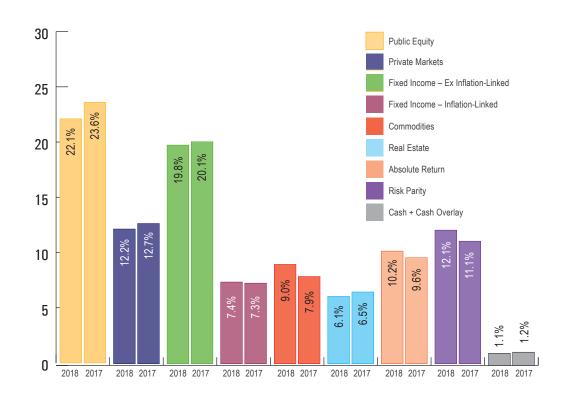
¹Includes Investment Receivables, Foreign Exchange Contracts Receivables, Interest and Dividend Receivables, Securities Lending Collateral, Investment Payables, Foreign Exchange Contracts Payables, Securities Lending Obligations, and Obligations Under Reverse Repurchase Agreements.



Asset Allocation Summary: June 30, 2018 Actual vs. June 30, 2017 Actual

(dollars in millions)		June 3	0, 2018		June 30	, 2017
Asset Class	Α	mount	Percent	_	Amount	Percent
Public Equity	\$	6,280.2	22.1 %	\$	6,213.6	23.6 %
Private Markets		3,480.2	12.2		3,358.3	12.7
Fixed Income - Ex Inflation-Linked		5,635.4	19.8		5,300.5	20.1
Fixed Income - Inflation-Linked		2,121.8	7.4		1,920.9	7.3
Commodities		2,551.5	9.0		2,092.2	7.9
Real Estate		1,740.4	6.1		1,717.7	6.5
Absolute Return		2,914.0	10.2		2,523.8	9.6
Risk Parity		3,437.8	12.1		2,914.6	11.1
Cash + Cash Overlay		314.5	1.1		322.9	1.2
Total Consolidated Defined Benefit Assets <sup>1</sup>	\$	28,475.8	100.0 %	\$	26,364.5	100.0 %

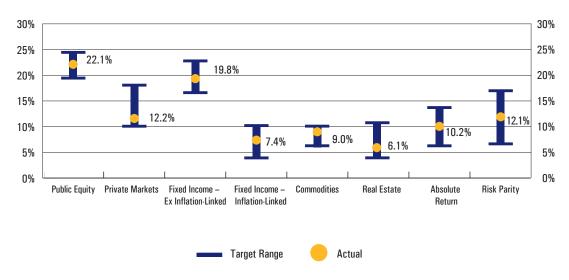
'Amounts disclosed above will agree to the Pooled Unit Trust Investments in the Financial Section in Note 2 (H) Summary of Significant Accounting Policies. The amounts disclosed above are shown by investment strategy and will differ from the Statement of Net Position and the Summary of Investments Held in the Financial Section Note 3 (C) Cash in Bank and Deposits, due to the investment strategy disclosure being related to a systematic plan to achieve returns and diversification and the Summary of Investments Held disclosure summarized by 1) the legal structure of the investments and 2) excluding Investment Receivables, Foreign Exchange Contracts Receivables, Interest and Dividend Receivables, Securities Lending Collateral, Investment Payables, Foreign Exchange Contracts Payables, Securities Lending Obligations, and Obligations Under Reverse Repurchase Agreements.



### Asset Allocation Summary: June 30, 2018 Actual vs. Target

Asset Class	June 30, 2018 Actual	Target	Allowable Range for Investments
Public Equity	22.1 %	22.0 %	19.5 to 24.5 %
Private Markets	12.2	14.0	10.0 to 18.0
Fixed Income - Ex Inflation-Linked	19.8	20.0	17.0 to 23.0
Fixed Income - Inflation-Linked	7.4	7.0	4.0 to 10.0
Commodities	9.0	8.0	6.0 to 10.0
Real Estate	6.1	7.0	3.5 to 10.5
Absolute Return	10.2	10.0	6.0 to 14.0
Risk Parity	12.1	12.0	7.0 to 17.0
Cash + Cash Overlay <sup>1</sup>	1.1	N/A	
Total Consolidated Defined Benefit Assets	100.0 %	100.0 %	

Includes cash, cash equivalents, and cash overlay. INPRS does not have a target allocation to cash as an asset class.



Note: Cash + Cash Overlay is not represented in the above chart as INPRS does not have a target allocation to cash as an asset class.

### Annualized Time-Weighted Rate of Return by Asset Class vs. Benchmark Returns For the Year Ended June 30, 2018

1-Year<sup>1</sup>

Asset Class	Actual Return <sup>2</sup>	Benchmark Return	Actual Over / (Under) Benchmark	Benchmark
Public Equity	11.7 %	11.1 %	0.6	MSCI All Country World IMI Index (MSCI ACWI)
Private Markets	16.0	15.6	0.4	Custom Benchmark <sup>3</sup>
Fixed Income - Ex Inflation-Linked	1.2	1.0	0.2	Custom Benchmark⁴
Fixed Income - Inflation-Linked	5.9	4.9	1.0	Custom Benchmark⁵
Commodities	22.0	16.0	6.0	Custom Benchmark <sup>6</sup>
Real Estate	12.2	(0.3)	12.5	Custom Benchmark <sup>7</sup>
Absolute Return	5.5	3.7	1.8	HFRI Custom Benchmark <sup>8</sup>
Risk Parity	8.1	7.4	0.7	Custom Benchmark <sup>9</sup>
Cash + Cash Overlay	9.3	8.0	1.3	Custom Benchmark <sup>10</sup>
Total Consolidated Defined Benefit Assets	9.3	8.3	1.0	Custom Target Benchmark

<sup>&</sup>lt;sup>1</sup>Time-weighted rates of return based on calculations made by the System's custodian, Bank of New York Mellon.

<sup>&</sup>lt;sup>2</sup>Net of fees.

Benchmark represents the private equity custom PME made up of the following components lagged one quarter with a 300 basis point premium: Russell 2000 (weight: 60%); MSCI EAFE Small Cap Index (weight: 20%); Credit Suisse High Yield Index (weight: 15%); Credit Suisse Western Europe High Yield Index (Hedged) (weight: 5%).

<sup>&</sup>lt;sup>4</sup>Benchmark represents the sub-asset class target allocation within the fixed income portfolio over time.

Global Inflation 70/30 is a 70% weight to Global Inflation-Linked Bonds (including U.S.) and a 30% weight to U.S. Inflation-Linked Bonds.

Global Inflation 70/30 is a 70% weight to Global Inflation-Linked Bonds (including U.S.) and a 30% weight to U.S. Inflation-Linked Bonds.

Global Inflation 70/30 is a 70% weight to Global Inflation-Linked Bonds (including U.S.) and a 30% weight to U.S. Inflation-Linked Bonds. respectively.

Real Estate Custom PME made up of the following components lagged one quarter: 70% FTSE NAREIT All Equity REITS and 30% Barclays CMBS.

Weighted average of INPRS exposure to representative HFRI sub-strategy indices.

<sup>960%</sup> MSCI ACWI IMI Index (Equities) / 40% Barclays Global Aggregate Bond Index (Bonds).

10Benchmark represents the allocation to sub-asset class targets for the cash overlay starting in April 2016; prior to that, the 3-month LIBOR was the benchmark for cash.

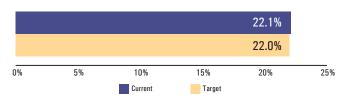
Asset Class Summary: **Public Equity** 

Fair Value as of 06/30/2018	INPRS 1-Year Net Performance <sup>1</sup>	MSCI All Country World IMI Index 1-Year Performance
\$6,280.2 Million	11.7%	11.1%

### **Portfolio Objective**

The public equity portfolio seeks to provide long-term capital appreciation and income through exposure to public equity securities. INPRS uses a variety of external managers to create a globally diversified portfolio within the asset class. Historically, public equities have performed well in environments when actual economic growth came in higher than expectations and/or when actual inflation came in lower than expectations.

### **INPRS Allocation**



### Performance Attribution

INPRS's public equity portfolio had a return of 11.7 percent for fiscal year 2018. The portfolio outperformed the benchmark by 0.6 percent. The domestic segment outperformed the benchmark by 0.8 percent and the international segment outperformed the benchmark by 0.1 percent.

### **Market Overview**

Over the past year, global equities, as represented by the MSCI All Country World IMI Index, were up 11.1 percent. Based on the Russell 3000 Index, domestic equities were up 14.8 percent over the fiscal year. International equities were up 7.8 percent based on the MSCI ACWI ex U.S. IMI Index.

For the first quarter of the fiscal year, INPRS's global equity portfolio was up 5.3 percent. Globally interest rates remained at historic lows, economic growth improved and inflation remained low. Realized U.S. equity volatility in September was the lowest on record. International equities outperformed domestic equities for the guarter.

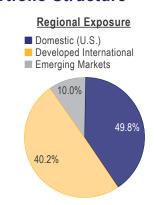
In the second quarter of the fiscal year, INPRS's global equity portfolio was up 5.4 percent. The U.S. reported the highest level of inflation-adjusted growth since 2015, and the Eurozone grew at the quickest pace since 2011. International year-over-year earnings growth exceeded that of the

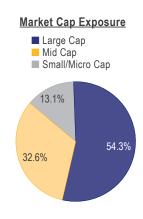
In the third quarter of the fiscal year, INPRS's global equity portfolio was down 0.1% percent. U.S. equity earnings improved following the Tax Cuts and Jobs Act. The U.S. equity market reached an all-time high in January before volatility spiked to the highest level since the summer of 2015 and resulted in a steep drawdown mid-guarter.

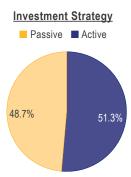
In the fourth quarter of the fiscal year, INPRS's global equity portfolio was up 0.8 percent. Globally, economic growth continued to be positive, but at a more moderate pace. Trade negotiations and geopolitical uncertainty were present during the quarter. Equity volatility moved to below average levels.

<sup>1</sup>Investment performance is based on calculations made by the system's custodian, BNY Mellon, and are time weighted rates of return.

### Portfolio Structure



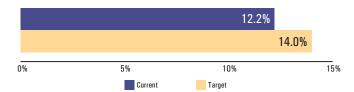




Asset Class Summary: *Private Markets* 



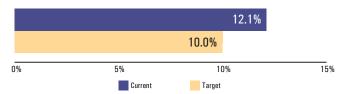
### **INPRS Allocation - Private Markets**



### **Portfolio Objective**

The private equity portfolio markets (which include private equity and private credit) seeks to provide risk-adjusted returns in excess of the public equity markets while simultaneously decreasing the volatility of the investment portfolio through diversification.

### **INPRS Allocation - Private Equity**



### **Performance Attribution - Private Equity**

The private equity portfolio (market value of \$3.44 billion as of June 30, 2018) returned 16.0 percent for fiscal year 2018, which was accretive to the INPRS target rate of return of 6.75 percent and outperformed its custom public market equivalent benchmark. The private equity portfolio underperformed the Cambridge Associates Pooled IRR for the one-year period, 15.9 percent versus 17.7 percent, but has outperformed the same index (11.6 percent versus 10.8 percent) since inception. The private equity portfolio has generated a TVPI3 of 1.6x and a DPI4 of 0.9x since

North American investments have generated the highest IRR since inception, totaling 12.5 percent. European investments have performed the worst, generating an IRR of 5.9 percent since inception.

The buyout sub-asset class has generated the highest IRR since inception, amounting to 13.0 percent. The venture, growth, special situations, and real assets sub-asset classes have generated 12.0 percent, 7.5 percent, 10.9 percent, and 9.4 percent IRRs since inception, respectively.

Co-investments have been the best performing investment structure since inception (generating an IRR of 26.6 percent) followed by secondary interests (14.3 percent IRR), primary funds (11.9 percent IRR), and fund of funds (9.6 percent IRR).

### **Portfolio Structure**

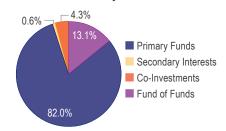




### Market Value by Sub-Asset Class



### Market Value by Structure



Investment performance is based on calculations made by the system's custodian, BNY Mellon, and are time-weighted

<sup>&</sup>lt;sup>2</sup>The custom public market equivalent index performance is based on calculations made by the system's custodian, BNY Mellon. It is calculated on a one-quarter lagged basis and consists of the following indices: Russell 2000 Index (weight: 60%); MSCI EAFE Small Cap Index (weight: 20%); Credit Suisse High Yield Index (weight: 15%); Credit Suisse Western Europe High Yield Index (Hedged) (weight: 5%). The custom public market equivalent index performance also includes a 300 basis point premium.

Total value to paid-in multiple.

<sup>&</sup>lt;sup>4</sup>Distributed to paid-in multiple.

Asset Class Summary: Private Markets, continued

### **Portfolio Overview - Private Equity**

The private equity portfolio continues to maintain a home continent bias with 85.5 percent of market value with North American-focused funds. Investments are well diversified by sub-asset class with buyout and venture/growth accounting for the largest portions of portfolio market value (50.7 percent and 20.9 percent, respectively).

Primary fund commitments account for the vast majority of market value (82.0 percent), with fund of funds (13.1 percent), co-investments (4.3 percent), and secondary interests (0.6 percent) accounting for the remainder. The portfolio continues to mature with pre-2008 funds accounting for 16.7 percent of market value.

Distributions from and contributions to the INPRS private equity portfolio totaled \$819.7 million and \$456.1 million, respectively, in fiscal year 2018, resulting in positive net cash flows of \$363.6 million.

During fiscal year 2018, INPRS closed 10 investments with 7 managers, totaling approximately \$474 million.



### **Private Credit**

During fiscal year 2018, INPRS commenced its allocation to a dedicated private credit portfolio with the goal of building a well-diversified portfolio of directly originated, debt financing to middle market companies. Commitments during the year totaled \$400 million with two managers in three funds, with \$34.3 million invested as of the end of June 30, 2018. Invested capital was deployed to first lien term loans to sponsored and non-sponsored borrowers in developed market economies. Still in its nascency, the portfolio includes loans across a diversified mix of business industries, with a thematic bias to North American borrowers in non-cyclical business industry sectors.

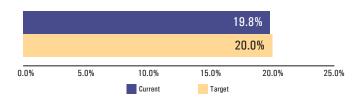
Asset Class Summary: Fixed Income – Ex Inflation-Linked

 Fair Value as of 6/30/2018	INPRS 1-Year Net Performance <sup>1</sup>	Custom Benchmark <sup>2</sup>
\$5.635.4 Million	1.2%	1.0%

### **Portfolio Objective**

The fixed income - ex inflation-linked portfolio seeks to generate current income and long-term risk-adjusted return, in excess of the custom benchmark ("Benchmark"), through the investment in debt securities. A focus is placed on preservation of capital. To minimize the probability of substantial principal loss, INPRS staff seeks to reduce the volatility of the portfolio and enhance return from both contractual income and capital appreciation--in part, by investing in certain actively managed strategies.

### **INPRS Allocation**



### **Performance Attribution**

For fiscal year 2018, the fixed income - ex inflation-linked portfolio returned 1.2 percent, outperforming its benchmark by 0.2 percent. Manager selection and asset allocation decisions within the long government/ credit and opportunistic credit portfolios were the largest contributors to outperformance.

### **Market Overview**

Fiscal year 2018 was anchored by strong global growth, tight labor markets, and a Federal Reserve that remained committed to withdrawing the monetary stimulus implemented following the Great Financial Crisis. While wage growth remained largely muted across developed economies, the Federal Reserve increased interest rates three times as well as began Policy Normalization. Over time, this program will reduce the amount of stimulus that the Fed injects into financial markets. Other global central banks turned less accommodative, albeit at a slower pace, compared to the Federal Reserve.

During the first quarter, the low volatility environment observed during fiscal year 2017 persisted. The Fed left domestic interest rates unchanged, given lower than target inflation. The U.S. treasury curve flattened slightly. Investment-grade, high-yield, and emerging market spreads compressed broadly across sectors, demonstrating a continued appetite for risky assets.

The second guarter was marked by the passage of U.S. fiscal stimulus and a 25 bps interest rate increase from the Fed, both occurring in December. The U.S. yield curve flattened, with the one-year rate increasing by 44 bps and the thirty-year rate decreasing by 12 bps. Investment-grade spreads in the U.S. and Europe compressed; while high-yield and emerging markets both experienced slight spread expansion.

Volatility returned to risk markets during the third quarter with the VIX reaching levels not seen since the third quarter of 2015. The Fed increased interest rates by 25 bps on the back of a strong global economy and conviction that inflation was moving towards their mandated target. The U.S. yield curve flattened, with short-term rates rising by less than long-term rates. Credit spreads widened broadly with the exception of U.S. high-yield.

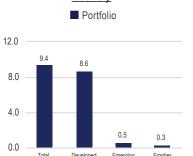
The fiscal year ended with another 25 bps rate increase from the Federal reserve and projections for two more hikes prior to December 31, 2018, according to their dot plot. Trade concerns took center stage during the quarter as the U.S. engaged NAFTA, NATO, and China in trade negotiations with no long term resolutions resulting from the discussions. The U.S. yield curve continued to flatten, but at a slower pace as compared to prior quarters. Spreads broadly expanded, with the exception of, again, U.S. high-yield which contracted slightly.

<sup>1</sup>Investment performance is based on calculations made by the system's custodian, BNY Mellon, and are time-weighted rates of

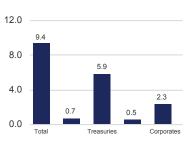
### **Portfolio Overview**

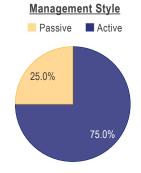
	INPRS
Effective Duration:	9.4 yrs
Yield to Maturity:	3.7%
Credit quality:	A1/BBB

#### Contribution to Effective Duration -Country<sup>3</sup>



### Contribution to Effective Duration -Sector<sup>3</sup> ■ Portfolio





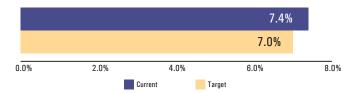
Asset Class Summary: Fixed Income – Inflation-Linked

Fair Value	INPRS 1-Year	Custom Benchmark
as of 6/30/2018	Net Performance <sup>1</sup>	1-Year Performance <sup>2</sup>
\$2.121.8 Million	5.9%	

### **Portfolio Objective**

The INPRS fixed income - inflation-linked portfolio seeks, primarily via passive management, to generate a long-term risk-adjusted return similar to that of the custom global inflation index ("Benchmark") and to, more broadly, provide protection against unanticipated inflation.

### **INPRS Allocation**



### **Performance Attribution**

For fiscal year 2018, the INPRS fixed income - inflation-linked portfolio returned 5.9% percent; outperforming its Benchmark by 1.0 percent. Overlay management within the Global-Inflation linked strategy was the largest contributor to benchmark outperformance.

### **Market Overview**

During the first quarter, the low volatility environment observed during fiscal year 2017 persisted. The Fed left domestic interest rates unchanged, given lower than target inflation. U.S. 10-year real rates tightened by 9 bps while breakeven inflation increased by 12 bps. Global 10-year real rates3 tightened by 3 bps and breakeven inflation increased by 11 bps.

In the U.S., the second quarter was marked by the passage of the Tax Cuts and Jobs Act of 2017 and a 25 bps interest rate increase from the Fed, both occurring in December. U.S. 10-year real rates again tightened by 6 bps and breakeven inflation increased by 13 bps. Global 10-year real rates tightened by 10 bps and breakeven inflation increased by 8 bps.

Despite bouts of increased volatility in many risk markets, during the third quarter of the fiscal year the Fed increased interest rates by 25 bps on the back of a strong global economy and conviction that inflation was moving towards their symmetric target of 2%. 10-year real rates increased by 26 bps and 13 bps in the U.S. and globally, respectively. Breakeven inflation increased by 7 bps and 4 bps in the U.S. and globally, respectively.

The fiscal year ended with another 25 bps rate increase from the Fed and projections for two more hikes prior to December 31, 2018, according to their dot plot. Trade concerns took center stage during the quarter as the U.S. engaged NAFTA, NATO, and China in fierce trade negotiations with no long term resolutions resulting from the discussions. In May, the year over year change in Personal Consumption Expenditures (PCE) reached 2%, touching the Fed's symmetric target. In view of reaching its target, the Fed remains accommodative, seeing the market conditions balanced against risks. U.S. real rates increased by 5 bps while global real rates decreased by 2 bps. Breakeven inflation increased by 7 bps in the U.S. and 4 bps globally.

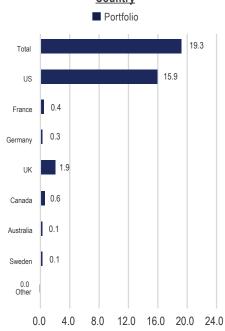
Investment performance is based on calculations made by the system's custodian, BNY Mellon, and are time weighted rates of

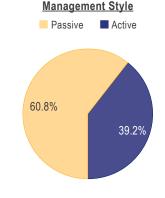
<sup>2</sup>INPRS performance benchmark represents sub-asset class target allocations within the Fixed Income - Inflation-Linked portfolio

### **Portfolio Overview**

	INPRS
Effective Duration:	19.3 yrs
Yield to Maturity:	0.5%
Credit quality:	Aa1/AAA

### Contribution to Effective Duration -Country





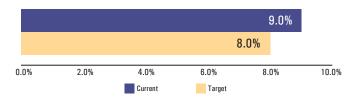
Asset Class Summary: Commodities

 Fair Value	INPRS 1-Year	Custom Benchmark
as of 6/30/2018	Net Performance <sup>1</sup>	1-Year Performance <sup>2</sup>
\$2,551.5 Million	22.0%	

### **Portfolio Objective**

The purpose of the commodity portfolio is to enhance long-term risk-adjusted returns by preserving investment capital and lowering overall volatility. The portfolio should also act as a hedge against unanticipated inflation. Commodity investments have historically delivered returns that are less correlated with equity and fixed income markets which may provide an opportunity to enhance returns and/or reduce volatility.

### **INPRS Allocation**



### **Performance Attribution**

The commodities portfolio one-year total return exceeded its benchmark by 6.0 percent. Commodities' total return is comprised of two components: 1) commodity futures return and 2) collateral return. The one-year return for each of these components was approximately 20.0 percent and 2.0 percent, respectively. The outperformance of the commodities portfolio relative to its benchmark was primarily attributable to managers' overweighting the energy sector and underweighting the agriculture and precious metal sectors, as well as underweighting precious metals.

#### **Market Overview**

INPRS's commodity exposure is approximately equal to a 50/50 blend of the Bloomberg Commodity Index ("BCOM") and the S&P Goldman Sachs Commodity Index ("GSCI"). For the fiscal year, the two indices returned 7.4 percent and 30.0 percent, respectively.

Commodity performance in fiscal year 2018 was driven by favorable supply and demand dynamics across commodity markets, especially within energy. Commodities as a whole rose throughout the fiscal year, primarily driven by rising oil prices. Towards the end of the fiscal year, however, the prices of some agricultural and industrial commodities began to decline due to tariff concerns.

In the energy markets, oil prices were bolstered by OPEC production cuts, declining inventories in Venezuela and Libya, and bottlenecks in U.S. production. Combined with a strong economy and rising global demand for oil, oil prices rose significantly throughout the fiscal year. Natural gas prices remained muted throughout the first half of the fiscal year due to mild weather and increasing supply, but began to increase in the second half of the fiscal year due to a very cold winter.

Prices in the agriculture markets moved idiosyncratically based on supply and demand. Favorable growing conditions resulted in high supplies of corn and soybeans. On the other hand, concerns about adverse growing conditions for wheat caused wheat prices to rise from January toward the end of the fiscal year, but prices then declined dramatically due to improving conditions. At the end of the fiscal year, fears around the adverse effects of tariffs caused agricultural commodity prices to decline, especially soybeans.

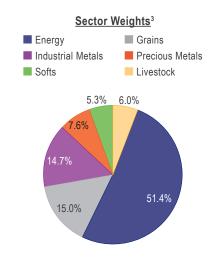
Industrial metals prices rose during the fiscal year, supported by a strong economy and rising global demand. Towards the end of the fiscal year, uncertainty around tariffs added significant volatility and pressured prices in industrial metals markets.

Precious metals prices remained relatively range-bound during the fiscal year. The primary driver of this is the offsetting effects of rising rates suppressing precious metals prices and increased geopolitical uncertainty and volatility supporting prices.

Investment Returns are based on calculations made by the system's custodian, BNY Mellon, and are time weighted rates of return. 
<sup>2</sup>Custom Benchmark is a 50/50 blend of the Bloomberg Commodity Index and the Goldman Sachs Commodity Index. The collateral component is a 75/25 blend of global inflation-linked bond indices and 90-day Treasury Bills respectively.

<sup>3</sup>Approximate.

### **Portfolio Structure**



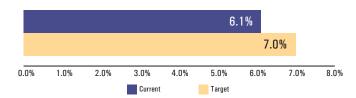
Asset Class Summary: Real Estate

_	Fair Value as of 6/30/2018	INPRS 1-Year Net Performance <sup>1</sup>	Custom Public Market Equivalent 1-Year Performance <sup>2</sup>
	\$1,740.4 Million	12.2%	(0.3)%

### **Portfolio Objective**

The real estate portfolio is mostly comprised of investments in private real estate partnerships, and the underlying exposures are a mix of debt and equity holdings. The portfolio seeks to generate attractive risk-adjusted returns by providing stable current income and preserving investment capital. The portfolio should also reduce volatility by providing a hedge against inflation and through the diversification benefits provided by real estate investments.

### **INPRS Allocation**



### **Performance Attribution**

For fiscal year 2018, the real estate portfolio exceeded its benchmark by 12.5 percent, with the real estate equity and debt portfolios returning 15.5 percent and 4.5 percent, respectively. Valueadd equity strategies were particularly strong contributors, returning 36.1 percent for the fiscal year. Primary drivers of the value add portfolio's returns include a large industrial portfolio realization and several multifamily realizations. Opportunistic equity and core equity also had strong performance, returning 13.5 percent and 10.1 percent, respectively.

### Market Overview

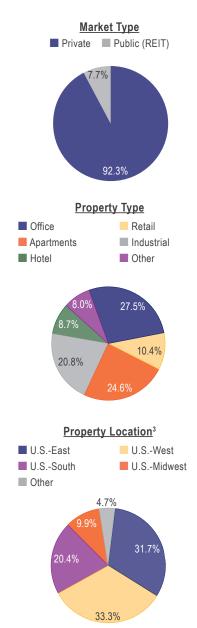
Net capital flows into private real estate during the fiscal year were slightly negative despite another year of strong performance. The NFI-ODCE Index returned 8.4 percent gross of fees and 7.5 percent net of fees over the fiscal year ending June 30, 2018.

Of the 8.4 percent gross of fees return for the NFI-ODCE, income contributed 4.3 percent and appreciation contributed 4.0 percent. Continuing the trend from last year, income contribution remained fairly steady at approximately 1.1 percent per quarter. Appreciation contribution increased from 0.7 percent in the first quarter to 1.2 percent in the third quarter, with fourth quarter appreciation of 1.0 percent.

Comparing the trailing three-year returns to the trailing twelve months, annual income contribution to total NFI-ODCE returns has remained fairly consistent at 4.3 percent to 4.4 percent. Appreciation, has declined from 4.8 percent annually over the trailing three years to 4.0 percent over the trailing twelve months. Since the ODCE's inception approximately forty years ago, appreciation has averaged 1.4 percent per annum, which equates to 16.5 percent of the 8.7 percent annualized gross returns of the index. Over this period, U.S. ten year bond yields declined from 7.2 percent to 2.6 percent, albeit not on a smooth downward sloping path, which has resulted in lower discount rates. Cap rate spreads measured against government bonds have oscillated around their long-term averages as is normal for risk premiums as they are driven by liquidity and business cycles, but more recently spreads to cash have become rich.

With respect to specific property types, big box retail continues to decline as the extent of Amazon's disruptive ability is weighed by market participants. A clear beneficiary of this disruption is industrial, as it has become a proxy for retail/consumption in the online shopping era. Multifamily supply increases in central business districts have weighed on incomes and valuations, but demand remains strong. Supply increases in office have also suppressed valuations, and demand and rent prices have been moderating.

### Portfolio Structure



<sup>&</sup>lt;sup>1</sup>Investment performance is based on calculations made by the system's custodian, BNY Mellon, and are time weighted

<sup>&</sup>lt;sup>2</sup>The custom public market equivalent index performance is based on calculations made by the system's custodian, BNY Mellon. It is calculated on a one-quarter lagged basis and consists of the following indices: FTSE NAREIT All Equity REITS Index (weight: 70%); Barclays CMBS Index (weight: 30%). 3Exclusive of REIT mandate.

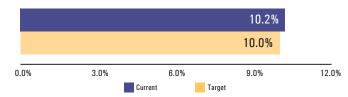
Asset Class Summary: Absolute Return

Fair Value as of 6/30/2018	INPRS 1-Year Net Performance <sup>1</sup>	HFRI Custom Benchmark <sup>2</sup>
\$2,914.0 Million	5.5%	3.7%

### **Portfolio Objective**

The purpose of the absolute return strategies program is to enhance the long-term risk adjusted returns of the plan by delivering alpha, providing diversification benefits, and preserving capital. Absolute return strategies generate returns by exploiting mispricing and inefficiencies in global capital markets, while attempting to reduce exposures to primary market factors (e.g. interest rates and equities) through various hedging techniques.

### **INPRS Allocation**



### **Performance Attribution**

INPRS outperformed the HFRI custom benchmark by 1.8 percent resulting from a combination of strategy selection and individual manager performance in the global macro and relative value strategies.

#### Market Overview

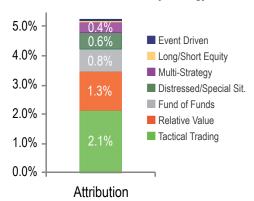
During the fiscal year, the portfolio was impacted by the implementation of President Trump's tax policies, a combination of global political uncertainty surrounding trade wars, the Iran nuclear deal, the formation of a populous coalition in Italy, central bank disintermediation across the developed world, and the return of volatility to global markets.

The portfolio's strategies exhibited a wide range of results over the fiscal year, with a range of total returns from (17.8) percent to 14.5 percent. The average positive performing investments (twenty-one in total) had a starting allocation of \$87.2 million and returned 6.3 percent. The average negative performing investments (six in total) had a starting allocation of \$44.3 million and returned (6.6) percent over the fiscal year. In summary, the numerous positive performers exhibited slightly lower returns on approximately double the initial allocations of the few offsetting negative performers.

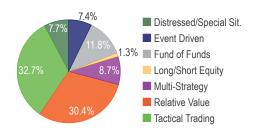
The portfolio also exhibited little beta to traditional asset classes over the fiscal year: 0.2 to the MSCI ACWI, and (0.3) to the Barclays Global Aggregate Index. The average pairwise correlation of fund returns across the entire roster of hedge funds was 0.2. The low betas and correlations indicate the portfolio has been successful in generating attractive returns while providing valuable diversification benefits to INPRS's consolidated defined benefit plan.

INPRS's fund-of-funds portfolio, which was an 11.8 percent allocation at the end of the fiscal year, gained 6.4 percent in aggregate over the fiscal year. Exposure to residential mortgages, event-driven, and special situations strategies were accretive to total performance.

### Contribution to Performance by Strategy<sup>3</sup>



#### **Portfolio Composition**



#### Fund of Funds - Look-Through4



<sup>&</sup>lt;sup>1</sup>Investment performance is based on calculations made by the systems custodian, BNY Mellon, and are timeweighted rates of return.

<sup>&</sup>lt;sup>2</sup>HFRI Custom benchmark is a weighted average of INPRS's exposure to representative HRFI sub-strategy indices.

<sup>&</sup>lt;sup>3</sup>The sum total of sub-strategy returns may differ from the reported portfolio-level return due to rounding at the sub-strategy and portfolio levels.

<sup>&</sup>lt;sup>4</sup>May not total 100 percent due to transition cash balance, allocations as of June 2018.

Asset Class Summary: Risk Parity

Fair Value as of 6/30/2018	INPRS 1-Year Net Performance <sup>1</sup>	Custom Benchmark 1-Year Performance <sup>2</sup>
\$3,437.8 Million	8.1%	7.4%

### **Portfolio Objective**

The risk parity portfolio seeks to create a risk balanced exposure that is capable of delivering consistent risk adjusted returns in several macroeconomic environments. Unlike a traditional asset allocation that is highly dependent on positive equity returns, the risk parity portfolio is constructed to accrue various asset class risk premiums, including equity, without long-term dominance from any single asset class. As a result, the underperformance of a given asset class in a particular environment may be offset by the outperformance of another asset with an opposing sensitivity to the environment.

The risk parity portfolio rests on the following key tenets:

- 1. Over a full market cycle, most asset classes provide investors with a positive risk premium in excess of cash instruments to encourage
- 2. The main drivers of returns are growth and inflation factors and changes in risk premiums; asset classes will perform differently depending on their sensitivity to such factors and macroeconomic conditions.
- 3. The return of a particular asset class is proportional to its risk over long periods of time (i.e., different asset classes produce roughly similar Sharpe ratios over the long term).
- 4. The moderate use of leverage enables one to increase the risk allocation to lower-volatility asset classes that provide additional diversification and balance to various macroeconomic environments. The use of leverage enables the portfolio to be constructed in a more diversified way without sacrificing equity-like rates of return over a full cycle.

#### **INPRS Allocation**



### **Performance Attribution**

Lacking a passive market equivalent for the risk parity portfolio, INPRS continues to use the traditional portfolio of 60 percent global equities and 40 percent global bonds ("60/40 portfolio") as a benchmark for long-term return and risk comparisons, despite expectations of significant tracking error. For fiscal year 2018, the risk parity portfolio outperformed a 60/40 portfolio by 0.7 percent, outlining the benefits of diversification.

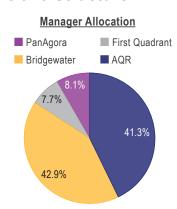
Over the past few years, equity risk concentrated or 60/40 portfolios have benefited from low volatility and high equity market returns. The market drawdown and return of volatility in early 2018 led to a slowdown in equities and 60/40 portfolios, while the risk parity portfolio benefitted from exposure to commodities. Emerging markets have been a detractor for the portfolio.

### **Market Overview**

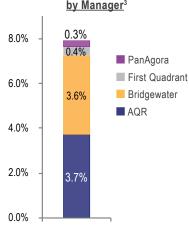
The theme of global growth seen at the start of 2017 continued throughout the second half of the year, with President Trump's tax reform announcement/implementation contributing to positive sentiment in the market. Equity returns thus far in 2018 remain positive, but have slowed, as geopolitical risks surrounding trade wars, the Iran nuclear deal, and the formation of a populous coalition in Italy concerned market participants. Emerging markets in particular have struggled and been a notable detractor to performance. In contrast to 2017, commodities have been strong, with performance largely driven by oil prices rising in response to headline geopolitical risk in markets.

<sup>1</sup>Based on calculations made by the system's custodian, BNY Mellon, and are time weighted rates of return. <sup>2</sup>Comprised of 60 percent MSCI ACWI IMI Index (equities) & 40 percent Barclays Global Aggregate Bond Index (bonds). <sup>3</sup>Sum total of manager contribution may differ from the reported portfolio level return due to rounding at the manager and

### Portfolio Structure







# Historical Comparative Investment Results<sup>1</sup> As of June 30, 2018

### **Annualized Time-Weighted Rates of Return**

	Percent of Portfolio	1-Year <sup>2,3</sup>	3-Year <sup>2,3</sup>	5-Year <sup>2,3</sup>
Total Consolidated Defined Benefit Assets	100.0 %	9.3 %	6.1 %	6.3 %
vs. BNY Mellon Public Universe Median <sup>4</sup>		8.6	7.3	8.2
Target Reference Index <sup>5</sup>		8.3	5.4	5.7
Total Domestic Equity	11.2	15.6	11.2	12.6
vs. BNY Mellon Public Universe Median		14.8	11.4	13.1
Russell 3000 Index		14.8	11.6	13.3
Total International Equity	10.9	7.8	6.6	7.5
vs. BNY Mellon Public Universe Median		7.8	6.1	7.0
MSCI ACWI ex U.S. IMI Net		7.8	5.5	6.4
Total Domestic Fixed Income	10.7	0.3	3.7	4.0
vs. BNY Mellon Public Universe Median		0.7	2.5	2.9
Barclays U.S. Aggregate Bond Index		(0.4)	1.7	2.3
Total International Fixed Income	7.1	1.5	3.7	2.9
vs. BNY Mellon Public Universe Median		(0.4)	2.7	1.3
Barclays Global Aggregate ex-USD (USDH)		3.3	3.6	4.0

<sup>&</sup>lt;sup>1</sup>As the investment objectives and resulting portfolio construction of INPRS may differ from those in the listed peer universes, the most relevant evaluation of INPRS's performance will be against the investment imperatives outlined in the report from the Chief Investment Officer and the cited benchmarks for each asset class.

<sup>2</sup>Net of Fees.

<sup>&</sup>lt;sup>3</sup>Investment performance is based on calculations made by the system's custodian, Bank of New York Mellon. The 1-year, 3-year, and 5-year performance returns are time-weighted rates of return based on the market rates of return.

<sup>4</sup>Universe of Public Funds.

<sup>&</sup>lt;sup>5</sup>The target index weights for each asset class benchmark are set by the target asset allocation. The return for Risk Parity, Real Estate, and Private Markets are equal to the asset class returns and not the benchmark.

### Ten-Year Time-Weighted Investment Rates of Return<sup>1</sup> For the Year Ended June 30

(dollars in millions)

		Fair Value of Assets	Rate of Return <sup>2</sup>	Actuarial Assumed Rate
2018	INPRS <sup>3</sup>	\$ 28,475.8	9.3 %	6.75 %
2017	INPRS <sup>3</sup>	26,364.5	8.0	6.75
2016	INPRS <sup>3</sup>	24,775.6	1.2	6.75
2015	INPRS <sup>3</sup>	24,629.8	0.0	6.75
2014	INPRS <sup>3</sup>	24,560.3	13.7	6.75
2013	INPRS <sup>3</sup>	21,488.7	6.0	6.75
2012	INPRS <sup>3</sup>	19,708.9	0.7	7.00
2011	PERF CRIF <sup>4</sup>	15,796.6	20.1	7.00
	TRF DB Assets <sup>5</sup>	5,984.0	18.2	7.00
2010	PERF CRIF⁴	13,314.0	13.9	7.25
	TRF DB Assets <sup>5</sup>	5,073.0	14.8	7.50
2009	PERF CRIF⁴	11,795.1	(20.6)	7.25
	TRF DB Assets <sup>5</sup>	4,236.0	(18.0)	7.50

<sup>&</sup>lt;sup>1</sup> Returns from 2009 - 2011 presented as previously reported; returns 2012 and thereafter are based on calculations made by the System's custodian, Bank of New York Mellon. All returns are time-weighted rates of return.

<sup>&</sup>lt;sup>2</sup>Net of fees; 2009-2011 reported as gross of fees.

<sup>&</sup>lt;sup>3</sup>INPRS Consolidated Defined Benefit Assets.

<sup>&</sup>lt;sup>4</sup>PERF Consolidated Retirement Investment Fund.

<sup>&</sup>lt;sup>5</sup>TRF Defined Benefit Assets.

### Statistical Performance As of June 30, 2018

Statistic	1-Year	3-Years	5-Years	10-Years
Annualized Time-Weighted Rate of Return	9.3 %	6.1 %	6.3 %	4.6 %
Annualized Standard Deviation	3.1	4.1	4.1	8.8
Annualized Sharpe Ratio <sup>1</sup>	2.5	1.3	1.4	0.5
Beta <sup>2</sup>	0.3	0.3	0.3	0.5
Correlation <sup>2</sup>	0.7	0.8	0.8	0.9
Annualized Alpha <sup>3</sup>	0.7	0.4	0.3	0.2

<sup>&</sup>lt;sup>1</sup>Risk Free Proxy is the Citigroup 3 Month T-Bill. <sup>2</sup>Market Proxy is the S&P 500.

### **Definition of Key Terms:**

Standard Deviation: A statistic used to measure the dispersion in a distribution. Dispersion is measured relative to the mean, or average of the distribution. The greater the dispersion, the higher the risk associated with the pattern of observations. One standard deviation describes two-thirds of the observations in a normal or bell-shaped distribution. In an asset allocation context, standard deviation is a conventional proxy for risk or volatility.

Sharpe Ratio: Ratio used to measure risk-adjusted performance. The Sharpe Ratio is calculated by subtracting a risk-free rate (proxy) from the rate of return for a portfolio and dividing the result by the standard deviation of the portfolio returns. The Sharpe Ratio provides insight on excess risk held in the portfolio. The greater a portfolio's Sharpe Ratio, the better its risk-adjusted performance has been. A negative Sharpe Ratio indicates that a risk-less asset would perform better than the security being analyzed.

Beta: A measure of the volatility, or systematic risk, of a security or portfolio in comparison to the market as a whole. Beta is the tendency of a security's return to respond to swings in the market. A Beta of less than one indicates less volatility than the market. A Beta of greater than one indicates greater volatility than the market.

Correlation: A statistical measure of how two securities move in relation to each other. A correlation of positive 1.0 indicates similar magnitude and direction of change. A correlation of negative (1.0) indicates similar magnitude, but opposite direction. A correlation of zero indicates the relationship is purely random.

Alpha: A measure of relative performance. Alpha is the difference between the actual performance of the fund and the performance which should have been achieved given the market's performance and the asset's risk posture.

<sup>&</sup>lt;sup>3</sup>Market Proxy is INPRS's Custom Dynamic Benchmark.

# **Investment Results – Defined Contribution Assets**

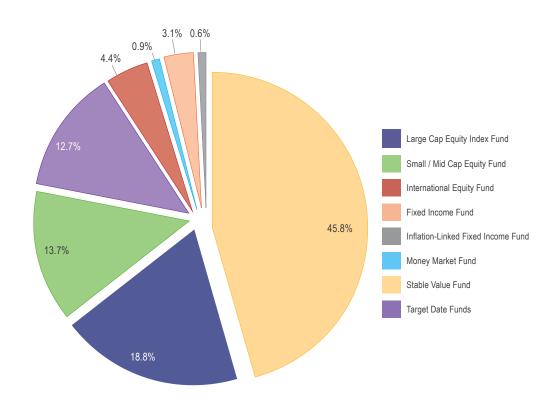
### Assets by Investment Option As of June 30, 2018

(dollars in millions)

Investment Option	Pla	n Assets¹	Percent of Self-Directed Investments
Large Cap Equity Index Fund	\$	1,061.6	18.8 %
Small / Mid Cap Equity Fund		773.8	13.7
International Equity Fund		249.4	4.4
Fixed Income Fund		173.4	3.1
Inflation-Linked Fixed Income Fund		32.0	0.6
Money Market Fund		48.7	0.9
Stable Value Fund		2,578.3	45.8
Target Date Funds <sup>2</sup>		717.1	12.7
Total Defined Contribution Assets <sup>3</sup>	\$	5,634.3	100.0 %

<sup>&</sup>lt;sup>1</sup>Assets include PERF DC, TRF DC and the LE DC account balances excluding the LE DC assets invested in the Consolidated Defined Benefit Assets option.

<sup>&</sup>lt;sup>3</sup>Includes Investment Receivables, Foreign Exchange Contracts Receivables, Interest and Dividend Receivables, Investment Payables, Foreign Exchange Contracts Payables, and Obligations Under Reverse Repurchase Agreements.



<sup>&</sup>lt;sup>2</sup>Consolidated fair values of all Target Date Funds.

# **Investment Results – Defined Contribution Assets**

Historical Annualized Time-Weighted Rate of Return by Investment Option vs. Benchmark Returns For the Year Ended June 30, 2018

Investment Option	1-Year <sup>1</sup>	3-Year <sup>1</sup>	5-Year <sup>1</sup>
Large Cap Equity Index Fund	14.4 %	11.9 %	13.4 %
S&P 500 Index	14.4	11.9	13.4
Small / Mid Cap Equity Fund	17.2	10.7	12.4
Russell Small Cap Completeness Index	16.9	10.5	12.8
International Equity Fund	7.6	6.1	7.1
MSCI ACWI ex US Index	7.3	5.1	6.0
Fixed Income Fund	(0.1)	2.0	2.5
Barclays U.S. Aggregate Bond Index	(0.4)	1.7	2.3
Inflation-Linked Fixed Income Fund	2.3	1.8	1.6
Barclays U.S. TIPS Index	2.1	1.9	1.7
Money Market Fund	1.5	0.9	0.6
Citigroup 3 Month T-Bill Index	1.3	0.6	0.4
Stable Value Fund	2.0	1.7	2.0
Federal Reserve 3 Yr Constant Maturity	2.1	1.5	1.2
Target Date Funds <sup>2</sup> :			
Retirement Fund	2.3	2.6	2.9
Retirement Fund Index	1.9	2.2	2.4
Retirement Fund 2060	8.0	6.9	7.8
2060 Fund Index	7.8	6.4	7.3
Retirement Fund 2055	8.0	6.9	7.8
2055 Fund Index	7.8	6.4	7.3
Retirement Fund 2050	8.0	6.9	7.8
2050 Fund Index	7.8	6.4	7.3
Retirement Fund 2045	8.0	6.9	7.8
2045 Fund Index	7.8	6.4	7.3
Retirement Fund 2040	7.8	6.7	7.7
2040 Fund Index	7.5	6.2	7.2
Retirement Fund 2035	6.7	6.0	7.2
2035 Fund Index	6.4	5.5	6.7
Retirement Fund 2030	4.8	4.8	6.0
2030 Fund Index	4.5	4.4	5.6
Retirement Fund 2025	3.5	3.9	4.8
2025 Fund Index	3.2	3.5	4.4
Retirement Fund 2020	2.7	3.1	3.8
2020 Fund Index	2.4	2.7	3.4

<sup>&</sup>lt;sup>1</sup>Return net of fees based on performance calculations made by the system's custodian.
<sup>2</sup>Target Date Fund benchmarks are comprised of performance data using a passive strategy with the same asset allocation of each Target Date Fund.

# **Investment Results – Defined Contribution Assets**

### **Historical Annual Interest Crediting Rates** For the Year Ended June 30

### Annual Interest Crediting Rate<sup>1</sup>

	'77 Fund	JRS	EG&C	PARF
2018	2.4 %	2.4 %	2.4 %	2.4 %
2017	2.4	2.4	2.4	2.4
2016	1.8	1.8	1.8	1.8
2015	1.9	1.9	1.9	1.9
2014	2.7	2.7	2.7	2.7
2013	1.9	1.9	1.9	1.9
2012	5.5	-	0.3	5.5
2011	5.5	-	3.5	5.5
2010	5.5	-	3.5	5.5
2009	5.5	-	3.5	5.5

<sup>&</sup>lt;sup>1</sup>Annual interest crediting rates are used to calculate interest on the sum of contributions to the fund for members who are not vested with a retirement benefit. Interest rates are approved by the INPRS Board of

# Top Ten Equity Holdings by Fair Value<sup>1</sup> As of June 30, 2018

### (dollars in thousands)

Company	Shares	Fair Value	
Apple Inc.	479,788	\$	88,814
Microsoft Corporation	841,499		82,980
Amazon.com Inc.	38,952		66,211
Samsung Electronics Co. Ltd.	1,256,003		52,573
Facebook Inc.	234,577		45,583
Alphabet Inc. Class C Capital Stock	35,880		40,030
Nestle SA	496,232		38,431
SAP SE	332,138		38,371
Berkshire Hathaway Inc.	196,843		36,741
Alphabet Inc. Class A Common Stock	32,195		36,354

<sup>&</sup>lt;sup>1</sup>A complete list of portfolio holdings is available upon request.

# Top Ten Fixed Income Holdings by Fair Value<sup>1</sup> As of June 30, 2018

### (dollars in thousands)

Description	Coupon Rate	Maturity Date	Par Value	Fair Value
U.S. Treasury - CPI Inflation Index Bond	2.125 %	2/15/41	\$ 173,460	\$ 219,910
U.S. Treasury - CPI Inflation Index Bond	1.375	2/15/44	156,449	174,887
U.S. Treasury Bond	3.000	2/15/48	162,535	163,081
U.S. Treasury - CPI Inflation Index Bond	0.750	2/15/42	162,619	159,016
U.S. Treasury - CPI Inflation Index Bond	0.625	2/15/43	161,621	153,194
U.S. Treasury - CPI Inflation Index Bond	0.750	2/15/45	154,712	150,304
U.S. Treasury - CPI Inflation Index Bond	1.000	2/15/46	136,195	140,469
U.S. Treasury - CPI Inflation Index Bond	2.125	2/15/40	111,191	139,959
U.S. Treasury - CPI Inflation Index Bond	0.875	2/15/47	134,501	134,685
U.S. Treasury Bond	3.125	2/15/43	97,690	100,289

<sup>&</sup>lt;sup>1</sup>A complete list of portfolio holdings is available upon request.

### Top Ten Brokers' Commission Fees For the Year Ended June 30, 2018

### (dollars in thousands)

Broker	Amount Paid in Fees	
Morgan Stanley & Co. Inc.	\$	1,025
Goldman Sachs & Co.		612
Newedge USA LLC		471
Merrill Lynch International		100
Pershing LLC, Jersey City		96
J.P. Morgan Clearing Corp, New York		95
J.P. Morgan Securities LTD, London		89
Merrill Lynch Pierce Fenner Smith Inc.		82
Instinet Europe Limited, London		69
HSBC Securities (USA) Inc., New York		51
Top Ten Brokers' Commission Fees		2,690
Other Brokers		1,374
Total Brokers' Commission Fees	\$	4,064

### Investment Management Fees For the Year Ended June 30, 2018

(dollars in thousands)

Asset Class		estment ement Fees
Consolidated Defined Benefit Assets		
Public Equity	\$	18,913
Private Markets		41,496
Fixed Income – Ex Inflation-Linked 19,5		19,519
Fixed Income – Inflation-Linked 4,1		4,136
Commodities 8,38		8,380
Real Estate 15,44		15,448
Absolute Return 60,07		60,079
Risk Parity 9,71		9,716
Cash + Cash Overlay 28		282
Total Consolidated Defined Benefit Assets	fit Assets 177,969	
Defined Contribution Assets	11,238	
Special Death Benefit Fund Assets		9
Total Investment Management Fees	\$	189,216

Private Markets and Real Estate managers provide account valuations on a net of fee basis. While management fees are disclosed in the Investment Management Fees schedule, for greater transparency, INPRS makes a good faith effort to provide realized carried interest and expenses that would not otherwise be disclosed. INPRS's consultants TorreyCove and Mercer provided additional fee information on a calendar year basis as of December 31, 2017 resulting in reported realized carried interest and expenses for Private Markets of \$70.8 million and Real Estate of \$21.1 million. Reported realized carried interest and expenses exclude funds where data was not provided by the general partners.

#### Investment Professionals

### **Consolidated Defined Benefit Assets**

### Custodian

Bank of New York Mellon

#### **Consultants**

Aksia (Absolute Return) Mercer (Real Estate)

Torrey Cove (Private Equity and Private Markets)

Verus (General: Defined Benefit)

### **Public Equity**

Altrinsic Global Advisors, LLC Arrowstreet Capital, LP

Artisan Partners Limited Partnership

Baillie Gifford & Company BlackRock Institutional Trust Disciplined Growth Investors Jackson Square Partners

Leading Edge Investment Advisors

RhumbLine Advisers

Schroders

Times Square Capital Management, LLC

#### **Private Markets**

A.M. Pappas & Associates

**ABRY Partners Accel Partners** 

Accent Equity Partners AB

Actis Capital

Advanced Technology Ventures

Advent International Aisling Capital **AlpInvest Partners American Securities** 

AnaCap Financial Partners

**Apax Partners** Apollo Management **ARCH Venture Partners** Ares Management Ascribe Capital **Austin Ventures** 

Avenue Capital Group **Bain Capital Partners** 

Baring Private Equity

**Bay Partners** Bertram Capital

Black Diamond Capital Management

**Bregal Sagemount Brentwood Associates** Butterfly Equity Partners, LLC

Caltius Capital Management

Cardinal Partners

Carlyle Global Credit Investment Management, L.L.C.

**Catterton Partners** 

Centerfield Capital Partners Century Park Capital Partners Cerberus Capital Management Charterhouse Capital Partners

CID Capital Cinven

Close Brothers Private Equity Code, Hennessy & Simmons

Coller Capital Columbia Capital

Court Square Capital Partners **Crescent Capital Partners** Crestview Partners

**CVC Capital Partners Doll Capital Management Elevation Partners EnCap Investments Energy Capital Partners Enhanced Capital Partners Escalate Capital Partners** Falcon Investment Advisors First Reserve Corporation Forbion Capital Partners

**Fortress** 

Gamut Capital Management Gilde Buyout Partners Globespan Capital Partners **GSO Capital Partners** GTCR Golder Rauner H2 Equity Partners

Hammond Kennedy Whitney & Co.

Hellman & Friedman Herkules Capital

High Road Capital Partners

Horsley Bridge

### Investment Professionals, continued

### **Consolidated Defined Benefit Assets**

### **Private Markets, continued**

HPS Investment Partners, LLC

Insight Venture Partners

Institutional Venture Partners

JFM Management

KAILAI Investments

Khosla Ventures

KPS Capital Partners, LP

Landmark Partners

Leonard Green & Partners

**Lexington Partners** 

Lightyear Capital

Lindsay Goldberg

Lion Capital

**MBK Partners** 

Merit Capital Partners

Mill Road Capital

Neuberger Berman

New Enterprise Associates

New Mountain Capital

NGP Energy Capital Management

Oak Hill Advisors

Oak Hill Capital Management

Oak Investment Partners

Oaktree Capital Management

**Opus Capital Venture Partners** 

Panda Power Funds

Parthenon Capital Partners

Peninsula Capital Partners

Permira Advisers

Platinum Equity

**Rho Capital Partners** 

**RJD Partners** 

SAIF Management II

Scale Venture Partners

Silver Cup

Silver Lake Partners

StepStone Group

Sumeru Equity Partners

Sun Capital Partners

TA Associates

**Technology Crossover Ventures** 

**Technology Partners** 

Terra Firma Capital Partners

The Blackstone Group

The Jordan Company (TJC)

TowerBrook Financial

TPG Capital

**Trilantic Capital Partners** 

**Trinity Ventures** 

**Triton Partners** 

True Ventures

TSG Consumer Partners

Veritas Capital Management

Veronis Suhler Stevenson (VSS)

Vestar Capital Partners

Vintage Venture Partners

Vision Capital

Vista Equity Partners

Walden Group of Venture Capital Funds

Warburg Pincus

Warwick Energy Investment Group

Wayzata Investment Partners

Weston Presidio Capital

White Deer Management

Windjammer

WL Ross & Co.

Xenon Private Equity

York Capital Management

#### Fixed Income - Ex Inflation-Linked

Goldman Sachs Asset Management, LP

Oak Hill Advisors, LP

Oak Tree Capital Management, LP

Pacific Investment Management Company (PIMCO)

Reams Asset Management

State Street Global Advisors

Stone Harbor

### Fixed Income - Inflation-Linked

Bridgewater Associates, Inc.

Northern Trust Global Investments

### **Commodities**

CoreCommodity Management

Goldman Sachs Asset Management, LP

Gresham Investment Management, LLC

### Investment Professionals, continued

### **Consolidated Defined Benefit Assets**

### **Real Estate**

Abacus Capital Group, LLC

BlackRock Financial Management

Blackstone Property Partners

Blackstone Real Estate Partners

Brigade Capital Management, LP

Colony Capital, LLC

Exeter Property Group, LLC

Greenfield Partners, LLC

H/2 Capital Partners

Harrison Street Real Estate Capital, LLC

JDM Partners

LimeTree Capital

Lone Star Funds

Mesa West Capital

Related Fund Management, LLC

Rockpoint Group, LLC

Stockbridge Capital Group

TA Realty Associates

Walton Street Capital, LLC

WestRiver Capital, LLC

#### **Absolute Return**

**AQR** Capital Management

Aeolus Capital Management

Blackstone Alternative Asset Management (BAAM)

Blackstone Tactical Opportunities Associates

Bridgewater Associates, Inc.

**Davidson Kempner Capital Management** 

D.E. Shaw & Co.

Eisler Capital (UK) Ltd.

Garda Capital Partners

Highfields Capital Management

Ionic Capital Management

Kepos Capital, LP

King Street Capital Management

Man Investments (USA) Corporation

Nephila Capital

Oceanwood Capital Management

Oxford Asset Management

Pacific Alternative Asset Management Company (PAAMCO)

Perella Weinberg Partners

Pharo Management (UK) LLP Rokos Capital Management, LLP Tenaron Capital Managment, L.P. Tilden Park Associates Two Sigma Advisers

### Risk Parity

AQR Capital Management Bridgewater Associates, Inc. First Quadrant PanAgora Asset Management, Inc.

### Cash Overlay

Russell Investments

### Investment Professionals, continued

### **Defined Contribution Assets**

Public Employees' Defined Contribution Account (PERF DC)

Teachers' Defined Contribution Account (TRF DC)
Legislators' Defined Contribution Fund (LE DC)

#### Consultant

Cap Cities (General: Defined Contribution)

### **Large Cap Equity Index Fund**

BlackRock Institutional Trust

### Small/Mid Cap Equity Fund

Rhumbline Advisers
Times Square Capital Management, LLC

### **International Equity Fund**

Altrinsic Global Advisors, LLC Arrowstreet Capital, LP Baillie Gifford & Company BlackRock Institutional Trust

### **Fixed Income Fund**

Loomis Sayles & Company Northern Trust Global Investments Pacific Investment Management Company (PIMCO)

### Inflation-Linked Fixed Income Fund

BlackRock Institutional Trust

#### **Money Market Fund**

Bank of New York Mellon

#### Stable Value Fund

Galliard Capital Management (Fund Advisor)
Income Research + Management (Fund Sub-Advisor)
Jennison Associates, LLC (Fund Sub-Advisor)
Loomis Sayles (Fund Sub-Advisor)
Reams Asset Management (Fund Sub-Advisor)
TCW (Fund Sub-Advisor)

### Special Death Benefit Fund (SDBF)

BlackRock Financial Management

# Local Public Safety Pension Relief Fund (LPSPR)

Bank of New York Mellon



# **Actuarial Section**



# 2018 COMPREHENSIVE ANNUAL FINANCIAL REPORT

For the Fiscal Year Ended June 30, 2018

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#### Introduction

he funding methods used for the Defined Benefit retirement plans administered by INPRS are not governed by and do not conform to GASB Statement No. 67, so the actuary prepares two actuarial valuations for each of the pension plans. One is an actuarial valuation used for financial reporting purposes that conforms to GASB Statement No. 67 as disclosed in the Financial Section. The second is an actuarial valuation used for funding purposes as disclosed in the Actuarial Section, which follows generally accepted actuarial principles and practice and the Actuarial Standards of Practice issued by the Actuarial Standards Board. The actuarial methods and assumptions used to prepare the two actuarial valuations are nearly identical, with the primary difference being the method of valuation of the pension assets. For financial reporting purposes, the fair value of the assets is used as of the fiscal year end. For funding purposes, a five-year smoothing of the gains or losses on the fair value of assets is used for each year, subject to a 20 percent corridor around the fair value of assets. Therefore, the amounts presented in the Actuarial Section may differ from the amounts presented for financial reporting purposes in the Financial Section.

Cavanaugh Macdonald Consulting, LLC provides the actuarial services for the eight Defined Benefit retirement plans administered by INPRS:

- Public Employees' Defined Benefit Account (PERF DB)
- Teachers' Pre-1996 Defined Benefit Account (TRF Pre-'96 DB)
- Teachers' 1996 Defined Benefit Account (TRF '96 DB)
- 1977 Police Officers' and Firefighters' Retirement Fund ('77 Fund)
- Judges' Retirement System (JRS)
- Excise, Gaming and Conservation Officers' Retirement Fund (EG&C)
- Prosecuting Attorneys' Retirement Fund (PARF)
- Legislators' Defined Benefit Fund (LE DB)

Effective January 1, 2018, funds previously known as an Annuity Savings Account (ASA), which had been reported within defined benefit funds, were recategorized as a Defined Contribution (DC) fund based on Internal Revenue Service Private Letter Rulings PLR-193-2016 and PLR-110249-18. DC member balances previously reported within PERF DB, TRF Pre-'96 DB, and TRF '96 DB fund totals were transferred to the appropriate DC fund as of January 1, 2018.

### Actuary's Certification Letter



November 1, 2018

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

Dear Members of the Board:

At your request, we performed actuarial valuations of the eight defined benefit plans administered by the Indiana Public Retirement System (INPRS): the Public Employees' Retirement Fund (PERF), the Teachers' Pre-1996 Account (TRF Pre-'96), the Teachers' 1996 Account (TRF '96), the 1977 Police Officers' and Firefighters' Retirement Fund ('77 Fund), the Judges' Retirement System (JRS), the Excise, Gaming and Conservation Officers' Retirement Fund (EG&C), Prosecuting Attorneys' Retirement Fund (PARF), and the Legislators' Defined Benefit Fund (LE DB). These valuations are as of June 30, 2018, for the purpose of estimating the actuarial required contribution for the plan years ending in calendar year 2020 (either June 30 or December 31), and reflect the benefit and funding provisions in place on June 30, 2018.

The PERF, TRF Pre-'96, TRF '96, EG&C, and LE DB funds were affected by the change in the actuarial assumption from the prior year for the Cost-of-Living-Adjustment (COLA) to reflect future expectations after the passage of Senate Enrolled Act No. 373. Additionally, effective January 1, 2018, the Defined Contribution (DC) account was separated from the defined benefit portion of the PERF and TRF trusts. This trust split has been reflected as a plan change and recognized immediately for both funding and GASB.

This is the first actuarial valuation prepared by Cavanaugh Macdonald Consulting, LLC. As part of our transition work, we replicated the June 30, 2017 actuarial valuation. Results were well within acceptable limits, but as is typical in a takeover situation, there were some differences in the key valuation results. Based on our experience, these differences are neither unusual nor significant.

### **Basis of the Valuations**

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

3802 Raynor Pkwy, Suite 202, Bellevue, NE 68123 Phone (402) 905-4461 • Fax (402) 905-4464 www.CavMacConsulting.com Offices in Kennesaw, GA • Bellevue, NE

#### Actuary's Certification Letter, continued

Board of Trustees November 1, 2018 Page 2



As noted above, the valuation reflects the provisions as of June 30, 2018, including the effects of Senate Enrolled Act No. 373 and the separation of the DC assets from the PERF and TRF trusts.

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

#### **Actuarial Methods and Assumptions**

While the assumptions were generally developed by the prior actuaries in experience studies for the period from July 1, 2010 or July 1, 2011 through June 30, 2014, we believe they are reasonable assumptions for the present. The Board has the final decision regarding the appropriateness of the assumptions and adopted them as indicated in Appendix C. Specifically, we presented the existing assumptions with adjustments to the COLA assumption for the 2018 valuations to the Board on February 23, 2018, and the Board subsequently adopted their use. These assumptions are applicable to both the funding and Governmental Accounting Standards Board (GASB) Statement Number 67 valuation calculations, unless otherwise noted.

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

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

#### Certification

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

#### Financial Section:

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

#### Actuary's Certification Letter, continued

Board of Trustees November 1, 2018 Page 3

# CM

#### Actuarial Section:

- Summary of INPRS Funded Status
- Historical Summary of Actuarial Valuation Results by Retirement Plan
- Summary of Actuarial Assumptions, Methods and Plan Provisions
- Analysis of Financial Experience
- Solvency Test
- Schedule of Active Member Valuation Data
- · Schedule of Retirants and Beneficiaries

#### Statistical Section:

- Membership Data 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 has been prepared in accordance with generally recognized and accepted actuarial principles and practices. We are members of the American Academy of Actuaries and meet the Qualification Standards to render the actuarial opinion contained herein.

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

We respectfully submit the following exhibits.

Brent a Bante

Sincerely,

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

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

Patrice Beckham



### **Summary of Funded Status**

(dollars in millions)	Actuari	al Valuation	as of June 3	0, 2018	Actuarial Valuation as of June 30, 2017				
Pre-Funded Defined Benefit Retirement Plans	Actuarial Accrued Liability	Actuarial Value of Assets	Unfunded Actuarial Accrued Liability <sup>1</sup>	Actuarial Funded Status	Actuarial Accrued Liability	Actuarial Value of Assets	Unfunded Actuarial Accrued Liability <sup>1</sup>	Actuarial Funded Status	
PERF DB	\$ 16,091.4	\$ 12,823.9	\$ 3,267.5	79.7 %	\$ 16,335.2	\$ 12,327.9	\$ 4,007.3	75.5 %	
TRF '96 DB	5,563.3	5,478.5	84.8	98.5	5,536.1	5,036.0	500.1	91.0	
'77 Fund	5,839.7	5,954.0	(114.3)	102.0	5,385.8	5,587.6	(201.8)	103.7	
JRS	547.6	516.7	30.9	94.4	523.7	492.0	31.7	93.9	
EG&C	140.0	132.4	7.6	94.6	142.6	124.5	18.1	87.3	
PARF	103.3	61.7	41.6	59.7	96.7	58.0	38.7	60.0	
LE DB	3.5	3.1	0.4	87.5	3.8	3.1	0.7	81.9	
Total Pre-Funded Defined Benefit Retirement Plans	28,288.8	24,970.3	3,318.5	88.3	28,023.9	23,629.1	4,394.8	84.3	
Pay-As-You-Go Defined Benefit Retirement Plan									
TRF Pre-'96 DB	14,583.2	3,721.3	10,861.9	25.5	15,494.5	3,708.9	11,785.6	23.9	
Total Defined Benefit Retirement Plans	\$ 42,872.0	\$ 28,691.6	\$ 14,180.4	66.9 %	\$ 43,518.4	\$ 27,338.0	\$ 16,180.4	62.8 %	

<sup>&</sup>lt;sup>1</sup>The Unfunded Actuarial Accrued Liability is calculated using the Actuarial Value of Assets (AVA), which is different from the Net Pension Liability in the Financial Section which uses the Plan Fiduciary Net Position, also known as the Fair Value of Assets (FVA).

#### **Analysis of Financial Experience**

(dollars in thousa	ands)			(Gain) / Loss									
Defined Benefit Retirement Plans	June 30, 2017 UAAL <sup>1</sup>	Normal Cost and Interest, less Actuarially Determined Contributions	Expected June 30, 2018 UAAL <sup>1</sup>	۷	ctuarial alue of Assets perience	A Li	ctuarial ccrued abilities perience <sup>2</sup>	As Me	Actuarial sumption & ethodology Changes³	Plan Provision Changes		otal (Gain) / Loss	June 30, 2018 UAAL <sup>1</sup>
PERF DB	\$ 4,007,295	\$ (75,594)	\$ 3,931,701	\$	49,765	\$	13,399	\$	(727,422)	\$	- \$	(664,258)	\$ 3,267,443
TRF Pre-'96 DB	11,785,669	(136,712)	11,648,957		44,600		(15,178)		(816,513)		-	(787,091)	10,861,866
TRF '96 DB	500,103	(9,501)	490,602		22,484		28,886		(457,190)		-	(405,820)	84,782
'77 Fund	(201,798)	2,234	(199,564)		(37,650)		81,440		41,455		-	85,245	(114,319)
JRS	31,722	(1,236)	30,486		3,552		(7,289)		4,196		-	459	30,945
EG&C	18,072	(385)	17,687		(1,470)		493		(9,095)		-	(10,072)	7,615
PARF	38,688	(804)	37,884		1,579		919		1,237		-	3,735	41,619
LE DB	690	(154)	536		104		(78)		(127)		-	(101)	435
Total INPRS	\$ 16,180,441	\$ (222,152)	\$15,958,289	\$	82,964	\$	102,592	\$	(1,963,459)	\$	- \$	(1,777,903)	\$ 14,180,386

<sup>&</sup>lt;sup>1</sup>UAAL: Unfunded Actuarial Accrued Liabilities

<sup>&</sup>lt;sup>2</sup>Actuarial Accrued Liabilities Experience represents actual experience versus expected experience of the actuarial census assumptions:

 <sup>-</sup> Unanticipated changes to the member census data.
 - For '77 Fund, a 2.2 percent COLA for benefit recipients effective July 1, 2018, rather than the assumed COLA of 2.0 percent.

<sup>-</sup> For JRS, a 2.1 percent COLA for benefit recipients effective July 1, 2018, rather than the assumed COLA of 2.5 percent.

Actuarial Assumption and Methodology Changes include:

- For PERF DB, TRF Pre-'96 DB, TRF '96 DB, EG&C, and LE DB, the COLA assumption was changed due to passage of Senate Enrolled Act No. 373. In lieu of a 1.0 percent COLA beginning on January 1, 2020, INPRS assumes that the COLA will be replaced by a 13th check for 2020 and 2021. The COLA assumption thereafter, would be 0.4 percent beginning on January 1, 2034, and ultimately 0.6 percent beginning on January 1, 2039.

<sup>-</sup> Actuarial Firm Change.

### Ten-Year Schedule of Participating Employers For the Year Ended June 30

	Total DB¹	PERF DB	TRF Pre- '96 DB <sup>2</sup>	TRF '96 DB <sup>2</sup>	Total TRF DB <sup>2</sup>	'77 Fund	JRS	EG&C	PARF	LE DB
2018	1,243	1,187	345	373	N/A	168	1	1	1	1
2017	1,234	1,183	341	368	N/A	167	1	1	1	1
2016	1,224	1,177	337	362	N/A	165	1	1	1	1
2015	1,212	1,167	339	360	N/A	165	1	1	1	1
2014	1,175	1,126	340	363	N/A	162	1	1	1	1
2013 <sup>3</sup>	1,171	1,121	N/A	N/A	365	161	1	1	1	1
2012 <sup>3</sup>	1,170	1,122	N/A	N/A	364	162	1	1	1	1
2011	1,182	1,132	N/A	N/A	369	166	1	1	1	1
2010	1,230	1,180	N/A	N/A	367	164	1	1	1	1
2009	1,220	1,179	N/A	N/A	360	160	1	1	1	1

<sup>&</sup>lt;sup>1</sup>Sum of individual employers by retirement plan does not equal total employers, since one (1) employer may participate in multiple retirement funds. <sup>2</sup>Prior to 2014 participating employers for TRF were not split between TRF Pre-<sup>9</sup>6 DB and TRF <sup>9</sup>6 DB. <sup>3</sup>The Total was adjusted to treat the State and its component units as one employer.

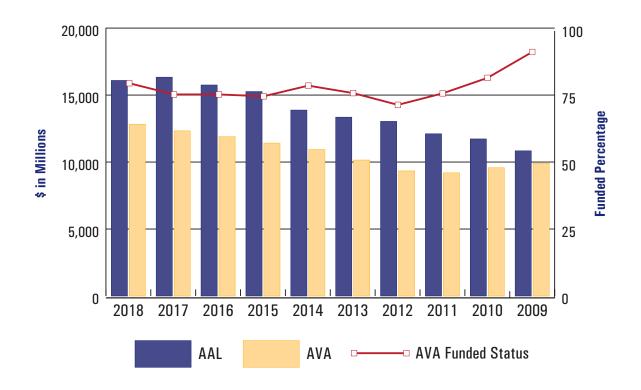
### Historical Summary of Actuarial Valuation Results Actuarial Valuation as of June 301

(dollars in millions)

	A	actuarial Accrued Dility (AAL)	Ì	ctuarial /alue of sets (AVA)	Li	nfunded ability <sup>2</sup> AL-AVA)	AVA Funded Status (AVA/AAL)	Ei	Covered mployee Payroll <sup>3</sup>	Unfunded Liability <sup>2</sup> as a percentage of Covered Employee Payroll
2018	\$	16,091.4	\$	12,823.9	\$	3,267.5	79.7 %	\$	5,083.1	64.3 %
2017		16,335.2		12,327.9		4,007.3	75.5		4,997.6	80.2
2016		15,752.0		11,896.1		3,855.9	75.5		4,868.7	79.2
2015		15,263.4		11,414.7		3,848.7	74.8		4,804.1	80.1
2014		13,880.7		10,939.8		2,940.9	78.8		4,896.6	60.1
2013		13,349.6		10,151.2		3,198.4	76.0		4,700.0	68.1
2012		13,034.8		9,338.8		3,696.0	71.6		4,550.0	81.2
2011		12,108.1		9,195.6		2,912.5	75.9		4,500.0	64.7
2010		11,725.5		9,576.6		2,148.9	81.7		4,800.0	44.8
2009		10,836.9		9,900.0		936.9	91.4		4,850.0	19.3

<sup>&</sup>lt;sup>1</sup>Effective January 1, 2018, DC account balances are treated as a separate DC plan.

<sup>&</sup>lt;sup>3</sup>Covered Employee Payroll can also be found in the RSI Contribution Schedule in the Financial Section.



The Unfunded Liability is calculated using the Actuarial Value of Assets (AVA), which is different than Net Pension Liability in the Financial Section which uses the Plan Fiduciary Net Position, also known as the Fair Value of Assets (FVA).

#### Summary of Actuarial Assumptions, Actuarial Methods and Plan Provisions

he actuarial assumptions and methods used in the June 30, 2018 valuation of the Public Employees' Defined Benefit Account were adopted by the INPRS Board in April 2018. The majority of the actuarial assumptions and methods are based on plan experience from July 1, 2010 through June 30, 2014, and were first used in the June 30, 2015 valuation. The INPRS Board adopted a funding policy in April 2014, and the policy was last updated in October 2017. The funding policy is available online at: www.in.gov/inprs/files/INPRS\_Funding\_Policy.pdf.

#### **Changes in Actuarial Assumptions**

For the actuarial valuation as of June 30, 2018, the COLA assumption was changed due to passage of Senate Enrolled Act No. 373. In lieu of a 1.0 percent COLA beginning on January 1, 2020, INPRS assumes the COLA will be replaced by a 13th check for 2020 and 2021. The COLA assumption thereafter, would be 0.4 percent beginning on January 1, 2022, changing to 0.5 percent beginning on January 1, 2034, and ultimately 0.6 percent beginning on January 1, 2039.

#### **Changes in Actuarial Methods**

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

#### **Changes in Plan Provisions**

Legislation passed in the 2018 legislative session creates a funding mechanism to provide for future benefit increases or 13th checks. The INPRS Board has the authority to have employers contribute up to 1.0 percent of member pay into the fund. Increases or payments are made upon passed legislation subject to the availability of funds to provide the benefit.

#### **Actuarial Assumptions**

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

#### **Economic Assumptions**

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

Interest Rate / Investment Return:

Funding 6.75 percent (net of administrative and investment expenses)

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

Inflation: 2.25 percent per year

Cost of Living Increases: It is assumed a service-based 13th check will be paid in the 2020 and 2021 fiscal years. Thereafter, the

following COLAs, compounded annually, are assumed:

0.4 percent beginning on January 1, 20220.5 percent beginning on January 1, 20340.6 percent beginning on January 1, 2039

Future Salary Increases: Based on 2010-2014 experience.

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

#### Summary of Actuarial Assumptions, Actuarial Methods and Plan Provisions, continued

#### Demographic Assumptions: Based on 2010-2014 Experience

Mortality (Healthy): RP-2014 Total Data Set Mortality Tables, with Social Security generational improvements from 2006 based on

the Social Security Administration's 2014 Trustee Report.

Mortality (Disabled): RP-2014 Disability Mortality Tables, with Social Security generational improvements from 2006 based on the

Social Security Administration's 2014 Trustee Report.

Years of Service Retirement:

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

Benefit Commencement Timing:

Active Members

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

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

**Terminated Vested Members** 

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

Termination:

Earnings < \$20,000

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

### Summary of Actuarial Assumptions, Actuarial Methods and Plan Provisions, continued

State (Male)						Years	s of Servic	e				
Earnings >= \$20,000	Age	0	1	2	3	4	5	6	7	8	9	10+
	20-24	23 %	23 %	23 %	20 %	20 %	17 %	17 %	12 %	12 %	7 %	7 %
	25-29	23	23	23	19	17	17	17	12	12	7	7
	30-34	22	22	19	18	16	13	13	12	7	7	7
	35-39	17	17	17	17	16	10	10	9	7	6	6
	40-44	17	17	14	12	12	10	9	9	7	5	5
	45-49	14	14	14	10	10	10	9	7	4	4	4
	50-54	14	14	9	9	9	9	9	7	4	4	4
	55+	13	13	7	7	7	7	7	7	4	4	4
State (Female)						Years	s of Servic	e				
Earnings >= \$20,000	Age	0	1	2	3	4	5	6	7	8	9	10+
	20-24	23 %	23 %	23 %	23 %	17 %	17 %	13 %	12 %	11 %	8 %	8 %
	25-29	23	23	22	21	17	17	13	12	11	8	8
	30-34	21	21	21	17	15	14	12	12	11	8	8
	35-39	19	19	16	16	12	12	12	12	9	8	7
	40-44	18	18	16	13	12	12	9	9	8	8	6
	45-49	16	16	16	13	10	10	9	9	8	8	6
	50-54	16	16	15	12	10	9	9	9	6	6	6
	55+	16	16	11	11	10	9	9	9	6	6	6
Political Subdivisions (Male)						Years	s of Servic	e				
Earnings >= \$20,000	Age	0	1	2	3	4	5	6	7	8	9	10+
	20-24	18 %	18 %	18 %	18 %	14 %	12 %	11 %	11 %	7 %	7 %	5 %
	25-29	18	18	18	16	14	12	11	11	7	7	5
	30-34	16	16	16	15	13	11	11	11	7	7	5
	35-39	15	15	12	12	12	10	9	9	7	7	5
	40-44	13	13	11	11	10	10	9	9	7	7	4
	45-49	11	11	11	11	9	7	7	7	7	7	4
	50-54	11	11	9	9	9	7	7	6	6	4	4
	55-59	11	11	7	7	7	7	7	5	5	4	4
	60+	8	8	7	7	7	7	7	5	5	4	4
Political Subdivisions (Female	)					Years	s of Servic	е				
Earnings >= \$20,000	Age	0	1	2	3	4	5	6	7	8	9	10+
	20-24	22 %	22 %	19 %	16 %	14 %	14 %	11 %	11 %	9 %	7 %	7 %
	25-29	21	21	18	16	14	14	11	11	9	7	7
	30-34	16	16	16	14	14	14	11	11	9	7	7
	35-39	14	14	14	12	12	12	9	9	9	7	6
	40-44	13	13	12	11	10	8	8	8	8	7	4
	45-49	12	12	12	10	8	8	8	7	6	6	4
	50-54	11	11	10	8	8	6	6	6	6	5	4
	55+	11	11	8	8	8	6	6	6	6	4	4

### Summary of Actuarial Assumptions, Actuarial Methods and Plan Provisions, continued

Disability:

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

Spouse/Beneficiary:

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

#### Summary of Actuarial Assumptions, Actuarial Methods and Plan Provisions, continued

#### **Actuarial Methods**

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

Actuarial Cost Method: Entry Age Normal - Level Percent of Payroll

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

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

Amortization Method:

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

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

Data Measurement Date:

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

Asset Valuation Method:

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

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

#### **Plan Provisions**

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

#### **Analysis of Financial Experience**

(dollars in thousands)	UAAL		
Unfunded Actuarial Accrued Liability (UAAL): June 30, 2017	\$	4,007,295	
Normal Cost and Interest, less Expected Contributions		(75,594)	
Expected UAAL: June 30, 2018		3,931,701	
UAAL (Gain) / Loss			
Actuarial Value of Assets Experience		49,765	
Actuarial Accrued Liabilities Experience <sup>1</sup>		13,399	
Actuarial Assumption & Methodology Changes <sup>2</sup>		(727,422)	
Plan Provision Changes		-	
Total UAAL (Gain) / Loss		(664,258)	
Unfunded Actuarial Accrued Liability: June 30, 2018	\$	3,267,443	

#### Solvency Test

(dollars in thousands)

	Actua	rial Accrued Liab	oilities		Covered by Assets					
Actuarial Valuation as of June 301	Retirees and Beneficiaries	Active Member (Employer Financed Portion)	Total Actuarial Accrued Liabilities	Actuarial Value of Assets	Retirees and Beneficiaries	Active Member (Employer Financed Portion)	Total Actuarial Accrued Liabilities			
2018	\$ 7,768,231	\$ 8,323,142	\$ 16,091,373	\$ 12,823,930	100.0 %	60.7%	79.7 %			
2017	7,834,962	8,500,291	16,335,253	12,327,958	100.0	52.9	75.5			
2016	7,595,089	8,156,966	15,752,055	11,896,167	100.0	52.7	75.5			
2015	6,981,308	8,282,087	15,263,395	11,414,710	100.0	53.5	74.8			
2014	6,250,902	7,629,820	13,880,722	10,939,760	100.0	61.5	78.8			
2013	6,367,819	6,981,759	13,349,578	10,151,181	100.0	54.2	76.0			
2012	5,895,779	7,139,012	13,034,791	9,338,776	100.0	48.2	71.6			
2011	5,370,786	6,737,338	12,108,124	9,195,563	100.0	56.8	75.9			
2010	4,931,592	6,793,890	11,725,482	9,576,629	100.0	68.4	81.7			
2009	4,611,257	6,225,705	10,836,962	9,900,018	100.0	85.0	91.4			

<sup>&</sup>lt;sup>1</sup>Effective January 1, 2018, DC account balances are treated as a separate DC plan.

**Portion of Actuarial Accrued Liabilities** 

<sup>&</sup>lt;sup>1</sup>Actuarial Accrued Liabilities Experience represents actual experience versus expected experience of the actuarial census assumptions:

- Unanticipated changes to the member census data.

<sup>2</sup>Actuarial Assumption and Methodology Changes include:

- The COLA assumption was changed due to passage of Senate Enrolled Act No. 373. In lieu of a 1.0 percent COLA beginning on January 1, 2020, INPRS assumes that the COLA will be replaced by a 13th check for 2020 and 2021. The COLA assumption thereafter, would be 0.4 percent beginning on January 1, 2034, and ultimately 0.6 percent beginning on January 1, 2034, and ultimately 0.6 percent beginning on January 1, 2039.

- Actuarial firm change -Actuarial firm change.

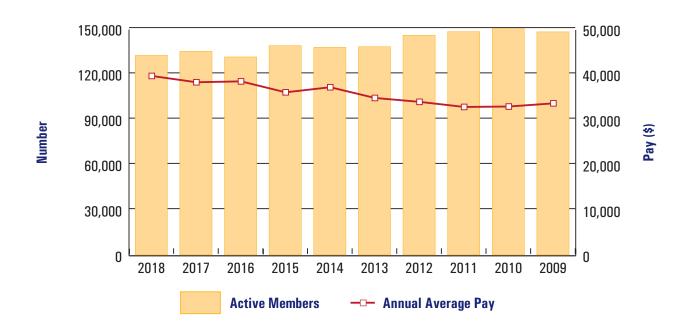
#### Schedule of Active Members Valuation Data Actuarial Valuation as of June 30

(dollars in thousands - except annual average pay)

	Active Members	Ann	Annual Payroll <sup>1</sup>		al Average Pay	Annual Percent Increase / (Decrease) In Average Pay
2018 <sup>2</sup>	132,181	\$	5,210,209	\$	39,417	3.6 %
20172	134,909		5,130,437		38,029	(0.5)
2016 <sup>2</sup>	131,178		5,014,012		38,223	6.8
2015 <sup>2</sup>	138,660		4,964,813		35,806	(3.0)
20142	137,567		5,080,092		36,928	6.9
2013	137,937		4,766,910		34,559	2.5
2012	145,519		4,904,052		33,700	3.5
2011	147,933		4,818,774		32,574	(0.3)
2010	149,877		4,896,013		32,667	(2.1)
2009	147,792		4,931,423		33,367	1.7

<sup>&</sup>lt;sup>1</sup>Figures shown are the anticipated pay for the one-year period following the valuation date.

### **Total Number of Active Members Per Year and Annual Average Pay**



<sup>&</sup>lt;sup>2</sup>The valuation results were calculated using the prior year census data, adjusted for certain activity during the fiscal year.

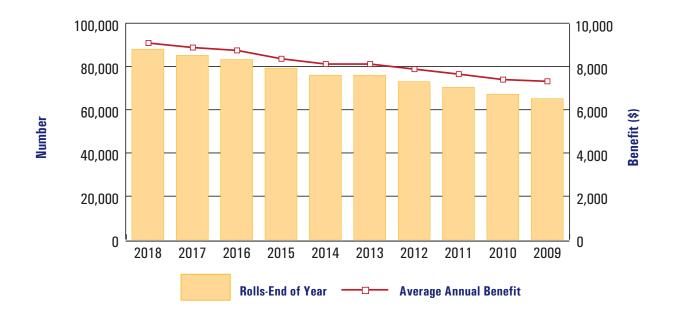
#### Schedule of Retirants and Beneficiaries Actuarial Valuation as of June 30

(dollars in thousands - except average annual benefit)

	Added to Rolls		Removed	from Rolls	Rolls – E	Rolls – End of Year Percent				Percent	
	Number	Annual Benefits	Number	Annual Benefits	Number	Total Annual Benefits <sup>1,2</sup>	Increase / (Decrease) In Total Annual Benefits	Α	verage nnual enefit <sup>2</sup>	Increase / (Decrease) in Average Annual Benefit	
2018 <sup>3</sup>	5,249	\$ 55,236	2,389	\$ 15,609	87,990	\$ 801,551	5.8 %	\$	9,110	2.3 %	
2017 <sup>3</sup>	4,855	49,980	2,913	18,808	85,130	757,851	3.9		8,902	1.5	
2016 <sup>3</sup>	6,478	78,487	2,488	15,597	83,188	729,366	9.9		8,768	4.6	
2015 <sup>3</sup>	5,489	60,538	2,241	14,107	79,198	663,767	7.4		8,381	3.0	
2014 <sup>3</sup>	-	-	-	-	75,950	617,977	-		8,137	-	
2013	5,231	55,523	2,273	13,898	75,950	617,977	7.2		8,137	3.0	
2012	4,751	49,766	2,139	12,540	72,992	576,678	6.8		7,901	3.0	
2011	5,402	56,185	2,188	11,698	70,380	539,747	8.3		7,669	3.4	
2010	4,827	39,214	2,760	19,022	67,166	498,199	4.3		7,417	1.1	
2009	6,047	55,726	3,372	19,103	65,099	477,553	9.3		7,336	4.9	

<sup>1</sup>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. <sup>2</sup>Annual benefits includes members selecting an annuity for their ASA.

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



<sup>&</sup>lt;sup>3</sup>The valuation results were calculated using the prior year census data, adjusted for certain activity during the fiscal year.

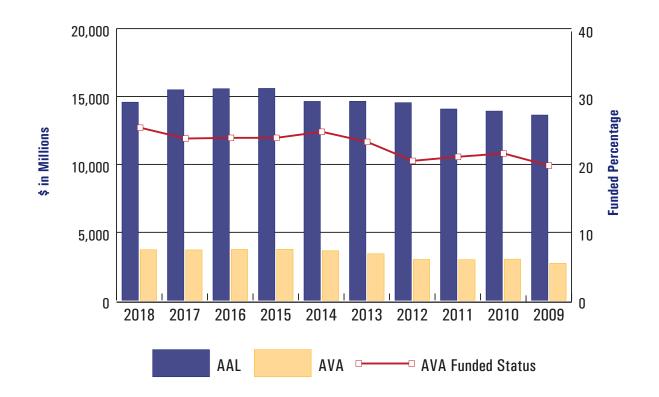
### Historical Summary of Actuarial Valuation Results Actuarial Valuation as of June 30<sup>1</sup>

(dollars in millions)

	I	actuarial Accrued Dility (AAL)	٧	ctuarial /alue of sets (AVA)	Ĺ	nfunded .iability² AL – AVA)	AVA Funded Status (AVA/AAL)	Covered Employee Payroll <sup>3</sup>		Unfunded Liability <sup>2</sup> as a percentage of Covered Employee Payroll
2018	\$	14,583.2	\$	3,721.3	\$	10,861.9	25.5 %	\$	824.8	1,317.0 %
2017		15,494.5		3,708.9		11,785.6	23.9		912.7	1,291.3
2016		15,575.1		3,743.9		11,831.2	24.0		989.1	1,196.2
2015		15,596.3		3,750.2		11,846.1	24.0		1,074.8	1,102.2
2014		14,639.9		3,643.0		10,996.9	24.9		1,262.8	870.8
2013		14,649.5		3,422.2		11,227.3	23.4		1,383.4	811.6
2012		14,547.9		3,004.0		11,543.9	20.6		1,637.1	705.1
2011		14,081.9		2,990.9		11,091.0	21.2		1,762.8	629.2
2010		13,928.4		3,028.7		10,899.7	21.7		1,865.1	584.4
2009		13,637.2		2,719.2		10,918.0	19.9		2,030.5	537.7

<sup>&</sup>lt;sup>1</sup>Effective January 1, 2018, DC account balances are treated as a separate DC plan.

<sup>&</sup>lt;sup>3</sup>Covered employee payroll can also be found in the RSI Contribution Schedule in the Financial Section.



<sup>&</sup>lt;sup>2</sup>The Unfunded Liability is calculated using the Actuarial Value of Assets (AVA), which is different than Net Pension Liability in the Financial Section which uses the Plan Fiduciary Net Position, also known as the Fair Value of Assets (FVA).

#### Summary of Actuarial Assumptions, Actuarial Methods and Plan Provisions

he actuarial assumptions and methods used in the June 30, 2018 valuation of the Teachers' Pre-1996 Defined Benefit Account were adopted by the INPRS Board in April 2018. The majority of the actuarial assumptions and methods are based on plan experience from July 1, 2011 through June 30, 2014, and were first used in the June 30, 2015 valuation. The INPRS Board adopted a funding policy in April 2014, and the policy was last updated in October 2017. The funding policy is available online at: www.in.gov/inprs/files/INPRS\_Funding\_Policy.pdf.

#### Changes in Actuarial Assumptions

For the actuarial valuation as of June 30, 2018, the COLA assumption was changed due to passage of Senate Enrolled Act No. 373. In lieu of a 1.0 percent COLA beginning on January 1, 2020, INPRS assumes that the COLA will be replaced by a 13th check for 2020 and 2021. The COLA assumption thereafter, would be 0.4 percent beginning on January 1, 2022, change to 0.5 percent beginning on January 1, 2034, and ultimately 0.6 percent beginning on January 1, 2039.

#### Changes in Actuarial Methods

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

#### Changes in Plan Provisions

Legislation passed in the 2018 legislative session creates a funding mechanism to provide for future benefit increases or 13th checks. The INPRS Board has the authority to designate certain statewide tax sources to provide funding. Increases or payments are made upon passed legislation subject to the availability of funds to provide the benefit.

### **Actuarial Assumptions**

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

#### **Economic Assumptions**

Interest Rate / Investment Return:

**Funding** 6.75 percent (net of administrative and investment expenses)

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

Inflation: 2.25 percent per year

Cost of Living Increases: It is assumed a service-based 13th check will be paid in the 2020 and 2021 fiscal years. Thereafter, the

following COLAs, compounded annually, are assumed:

0.4 percent beginning on January 1, 2022

0.5 percent beginning on January 1, 2034

0.6 percent beginning on January 1, 2039

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

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

#### Summary of Actuarial Assumptions, Actuarial Methods and Plan Provisions, continued

#### **Demographic Assumptions: Based on 2011-2014 Experience**

Mortality (Healthy): RP-2014 White Collar Mortality Tables, with Social Security generational improvements from 2006

based on the Social Security Administration's 2014 Trustee Report.

Mortality (Disabled): RP-2014 Disability Mortality Tables, with Social Security generational improvements from 2006

based on the Social Security Administration's 2014 Trustee Report.

Retirement:

Regular	Retirement	Rule of 8	5 Retirement	Early Retirement		
Age	Probability	Age	Probability	Age	Probability	
				50-53	2.0 %	
				54	5.0	
		55	15.0 %	55	5.0	
		56	15.0	56	5.0	
		57	15.0	57	6.5	
		58	15.0	58	8.0	
		59	20.0	59	12.0	
60	20.0 %	60	20.0			
61	25.0	61	25.0			
62	30.0	62	30.0			
63	35.0	63	35.0			
64	40.0	64	40.0			
65-69	45.0	65-69	45.0			
70+	100.0	70+	100.0			

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

Termination:

Service Based		Sample Age Based <sup>1</sup>					
Male	Female	Attained Age	Male	Female			
35.0 %	35.0 %	30	2.25 %	3.0 %			
14.0	14.0	35	2.25	3.0			
11.0	11.0	40	2.25	2.0			
9.0	9.0	45	2.25	2.0			
8.0	8.0	50	2.25	2.0			
7.0	7.0	55	2.25	2.0			
6.0	6.0	60	2.25	2.0			
5.0	5.5						
4.5	5.0						
4.5	4.5						
	Male  35.0 %  14.0  11.0  9.0  8.0  7.0  6.0  5.0  4.5	Male         Female           35.0 %         35.0 %           14.0         14.0           11.0         11.0           9.0         9.0           8.0         8.0           7.0         7.0           6.0         6.0           5.0         5.5           4.5         5.0	Male         Female         Attained Age           35.0 %         35.0 %         30           14.0         14.0         35           11.0         11.0         40           9.0         9.0         45           8.0         8.0         50           7.0         7.0         55           6.0         6.0         60           5.0         5.5           4.5         5.0	Male         Female         Attained Age         Male           35.0 %         35.0 %         30         2.25 %           14.0         14.0         35         2.25           11.0         11.0         40         2.25           9.0         9.0         45         2.25           8.0         8.0         50         2.25           7.0         7.0         55         2.25           6.0         6.0         60         2.25           5.0         5.5         4.5         5.0			

<sup>&</sup>lt;sup>1</sup>Age-based rates apply only if 10 or more years of service.

### Summary of Actuarial Assumptions, Actuarial Methods and Plan Provisions, continued

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

Spouse/Beneficiary:

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

#### Summary of Actuarial Assumptions, Actuarial Methods and Plan Provisions, continued

#### Actuarial Methods

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

Actuarial Cost Method: Entry Age Normal – Level Percent of Payroll

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

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

Amortization Method:

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

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

Data Measurement Date:

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

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

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

#### **Plan Provisions**

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

#### **Analysis of Financial Experience**

(dollars in thousands)	UAAL		
Unfunded Actuarial Accrued Liability (UAAL): June 30, 2017	\$	11,785,669	
Normal Cost and Interest, less Expected Contributions		(136,712)	
Expected UAAL: June 30, 2018		11,648,957	
UAAL (Gain) / Loss			
Actuarial Value of Assets Experience		44,600	
Actuarial Accrued Liabilities Experience <sup>1</sup>		(15,178)	
Actuarial Assumption & Methodology Changes <sup>2</sup>		(816,513)	
Plan Provision Changes			
Total UAAL (Gain) / Loss		(787,091)	
Unfunded Actuarial Accrued Liability: June 30, 2018	\$	10,861,866	

<sup>&</sup>lt;sup>1</sup>Actuarial Accrued Liabilities Experience represents actual experience versus expected experience of the actuarial census

#### Solvency Test

(dollars in thousands)

#### **Portion of Actuarial Accrued Liabilities Actuarial Accrued Liabilities Covered by Assets**

Actuarial Valuation as of June 30 <sup>1</sup>	Retirees and Beneficiaries	Active Member (Employer Financed Portion)	Total Actuarial Accrued Liabilities	Actuarial Value of Assets	Retirees and Beneficiaries	Active Member (Employer Financed Portion)	Total Actuarial Accrued Liabilities
2018	\$ 11,160,975	\$ 3,422,214	\$14,583,189	\$ 3,721,323	33.3 %	- %	25.5 %
2017	11,653,674	3,840,865	15,494,539	3,708,870	31.8	-	23.9
2016 <sup>2</sup>	11,358,156	4,216,916	15,575,072	3,743,861	33.0	-	24.0
2015 <sup>2</sup>	10,488,066	5,108,225	15,596,291	3,750,183	35.8	-	24.0
20142	9,686,391	4,953,485	14,639,876	3,643,011	37.6	-	24.9
2013 <sup>2</sup>	10,079,101	4,570,448	14,649,549	3,422,274	34.0	-	23.4
20122	9,260,069	5,287,870	14,547,939	3,004,031	32.4	-	20.6
2011 <sup>2</sup>	8,555,971	5,525,907	14,081,878	2,990,877	35.0	-	21.2
2010	8,153,240	5,775,111	13,928,351	3,028,694	37.1	-	21.7
2009	7,891,346	5,745,861	13,637,207	2,719,200	34.5	-	19.9

<sup>&</sup>lt;sup>1</sup>Effective January 1, 2018, DC account balances are treated as a separate DC plan.

<sup>-</sup> Unanticipated changes to the member census data.

<sup>&</sup>lt;sup>2</sup>Actuarial Assumption and Methodology Changes include:

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The COLA assumption was changed due to passage of Senate Enrolled Act No. 373. In lieu of a 1.0 percent COLA beginning on January 1, 2020, INPRS assumes that the COLA will be replaced by a 13th check for 2020 and 2021. The COLA assumption thereafter, would be 0.4 percent beginning on January 1, 2022, changing to 0.5 percent beginning on January 1, 2034, and ultimately 0.6 percent beginning on January 1, 2039.

<sup>-</sup> Actuarial firm change.

<sup>&</sup>lt;sup>2</sup>DC balances were removed from retirees' and beneficiaries' actuarial accrued liabilities.

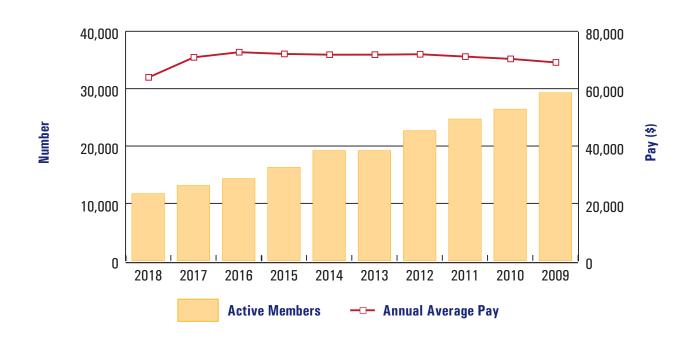
#### **Schedule of Active Members Valuation Data** Actuarial Valuation as of June 30

(dollars in thousands - except annual average pay)

	Active Members	Ann	ual Payroll¹	Annual rage Pay	Annual Percent Increase / (Decrease) In Average Pay
2018 <sup>2,3</sup>	11,710	\$	750,691	\$ 64,107	(9.8) %
2017 <sup>2</sup>	13,128		933,278	71,091	(2.4)
2016 <sup>2</sup>	14,327		1,044,096	72,876	0.8
2015 <sup>2</sup>	16,310		1,178,846	72,277	0.4
2014 <sup>2</sup>	19,210		1,383,242	72,006	-
2013	19,210		1,383,428	72,016	(0.2)
2012	22,688		1,637,066	72,156	1.1
2011	24,710		1,762,750	71,338	1.1
2010	26,439		1,865,102	70,544	1.8
2009	29,297		2,030,484	69,307	4.5

<sup>&</sup>lt;sup>1</sup>Figures shown are the anticipated pay for the one-year period following the valuation date.

### **Total Number of Active Members Per Year and Annual Average Pay**



<sup>&</sup>lt;sup>2</sup>The valuation results were calculated using the prior year census data, adjusted for certain activity during the fiscal year.
<sup>3</sup>Decrease in Annual Average Pay is due to a change in projection method.

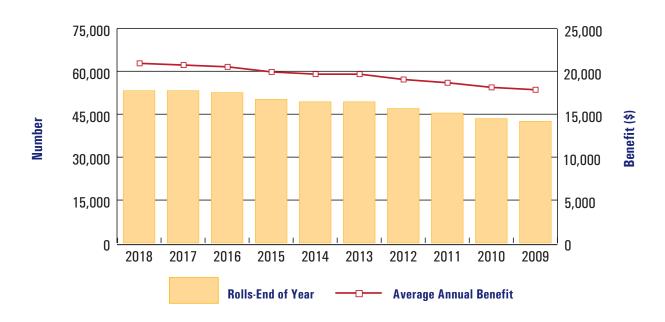
#### Schedule of Retirants and Beneficiaries Actuarial Valuation as of June 30

(dollars in thousands - except average annual benefit)

	Added to Rolls		Removed	from Rolls			Percent			Percent
	Number	Annual Benefits	Number	Annual Benefits	Number	Total Annual Benefits <sup>1,2</sup>	Increase / (Decrease) In Total Annual Benefits	Δ	verage annual enefit <sup>2</sup>	Increase / (Decrease) in Average Annual Benefit
2018 <sup>3</sup>	1,483	\$ 33,330	1,496	\$ 20,240	53,227	\$ 1,117,463	0.9 %	\$	20,994	1.0 %
2017 <sup>3</sup>	1,953	47,305	1,288	18,257	53,240	1,106,961	2.3		20,792	1.0
2016 <sup>3</sup>	3,466	95,994	1,105	14,677	52,575	1,082,306	7.8		20,586	3.0
2015 <sup>3</sup>	1,886	50,261	1,017	14,293	50,214	1,003,910	3.1		19,993	1.3
2014 <sup>3</sup>	-	93,605	-	14,524	49,345	973,635	-		19,731	-
2013	3,422	93,605	1,077	14,524	49,345	973,635	8.4		19,731	3.3
2012	2,541	63,923	962	12,216	47,000	898,006	5.6		19,107	2.0
2011	3,003	77,290	1,060	13,121	45,421	850,711	7.6		18,729	3.0
2010	1,940	47,657	1,010	11,982	43,478	790,773	3.8		18,188	1.5
20094	2,344	56,819	929	11,062	42,548	762,067	8.7		17,911	3.6

<sup>1</sup>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. <sup>2</sup>Annual benefits includes members selecting an annuity for their ASA.

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



<sup>&</sup>lt;sup>3</sup>The valuation results were calculated using the prior year census data, adjusted for certain activity during the fiscal year.

The end of year number of benefit recipients are not equal to prior end of year number of benefit recipients plus additions less removals due to reclassifications between TRF Pre-'96 DB

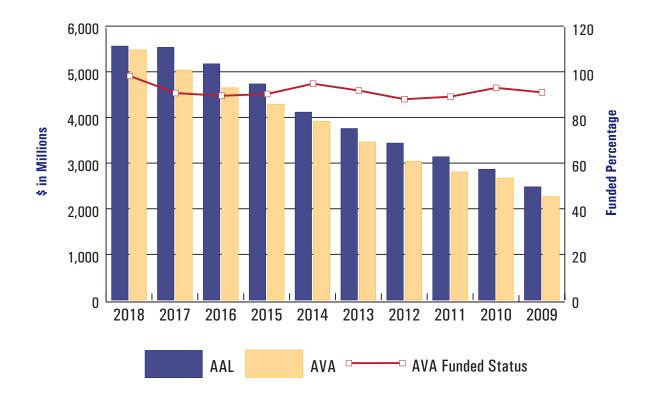
# Historical Summary of Actuarial Valuation Results Actuarial Valuation as of June 30<sup>1</sup>

(dollars in millions)

Α	ccrued	V	alue of	Lia	ability <sup>2</sup>	AVA Funded Status (AVA/AAL)	Er	mployee	Unfunded Liability <sup>2</sup> as a percentage of Covered Employee Payroll
\$	5,563.3	\$	5,478.5	\$	84.8	98.5 %	\$	3,129.1	2.7 %
	5,536.1		5,036.0		500.1	91.0		3,020.5	16.6
	5,174.3		4,648.3		526.0	89.8		2,881.4	18.3
	4,734.8		4,290.3		444.5	90.6		2,742.2	16.2
	4,116.3		3,914.5		201.8	95.1		2,598.1	7.8
	3,757.4		3,461.9		295.5	92.1		2,442.5	12.1
	3,439.0		3,037.1		401.9	88.3		2,400.0	16.7
	3,138.6		2,806.4		332.2	89.4		2,225.0	14.9
	2,864.0		2,672.0		192.0	93.3		2,200.0	8.7
	2,479.7		2,264.9		214.8	91.3		2,075.0	10.4
	Liab	5,536.1 5,174.3 4,734.8 4,116.3 3,757.4 3,439.0 3,138.6 2,864.0	* 5,563.3 \$ 5,536.1 5,174.3 4,734.8 4,116.3 3,757.4 3,439.0 3,138.6 2,864.0	Accrued Liability (AAL)         Value of Assets (AVA)           \$ 5,563.3         \$ 5,478.5           5,536.1         5,036.0           5,174.3         4,648.3           4,734.8         4,290.3           4,116.3         3,914.5           3,757.4         3,461.9           3,439.0         3,037.1           3,138.6         2,806.4           2,864.0         2,672.0	Accrued Liability (AAL)         Value of Assets (AVA)         Liability (AAL)           \$ 5,563.3         \$ 5,478.5         \$           5,536.1         5,036.0         \$           5,174.3         4,648.3         4,290.3           4,734.8         4,290.3         4,116.3         3,914.5           3,757.4         3,461.9         3,439.0         3,037.1           3,138.6         2,806.4         2,864.0         2,672.0	Accrued Liability (AAL)         Value of Assets (AVA)         Liability² (AAL – AVA)           \$ 5,563.3         \$ 5,478.5         \$ 84.8           5,536.1         5,036.0         500.1           5,174.3         4,648.3         526.0           4,734.8         4,290.3         444.5           4,116.3         3,914.5         201.8           3,757.4         3,461.9         295.5           3,439.0         3,037.1         401.9           3,138.6         2,806.4         332.2           2,864.0         2,672.0         192.0	Accrued Liability (AAL)         Value of Assets (AVA)         Liability² (AAL – AVA)         Status (AVA/AAL)           \$ 5,563.3         \$ 5,478.5         \$ 84.8         98.5 %           5,536.1         5,036.0         500.1         91.0           5,174.3         4,648.3         526.0         89.8           4,734.8         4,290.3         444.5         90.6           4,116.3         3,914.5         201.8         95.1           3,757.4         3,461.9         295.5         92.1           3,439.0         3,037.1         401.9         88.3           3,138.6         2,806.4         332.2         89.4           2,864.0         2,672.0         192.0         93.3	Accrued Liability (AAL)         Value of Assets (AVA)         Liability <sup>2</sup> (AAL – AVA)         Status (AVA/AAL)         Endit of Example of	Accrued Liability (AAL)         Value of Assets (AVA)         Liability² (AAL – AVA)         Status (AVA/AAL)         Employee Payroll³           \$ 5,563.3         \$ 5,478.5         \$ 84.8         98.5 %         \$ 3,129.1           5,536.1         5,036.0         500.1         91.0         3,020.5           5,174.3         4,648.3         526.0         89.8         2,881.4           4,734.8         4,290.3         444.5         90.6         2,742.2           4,116.3         3,914.5         201.8         95.1         2,598.1           3,757.4         3,461.9         295.5         92.1         2,442.5           3,439.0         3,037.1         401.9         88.3         2,400.0           3,138.6         2,806.4         332.2         89.4         2,225.0           2,864.0         2,672.0         192.0         93.3         2,200.0

Harding alored Link History

<sup>&</sup>lt;sup>3</sup>Covered Employee Payroll can also be found in the RSI Contribution Schedule in the Financial Section.



<sup>&</sup>lt;sup>1</sup>Effective January 1, 2018, DC account balances are treated as a separate DC plan.

<sup>&</sup>lt;sup>2</sup>The Unfunded Liability is calculated using the Actuarial Value of Assets (AVA), which is different than Net Pension Liability in the Financial Section which uses the Plan Fiduciary Net Position, also known as the Fair Value of Assets (FVA).

#### Summary of Actuarial Assumptions, Actuarial Methods and Plan Provisions

he actuarial assumptions and methods used in the June 30, 2018 valuation of the Teachers' 1996 Defined Benefit Account were adopted by the INPRS Board in April 2018. The majority of the actuarial assumptions and methods are based on plan experience from July 1, 2011 through June 30, 2014, and were first used in the June 30, 2015 valuation. The INPRS Board adopted a funding policy in April 2014, and the policy was last updated in October 2017. The funding policy is available online at: www.in.gov/inprs/files/INPRS\_Funding\_Policy.pdf.

#### Changes in Actuarial Assumptions

For the actuarial valuation as of June 30, 2018, the COLA assumption was changed due to passage of Senate Enrolled Act No. 373. In lieu of a 1.0 percent COLA beginning on January 1, 2020, INPRS assumes the COLA will be replaced by a 13th check for 2020 and 2021. The COLA assumption thereafter, would be 0.4 percent beginning on January 1, 2022, changing to 0.5 percent beginning on January 1, 2034, and ultimately 0.6 percent beginning on January 1, 2039.

#### **Changes in Actuarial Methods**

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

#### Changes in Plan Provisions

Legislation passed in the 2018 legislative session creates a funding mechanism to provide for future benefit increases or 13th checks. The INPRS Board has the authority to have employers contribute up to 1.0 percent of member pay into the fund. Increases or payments are made upon passed legislation subject to the availability of funds to provide the benefit.

#### **Actuarial Assumptions**

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

#### **Economic Assumptions**

Interest Rate / Investment Return:

6.75 percent (net of administrative and investment expenses)

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

Inflation: 2.25 percent per year

Cost of Living Increases: It is assumed a service-based 13th check will be paid in the 2020 and 2021 fiscal years. Thereafter, the

following COLAs, compounded annually, are assumed:

0.4 percent beginning on January 1, 2022

0.5 percent beginning on January 1, 2034

0.6 percent beginning on January 1, 2039

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

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

#### Summary of Actuarial Assumptions, Actuarial Methods and Plan Provisions, continued

#### Demographic Assumptions: Based on 2011-2014 Experience

Mortality (Healthy): RP-2014 White Collar Mortality Tables, with Social Security generational improvements from 2006

based on the Social Security Administration's 2014 Trustee Report.

Mortality (Disabled): RP-2014 Disability Mortality Tables, with Social Security generational improvements from 2006

based on the Social Security Administration's 2014 Trustee Report.

Retirement:

Regular	Retirement	Rule of 8	5 Retirement	Early Retirement		
Age Probability		Age	Probability	Age	Probability	
				50-53	2.0 %	
				54	5.0	
		55	15.0 %	55	5.0	
		56	15.0	56	5.0	
		57	15.0	57	6.5	
		58	15.0	58	8.0	
		59	20.0	59	12.0	
60	20.0 %	60	20.0			
61	25.0	61	25.0			
62	30.0	62	30.0			
63	35.0	63	35.0			
64	40.0	64	40.0			
65-69	45.0	65-69	45.0			
70+	100.0	70+	100.0			

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

Termination:

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

<sup>&</sup>lt;sup>1</sup>Age-based rates apply only if 10 or more years of service.

### Summary of Actuarial Assumptions, Actuarial Methods and Plan Provisions, continued

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

Spouse/Beneficiary:

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

#### Summary of Actuarial Assumptions, Actuarial Methods and Plan Provisions, continued

#### **Actuarial Methods**

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

Actuarial Cost Method: Entry Age Normal – Level Percent of Payroll

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

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

Amortization Method:

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

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

Data Measurement Date:

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

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

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

#### **Plan Provisions**

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

#### **Analysis of Financial Experience**

(dollars in thousands)	UAAL
Unfunded Actuarial Accrued Liability (UAAL): June 30, 2017	\$ 500,103
Normal Cost and Interest, less Expected Contributions	(9,501)
Expected UAAL: June 30, 2018	490,602
UAAL (Gain) / Loss	
Actuarial Value of Assets Experience	22,484
Actuarial Accrued Liabilities Experience <sup>1</sup>	28,886
Actuarial Assumption & Methodology Changes <sup>2</sup>	(457,190)
Plan Provision Changes	 
Total UAAL (Gain) / Loss	(405,820)
Unfunded Actuarial Accrued Liability: June 30, 2018	\$ 84,782

<sup>&</sup>lt;sup>1</sup>Actuarial Accrued Liabilities Experience represents actual experience versus expected experience of the actuarial census

#### Solvency Test

(dollars in thousands)

	Actuar	ial Accrued Liab	oilities		Covered by Assets					
Actuarial Valuation as of June 30	Retirees and Beneficiaries	Active Member (Employer Financed Portion)	Total Actuarial Accrued Liabilities	Actuarial Value of Assets	Retirees and Beneficiaries	Active Member (Employer Financed Portion)	Total Actuarial Accrued Liabilities			
2018	\$ 1,232,059	\$ 4,331,205	\$ 5,563,264	\$ 5,478,482	100.0 %	98.0%	98.5 %			
2017	1,213,780	4,322,314	5,536,094	5,035,991	100.0	88.4	91.0			
2016 <sup>1</sup>	1,079,255	4,095,062	5,174,317	4,648,297	100.0	87.2	89.8			
2015 <sup>1</sup>	897,036	3,837,741	4,734,777	4,290,258	100.0	88.4	90.6			
2014 <sup>1</sup>	759,244	3,357,020	4,116,264	3,914,503	100.0	94.0	95.1			
2013 <sup>1</sup>	781,870	2,975,574	3,757,444	3,461,904	100.0	90.1	92.1			
2012 <sup>1</sup>	646,161	2,792,809	3,438,970	3,037,116	100.0	85.6	88.3			
2011 <sup>1</sup>	544,515	2,594,053	3,138,568	2,806,386	100.0	87.2	89.4			
2010	483,118	2,380,867	2,863,985	2,671,979	100.0	91.9	93.3			
2009	432,942	2,046,748	2,479,690	2,264,892	100.0	89.5	91.3			

<sup>&</sup>lt;sup>1</sup>DC balances were removed from retirees' and beneficiaries' actuarial accrued liabilities.

**Portion of Actuarial Accrued Liabilities** 

 <sup>-</sup> Unanticipated changes to the member census data.
 2Actuarial Assumption and Methodology Changes include:

<sup>-</sup> The COLA assumption was changed due to passage of Senate Enrolled Act No. 373. In lieu of a 1.0 percent COLA beginning on January 1, 2020, INPRS assumes that the COLA will be replaced by a 13th check for 2020 and 2021. The COLA assumption thereafter, would be 0.4 percent beginning on January 1, 2022, changing to 0.5 percent beginning on January 1, 2034, and ultimately 0.6 percent beginning on January 1, 2039. - Actuarial firm change.

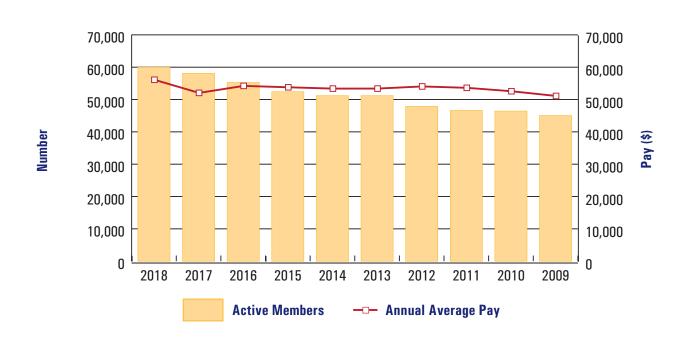
#### Schedule of Active Members Valuation Data Actuarial Valuation as of June 30

(dollars in thousands - except annual average pay)

	Active Members	Anr	nual Payroll¹	Annu	al Average Pay	Annual Percent Increase / (Decrease) In Average Pay		
2018 <sup>2,3</sup>	59,996	\$	3,374,943	\$	56,253	7.8 %		
20172	58,097		3,032,299		52,194	(4.0)		
2016 <sup>2</sup>	55,265		3,004,169		54,359	0.8		
2015 <sup>2</sup>	52,424		2,827,311		53,932	0.8		
2014 <sup>2</sup>	51,204		2,740,661		53,524	-		
2013	51,204		2,740,940		53,530	(1.2)		
2012	47,885		2,594,952		54,191	0.8		
2011	46,633		2,507,193		53,764	2.0		
2010	46,433		2,447,509		52,711	2.9		
2009	45,046		2,308,548		51,249	3.9		

<sup>&</sup>lt;sup>1</sup>Figures shown are the anticipated pay for the one-year period following the valuation date.

### **Total Number of Active Members Per Year and Annual Average Pay**



<sup>&</sup>lt;sup>2</sup>The valuation results were calculated using the prior year census data, adjusted for certain activity during the fiscal year.

<sup>&</sup>lt;sup>3</sup>Increase in Annual Average Pay is due to a change in projection method.

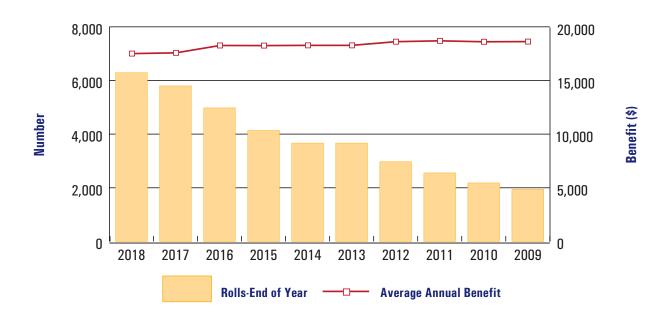
#### Schedule of Retirants and Beneficiaries Actuarial Valuation as of June 30

(dollars in thousands - except average annual benefit)

	Added to Rolls		Removed from Rolls		s Rolls -	Rolls – End of Year					Percent Increase /	
	Number	Annual Benefits			Annual Benefits Number		tal Annual enefits <sup>1,2</sup>	Increase / (Decrease) li Total Annua Benefits	1 /	Average Annual Benefit <sup>2</sup>	(Decrease) in Average Annual Benefit	
2018 <sup>3</sup>	710	\$ 9,562	217	\$ 1,00	02 6,289	\$	110,423	8.1 %	6 \$	17,558	(0.4) %	
20173	855	12,106	36	56	5,796		102,178	12.1		17,629	(3.8)	
2016 <sup>3</sup>	858	16,075	17	30	95 4,977		91,160	20.4		18,316	0.1	
2015 <sup>3</sup>	499	9,101	28	35	4,136		75,714	12.7		18,306	(0.1)	
20143	-	12,216	-	25	3,665		67,169	-		18,327	-	
2013	712	12,216	18	25	3,665		67,169	21.1		18,327	(1.8)	
2012	433	8,132	16	23	36 2,971		55,475	15.8		18,672	(0.4)	
2011	390	7,666	17	25	2,554		47,887	17.7		18,750	0.5	
2010	249	4,859	12	12	2,181		40,701	12.1		18,662	(0.1)	
20094	270	5,145	10	1′	9 1,944		36,312	(16.5)		18,679	(2.8)	

<sup>1</sup>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. <sup>2</sup>Annual benefits includes members selecting an annuity for their ASA.

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



<sup>&</sup>lt;sup>3</sup>The valuation results were calculated using the prior year census data, adjusted for certain activity during the fiscal year.

The end of year number of benefit recipients are not equal to prior end of year number of benefit recipients plus additions less removals due to reclassifications between TRF Pre-'96 DB

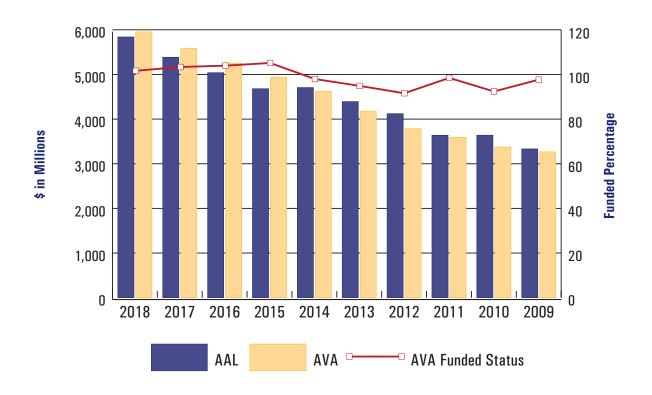
### Historical Summary of Actuarial Valuation Results Actuarial Valuation as of June 30

(dollars in millions)

	Actuarial Accrued Liability (AAL)		Actuarial Value of Assets (AVA)		Unfunded Liability <sup>1</sup> (AAL – AVA)		AVA Funded Status (AVA/AAL)	Covered Employee Payroll <sup>2</sup>		Unfunded Liability <sup>1</sup> as a percentage of Covered Employee Payroll	
2018	\$	5,839.7	\$	5,954.0	\$	(114.3)	102.0 %	\$	842.2	(13.6) %	
2017		5,385.8		5,587.6		(201.8)	103.7		809.4	(24.9)	
2016		5,039.8		5,255.2		(215.4)	104.3		771.9	(27.9)	
2015		4,680.7		4,939.3		(258.6)	105.5		745.3	(34.7)	
2014		4,707.0		4,625.5		81.5	98.3		710.6	11.5	
2013		4,392.9		4,180.7		212.2	95.2		695.0	30.5	
2012		4,122.4		3,786.6		335.8	91.9		690.0	48.7	
2011		3,639.0		3,593.8		45.2	98.8		687.0	6.6	
2010		3,639.6		3,374.4		265.2	92.7		670.0	39.6	
2009 <sup>3</sup>		3,332.7		3,265.6		67.1	98.0		330.0	20.3	

<sup>&</sup>lt;sup>1</sup>The Unfunded Liability is calculated using the Actuarial Value of Assets (AVA), which is different than Net Pension Liability in the Financial Section which uses the Plan Fiduciary Net Position, also known as the Fair Value of Assets (FVA).

<sup>&</sup>lt;sup>3</sup>Covered employee payroll represents only a half year of activity.



<sup>&</sup>lt;sup>2</sup>Covered employee payroll can also be found in the RSI Contribution Schedule in the Financial Section.

#### Summary of Actuarial Assumptions, Actuarial Methods and Plan Provisions

he actuarial assumptions and methods used in the June 30, 2018 valuation of the 1977 Police Officers' and Firefighters' Retirement Fund were adopted by the INPRS Board in April 2018. The majority of the actuarial assumptions and methods are based on plan experience from July 1, 2010 through June 30, 2014, and were first used in the June 30, 2015 valuation. The INPRS Board adopted a funding policy in April 2014, and the policy was last updated in October 2017. The funding policy is available online at: www.in.gov/inprs/files/INPRS\_Funding\_Policy.pdf.

#### **Changes in Actuarial Assumptions**

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

#### **Changes in Actuarial Methods**

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

#### **Changes in Plan Provisions**

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

### **Actuarial Assumptions**

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

#### **Economic Assumptions**

Interest Rate / Investment Return:

Funding 6.75 percent (net of administrative and investment expenses)

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

Interest on Member Contributions: 3.50 percent per year

Inflation: 2.25 percent per year

Cost of Living Increases: 2.00 percent per year in retirement

Future Salary Increases: 2.50 percent per year

#### Summary of Actuarial Assumptions, Actuarial Methods and Plan Provisions, continued

#### Demographic Assumptions: Based on 2010-2014 Experience

Mortality (Healthy): RP-2014 Blue Collar Mortality Tables, with Social Security generational improvements from

2006 based on the Social Security Administration's 2014 Trustee report.

Mortality (Disabled): RP-2014 Disability Mortality Tables, with Social Security generational improvements from

2006 based on the Social Security Administration's 2014 Trustee report.

Retirement: Ages Service <32 Service >= 32

70+

5

50-57 10 % 20 % 58-61 15 20 20 62-64 20 65-69 50 50 100

100

2.5

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

Termination: Service Rate Service Rate

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

Disability: Age Sample Rates 0.10 % <=30

35 0.16 40 0.26 0.36 45 50 0.46 0.56 55 60 0.66 62+ 0.70

Spouse/Beneficiary: 80 percent of male members and 50 percent of female members are assumed to be married or to have a dependent

beneficiary. Male members are assumed to be three years older than females and female members are assumed to be

the same age as males.

For members hired after 1989 that become disabled, impairments are assumed to be 1 percent catastrophic Class 1 Disability Retirement:

(at 100 percent of salary), 44 percent Class 1 (at 65 percent of salary), 10 percent Class 2 (at 50 percent of salary),

and 45 percent Class 3 (at 36 percent of salary).

Pre-Retirement Death: Of active member deaths, 10 percent are assumed to be in the line of duty and 90 percent are other than in the line of

duty. Additionally, all deaths among retired and disabled members are other than in the line of duty.

#### Summary of Actuarial Assumptions, Actuarial Methods and Plan Provisions, continued

#### **Actuarial Methods**

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

Actuarial Cost Method: Entry Age Normal – Level Percent of Payroll

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

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

Amortization Method:

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

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

Data Measurement Date:

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

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

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

#### **Plan Provisions**

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

### **Analysis of Financial Experience**

(dollars in thousands)	UAAL		
Unfunded Actuarial Accrued Liability (UAAL): June 30, 2017	\$	(201,798)	
Normal Cost and Interest, less Expected Contributions		2,234	
Expected UAAL: June 30, 2018		(199,564)	
UAAL (Gain) / Loss			
Actuarial Value of Assets Experience		(37,650)	
Actuarial Accrued Liabilities Experience <sup>1</sup>		81,440	
Actuarial Assumption & Methodology Changes <sup>2</sup>		41,455	
Plan Provision Changes			
Total UAAL (Gain) / Loss		85,245	
Unfunded Actuarial Accrued Liability: June 30, 2018	\$	(114,319)	

<sup>&</sup>lt;sup>1</sup>Actuarial Accrued Liabilities Experience represents actual experience versus expected experience of the actuarial census assumptions:

**Actuarial Accrued Liabilities** 

### Solvency Test

(dollars in thousands)

Actuarial Valuation as of June 30	N	Active Member atributions	 etirees and eneficiaries	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
2018	\$	866,551	\$ 1,910,154	\$ 3,062,954	\$ 5,839,659	\$ 5,953,978	100.0 %	100.0 %	103.7 %	102.0 %
2017		857,426	1,715,503	2,812,824	5,385,753	5,587,551	100.0	100.0	107.2	103.7
2016		843,628	1,532,936	2,663,272	5,039,836	5,255,255	100.0	100.0	108.1	104.3
2015		832,760	1,362,021	2,485,913	4,680,694	4,939,330	100.0	100.0	110.4	105.5
2014		809,877	1,280,920	2,616,200	4,706,997	4,625,475	100.0	100.0	96.9	98.3
2013		782,124	1,288,457	2,322,366	4,392,947	4,180,704	100.0	100.0	90.9	95.2
2012		728,892	1,135,538	2,258,006	4,122,436	3,786,595	100.0	100.0	85.1	91.9
2011		679,849	970,676	1,988,431	3,638,956	3,593,787	100.0	100.0	97.7	98.8
2010		634,865	859,626	2,145,178	3,639,669	3,374,438	100.0	100.0	87.6	92.7

3,332,686

3,265,598

100.0

100.0

96.6

98.0

**Portion of Actuarial Accrued Liabilities** 

**Covered by Assets** 

571,534

793,167

1,967,985

2009

<sup>-</sup> Unanticipated changes to the member census data.

<sup>-</sup> A 2.2 percent COLA for benefit recipients effective July 1, 2018, rather than the assumed COLA of 2.0 percent <sup>2</sup>Actuarial Assumption and Methodology Changes include:

<sup>-</sup> Actuarial firm change.

# 1977 Police Officers' and Firefighters' Retirement Fund

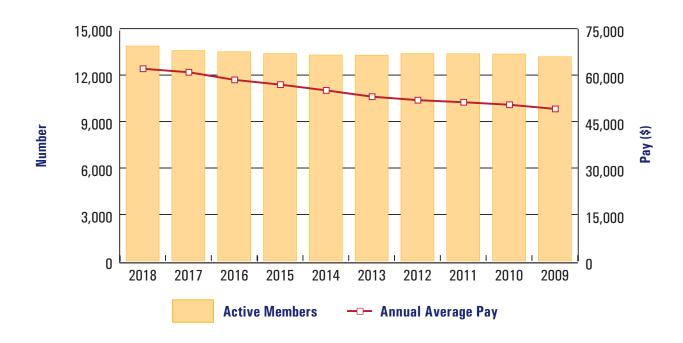
## Schedule of Active Members Valuation Data Actuarial Valuation as of June 30

(dollars in thousands - except annual average pay)

	Active Members	Annu	ıal Payroll <sup>1,2</sup>	Annu	al Average Pay	Annual Percent Increase / (Decrease) In Average Pay
2018 <sup>3</sup>	13,879	\$	863,233	\$	62,197	1.8 %
2017 <sup>3</sup>	13,587		829,736		61,068	4.2
2016 <sup>3</sup>	13,506		791,508		58,604	2.7
2015 <sup>3</sup>	13,390		764,215		57,074	3.4
20143	13,295		734,024		55,211	3.8
2013	13,287		706,603		53,180	2.1
2012	13,390		697,111		52,062	1.3
2011	13,376		687,342		51,386	1.6
2010	13,362		675,797		50,576	2.7
2009	13,184		649,018		49,228	-

<sup>&</sup>lt;sup>1</sup>Figures shown are the anticipated pay for the one-year period following the valuation date. <sup>2</sup>Excludes payroll from members that are over the 32 year service cap.

## **Total Number of Active Members Per Year and Annual Average Pay**



<sup>&</sup>lt;sup>3</sup>The valuation results were calculated using the prior year census data, adjusted for certain activity during the fiscal year.

# 1977 Police Officers' and Firefighters' Retirement Fund

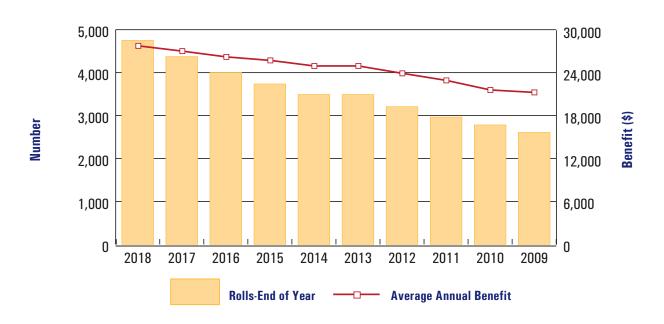
## Schedule of Retirants and Beneficiaries Actuarial Valuation as of June 30

(dollars in thousands - except average annual benefit)

	Added	to Rolls	Removed	from Ro	lls	Rolls – End of Year		Percent Increase /			Percent Increase /	
	Number	Annual Benefits	Number	Annu Bene		Number		al Annual enefits¹	(Decrease) In Total Annual Benefits	A	verage innual enefit	(Decrease) in Average Annual Benefit
2018 <sup>2</sup>	429	\$ 14,914	52	\$ 1,	002	4,751	\$	132,207	11.6 %	\$	27,827	2.7 %
20172	407	13,321	37		642	4,374		118,472	12.6		27,085	3.1
2016 <sup>2</sup>	312	10,074	44		334	4,004		105,218	9.2		26,278	1.9
2015 <sup>2</sup>	283	8,858	38		727	3,736		96,336	10.3		25,786	3.1
20142	-	-	-		-	3,491		87,301	-		25,008	-
2013	326	10,098	43		345	3,491		87,301	13.5		25,008	4.3
2012	281	7,900	39		314	3,208		76,917	12.8		23,977	4.3
2011	218	6,179	34		609	2,966		68,179	13.2		22,987	6.2
2010	208	4,918	34		641	2,782		60,220	8.4		21,646	1.6
2009	102	2,571	24		479	2,608		55,564	3.7		21,305	0.6

<sup>1</sup>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. <sup>2</sup>The valuation results were calculated using the prior year census data, adjusted for certain activity during the fiscal year.

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



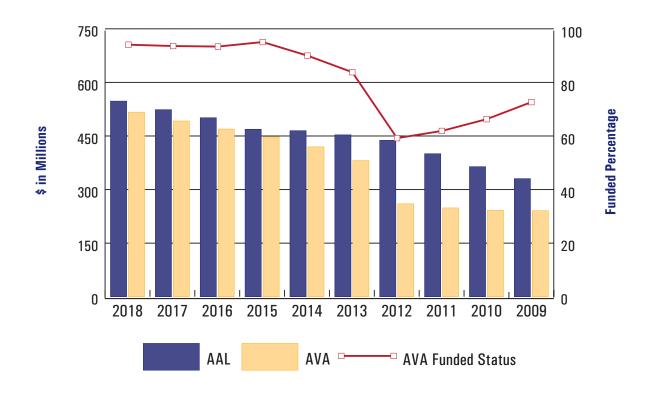
## Historical Summary of Actuarial Valuation Results **Actuarial Valuation as of June 30**

(dollars in millions)

Ad	crued	Va	lue of	Lia	ability <sup>1</sup>	AVA Funded Status (AVA/AAL)	Em	ployee	Unfunded Liability¹ as a percentage of Covered Employee Payroll
\$	547.6	\$	516.7	\$	30.9	94.4 %	\$	53.4	58.0 %
	523.7		492.0		31.7	93.9		54.8	57.9
	501.1		469.4		31.7	93.7		51.4	61.7
	468.9		447.5		21.4	95.4		48.6	44.1
	464.9		419.6		45.3	90.3		46.0	98.5
	453.1		381.2		71.9	84.1		47.6	151.1
	437.9		260.1		177.8	59.4		45.1	393.9
	400.3		248.6		151.7	62.1		45.8	331.5
	364.1		242.1		122.0	66.5		36.7	332.2
	330.6		241.0		89.6	72.9		36.2	247.5
	Ac Liabi	523.7 501.1 468.9 464.9 453.1 437.9 400.3	Accrued Liability (AAL)  \$ 547.6 \$ 523.7   501.1   468.9   464.9   453.1   437.9   400.3   364.1	Accrued Liability (AAL)         Value of Assets (AVA)           \$ 547.6         \$ 516.7           523.7         492.0           501.1         469.4           468.9         447.5           464.9         419.6           453.1         381.2           437.9         260.1           400.3         248.6           364.1         242.1	Accrued Liability (AAL)         Value of Assets (AVA)         Liability (AAL)           \$ 547.6         \$ 516.7         \$ 523.7           \$ 501.1         469.4         447.5           464.9         447.5         453.1           437.9         260.1         400.3           364.1         242.1	Accrued Liability (AAL)         Value of Assets (AVA)         Liability¹ (AAL – AVA)           \$ 547.6         \$ 516.7         \$ 30.9           523.7         492.0         31.7           501.1         469.4         31.7           468.9         447.5         21.4           464.9         419.6         45.3           453.1         381.2         71.9           437.9         260.1         177.8           400.3         248.6         151.7           364.1         242.1         122.0	Accrued Liability (AAL)         Value of Assets (AVA)         Liability (AAL – AVA)         Status (AVA/AAL)           \$ 547.6         \$ 516.7         \$ 30.9         94.4 %           523.7         492.0         31.7         93.9           501.1         469.4         31.7         93.7           468.9         447.5         21.4         95.4           464.9         419.6         45.3         90.3           453.1         381.2         71.9         84.1           437.9         260.1         177.8         59.4           400.3         248.6         151.7         62.1           364.1         242.1         122.0         66.5	Accrued Liability (AAL)         Value of Assets (AVA)         Liability (AAL – AVA)         Status (AVA/AAL)         Empare Parent           \$ 547.6         \$ 516.7         \$ 30.9         94.4 %         \$ 523.7         492.0         31.7         93.9         93.7         93.7         93.7         9468.9         447.5         21.4         95.4         95.4         95.4         95.4         95.4         96.3         96.5         96.5         96.5         96.5         96.5         96.5 <td< td=""><td>Accrued Liability (AAL)         Value of Assets (AVA)         Liability¹ (AAL – AVA)         Status (AVA/AAL)         Employee Payroll²           \$ 547.6         \$ 516.7         \$ 30.9         94.4 %         \$ 53.4           523.7         492.0         31.7         93.9         54.8           501.1         469.4         31.7         93.7         51.4           468.9         447.5         21.4         95.4         48.6           464.9         419.6         45.3         90.3         46.0           453.1         381.2         71.9         84.1         47.6           437.9         260.1         177.8         59.4         45.1           400.3         248.6         151.7         62.1         45.8           364.1         242.1         122.0         66.5         36.7</td></td<>	Accrued Liability (AAL)         Value of Assets (AVA)         Liability¹ (AAL – AVA)         Status (AVA/AAL)         Employee Payroll²           \$ 547.6         \$ 516.7         \$ 30.9         94.4 %         \$ 53.4           523.7         492.0         31.7         93.9         54.8           501.1         469.4         31.7         93.7         51.4           468.9         447.5         21.4         95.4         48.6           464.9         419.6         45.3         90.3         46.0           453.1         381.2         71.9         84.1         47.6           437.9         260.1         177.8         59.4         45.1           400.3         248.6         151.7         62.1         45.8           364.1         242.1         122.0         66.5         36.7

<sup>&</sup>lt;sup>1</sup>The Unfunded Liability is calculated using the Actuarial Value of Assets (AVA), which is different than Net Pension Liability in the Financial Section which uses the Plan Fiduciary Net Position, also known as the Fair Value of Assets (FVA).

<sup>&</sup>lt;sup>2</sup>Covered Employee Payroll can also be found in the RSI Contribution Schedule in the Financial Section.



### Summary of Actuarial Assumptions, Actuarial Methods and Plan Provisions

he actuarial assumptions and methods used in the June 30, 2018 valuation of the Judges' Retirement System were adopted by the INPRS Board in April 2018. The majority of the actuarial assumptions and methods are based on plan experience from July 1, 2010 through June 30, 2014, and were first used in the June 30, 2015 valuation. The INPRS Board adopted a funding policy in April 2014, and the policy was last updated in October 2017. The funding policy is available online at: www.in.gov/inprs/files/INPRS\_Funding\_Policy.pdf.

## **Changes in Actuarial Assumptions**

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

## **Changes in Actuarial Methods**

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

## **Changes in Plan Provisions**

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

## **Actuarial Assumptions**

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

#### **Economic Assumptions**

Interest Rate / Investment Return:

Funding 6.75 percent (net of administrative and investment expenses)

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

Interest on Member Contributions: 3.50 percent per year

Inflation: 2.25 percent per year

Cost of Living Increases: 2.50 percent per year in deferral and retirement

Future Salary Increases: 2.50 percent per year

## Summary of Actuarial Assumptions, Actuarial Methods and Plan Provisions, continued

### **Demographic Assumptions: Based on 2010-2014 Experience**

Mortality (Healthy): RP-2014 White Collar Mortality Tables, with Social Security generational improvements from 2006 based on the

Social Security Administration's 2014 Trustee report.

Mortality (Disabled): RP-2014 Disability Mortality Tables, with Social Security generational improvements from 2006 based on the Social

Security Administration's 2014 Trustee report.

 Retirement:
 Age
 Service < 22</th>
 Age
 Service >= 22

 62
 25 %
 55-74
 70 %

63 15 75+ 100 64 10 65 50 66-74 30 75+ 100

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

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

Disability: 1964 OASDI Table. Illustrative rates shown below:

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

Spouse/Beneficiary: 90 percent of members are assumed to be married or to have a dependent beneficiary. Male members are

assumed to be three years older than their spouses and female members are assumed to be two years younger

than their spouses.

### Summary of Actuarial Assumptions, Actuarial Methods and Plan Provisions, continued

#### **Actuarial Methods**

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

Actuarial Cost Method: Entry Age Normal – Level Percent of Payroll

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

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

Amortization Method: For funding, gains and losses occurring from census experience different than assumed, assumption changes,

and benefit changes are amortized over a 20-year period with level payments each year. A new gain or loss base is established each year based on the additional gain or loss during that year and that base is amortized over a new 20-year period. However, when the plan is at or above 100 percent funded (based on Actuarial Value of Assets), the past amortization bases are considered fully amortized and a single amortization base equal to the surplus is amortized over a 30-year period with level payment each year. The purpose of the method is to give a smooth progression of the costs from year-to-year and, at the same time, provide for an orderly funding of the

unfunded liabilities.

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

expense in the year in which they occur.

Data Measurement Date: Member census data as of the prior year end was used in the valuation and adjusted, where appropriate, to reflect

changes during the current fiscal year. Standard actuarial roll forward techniques were then used to project the

liabilities computed as of prior year end to the current year measurement date.

Asset Valuation Method: Funding uses the Actuarial Value of Assets (AVA), which is equal to a five-year smoothing of gains and losses on

the Fair Value of Assets (FVA), subject to a 20 percent corridor. Accordingly, the AVA is limited to no more than 20

percent greater than or 20 percent less than the FVA.

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

67.

#### **Plan Provisions**

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

## **Analysis of Financial Experience**

(dollars in thousands)	 UAAL
Unfunded Actuarial Accrued Liability (UAAL): June 30, 2017	\$ 31,722
Normal Cost and Interest, less Expected Contributions	(1,236)
Expected UAAL: June 30, 2018	30,486
UAAL (Gain) / Loss	
Actuarial Value of Assets Experience	3,552
Actuarial Accrued Liabilities Experience <sup>1</sup>	(7,289)
Actuarial Assumption & Methodology Changes <sup>2</sup>	4,196
Plan Provision Changes	
Total UAAL (Gain) / Loss	459
Unfunded Actuarial Accrued Liability: June 30, 2018	\$ 30,945

<sup>&</sup>lt;sup>1</sup>Actuarial Accrued Liabilities Experience represents actual experience versus expected experience of the actuarial census assumptions:

- Unanticipated changes to the member census data.

- 2.1 percent COLA for benefit recipients effective July 1, 2018, rather than the assumed COLA of 2.5 percent.

<sup>2</sup>Actuarial Assumption and Methodology Changes include:

Actuarial firm above.

## Solvency Test

(dollars in thousands)

#### **Portion of Actuarial Accrued Liabilities Actuarial Accrued Liabilities Covered by Assets**

Actuarial Valuation as of June 30	M	active ember ributions		tirees and neficiaries	(E Fi	Active Member mployer inanced Portion)	A	Total actuarial Accrued abilities	١	actuarial /alue of Assets	Active Member Contributions	Retirees and Beneficiaries	Active Member (Employer Financed Portion)	Total Actuarial Accrued Liabilities
2018	\$	38,541	\$	258,255	\$	250,898	\$	547,694	\$	516,750	100.0 %	100.0 %	87.7 %	94.4 %
2017		36,385		245,177		242,173		523,735		492,013	100.0	100.0	86.9	93.9
2016		34,804		244,484		221,838		501,126		469,378	100.0	100.0	85.7	93.7
2015		32,383		210,020		226,542		468,945		447,514	100.0	100.0	90.5	95.4
2014		32,060		216,044		216,751		464,855		419,568	100.0	100.0	79.1	90.3
2013¹		29,060		224,132		199,918		453,110		381,240	100.0	100.0	64.1	84.1
2012		27,699		205,341		204,814		437,854		260,096	100.0	100.0	13.2	59.4
2011		24,359		198,797		177,118		400,274		248,623	100.0	100.0	14.4	62.1
2010		23,138		182,023		158,962		364,123		242,143	100.0	100.0	23.3	66.5
2009		21,649		170,962		137,940		330,551		240,954	100.0	100.0	35.0	72.9

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

<sup>-</sup> Actuarial firm change.

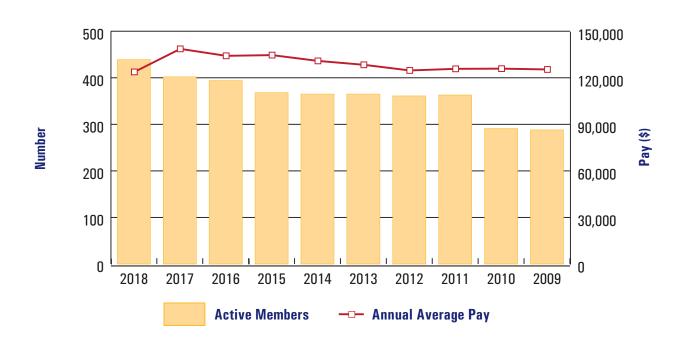
## Schedule of Active Members Valuation Data Actuarial Valuation as of June 30

(dollars in thousands - except annual average pay)

	Active Members	Annua	al Payroll <sup>1,2</sup>	Annu	ual Average Pay	Annual Percent Increase / (Decrease) In Average Pay
20183,4	439	\$	54,470	\$	124,078	(10.7) %
2017 <sup>3</sup>	402		55,850		138,931	3.3
2016 <sup>3</sup>	394		52,975		134,454	(0.3)
2015 <sup>3</sup>	368		49,651		134,921	2.8
2014 <sup>3</sup>	365		47,883		131,186	2.0
2013	365		46,967		128,676	2.9
2012	361		45,138		125,036	(0.8)
2011	363		45,764		126,072	(0.1)
2010	291		36,722		126,192	0.4
2009	288		36,196		125,680	(0.5)

<sup>&</sup>lt;sup>1</sup>Figures shown are the anticipated pay for the one-year period following the valuation date. <sup>2</sup>Excludes payroll from members that are over the 22 year service cap.

## **Total Number of Active Members Per Year and Annual Average Pay**



<sup>&</sup>lt;sup>3</sup>The valuation results were calculated using the prior year census data, adjusted for certain activity during the fiscal year.

<sup>&</sup>lt;sup>4</sup>Decrease in Annual Average Pay is due to a change in projection method.

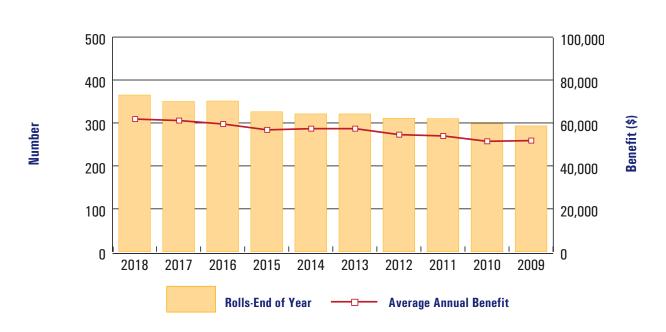
## Schedule of Retirants and Beneficiaries Actuarial Valuation as of June 30

(dollars in thousands - except average annual benefit)

	Added	to Rolls	Removed	from F	n Rolls Rolls		End o	f Year	Percent			Percent
	Number	Annual Benefits	Number		nual efits	Number	Number Total Annual Benefits¹		Increase / (Decrease) In Average Total Annual Benefits Benefit		Increase / (Decrease) in Average Annual Benefit	
2018 <sup>2</sup>	22	\$ 1,723	7	\$	309	365	\$	22,637	5.5 %	\$	62,019	1.1 %
20172	9	696	10		509	350		21,465	2.4		61,329	2.7
2016 <sup>2</sup>	34	2,520	9		340	351		20,959	12.8		59,714	4.8
2015 <sup>2</sup>	10	494	5		195	326		18,578	0.6		56,987	(1.0)
2014 <sup>2</sup>	-	-	-		-	321		18,474	-		57,551	-
2013	24	1,798	14		442	321		18,474	8.5		57,551	5.1
2012	7	444	6		194	311		17,028	1.4		54,751	1.1
2011	21	1,452	9		200	310		16,787	9.1		54,152	4.9
2010	11	627	6		339	298		15,390	1.1		51,644	(0.6)
2009	74	3,744	57		1,835	293		15,230	3.2		51,978	(2.8)

<sup>&</sup>lt;sup>1</sup>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. <sup>2</sup>The valuation results were calculated using the prior year census data, adjusted for certain activity during the fiscal year.

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



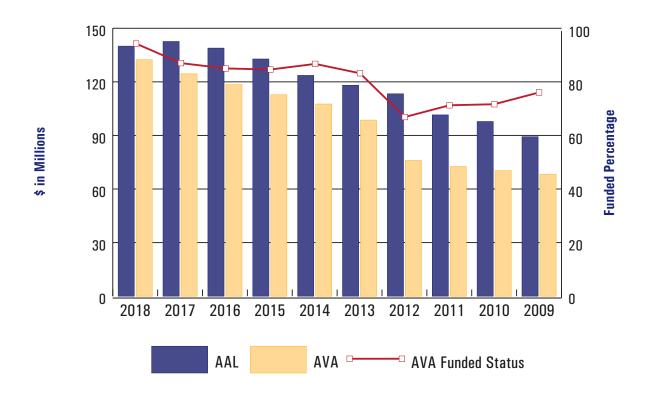
## Historical Summary of Actuarial Valuation Results Actuarial Valuation as of June 30

(dollars in millions)

Ad	crued	Va	lue of	Lia	ıbility¹	AVA Funded Status (AVA/AAL)	Em	ployee	Unfunded Liability¹ as a percentage of Covered Employee Payroll
\$	140.0	\$	132.4	\$	7.6	94.6 %	\$	29.4	25.9 %
	142.6		124.5		18.1	87.3		27.4	65.9
	138.9		118.5		20.4	85.3		25.5	80.1
	132.8		112.8		20.0	84.9		25.1	79.7
	123.6		107.6		16.0	87.0		25.8	62.1
	118.1		98.6		19.5	83.5		24.7	79.0
	113.3		76.0		37.3	67.1		24.3	153.5
	101.5		72.6		28.9	71.5		25.0	115.6
	97.8		70.3		27.5	71.9		25.3	108.7
	89.3		68.2		21.1	76.3		25.5	82.7
	Ac Liabi	142.6 138.9 132.8 123.6 118.1 113.3 101.5	Accrued Liability (AAL)  \$ 140.0 \$ 142.6	Accrued Liability (AAL)         Value of Assets (AVA)           \$ 140.0         \$ 132.4           142.6         124.5           138.9         118.5           132.8         112.8           123.6         107.6           118.1         98.6           113.3         76.0           101.5         72.6           97.8         70.3	Accrued Liability (AAL)         Value of Assets (AVA)         Liability (AAL)           \$ 140.0         \$ 132.4         \$ 142.5           \$ 138.9         \$ 118.5         124.5           \$ 132.8         \$ 112.8         123.6           \$ 118.1         \$ 98.6         113.3           \$ 72.6         \$ 97.8         \$ 70.3	Accrued Liability (AAL)         Value of Assets (AVA)         Liability¹ (AAL-AVA)           \$ 140.0         \$ 132.4         \$ 7.6           142.6         124.5         18.1           138.9         118.5         20.4           132.8         112.8         20.0           123.6         107.6         16.0           118.1         98.6         19.5           113.3         76.0         37.3           101.5         72.6         28.9           97.8         70.3         27.5	Accrued Liability (AAL)         Value of Assets (AVA)         Liability (AAL-AVA)         Status (AVA/AAL)           \$ 140.0         \$ 132.4         \$ 7.6         94.6 %           142.6         124.5         18.1         87.3           138.9         118.5         20.4         85.3           132.8         112.8         20.0         84.9           123.6         107.6         16.0         87.0           118.1         98.6         19.5         83.5           113.3         76.0         37.3         67.1           101.5         72.6         28.9         71.5           97.8         70.3         27.5         71.9	Accrued Liability (AAL)         Value of Assets (AVA)         Liability (AAL-AVA)         Status (AVA/AAL)         Employer           \$ 140.0         \$ 132.4         \$ 7.6         94.6 %         \$           142.6         124.5         18.1         87.3           138.9         118.5         20.4         85.3           132.8         112.8         20.0         84.9           123.6         107.6         16.0         87.0           118.1         98.6         19.5         83.5           113.3         76.0         37.3         67.1           101.5         72.6         28.9         71.5           97.8         70.3         27.5         71.9	Accrued Liability (AAL)         Value of Assets (AVA)         Liability (AAL-AVA)         Status (AVA/AAL)         Employee Payroll²           \$ 140.0         \$ 132.4         \$ 7.6         94.6 %         \$ 29.4           142.6         124.5         18.1         87.3         27.4           138.9         118.5         20.4         85.3         25.5           132.8         112.8         20.0         84.9         25.1           123.6         107.6         16.0         87.0         25.8           118.1         98.6         19.5         83.5         24.7           113.3         76.0         37.3         67.1         24.3           101.5         72.6         28.9         71.5         25.0           97.8         70.3         27.5         71.9         25.3

<sup>&</sup>lt;sup>1</sup>The Unfunded Liability is calculated using the Actuarial Value of Assets (AVA), which is different than Net Pension Liability in the Financial Section which uses the Plan Fiduciary Net Position, also known as the Fair Value of Assets (FVA).

<sup>&</sup>lt;sup>2</sup>Covered employee payroll can also be found in the RSI Contribution Schedule in the Financial Section.



## Summary of Actuarial Assumptions, Actuarial Methods and Plan Provisions

he actuarial assumptions and methods used in the June 30, 2018 valuation of the Excise, Gaming and Conservation Officers' Retirement Fund were adopted by the INPRS Board in April 2018. The majority of the actuarial assumptions and methods are based on plan experience from July 1, 2010 through June 30, 2014, and were first used in the June 30, 2015 valuation. The INPRS Board adopted a funding policy in April 2014, and the policy was last updated in October 2017. The funding policy is available online at: www.in.gov/inprs/files/INPRS Funding Policy.pdf.

## **Changes in Actuarial Assumptions**

For the actuarial valuation as of June 30, 2018, the COLA assumption was changed due to passage of Senate Enrolled Act No. 373. In lieu of a 1.0 percent COLA beginning on January 1, 2020, INPRS assumes the COLA will be replaced by a 13th check for 2020 and 2021. The COLA assumption thereafter, would be 0.4 percent beginning on January 1, 2022, changing to 0.5 percent beginning on January 1, 2034, and ultimately 0.6 percent beginning on January 1, 2039.

## **Changes in Actuarial Methods**

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

## **Changes in Plan Provisions**

Legislation passed in the 2018 legislative session creates a funding mechanism to provide for future benefit increases or 13th checks. The INPRS Board has the authority to have employers contribute up to 1.0 percent of member pay into the fund. Increases or payments are made upon passed legislation subject to the availability of funds to provide the benefit.

## **Actuarial Assumptions**

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

#### **Economic Assumptions**

Interest Rate / Investment Return:

Funding 6.75 percent (net of administrative and investment expenses)

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

Interest on Member Contributions: 3.50 percent per year

Inflation: 2.25 percent per year

Cost of Living Increases: It is assumed a service-based 13th check will be paid in the 2020 and 2021 fiscal years. Thereafter, the

following COLAs, compounded annually, are assumed:

0.4 percent beginning on January 1, 20220.5 percent beginning on January 1, 20340.6 percent beginning on January 1, 2039

Future Salary Increases: 2.50 percent per year

## Summary of Actuarial Assumptions, Actuarial Methods and Plan Provisions, continued

#### Demographic Assumptions: Based on 2010-2014 Experience

Mortality (Healthy): RP-2014 Blue Collar Mortality Tables, with Social Security generational improvements from

2006 based on the Social Security Administration's 2014 Trustee report.

Mortality (Disabled): RP-2014 Disability Mortality Tables, with Social Security generational improvements from 2006

based on the Social Security Administration's 2014 Trustee report.

Retirement:

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

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

Termination:

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

Disability:

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

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

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

Spouse/Beneficiary:

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

## Summary of Actuarial Assumptions, Actuarial Methods and Plan Provisions, continued

#### Actuarial Methods

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

Actuarial Cost Method: Entry Age Normal – Level Percent of Payroll

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

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

Amortization Method: For funding, gains and losses occurring from census experience different than assumed, assumption changes,

and benefit changes are amortized over a 20-year period with level payments each year. A new gain or loss base is established each year based on the additional gain or loss during that year and that base is amortized over a new 20-year period. However, when the plan is at or above 100 percent funded (based on Actuarial Value of Assets), the past amortization bases are considered fully amortized and a single amortization base equal to the surplus is amortized over a 30-year period with level payment each year. The purpose of the method is to give a smooth progression of the costs from year-to-year and, at the same time, provide for an orderly funding of

the unfunded liabilities.

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

expense in the year in which they occur.

Data Measurement Date: Member census data as of the prior year end was used in the valuation and adjusted, where appropriate, to

reflect changes during the current fiscal year. Standard actuarial roll forward techniques were then used to

project the liabilities computed as of prior year end to the current year measurement date.

Asset Valuation Method: Funding uses the Actuarial Value of Assets (AVA), which is equal to a five-year smoothing of gains and losses on

the Fair Value of Assets (FVA), subject to a 20 percent corridor. Accordingly, the AVA is limited to no more than 20

percent greater than or 20 percent less than the FVA.

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

67.

## **Plan Provisions**

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

## **Analysis of Financial Experience**

(dollars in thousands)	UAAL
Unfunded Actuarial Accrued Liability (UAAL): June 30, 2017	\$ 18,072
Normal Cost and Interest, less Expected Contributions	 (385)
Expected UAAL: June 30, 2018	17,687
UAAL (Gain) / Loss	
Actuarial Value of Assets Experience	(1,470)
Actuarial Accrued Liabilities Experience <sup>1</sup>	493
Actuarial Assumption & Methodology Changes <sup>2</sup>	(9,095)
Plan Provision Changes	 
Total UAAL (Gain) / Loss	 (10,072)
Unfunded Actuarial Accrued Liability: June 30, 2018	\$ 7,615

<sup>&</sup>lt;sup>1</sup>Actuarial Accrued Liabilities Experience represents actual experience versus expected experience of the actuarial census assumptions:

**Portion of Actuarial Accrued Liabilities** 

## Solvency Test

(dollars in thousands)

			Actu	iarial Accri	led I	Liabilities					Covered by Assets					
Actuarial Valuation as of June 30	N	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		
2018	\$	10,715	\$	68,750	\$	60,591	\$	140,056	\$	132,441	100.0 %	100.0 %	87.4 %	94.6 %		
2017		9,737		69,217		63,649		142,603		124,531	100.0	100.0	71.6	87.3		
2016		9,085		67,424		62,456		138,965		118,515	100.0	100.0	67.3	85.3		
2015		8,456		61,503		62,837		132,796		112,765	100.0	100.0	68.1	84.9		
2014		8,042		54,626		60,933		123,601		107,563	100.0	100.0	73.7	87.0		
2013 <sup>1</sup>		7,494		56,028		54,575		118,097		98,608	100.0	100.0	64.3	83.5		
2012		6,532		53,929		52,822		113,283		76,007	100.0	100.0	29.4	67.1		
2011		6,271		46,695		48,568		101,534		72,599	100.0	100.0	40.4	71.5		
2010		6,220		36,044		55,598		97,862		70,327	100.0	100.0	50.5	71.9		
2009		5.274		35.039		48.983		89 296		68 170	100.0	100.0	56.9	76.3		

<sup>1</sup>In accordance with Legislation passed during March 2012, the State appropriated \$14,619 thousand during 2013 to reach a funded status of 80.0 percent based on the actuarial valuation as

<sup>-</sup> Unanticipated changes to the member census data.

<sup>&</sup>lt;sup>2</sup>Actuarial Assumption and Methodology Changes include:

Actuarian Assumption and inventional control of the COLA assumption was changed due to passage of Senate Enrolled Act No. 373. In lieu of a 1.0 percent COLA beginning on January 1, 2020, INPRS assumes that the COLA will be replaced by a 13th check for 2020 and 2021. The COLA assumption thereafter, would be 0.4 percent beginning on January 1, 2022, changing to 0.5 percent beginning on January 1, 2034, and ultimately 0.6 percent beginning on January 1, 2039.

- Actuarial firm change.

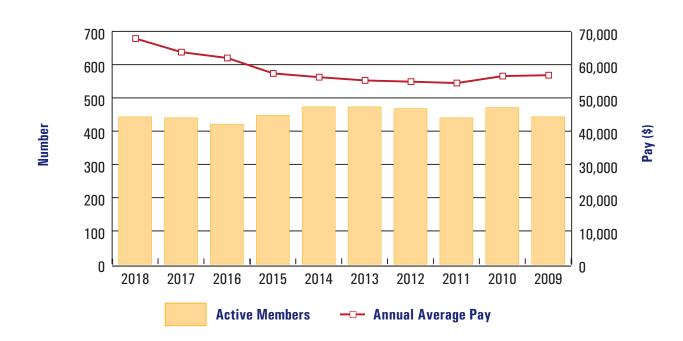
## Schedule of Active Members Valuation Data Actuarial Valuation as of June 30

(dollars in thousands - except annual average pay)

	Active Members	Annu	al Payroll¹	Annu	al Average Pay	Annual Percent Increase / (Decrease) In Average Pay
2018 <sup>2,3</sup>	443	\$	30,121	\$	67,994	6.4 %
2017 <sup>2</sup>	440		28,114		63,895	2.8
2016 <sup>2</sup>	421		26,164		62,147	8.1
2015 <sup>2</sup>	448		25,761		57,502	2.0
20142	473		26,664		56,372	1.8
2013	473		26,201		55,393	0.7
2012	468		25,752		55,026	0.8
2011	440		24,028		54,609	(3.7)
2010	471		26,709		56,707	(0.5)
2009	443		25,238		56,971	9.5

<sup>&</sup>lt;sup>1</sup>Figures shown are the anticipated pay for the one-year period following the valuation date.

## **Total Number of Active Members Per Year and Annual Average Pay**



<sup>&</sup>lt;sup>2</sup>The valuation results were calculated using the prior year census data, adjusted for certain activity during the fiscal year.

<sup>&</sup>lt;sup>3</sup>Increase in Annual Average Pay is due to a change in projection method.

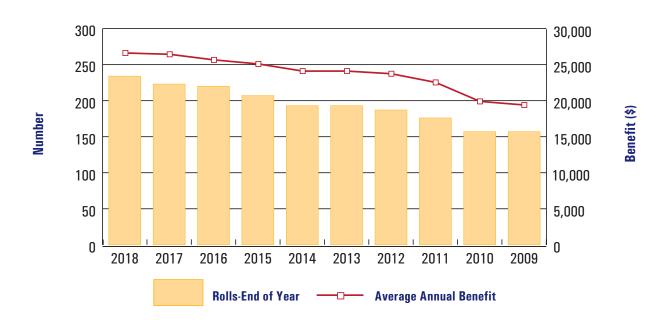
## Schedule of Retirants and Beneficiaries Actuarial Valuation as of June 30

(dollars in thousands - except average annual benefit)

	Added to Rolls		Removed	Removed from Rolls			End of	f Year	Percent			Percent	
	Number		nual nefits	Number		nnual nefits	Number		Il Annual enefits¹	Increase / (Decrease) In Total Annual Benefits	A	verage Innual Senefit	Increase / (Decrease) in Average Annual Benefit
2018 <sup>2</sup>	13	\$	404	2	\$	23	234	\$	6,246	5.6 %	\$	26,692	0.7 %
2017 <sup>2</sup>	8		314	5		60	223		5,912	4.4		26,512	3.0
2016 <sup>2</sup>	14		506	1		4	220		5,661	8.7		25,733	2.2
2015 <sup>2</sup>	15		556	1		5	207		5,210	11.7		25,170	4.1
2014 <sup>2</sup>	-		-	-		-	193		4,666	-		24,177	-
2013	8		253	2		9	193		4,666	4.8		24,177	1.5
2012	14		495	3		14	187		4,452	11.9		23,810	5.3
2011	22		902	3		23	176		3,978	26.9		22,602	13.2
2010	6		136	6		49	157		3,134	2.6		19,962	2.6
2009	59		748	39		258	157		3,056	21.3		19,465	5.9

<sup>1</sup>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. <sup>2</sup>The valuation results were calculated using the prior year census data, adjusted for certain activity during the fiscal year.

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



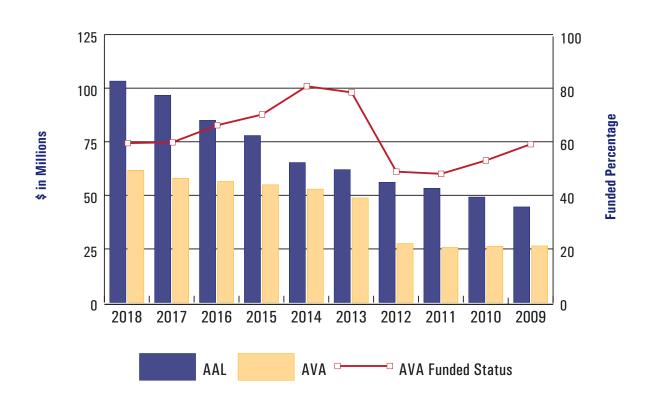
## Historical Summary of Actuarial Valuation Results **Actuarial Valuation as of June 30**

(dollars in millions)

	Actuarial Accrued Liability (AAL)		Actuarial Value of Assets (AVA)		Unfunded Liability¹ (AAL-AVA)		AVA Funded Status (AVA/AAL)	Covered Employee Payroll <sup>2</sup>		Unfunded Liability <sup>1</sup> as a percentage of Covered Employee Payroll
2018	\$	103.3	\$	61.7	\$	41.6	59.7 %	\$	21.6	192.9 %
2017		96.7		58.0		38.7	60.0		22.6	170.9
2016		85.0		56.4		28.6	66.4		21.4	133.6
2015		77.9		54.9		23.0	70.4		21.1	108.8
2014		65.3		52.9		12.4	81.0		20.6	60.2
2013		62.0		48.8		13.2	78.7		18.8	70.2
2012		56.1		27.5		28.6	49.0		21.7	131.8
2011		53.3		25.7		27.6	48.2		18.1	152.6
2010		49.2		26.2		23.0	53.2		21.0	109.4
2009		44.6		26.4		18.2	59.3		20.8	87.6

<sup>&</sup>lt;sup>1</sup>The Unfunded Liability is calculated using the Actuarial Value of Assets (AVA), which is different than Net Pension Liability in the Financial Section which uses the Plan Fiduciary Net Position, also known as the Fair Value of Assets (FVA).

<sup>&</sup>lt;sup>2</sup>Covered Employee Payroll can also be found in the RSI Contribution Schedule in the Financial Section.



### Summary of Actuarial Assumptions, Actuarial Methods and Plan Provisions

he actuarial assumptions and methods used in the June 30, 2018 valuation of the Prosecuting Attorneys' Retirement Fund were adopted by the INPRS Board in April 2018. The majority of the actuarial assumptions and methods are based on plan experience from July 1, 2010 through June 30, 2014, and were first used in the June 30, 2015 valuation. The INPRS Board adopted a funding policy in April 2014, and the policy was last updated in October 2017. The funding policy is available online at: www.in.gov/inprs/files/INPRS\_Funding\_Policy.pdf.

## **Changes in Actuarial Assumptions**

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

## **Changes in Actuarial Methods**

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

## **Changes in Plan Provisions**

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

## **Actuarial Assumptions**

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

#### **Economic Assumptions**

Interest Rate / Investment Return:

Funding 6.75 percent (net of administrative and investment expenses)

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

Interest on Member Contributions: 3.50 percent per year

Inflation: 2.25 percent per year

Cost of Living Increases: N/A

Future Salary Increases: 4.00 percent per year

## Summary of Actuarial Assumptions, Actuarial Methods and Plan Provisions, continued

#### **Demographic Assumptions: Based on 2010-2014 Experience**

Disability:

Mortality (Healthy): RP-2014 White Collar Mortality Tables, with Social Security generational improvements from 2006 based

on the Social Security Administration's 2014 Trustee report.

Mortality (Disabled): RP-2014 Disability Mortality Tables, with Social Security generational improvements from 2006 based on

the Social Security Administration's 2014 Trustee report.

Retirement: Age Service < 22 Age Service > = 22 Age

65+ 100 65+ 100

Inactive vested members are assumed to commence their retirement benefit at their earliest unreduced

eligible retirement date (age 62, or current age if greater).

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

Sample Rates

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

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

assumed to be three years older than their spouses.

### Summary of Actuarial Assumptions, Actuarial Methods and Plan Provisions, continued

#### **Actuarial Methods**

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

Actuarial Cost Method: Entry Age Normal – Level Percent of Payroll

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

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

Amortization Method: For funding, gains and losses occurring from census experience different than assumed, assumption changes,

and benefit changes are amortized over a 20-year period with level payments each year. A new gain or loss base is established each year based on the additional gain or loss during that year and that base is amortized over a new 20-year period. However, when the plan is at or above 100 percent funded (based on Actuarial Value of Assets), the past amortization bases are considered fully amortized and a single amortization base equal to the surplus is amortized over a 30-year period with level payment each year. The purpose of the method is to give a smooth progression of the costs from year-to-year and, at the same time, provide for an orderly funding of the

unfunded liabilities.

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

expense in the year in which they occur.

Data Measurement Date: Member census data as of the prior year end was used in the valuation and adjusted, where appropriate, to

reflect changes during the current fiscal year. Standard actuarial roll forward techniques were then used to

project the liabilities computed as of prior year end to the current year measurement date.

Asset Valuation Method: Funding uses the Actuarial Value of Assets (AVA), which is equal to a five-year smoothing of gains and losses on

the Fair Value of Assets (FVA), subject to a 20 percent corridor. Accordingly, the AVA is limited to no more than

20 percent greater than or 20 percent less than the FVA.

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

67.

#### **Plan Provisions**

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

## **Analysis of Financial Experience**

(dollars in thousands)	UAAL			
Unfunded Actuarial Accrued Liability (UAAL): June 30, 2017	\$	38,688		
Normal Cost and Interest, less Expected Contributions		(804)		
Expected UAAL: June 30, 2018		37,884		
UAAL (Gain) / Loss				
Actuarial Value of Assets Experience		1,579		
Actuarial Accrued Liabilities Experience <sup>1</sup>		919		
Actuarial Assumption & Methodology Changes <sup>2</sup>		1,237		
Plan Provision Changes				
Total UAAL (Gain) / Loss		3,735		
Unfunded Actuarial Accrued Liability: June 30, 2018	\$	41,619		

<sup>&</sup>lt;sup>1</sup>Actuarial Accrued Liabilities Experience represents actual experience versus expected experience of the actuarial census assumptions:

- Unanticipated changes to the member census data.

<sup>2</sup>Actuarial Assumption and Methodology Changes include:

- Actuarial firm change.

**Actuarial Accrued Liabilities** 

## **Solvency Test**

(dollars in thousands)

#### **Portion of Actuarial Accrued Liabilities Covered by Assets**

7101441141710014104 21451111100													
M	ember			M Er Fi	ember nployer nanced	A	ccrued	٧	alue of	Active Member Contributions	Retirees and Beneficiaries	Active Member (Employer Financed Portion)	Total Actuarial Accrued Liabilities
\$	27,620	\$	39,034	\$	36,630	\$	103,284	\$	61,664	100.0 %	87.2 %	- %	59.7 %
	26,327		38,504		31,824		96,655		57,967	100.0	82.2	-	60.0
	26,206		37,709		21,118		85,033		56,472	100.0	80.3	-	66.4
	25,479		26,636		25,746		77,861		54,848	100.0	100.0	10.6	70.4
	26,654		22,665		16,017		65,336		52,936	100.0	100.0	22.6	81.0
	25,371		22,004		14,565		61,940		48,762	100.0	100.0	9.5	78.7
	23,406		18,660		14,014		56,080		27,501	100.0	21.9	-	49.0
	21,592		16,806		14,854		53,252		25,651	100.0	24.2	-	48.2
	20,999		12,557		15,618		49,174		26,166	100.0	41.1	-	53.2
	19,239		10,384		15,009		44,632		26,467	100.0	69.6	-	59.3
	Cont	\$ 27,620 26,327 26,206 25,479 26,654 25,371 23,406 21,592 20,999	Member Contributions         Retigen           \$ 27,620         \$           26,327         26,206           25,479         26,654           25,371         23,406           21,592         20,999	Member Contributions         Retirees and Beneficiaries           \$ 27,620         \$ 39,034           26,327         38,504           26,206         37,709           25,479         26,636           26,654         22,665           25,371         22,004           23,406         18,660           21,592         16,806           20,999         12,557	Active Member Contributions         Retirees and Beneficiaries         M (Er Fin Power Fin Powe	Member Contributions         Retirees and Beneficiaries         Financed Portion)           \$ 27,620         \$ 39,034         \$ 36,630           26,327         38,504         31,824           26,206         37,709         21,118           25,479         26,636         25,746           26,654         22,665         16,017           25,371         22,004         14,565           23,406         18,660         14,014           21,592         16,806         14,854           20,999         12,557         15,618	Active Member Contributions         Retirees and Beneficiaries         Member (Employer Financed Portion)         A A Limit	Active Member Contributions         Retirees and Beneficiaries         Member (Employer Financed Portion)         Total Actuarial Accrued Liabilities           \$ 27,620         \$ 39,034         \$ 36,630         \$ 103,284           26,327         38,504         31,824         96,655           26,206         37,709         21,118         85,033           25,479         26,636         25,746         77,861           26,654         22,665         16,017         65,336           25,371         22,004         14,565         61,940           23,406         18,660         14,014         56,080           21,592         16,806         14,854         53,252           20,999         12,557         15,618         49,174	Active Member Contributions         Retirees and Beneficiaries         Member (Employer Financed Portion)         Total Actuarial Accrued Liabilities         Actuarial Accrued Liabilities         Accrued Liabilities           \$ 27,620         \$ 39,034         \$ 36,630         \$ 103,284         \$ 26,327         38,504         31,824         96,655         96,655         4 26,206         25,479         26,636         25,746         77,861         77,861         26,654         22,665         16,017         65,336         25,371         22,004         14,565         61,940         23,406         18,660         14,014         56,080         21,592         16,806         14,854         53,252         20,999         12,557         15,618         49,174	Active Member Contributions         Retirees and Beneficiaries         Member (Employer Financed Portion)         Total Actuarial Accrued Liabilities         Actuarial Value of Assets           \$ 27,620         \$ 39,034         \$ 36,630         \$ 103,284         \$ 61,664           26,327         38,504         31,824         96,655         57,967           26,206         37,709         21,118         85,033         56,472           25,479         26,636         25,746         77,861         54,848           26,654         22,665         16,017         65,336         52,936           25,371         22,004         14,565         61,940         48,762           23,406         18,660         14,014         56,080         27,501           21,592         16,806         14,854         53,252         25,651           20,999         12,557         15,618         49,174         26,166	Active Member ContributionsRetirees and BeneficiariesMember (Employer Financed Portion)Total Actuarial Accrued LiabilitiesActuarial Value of AssetsActive Member Contributions\$ 27,620\$ 39,034\$ 36,630\$ 103,284\$ 61,664100.0 %26,32738,50431,82496,65557,967100.026,20637,70921,11885,03356,472100.025,47926,63625,74677,86154,848100.026,65422,66516,01765,33652,936100.025,37122,00414,56561,94048,762100.023,40618,66014,01456,08027,501100.021,59216,80614,85453,25225,651100.020,99912,55715,61849,17426,166100.0	Active Member ContributionsRetirees and PeneficiariesMember Financed Portion)Total Actuarial Accrued LiabilitiesActuarial Value of AssetsActive Member ContributionsRetirees and Beneficiaries\$ 27,620\$ 39,034\$ 36,630\$ 103,284\$ 61,664100.0 %87.2 %26,32738,50431,82496,65557,967100.082.226,20637,70921,11885,03356,472100.080.325,47926,63625,74677,86154,848100.0100.026,65422,66516,01765,33652,936100.0100.025,37122,00414,56561,94048,762100.0100.023,40618,66014,01456,08027,501100.021.921,59216,80614,85453,25225,651100.024.220,99912,55715,61849,17426,166100.041.1	Active Member Contributions         Retirees and Portion         Member (Employer Financed Portion)         Total Actuarial Accrued Liabilities         Actuarial Value of Assets         Active Member Contributions         Retirees and Beneficiaries         Member (Employer Financed Portion)           \$ 27,620         \$ 39,034         \$ 36,630         \$ 103,284         \$ 61,664         \$ 100.0 %         87.2 %         - %           \$ 26,327         \$ 38,504         \$ 31,824         \$ 96,655         \$ 57,967         \$ 100.0         82.2         -           \$ 26,206         \$ 37,709         \$ 21,118         \$ 85,033         \$ 56,472         \$ 100.0         \$ 80.3         -           \$ 25,479         \$ 26,636         \$ 25,746         \$ 77,861         \$ 54,848         \$ 100.0         \$ 100.0         \$ 10.6           \$ 26,654         \$ 22,665         \$ 16,017         \$ 65,336         \$ 52,936         \$ 100.0         \$ 100.0         \$ 22.6           \$ 25,371         \$ 22,004         \$ 14,565         \$ 61,940         \$ 48,762         \$ 100.0         \$ 100.0         \$ 9.5           \$ 23,406         \$ 18,660         \$ 14,854         \$ 53,252         \$ 25,651         \$ 100.0         \$ 24.2         -           \$ 20,999         \$ 12,557         \$ 15,618         \$ 49,174

<sup>&</sup>lt;sup>1</sup>In accordance with Legislation passed during March 2012, the State appropriated \$17,363 thousand during 2013 to reach a funded status of 80.0 percent based on the actuarial valuation as of June 30, 2012.

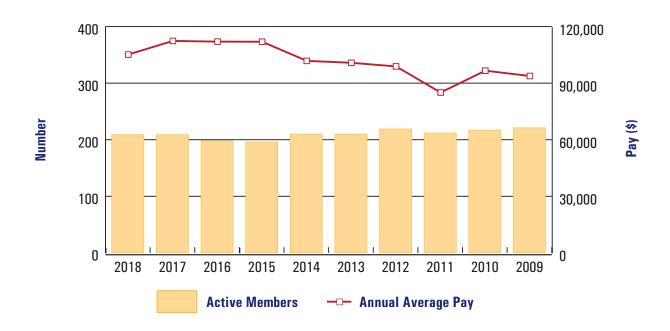
## Schedule of Active Members Valuation Data Actuarial Valuation as of June 30

(dollars in thousands - except annual average pay)

	Active Members	Annua	al Payroll <sup>1,2</sup>	Annu	ual Average Pay	Annual Percent Increase / (Decrease) In Average Pay
20183,4	209	\$	22,031	\$	105,413	(6.4) %
20173	209		23,540		112,632	0.3
2016 <sup>3</sup>	198		22,227		112,257	0.1
2015 <sup>3</sup>	196		21,991		112,198	9.9
2014 <sup>3</sup>	210		21,432		102,057	1.0
2013	210		21,217		101,033	1.9
2012	219		21,705		99,110	16.2
2011	212		18,082		85,292	(11.9)
2010	217		21,016		96,848	3.0
2009	221		20,782		94,037	(4.7)

<sup>&</sup>lt;sup>1</sup>Figures shown are the anticipated pay for the one-year period following the valuation date.

## **Total Number of Active Members Per Year and Annual Average Pay**



<sup>&</sup>lt;sup>2</sup>Excludes payroll from members that are over the 22 year service cap.

<sup>&</sup>lt;sup>3</sup>The valuation results were calculated using the prior year census data, adjusted for certain activity during the fiscal year.

<sup>&</sup>lt;sup>4</sup>Decrease in Annual Average Pay is due to a change in the projection method.

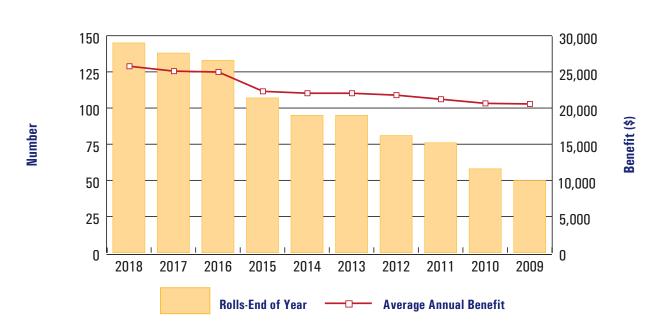
## Schedule of Retirants and Beneficiaries Actuarial Valuation as of June 30

(dollars in thousands - except average annual benefit)

	Added to Rolls		Removed from Rolls			Rolls - I	End of	f Year	Percent			Percent	
	Number		nnual nefits	Number		nnual nefits	Number		l Annual enefits¹	Increase / (Decrease) In Total Annual Benefits	A	verage Innual Senefit	Increase / (Decrease) in Average Annual Benefit
2018 <sup>2</sup>	9	\$	307	2	\$	28	145	\$	3,749	7.9 %	\$	25,853	2.7 %
20172	5		140	-		-	138		3,474	4.3		25,176	0.5
2016 <sup>2</sup>	26		937	-		-	133		3,332	39.1		25,056	11.9
2015 <sup>2</sup>	14		319	2		14	107		2,395	14.0		22,385	1.2
20142	-		-	-		-	95		2,101	-		22,118	-
2013	15		362	1		27	95		2,101	18.7		22,118	1.2
2012	6		178	1		27	81		1,770	9.4		21,853	2.7
2011	19		473	1		16	76		1,618	34.7		21,288	2.8
2010	9		187	1		16	58		1,201	16.4		20,715	0.4
2009	26		536	2		26	50		1,032	97.8		20,636	2.8

1End 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. <sup>2</sup>The valuation results were calculated using the prior year census data, adjusted for certain activity during the fiscal year.

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



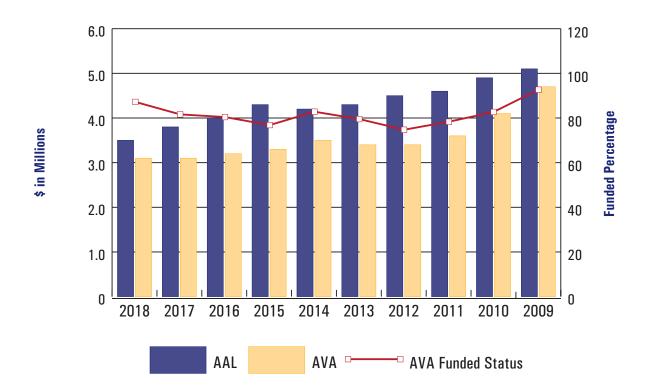
## Historical Summary of Actuarial Valuation Results Actuarial Valuation as of June 30

(dollars in millions)

	Acc	uarial crued ty (AAL)	Val	uarial ue of s (AVA)	Lial	unded bility¹ – AVA)	AVA Funded Status (AVA/AAL)	Covered Employee Payroll <sup>2</sup>	Unfunded Liability <sup>1</sup> as a percentage of Covered Employee Payroll
2018	\$	3.5	\$	3.1	\$	0.4	87.5 %	N/A	N/A
2017		3.8		3.1		0.7	81.9	N/A	N/A
2016		4.0		3.2		0.8	80.7	N/A	N/A
2015		4.3		3.3		1.0	77.1	N/A	N/A
2014		4.2		3.5		0.7	83.1	N/A	N/A
2013		4.3		3.4		0.9	79.8	N/A	N/A
2012		4.5		3.4		1.1	75.0	N/A	N/A
2011		4.6		3.6		1.0	78.6	N/A	N/A
2010		4.9		4.1		0.8	83.0	N/A	N/A
2009		5.1		4.7		0.4	93.0	N/A	N/A

<sup>&</sup>lt;sup>1</sup>The Unfunded Liability is calculated using the Actuarial Value of Assets (AVA), which is different than Net Pension Liability in the Financial Section which uses the Plan Fiduciary Net Position, also known as the Fair Value of Assets (FVA).

<sup>2</sup>LE DB is a closed plan with no Covered Employee Payroll.



### Summary of Actuarial Assumptions, Actuarial Methods and Plan Provisions

he actuarial assumptions and methods used in the June 30, 2018 valuation of the Legislators' Defined Benefit Fund were adopted by the INPRS Board in April 2018. The majority of the actuarial assumptions and methods are based on plan experience from July 1, 2010 through June 30, 2014, and were first used in the June 30, 2015 valuation. The INPRS Board adopted a funding policy in April 2014, and the policy was last updated in October 2017. The funding policy is available online at: www.in.gov/inprs/files/INPRS\_Funding\_Policy.pdf.

## **Changes in Actuarial Assumptions**

For the actuarial valuation as of June 30, 2018, the COLA assumption was changed due to passage of Senate Enrolled Act No. 373. In lieu of a 1.0 percent COLA beginning on January 1, 2020, INPRS assumes the COLA will be replaced by a 13th check for 2020 and 2021. The COLA assumption thereafter, would be 0.4 percent beginning on January 1, 2022, changing to 0.5 percent beginning on January 1, 2034, and ultimately 0.6 percent beginning on January 1, 2039.

## **Changes in Actuarial Methods**

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

## **Changes in Plan Provisions**

Legislation passed in the 2018 legislative session creates a funding mechanism to provide for future benefit increases or 13th checks. Contributions for the Legislators' Defined Benefit Fund will be directly allocated by the State Legislature. Increases or payments are made upon passed legislation subject to the availability of funds to provide the benefit.

## **Actuarial Assumptions**

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

#### **Economic Assumptions**

Interest Rate / Investment Return:

Funding 6.75 percent (net of administrative and investment expenses)

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

Inflation: 2.25 percent per year

Cost of Living Increases: It is assumed a service-based 13th check will be paid in the 2020 and 2021 fiscal years. Thereafter,

the following COLAs, compounded annually, are assumed:

0.4 percent beginning on January 1, 20220.5 percent beginning on January 1, 20340.6 percent beginning on January 1, 2039

Future Salary Increases: 2.25 percent per year

## Summary of Actuarial Assumptions, Actuarial Methods and Plan Provisions, continued

#### <u>Demographic Assumptions: Based on 2010-2014 Experience</u>

Mortality (Healthy): RP-2014 White Collar Mortality Tables, with Social Security generational improvements from 2006

based on the Social Security Administration's 2014 Trustee Report.

Mortality (Disabled): RP-2014 Disability Mortality Tables, with Social Security generational improvements from 2006

based on the Social Security Administration's 2014 Trustee Report.

 Retirement:
 Age
 Rate

 55
 10 %

56-57 8 58-61 2 62-64 5 65+ 100

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

Termination: Sarason T-2 Tables. Sample rates:

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

Disability: 75 percent of 1964 OASDI Tables. Sample rates:

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

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

to be three years older than females.

## Summary of Actuarial Assumptions, Actuarial Methods and Plan Provisions, continued

### **Actuarial Methods**

Actuarial Cost & Amortization Methods:

Funding: Traditional Unit Credit

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

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

Accounting & Financial Reporting: Entry Age Normal - Level Percent of Payroll

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

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

in the year in which they occur.

Data Measurement Date: Member census data as of the prior year end was used in the valuation and adjusted, where

appropriate, to reflect changes during the current fiscal year. Standard actuarial roll forward techniques were then used to project the liabilities computed as of prior year end to the current year

measurement date.

Asset Valuation Method: Funding uses the Actuarial Value of Assets (AVA), which is equal to a five-year smoothing of gains

and losses on the Fair Value of Assets (FVA), subject to a 20 percent corridor. Accordingly, the AVA is

limited to no more than 20 percent greater than or 20 percent less than the FVA.

Accounting and financial reporting uses the Fair Value of Assets (FVA) in accordance with GASB

Statement No. 67.

### **Plan Provisions**

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

## **Analysis of Financial Experience**

(dollars in thousands)	UAAL
Unfunded Actuarial Accrued Liability (UAAL): June 30, 2017	\$ 690
Normal Cost and Interest, less Expected Contributions	 (154)
Expected UAAL: June 30, 2018	536
UAAL (Gain) / Loss	
Actuarial Value of Assets Experience	104
Actuarial Accrued Liabilities Experience <sup>1</sup>	(78)
Actuarial Assumption & Methodology Changes <sup>2</sup>	 (127)
Total UAAL (Gain) / Loss	 (101)
Unfunded Actuarial Accrued Liability: June 30, 2018	\$ 435

<sup>&</sup>lt;sup>1</sup>Actuarial Accrued Liabilities Experience represents actual experience versus expected experience of the actuarial census

## Solvency Test

(dollars in thousands)

Actuarial	Accrued	Liahilitiae

### **Portion of Actuarial Accrued Liabilities Covered by Assets**

Actuarial Valuation as of June 30		rees and eficiaries	Me (Em Fin	ctive mber ployer anced rtion)	Ac Ac	otal tuarial crued bilities	Va	tuarial llue of ssets	Retirees and Beneficiaries	Active Member (Employer Financed Portion)	Total Actuarial Accrued Liabilities
2018	\$	2,783	\$	702	\$	3,485	\$	3,050	100.0 %	38.1%	87.5 %
2017		3,013		791		3,804		3,114	100.0	12.9	81.9
2016		3,207		809		4,016		3,241	100.0	4.2	80.7
2015		3,213		1,115		4,328		3,336	100.0	11.1	77.1
2014		3,076		1,097		4,173		3,467	100.0	35.7	83.1
2013		3,192		1,103		4,295		3,428	100.0	21.4	79.8
2012		3,031		1,472		4,503		3,377	100.0	23.5	75.0
2011		3,037		1,584		4,621		3,634	100.0	37.7	78.6
2010		3,017		1,892		4,909		4,075	100.0	55.9	83.0
2009		3,147		1,940		5,087		4,730	100.0	81.6	93.0

assumptions:
- Unanticipated changes to the member census data.

2Actuarial Assumption and Methodology Changes include:
- The COLA assumption was changed due to passage of Senate Enrolled Act No. 373. In lieu of a 1.0 percent COLA beginning on January 1, 2020, INPRS assumes that the COLA will be replaced by a 13th check for 2020 and 2021. The COLA assumption thereafter, would be 0.4 percent beginning on January 1, 2022, changing to 0.5 percent beginning on January 1, 2034, and ultimately 0.6 percent beginning on January 1, 2039.

- Actuarial firm change.

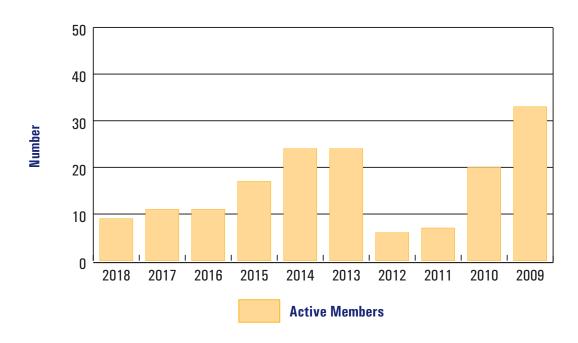
## Schedule of Active Members Valuation Data Actuarial Valuation as of June 30

(dollars in thousands - except annual average pay)

	Active Members	Annual Payroll	Annual Average Pay	Annual Percent Increase / (Decrease) In Average Pay
2018 <sup>1</sup>	9	N/A	N/A	N/A
20171	11	N/A	N/A	N/A
2016¹	11	N/A	N/A	N/A
2015 <sup>1</sup>	17	N/A	N/A	N/A
2014 <sup>1</sup>	24	N/A	N/A	N/A
2013	24	N/A	N/A	N/A
2012	6	N/A	N/A	N/A
2011	7	N/A	N/A	N/A
2010	20	N/A	N/A	N/A
2009	33	N/A	N/A	N/A

<sup>&</sup>lt;sup>1</sup>The valuation results were calculated using the prior year census data, adjusted for certain activity during the fiscal year.

## **Total Number of Active Members Per Year**



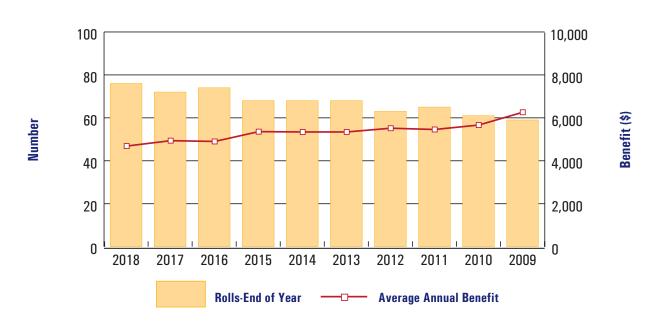
## Schedule of Retirants and Beneficiaries Actuarial Valuation as of June 30

(dollars in thousands - except average annual benefit)

	Added to Rolls		Removed	from I	Rolls	Rolls – End		Year	Percent Increase /			Percent Increase /	
	Number		nual nefits	Number		nual nefits	Number		Annual nefits <sup>1</sup>	(Decrease) In Total Annual Benefits	Α	rerage nnual enefit	(Decrease) in Average Annual Benefit
2018 <sup>2</sup>	4	\$	16	-	\$	-	76	\$	357	- %	\$	4,704	(5.1) %
2017 <sup>2</sup>	-		-	2		7	72		357	(1.9)		4,956	0.8
2016 <sup>2</sup>	8		23	2		14	74		364	(0.5)		4,919	(8.5)
2015 <sup>2</sup>	1		2	1		1	68		366	0.5		5,377	0.3
2014 <sup>2</sup>	-		-	-		-	68		364	-		5,362	-
2013	9		41	4		26	68		364	4.3		5,362	(3.1)
2012	2		13	4		20	63		349	(2.0)		5,536	1.1
2011	4		22	-		-	65		356	2.6		5,477	(3.7)
2010	5		9	3		27	61		347	(6.5)		5,685	(9.5)
2009	17		88	2		2	59		371	35.3		6,281	0.9

<sup>1</sup>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. <sup>2</sup>The valuation results were calculated using the prior year census data, adjusted for certain activity during the fiscal year.

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





# **Statistical Section**



## 2018 COMPREHENSIVE ANNUAL FINANCIAL REPORT

For the Fiscal Year Ended June 30, 2018

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## **Summary of Statistical Section**

his part of the Comprehensive Annual Financial Report contains more detailed information regarding financial viability and pension benefit offerings.

#### **Financial Trends**

The following schedules contain trends to assist in understanding changes over time in financial performance of each retirement fund:

- Schedule of Changes and Growth in Fiduciary Net Position
- Summary of Income Sources for a Ten-Year Period
- Schedule of Historical Contribution Rates

## **Demographic and Economic Information**

The following schedules contain benefit and member data to provide a better understanding of the benefit offerings of each retirement fund:

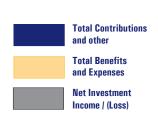
- Summary of Participating Employers
- Membership Data Summary
- Ratio of Active Members to Annuitants
- Pension Benefits by Indiana County
- Retirees by Geographical Location
- Summary of Defined Benefit Retirement Benefits
- Schedule of Benefit Recipients by Type of Benefit Option
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- Schedule of Participating Employers: Top 10
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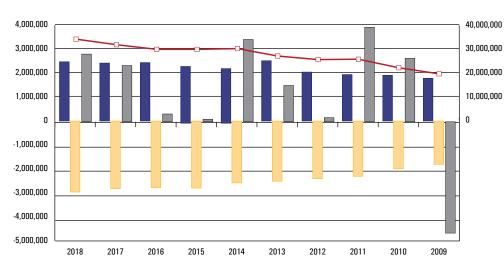
## Schedule of Changes and Growth in Fiduciary Net Position For the Year Ended June 301

(dollars in thousands)	2018 <sup>2</sup>	2017	2016	2015	2014	2013	2012	2011	2010	2009
Fiduciary Net Position - Beginning of Year	\$31,847,149	\$29,900,278	\$29,892,379	\$30,212,225	\$27,080,402	\$25,559,605	\$25,750,906	\$22,174,510	\$19,614,487	\$24,289,388
Contributions / (Benefits and Expenses)										
Employer Contributions	984,332	967,011	1,012,012	923,759	894,851	933,719	749,439	677,385	648,470	636,164
Nonemployer Contributing Entity	1,124,814	1,088,559	1,100,433	1,080,665	1,028,579	1,242,728	946,163	916,754	912,923	802,673
Member Contributions	349,246	347,622	334,079	348,789	341,609	326,518	335,548	330,314	335,244	332,959
Member Reassignments	13,446	16,669	16,187	17,591	15,582	14,759	13,025	15,410	8,176	7,662
Miscellaneous Income	695	185	1,078	188	172	106	100	166	154	166
Total Contributions and Other	2,472,533	2,420,046	2,463,789	2,370,992	2,280,793	2,517,830	2,044,275	1,940,029	1,904,967	1,779,624
Pension Benefits	(2,297,332)	(2,275,134)	(2,212,132)	(2,220,957)	(2,006,827)	(1,938,557)	(1,976,672)	(1,889,792)	(1,623,749)	(1,494,247)
Disability Benefits	(46,056)	(42,115)	(62,234)	(64,172)	(71,202)	(60,664)	(57,239)	(53,608)	(55,554)	(51,326)
Survivor Benefits <sup>3</sup>	(171,381)	(163,155)	(154,804)	(144,767)	(138,027)	(131,468)	-	-	-	-
Special Death Benefits	(1,634)	(1,209)	(924)	(1,610)	(1,170)	(1,744)	(938)	(1,224)	(1,464)	(806)
Distributions of Contributions and Interest	(179,575)	(70,332)	(80,385)	(88,659)	(87,375)	(98,414)	(95,431)	(91,447)	(53,297)	(50,355)
Distribution of Custodial Funds	(212,634)	(213,256)	(215,816)	(217,663)	(219,440)	(219,814)	(224,220)	(219,425)	(213,035)	(167,279)
Administrative Expenses	(38,991)	(38,365)	(38,502)	(40,486)	(43,447)	(45,921)	(40,848)	(35,918)	(38,258)	(36,318)
Member Reassignments	(13,446)	(16,669)	(16,187)	(17,591)	(15,582)	(14,759)	(13,025)	(15,410)	(8,176)	(7,662)
Miscellaneous Expense	(437)	(13)								
Total Benefits and Expenses	(2,961,486)	(2,820,248)	(2,780,984)	(2,795,905)	(2,583,070)	(2,511,341)	(2,408,373)	(2,306,824)	(1,993,533)	(1,807,993)
Net Contributions / (Benefits and Expenses)	(488,953)	(400,202)	(317,195)	(424,913)	(302,277)	6,489	(364,098)	(366,795)	(88,566)	(28,369)
Net Investment Income / (Loss)	2,824,367	2,347,073	325,094	105,067	3,434,100	1,514,308	172,797	3,943,191	2,648,589	(4,646,532)
Net Increase / (Decrease)	2,335,414	1,946,871	7,899	(319,846)	3,131,823	1,520,797	(191,301)	3,576,396	2,560,023	(4,674,901)
Fiduciary Net Position - End of Year	\$34,182,563	\$31,847,149	\$29,900,278	\$29,892,379	\$30,212,225	\$27,080,402	\$25,559,605	\$25,750,906	\$22,174,510	\$19,614,487

<sup>&</sup>lt;sup>1</sup>Prior years were restated to include Local Public Safety Pension Relief Fund.

### (in thousands of dollars)



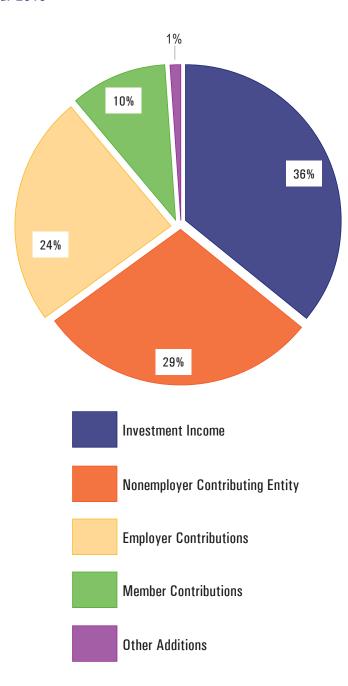


**Net Position-**

**End of Year** 

<sup>&</sup>lt;sup>2</sup>PERF DC was split from the PERF Hybrid plan as of January 1, 2018, therefore 2018 includes only the first six months of DC activity. The balances were transferred out on January 1, 2018. <sup>3</sup>Survivor benefits information is available since June 30, 2013. Prior to June 30, 2013 amounts were contained within pension benefits.

Summary of Income Sources for a Ten-Year Period Fiscal Year 2009 - Fiscal Year 2018



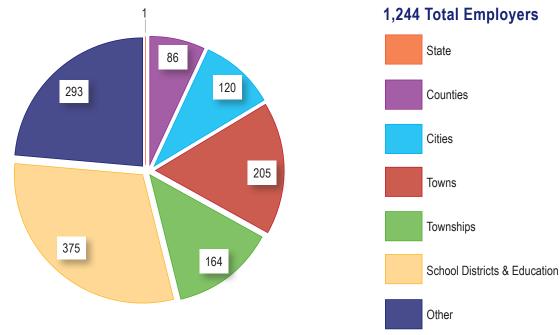
## Summary of Participating Employers For the Year Ended June 30, 2018

#### **INPRS Funds**

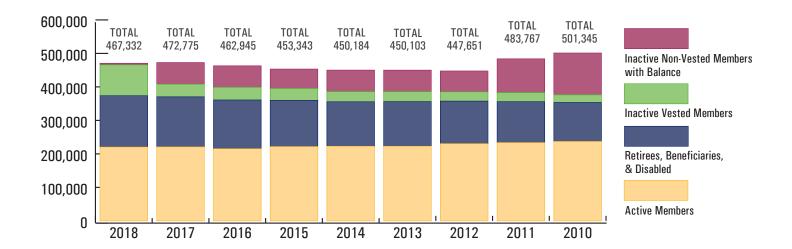
- PERF DB = Public Employees' Defined Benefit Account
- TRF Pre-'96 DB = Teachers' Pre-1996 Defined Benefit Account
- TRF '96 DB = Teachers' 1996 Defined Benefit Account
- '77 Fund = 1977 Police Officers' and Firefighters' Retirement Fund
- JRS = Judges' Retirement System
- EG&C = Excise, Gaming and Conservation Officers' Retirement Fund
- PARF = Prosecuting Attorneys' Retirement Fund
- LE DB = Legislators' Defined Benefit Fund
- PERF DC = Public Employees' Defined Contribution Account
- TRF DC = Teachers' Defined Contribution Account
- LE DC = Legislators' Defined Contribution Fund

		Defined Benefit (DB)								Defined Contribution (DC)				
Employers	Total <sup>1</sup>	Total DB	PERF DB	TRF Pre- '96 DB	TRF '96 DB	'77 Fund	JRS	EG&C	PARF	LE DB	Total DC	PERF DC	TRF DC	LE DC
State	1	1	1	1	1	-	1	1	1	1	1	1	1	1
Counties	86	86	86	-	-	-	-	-	-	-	86	86	-	-
Cities	120	120	113	-	-	119	-	-	-	-	113	113	-	-
Towns	205	205	202	-	-	34	-	-	-	-	202	202	-	-
Townships	164	164	160	-	-	13	-	-	-	-	160	160	-	-
School Districts & Education	375	375	333	344	372	-	-	-	-	-	375	333	373	-
Other	293	292	292	-	-	2	-	-	-	-	293	293	-	-
Total	1,244	1,243	1,187	345	373	168	1	1	1	1	1,230	1,188	374	1

<sup>1</sup>Sum of individual employers by retirement plan does not equal total employers, since one employer may participate in multiple retirement funds.



### Membership Data Summary<sup>1</sup>



For the Year Ended June 30, 2018 2,3

Active Members	Retirees, Beneficiaries, & Disabled	Inactive Vested Members	Inactive Non-Vested Members With Balance	Total Members
132,181	87,990	31,924	-	252,095
11,710	53,227	2,635	-	67,572
59,996	6,289	4,996	-	71,281
13,879	4,751	225	1,136	19,991
439	365	26	42	872
443	234	5	141	823
209	145	87	134	575
9	76	10	-	95
218,866	153,077	39,908	1,453	413,304
128,678	-	88,974	-	217,652
69,193	-	25,218	-	94,411
150	-	67	-	217
198,021	-	114,259	-	312,280
220,505	153,077	92,297	1,453	467,332
	132,181 11,710 59,996 13,879 439 443 209 9 218,866 128,678 69,193 150 198,021	Active Members         & Disabled           132,181         87,990           11,710         53,227           59,996         6,289           13,879         4,751           439         365           443         234           209         145           9         76           218,866         153,077           128,678         -           69,193         -           150         -           198,021         -	Active Members         & Disabled         Members           132,181         87,990         31,924           11,710         53,227         2,635           59,996         6,289         4,996           13,879         4,751         225           439         365         26           443         234         5           209         145         87           9         76         10           218,866         153,077         39,908           128,678         -         88,974           69,193         -         25,218           150         -         67           198,021         -         114,259	Active Members         & Disabled         Members         Members With Balance           132,181         87,990         31,924         -           11,710         53,227         2,635         -           59,996         6,289         4,996         -           13,879         4,751         225         1,136           439         365         26         42           443         234         5         141           209         145         87         134           9         76         10         -           218,866         153,077         39,908         1,453           128,678         -         88,974         -           69,193         -         25,218         -           150         -         67         -           198,021         -         114,259         -

<sup>1</sup>NPRS intends to make this schedule a 10-year schedule over time. Inactive Non-Vested Members With Balance data was not available for select funds prior to fiscal year 2010. <sup>2</sup>DB calculated using the prior year census data, adjusted for certain activity during the fiscal year.
<sup>3</sup>Effective January 1, 2018, DB was separated from the DC. DC member count is as of June 30, 2018.

Total number of members based on adjusted prior year DB member census data and prior year DC member data, excluding duplicates as members may participate in more than one fund.

## Membership Data Summary, continued<sup>1</sup>

### For the Year Ended June 30, 2017 <sup>2</sup>

Fund	Active Members	Retirees, Beneficiaries, & Disabled	Inactive Vested Members	Inactive Non-Vested Members With Balance	Total Members
PERF	134,909	85,130	30,816	50,312	301,167
TRF Pre-'96	13,128	53,240	2,504	400	69,272
TRF '96	58,097	5,796	4,252	12,494	80,639
'77 Fund	13,587	4,374	195	1,005	19,161
JRS	402	350	67	39	858
EG&C	440	223	6	120	789
PARF	209	138	87	138	572
LE DB	11	72	12	-	95
LE DC	150	-	-	72	222
Total INPRS	220,933	149,323	37,939	64,580	472,775

### For the Year Ended June 30, 2016<sup>2</sup>

Fund	Active Members	Retirees, Beneficiaries, & Disabled	Inactive Vested Members	Inactive Non-Vested Members With Balance	Total Members
PERF	131,178	83,188	29,702	50,212	294,280
TRF Pre-'96	14,327	52,575	3,119	394	70,415
TRF '96	55,265	4,977	4,335	12,529	77,106
'77 Fund	13,506	4,004	186	933	18,629
JRS	394	351	65	41	851
EG&C	421	220	7	121	769
PARF	198	133	100	151	582
LE DB	11	74	12	-	97
LE DC	150	-	-	66	216
Total INPRS	215,450	145,522	37,526	64,447	462,945

### For the Year Ended June 30, 2015<sup>2</sup>

Fund	Active Members	Retirees, Beneficiaries, & Disabled	Inactive Vested Members	Inactive Non-Vested Members With Balance	Total Members
PERF	138,660	79,198	26,681	43,803	288,342
TRF Pre-'96	16,310	50,214	4,545	408	71,477
TRF '96	52,424	4,136	4,132	12,292	72,984
'77 Fund	13,390	3,736	155	822	18,103
JRS	368	326	78	32	804
EG&C	448	207	3	101	759
PARF	196	107	97	153	553
LE DB	17	68	14	-	99
LE DC	149	-	-	73	222
Total INPRS	221,962	137,992	35,705	57,684	453,343

<sup>&</sup>lt;sup>1</sup>INPRS intends to make this schedule a 10-year schedule over time. Inactive Non-Vested Members With Balance data was not available for select funds prior to fiscal year 2010. <sup>2</sup>DB calculated using the prior year census data, adjusted for certain activity during the fiscal year.

## Membership Data Summary, continued<sup>1</sup>

### For the Year Ended June 30, 2014<sup>2</sup>

Fund	Active Members	Retirees, Beneficiaries, & Disabled	Inactive Vested Members	Inactive Non-Vested Members With Balance	Total Members
PERF	137,567	75,950	24,013	50,997	288,527
TRF Pre-'96	19,210	49,345	3,314	546	72,415
TRF '96	51,204	3,665	3,103	11,147	69,119
'77 Fund	13,295	3,491	129	796	17,711
JRS	365	321	67	32	785
EG&C	473	193	4	87	757
PARF	210	95	83	162	550
LE DB	24	68	9	-	101
LE DC	149	-	-	70	219
Total INPRS	222,497	133,128	30,722	63,837	450,184

### For the Year Ended June 30, 2013

Fund	Active Members	Retirees, Beneficiaries, & Disabled	Inactive Vested Members	Inactive Non-Vested Members With Balance	Total Members
PERF	137,937	75,950	23,504	51,057	288,448
TRF Pre-'96	19,210	49,345	3,314	546	72,415
TRF '96	51,204	3,665	3,103	11,147	69,119
'77 Fund	13,287	3,491	129	796	17,703
JRS	365	321	67	32	785
EG&C	473	193	4	87	757
PARF	210	95	83	162	550
LE DB	24	68	9	-	101
LE DC	167	-	-	58	225
Total INPRS	222,877	133,128	30,213	63,885	450,103

### For the Year Ended June 30, 2012

Fund	Active Members	Retirees, Beneficiaries, & Disabled	Inactive Vested Members	Inactive Non-Vested Members With Balance	Total Members
PERF	145,519	72,992	21,200	47,874	287,585
TRF Pre-'96	22,688	47,000	3,382	794	73,864
TRF '96	47,885	2,971	2,985	12,528	66,369
'77 Fund	13,390	3,208	122	751	17,471
JRS	361	311	72	28	772
EG&C	468	187	4	61	720
PARF	219	81	84	165	549
LE DB	6	63	38	-	107
LE DC	167	-	-	47	214
Total INPRS	230,703	126,813	27,887	62,248	447,651

<sup>&</sup>lt;sup>1</sup>INPRS intends to make this schedule a 10-year schedule over time. Inactive Non-Vested Members With Balance data was not available for select funds prior to fiscal year 2010. <sup>2</sup>Calculated using the prior year census data, adjusted for certain activity during the fiscal year.

Membership Data Summary, continued<sup>1</sup>

### For the Year Ended June 30, 2011

Fund	Active Members	Retirees, Beneficiaries, & Disabled	Inactive Vested Members	Inactive Non-Vested Members With Balance	Total Members
PERF	147,933	70,380	20,634	72,105	311,052
TRF Pre-'96	24,710	45,421	3,921	3,595	77,647
TRF '96	46,633	2,554	2,715	23,573	75,475
'77 Fund	13,376	2,966	126	791	17,259
JRS	363	310	66	31	770
EG&C	440	176	5	59	680
PARF	212	76	85	177	550
LE DB	7	65	40	-	112
LE DC	171	-	-	51	222
Total INPRS	233,845	121,948	27,592	100,382	483,767

### For the Year Ended June 30, 2010

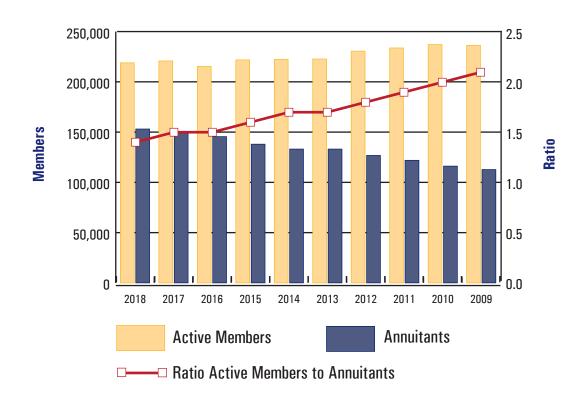
Fund	Active Members	Retirees, Beneficiaries, & Disabled	Inactive Vested Members	Inactive Non-Vested Members With Balance	Total Members
PERF	149,877	67,166	14,759	88,234	320,036
TRF Pre-'96	26,439	43,478	5,209	8,149	83,275
TRF '96	46,433	2,181	2,461	27,698	78,773
'77 Fund	13,362	2,782	111	771	17,026
JRS	291	298	73	31	693
EG&C	471	157	4	52	684
PARF	217	58	74	177	526
LE DB	20	61	34	-	115
LE DC	169			48	217
Total INPRS	237,279	116,181	22,725	125,160	501,345

<sup>1</sup>INPRS intends to make this schedule a 10-year schedule over time. Inactive Non-Vested Members With Balance data was not available for select funds prior to fiscal year 2010.

### Ratio of Active Members to Annuitants For the Year Ended June 30

	Active Members <sup>1</sup>	Annuitants <sup>2</sup>	Ratio Active Members to Annuitants
2018 <sup>3</sup>	218,866	153,077	1.4
20173	220,783	149,323	1.5
2016 <sup>3</sup>	215,300	145,522	1.5
2015 <sup>3</sup>	221,813	137,992	1.6
20143	222,348	133,128	1.7
2013	222,710	133,128	1.7
2012	230,536	126,813	1.8
2011	233,674	121,948	1.9
2010	237,110	116,181	2.0
2009	236,304	112,758	2.1

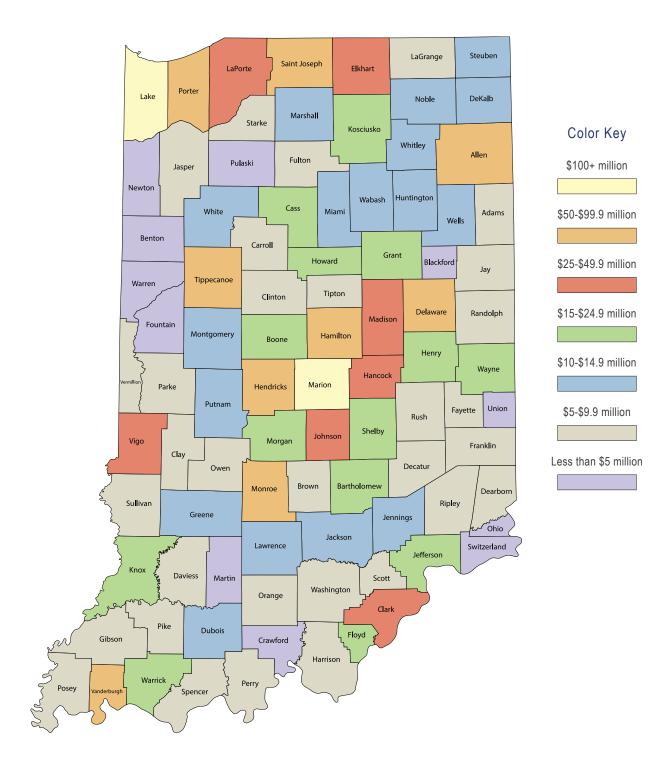
<sup>&</sup>lt;sup>3</sup>Calculated using the prior year census data, adjusted for certain activity during the fiscal year.



<sup>&</sup>lt;sup>1</sup>DB Active Members only. <sup>2</sup>Annuitants includes retirees, beneficiaries, and disabled members.

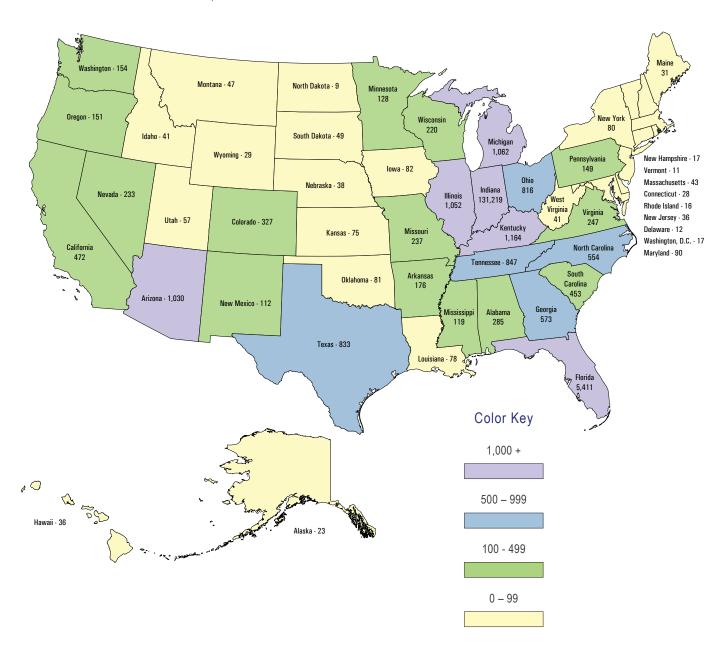
### Pension Benefits by Indiana County (Jan-Dec 2017)

Approximately 88% of retirees or their beneficiaries reside in Indiana. This map illustrates how approximately \$2.0 billion in pension benefit payments for calendar year 2017 were distributed amongst Indiana's counties, representing INPRS's economic impact on the state.



## Retirees by Geographical Location (December 2017)

In the month of December 2017, more than 148 thousand retirees received benefits from INPRS.



### Retirees outside the United States:

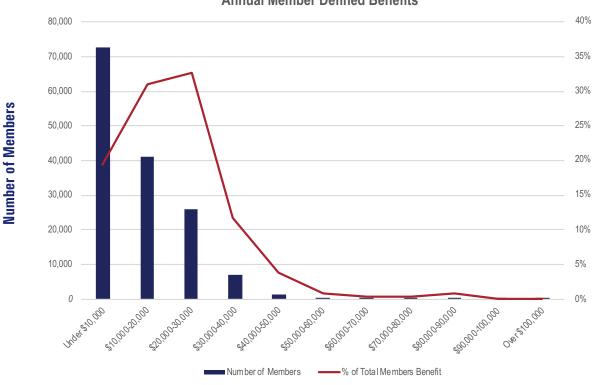
Armed Forces, Pacific – 1	England – 2	India – 1	Philippines – 1	Turkmenistan – 1
Australia – 1	France – 2	Isle of Man – 1	Puerto Rico – 13	Virgin Islands – 1
Canada – 13	Germany – 3	Israel – 3	Romania – 1	
Croatia – 1	Greece – 1	Jamaica – 1	Spain – 2	
Ecuador – 1	Hong Kong – 1	Mexico – 1	Thailand – 2	

### Summary of Defined Benefit Retirement Benefits (December 2017)

In the month of December 2017, more than 148 thousand retirees received benefits from INPRS administered defined benefit (DB) retirement plans with an average annualized DB benefit of \$13,066. The median annualized DB benefit was \$10,294, which means half of all retirees receiving benefits are higher than \$10,294 and half are lower. Retirees may also be eligible for Social Security.

Membe	rs	Members Benefit (	(in thousands)
#	%	\$	%
72,722	48.8	367,356	18.9
41,068	27.6	605,581	31.1
26,061	17.5	631,326	32.5
6,896	4.6	232,351	11.9
1,436	1.0	63,237	3.3
298	0.2	15,901	0.8
80	0.1	5,192	0.3
78	0.1	5,850	0.3
151	0.1	12,863	0.7
24	-	2,270	0.1
25	-	2,876	0.1
148,839	100.0	1,944,803	100.0
	# 72,722 41,068 26,061 6,896 1,436 298 80 78 151 24 25	72,722 48.8 41,068 27.6 26,061 17.5 6,896 4.6 1,436 1.0 298 0.2 80 0.1 78 0.1 151 0.1 24 - 25 -	#       %       \$         72,722       48.8       367,356         41,068       27.6       605,581         26,061       17.5       631,326         6,896       4.6       232,351         1,436       1.0       63,237         298       0.2       15,901         80       0.1       5,192         78       0.1       5,850         151       0.1       12,863         24       -       2,270         25       -       2,876

#### **Annual Member Defined Benefits**



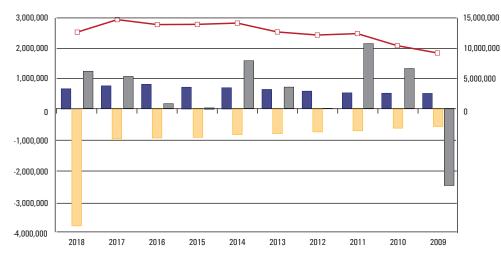
### Schedule of Changes and Growth in Fiduciary Net Position For the Year Ended June 30

(dollars in thousands)	2018¹	2017	2016	2015	2014	2013	2012	2011	2010	2009
Net Position - Beginning of Year	\$ 14,644,671	\$ 13,870,502	\$ 13,907,666	\$ 14,104,288	\$ 12,720,601	\$12,243,755	\$ 12,461,356	\$ 10,581,319	\$ 9,442,336	\$ 12,073,470
Contributions / (Benefits and Expenses)										
Employer Contributions	571,374	558,891	615,773	538,059	526,090	455,658	397,843	342,779	331,090	323,151
Member Contributions	83,112	168,112	161,905	169,731	164,189	156,408	158,696	156,028	158,089	160,034
Member Reassignments	3,208	6,118	5,543	4,184	3,444	4,363	3,341	5,302	2,361	3,115
Miscellaneous Income	121	55	905	83	52	31	8	15	39	32
Total Contributions and Other	657,815	733,176	784,126	712,057	693,775	616,460	559,888	504,124	491,579	486,332
Pension Benefits	(825,808)	(830,750)	(782,197)	(756,484)	(668,789)	(625,526)	(628,522)	(600,797)	(539,540)	(500,214)
Disability Benefits	(19,816)	(17,754)	(32,855)	(34,984)	(39,837)	(42,905)	(40,659)	(37,663)	(40,171)	(36,569)
Survivor Benefits <sup>2</sup>	(71,095)	(68,530)	(64,036)	(59,208)	(56,701)	(54,154)	-	-	-	-
Distributions of Contributions and Interest	(21,490)	(47,822)	(57,184)	(62,732)	(63,031)	(68,775)	(69,879)	(65,178)	(39,632)	(36,099)
Administrative Expenses	(20,844)	(24,483)	(24,098)	(25,506)	(27,433)	(29,181)	(24,793)	(22,461)	(24,959)	(21,497)
Transfer to Defined Contribution	(2,849,380)	-	-	-	-	-	-	-	-	-
Member Reassignments	(10,238)	(10,555)	(10,814)	(13,403)	(7,690)	(10,405)	(9,684)	(10,078)	(5,837)	(5,132)
Miscellaneous Expense	(65)									
Total Benefits and Expenses	(3,818,736)	(999,894)	(971,184)	(952,317)	(863,481)	(830,946)	(773,537)	(736,177)	(650,139)	(599,511)
Net Contributions / (Benefits and Expenses)	(3,160,921)	(266,718)	(187,058)	(240,260)	(169,706)	(214,486)	(213,649)	(232,053)	(158,560)	(113,179)
Net Investment Income / (Loss)	1,210,578	1,040,887	149,894	43,638	1,553,393	691,332	(3,952)	2,112,090	1,297,543	(2,517,955)
Net Increase / (Decrease)	(1,950,343)	774,169	(37,164)	(196,622)	1,383,687	476,846	(217,601)	1,880,037	1,138,983	(2,631,134)
Net Position - End of Year	\$ 12,694,328	\$ 14,644,671	\$ 13,870,502	\$ 13,907,666	\$ 14,104,288	\$ 12,720,601	\$ 12,243,755	\$ 12,461,356	\$ 10,581,319	\$ 9,442,336

<sup>&</sup>lt;sup>1</sup>PERF DC was split from the PERF Hybrid plan as of January 1, 2018, therefore 2018 includes only the first six months of DC activity. The balances were transferred out on January 1, 2018. <sup>2</sup>Survivor benefit information is available since June 30, 2013. Prior to June 30, 2013 amounts were contained within pension benefits.

#### (in thousands of dollars)



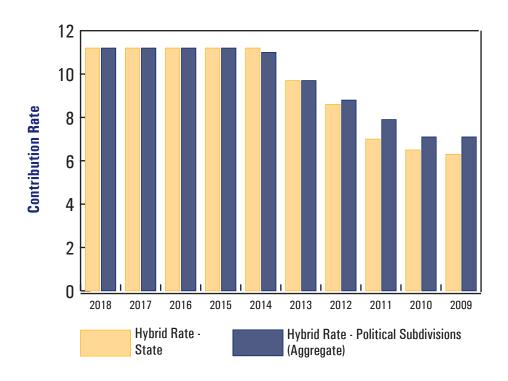


Net Position-**End of Year** 

### Schedule of Historical Contribution Rates For the Year Ended June 30

_	Hybri	d Rate	My Choice Supp	Supplemental Rate <sup>1</sup>				
_	State	Political Subdivisions (Aggregate)	State	Political Subdivisions (Aggregate)				
2018	11.2 %	11.2 %	7.8 %	7.1 %				
2017	11.2	11.2	7.9	7.2				
2016	11.2	11.2	6.6	5.4				
2015	11.2	11.2	6.6	N/A				
2014	11.2	11.0	6.5	N/A				
2013	9.7	9.7	6.5	N/A				
2012	8.6	8.8	N/A	N/A				
2011	7.0	7.9	N/A	N/A				
2010	6.5	7.1	N/A	N/A				
2009	6.3	7.1	N/A	N/A				
Memo:								
Effective Date	July 1	January 1	July 1	January 1				

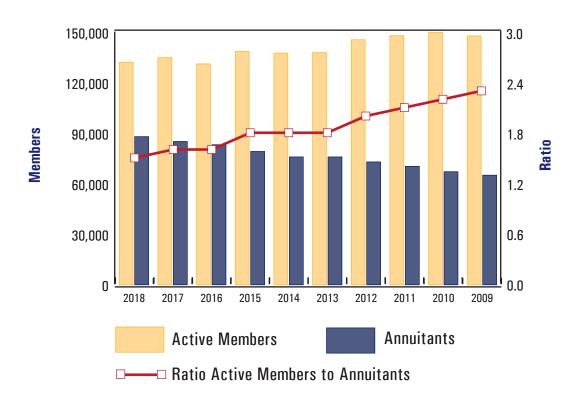
<sup>1</sup>Represents the portion of the Hybrid Rate that remains with PERF DB to cover the unfunded liability, with the difference potentially going to the member in PERF DC. New employers that only participate in My Choice are not required to pay the My Choice Supplemental Rate.



### Ratio of Active Members to Annuitants For the Year Ended June 30

	Active Members	Annuitants <sup>1</sup>	Ratio Active Members to Annuitants
2018 <sup>2</sup>	132,181	87,990	1.5
2017 <sup>2</sup>	134,909	85,130	1.6
2016 <sup>2</sup>	131,178	83,188	1.6
2015 <sup>2</sup>	138,660	79,198	1.8
2014 <sup>2</sup>	137,567	75,950	1.8
2013	137,937	75,950	1.8
2012	145,519	72,992	2.0
2011	147,933	70,380	2.1
2010	149,877	67,166	2.2
2009	147,792	65,099	2.3

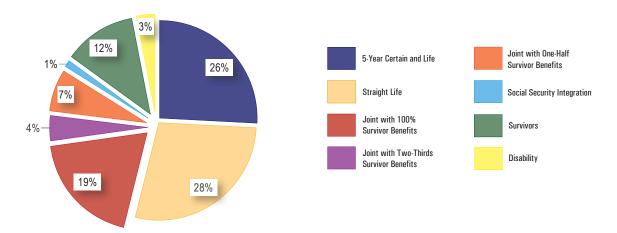
<sup>&</sup>lt;sup>1</sup>Annuitants includes retirees, beneficiaries, and disabled members. <sup>2</sup>Calculated using the prior year census data, adjusted for certain activity during the fiscal year.



# Schedule of Benefit Recipients by Type of Benefit Option For the Year Ended June 30, 2018<sup>1</sup>

#### Number of Benefit Recipients by Benefit Option

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	Social Security Integration	Survivors	Disability	Total Benefit Recipients
\$ 1 - 500	11,677	8,759	7,254	781	1,806	255	6,267	2,080	38,879
501 - 1,000	7,291	8,521	4,889	1,017	2,144	143	2,756	574	27,335
1,001 - 1,500	2,588	3,918	2,742	639	1,156	73	811	169	12,096
1,501 - 2,000	991	1,808	1,192	381	508	71	260	53	5,264
2,001 - 3,000	596	1,239	792	255	428	86	115	9	3,520
Over 3,000	110	347	189	103	112	9	21	5	896
Total	23,253	24,592	17,058	3,176	6,154	637	10,230	2,890	87,990



5-Year Certain & Life — Provides a monthly benefit for retiree's life. If retiree receives benefits for at least five years prior to death, there is no benefit payable to a designated beneficiary. In the event the retiree dies before receiving five years of payments, the beneficiary receives the remainder of those five years of monthly benefits, or the present value of those remaining payments in a lump sum. Includes Modified Cash Refund Plus 5-Year Certain & Life.

Straight Life — Provides a monthly benefit for retiree's life. The benefit ceases upon the death of the retiree.

Joint With 100% Survivor Benefits — Provides a monthly benefit for retiree's life. Upon the death of the retiree, the qualified designated survivor receives 100 percent of the member's monthly benefit for the remainder of the survivor's life.

Joint With Two-Thirds Survivor Benefits — Provides a monthly benefit for retiree's life. Upon the death of the retiree, the qualified designated survivor receives 66 2/3 percent of the member's monthly benefit for the remainder of the survivor's life.

Joint With One-Half Survivor Benefits — Provides a monthly benefit for retiree's life. Upon the death of the retiree, the qualified designated survivor receives 50 percent of the member's monthly benefit for the remainder of the survivor's life.

**Social Security Integration** — Provides a higher monthly benefit for a retiree between the ages 50 and 62 who elects to integrate social security with the monthly benefit. For PERF retirees, the monthly benefit is reduced at age 62 to no less than \$180 depending on the estimated monthly benefit from social security at age 62.

Survivors — Members receiving a survivor benefit in accordance with the applicable statute. The benefit ceases upon the death of the survivor.

**Disability** — Members receiving a disability benefit in accordance with the applicable statute. For PERF, five or more years of creditable service is required to be eligible for a disability benefit.

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

### Schedule of Average Benefit Payments<sup>1</sup>

	Years of Credited Service												
		< 10 <sup>2</sup>		10 - 14	1:	5 - 19	2	20 - 24		25 - 29	30+		Total
For the Year Ended June 30, 2018 <sup>3</sup>													
Average Monthly Defined Benefit	\$	150	\$	288	\$	400	\$	558	\$	784	\$ 1,265	\$	633
Average Monthly ASA Annuity <sup>4</sup>	\$	46	\$	106	\$	144	\$	201	\$	273	\$ 477	\$	232
Average Final Average Salary	\$	25,035	\$	25,253	\$ 2	27,427	\$	29,637	\$	33,189	\$40,726	\$	30,974
Number of Benefit Recipients		3,113		14,854	2	21,774		17,528		13,272	17,449		87,990
For the Year Ended June 30, 2017 <sup>3</sup>													
Average Monthly Defined Benefit	\$	155	\$	282	\$	392	\$	548	\$	765	\$ 1,241	\$	618
Average Monthly ASA Annuity <sup>4</sup>	\$	45	\$	104	\$	142	\$	199	\$	273	\$ 478	\$	230
Average Final Average Salary	\$	24,719	\$	24,631	\$ 2	26,902	\$	29,142	\$	32,445	\$ 39,990	\$	30,347
Number of Benefit Recipients		3,077		14,268	2	21,252		17,139		12,718	16,676		85,130
For the Year Ended June 30, 2016 <sup>3</sup>													
Average Monthly Defined Benefit	\$	153	\$	278	\$	385	\$	537	\$	751	\$ 1,218	\$	604
Average Monthly ASA Annuity <sup>4</sup>	\$	46	\$	103	\$	140	\$	197	\$	274	\$ 479	\$	229
Average Final Average Salary	\$	24,269	\$	24,024	\$ 2	26,337	\$	28,523	\$	31,831	\$ 39,261	\$	29,693
Number of Benefit Recipients		2,951		13,952	2	20,992		16,918		12,346	16,029		83,188
For the Year Ended June 30, 2015 <sup>3</sup>	_												
Average Monthly Defined Benefit	\$	149	\$	293	\$	378	\$	525	\$	732	\$ 1,182	\$	583
Average Monthly ASA Annuity <sup>4</sup>	\$	43	\$	116	\$	129	\$	187	\$	255	\$ 443	\$	211
Average Final Average Salary	\$	23,480	\$	23,252	\$ 2	25,678	\$	27,754	\$	30,842	\$ 37,941	\$	28,714
Number of Benefit Recipients		2,775		14,087	2	20,210		16,141		11,503	14,482		79,198
For the Year Ended June 30, 2014 <sup>3</sup>	_												
Average Monthly Defined Benefit	\$	154	\$	269	\$	370	\$	515	\$	715	\$ 1,160	\$	569
Average Monthly ASA Annuity <sup>4</sup>	\$	42	\$	94	\$	124	\$	180	\$	244	\$ 425	\$	199
Average Final Average Salary	\$	22,762	\$	22,669	\$ 2	25,080	\$	27,190	\$	30,044	\$ 37,145	\$	28,019
Number of Benefit Recipients		2,670		12,866		19,825		15,757		11,079	13,753		75,950
For the Year Ended June 30, 2013	_												
Average Monthly Defined Benefit	\$	154	\$	269	\$	370	\$	515	\$	715	\$ 1,160	\$	569
Average Monthly ASA Annuity <sup>4</sup>	\$	42	\$	94	\$	124	\$	180	\$	244	\$ 425	\$	199
Average Final Average Salary	\$	22,762	\$	22,669	\$ 2	25,080	\$	27,190	\$	30,044	\$ 37,145	\$	28,019
Number of Benefit Recipients		2,670		12,866		19,825		15,757		11,079	13,753		75,950

<sup>&</sup>lt;sup>1</sup>INPRS intends to make this schedule a 10-year schedule over time.

<sup>2</sup>Members with less than 10 years of service are: (1) a member receiving a disability benefit from INPRS; (2) a member who has at least eight years of creditable service as a county clerk, county auditor, county recorder, county treasurer, county sheriff or county corone eligible for a normal retirement after reaching age 65 (applies to only members retiring after June 30, 2002); (3) a member who has at least eight years of creditable service as a state auditor, state treasurer, or secretary of state (whose term commences after the November 5, 2002 election).

<sup>&</sup>lt;sup>3</sup>Calculated using the prior year census data, adjusted for certain activity during the fiscal year.

<sup>4</sup>This represents those retirees who elected to receive their Defined Contribution Account as a supplemental monthly payment in addition to the monthly Defined Benefit payment. The option to annuitize ASA money with the monthly defined benefit is no longer available as of January 1, 2018.

### Schedule of Average Benefit Payments, continued<sup>1</sup>

						Years	of C	redited	Serv	/ice		
		< 10 <sup>2</sup>	_	10 - 14	_1	15 - 19	_ 2	20 - 24		25 - 29	30+	Total
For the Year Ended June 30, 2012	_											
Average Monthly Defined Benefit	\$	156	\$	265	\$	363	\$	504	\$	701	\$ 1,139	\$ 555
Average Monthly ASA Annuity <sup>3</sup>	\$	42	\$	89	\$	116	\$	171	\$	233	\$ 407	\$ 188
Average Final Average Salary	\$	22,105	\$	21,993	\$	24,513	\$	26,534	\$	29,347	\$ 36,331	\$ 27,306
Number of Benefit Recipients		2,523		12,369		19,361		15,258		10,589	12,892	72,992
For the Year Ended June 30, 2011												
Average Monthly Defined Benefit	\$	159	\$	263	\$	358	\$	495	\$	687	\$ 1,120	\$ 542
Average Monthly ASA Annuity <sup>3</sup>	\$	39	\$	85	\$	110	\$	162	\$	223	\$ 386	\$ 176
Average Final Average Salary	\$	21,397	\$	21,487	\$	24,034	\$	25,883	\$	28,617	\$ 35,542	\$ 26,632
Number of Benefit Recipients		2,373		12,036		19,007		14,731		10,190	12,043	70,380

<sup>&</sup>lt;sup>1</sup>INPRS intends to make this schedule a 10-year schedule over time.

<sup>&</sup>lt;sup>2</sup>Members with less than 10 years of service are: (1) a member receiving a disability benefit from INPRS; (2) a member who has at least eight years of creditable service as a county clerk, county auditor, county recorder, county treasurer, county sheriff or county coroner eligible for a normal retirement after reaching age 65 (applies to only members retiring after June 30, 2002); (3) a member who has at least eight years of creditable service as a state auditor, state treasurer, or secretary of state (whose term commences after the November 5, 2002 election).

after the November 5, 2002 election).

This represents those retirees who elected to receive their Defined Contribution Account as a supplemental monthly payment in addition to the monthly Defined Benefit payment. The option to annuitize ASA money with the monthly defined benefit is no longer available as of January 1, 2018.

Schedule of Participating Employers: Top 10

		June 30, 201	8	June 30, 2009						
Top 10 Employers	Covered Members	Rank	Percentage of Total	Covered Members	Rank	Percentage of Total				
State of Indiana	37,212	1	28.2 %	48,636	1	32.9 %				
Health & Hospital Corporation - Marion County			2.4	4,576	2	3.1				
Marion County	County 2,426 3 1.8		1.8	3,021	3	2.0				
Indianapolis Public Schools	polis Public Schools 1,879 4		1.4	2,357	4	1.6				
Lake County	1,550 5		1.2	1,699	7	1.1				
City of Indianapolis	1,461	6	1.1	1,857	6	1.3				
South Bend Community School Corporation	1,281	7	1.0	1,484	8	1.0				
Evansville-Vanderburgh School Corporation	1,240	8	0.9	1,252	10	0.8				
St Joseph County	1,068	9	0.8							
Fort Wayne Community Schools	1,058	10	0.8	2,041	5	1.4				
Allen County				1,266	9	0.9				
Total – Top 10 Employers	52,391 39.6		39.6	68,189		46.1				
All Other *	79,790	60.4		79,603		53.9				
Grand Total	132,181		100.0 %	147,792		100.0 %				

<sup>1,187</sup> Employers in 2018, and

<sup>\*</sup>As of June 30, 2018, "All Other" consisted of:

Type of Employer	Number of Employers	Covered Members
Counties	83	19,436
Cities	112	11,356
Towns	202	3,005
Townships	160	905
School Districts & Education	329	39,178
Other	291	5,910
Total All Other	1,177	79,790

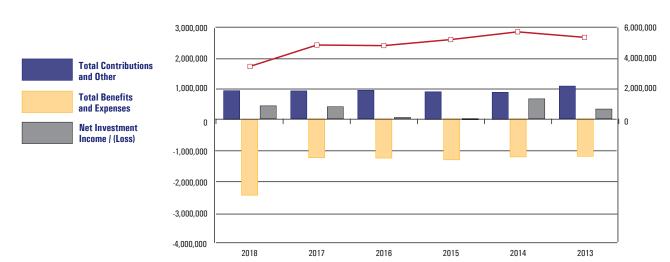
<sup>1,174</sup> in 2009

### Schedule of Changes and Growth in Fiduciary Net Position<sup>1</sup> For the Year Ended June 30

(dollars in thousands)	2018 <sup>2</sup>	2017	2016	2015	2014	2013		
Net Position - Beginning of Year	\$ 4,817,630	\$ 4,787,529	\$ 5,099,910	\$ 5,501,867	\$ 5,215,202	\$ 5,058,910		
Contributions / (Benefits and Expenses)								
Employer Contributions	4,168	4,525	5,048	5,811	6,325	9,484		
Nonemployer Contributing Entity <sup>3</sup>	917,900	871,000	887,500	845,616	825,617	1,003,596		
Member Contributions	12,765	28,836	31,529	41,740	47,028	45,421		
Member Reassignments	3,107	4,206	4,057	6,273	3,250	5,883		
Miscellaneous Income	229	-	-	21	19	5		
Total Contributions and Other	938,169	908,567	928,134	899,461	882,239	1,064,389		
Pension Benefits	(1,167,057)	(1,175,344)	(1,185,321) (1,242,792		(1,143,154)	(1,137,783)		
Disability Benefits	(2,463)	(2,412)	(2,412) (8,505) (9		(11,562)	(45)		
Survivor Benefit	(79,600)	(75,495)	(73,124)	(69,350)	(66,150)	(63,379)		
Distributions of Contributions and Interest	(3,404)	(4,993) (6,004)		(7,145)	(8,435)	(11,738)		
Administrative Expenses	(5,385)	(6,226)	(6,564)	(6,530)	(7,010)	(7,926)		
Transfer to Defined Contribution	(1,205,277)	-	-	-	-	-		
Member Reassignments	(1,678)	(4,859)	(3,426)	(2,919)	(6,844)	(2,824)		
Miscellaneous Expense	(116)							
Total Benefits and Expenses	(2,464,980)	(1,269,329)	(1,282,944)	(1,338,303)	(1,243,155)	(1,223,695)		
Net Contributions / (Benefits and Expenses)	(1,526,811)	(360,762)	(354,810)	(438,842)	(360,916)	(159,306)		
Net Investment Income / (Loss)	420,528	390,863	42,429	36,885	647,581	315,598		
Net Increase / (Decrease)	(1,106,283)	30,101	(312,381)	(401,957)	286,665	156,292		
Net Position - End of Year	\$ 3,711,347	\$ 4,817,630	\$ 4,787,529	\$ 5,099,910	\$ 5,501,867	\$ 5,215,202		

<sup>1</sup> June 30, 2013 was the first year to split the Teachers' Retirement Fund (TRF) into two, TRF Pre-1996 DB and TRF 1996 DB Accounts. INPRS intends to make this TREP DC was split from the TRF Hybrid plan as of January 1, 2018, therefore 2018 includes only the first six months of DC activity. The balances were transferred out on

#### (in thousands of dollars)



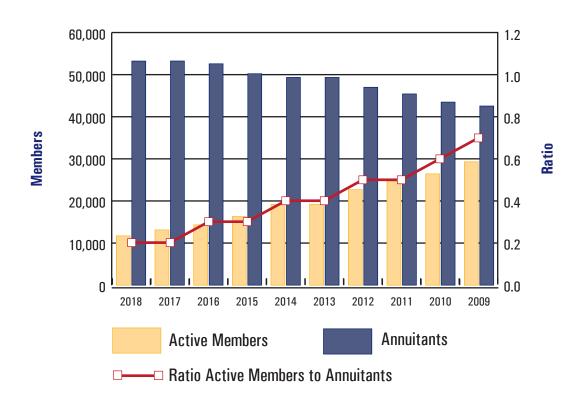
**Net Position-End of Year** 

January 1, 2018.

3The State of Indiana appropriated additional monies of \$20,799 thousand in 2016 and \$206,796 thousand in 2013.

### Ratio of Active Members to Annuitants For the Year Ended June 30

	Active Members	Annuitants <sup>1</sup>	Ratio Active Members to Annuitants
2018 <sup>2</sup>	11,710	53,227	0.2
2017 <sup>2</sup>	13,128	53,240	0.2
2016 <sup>2</sup>	14,327	52,575	0.3
2015 <sup>2</sup>	16,310	50,214	0.3
2014 <sup>2</sup>	19,210	49,345	0.4
2013	19,210	49,345	0.4
2012	22,688	47,000	0.5
2011	24,710	45,421	0.5
2010	26,439	43,478	0.6
2009	29,297	42,548	0.7

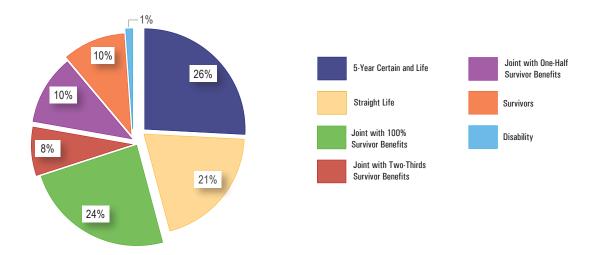


<sup>&</sup>lt;sup>1</sup>Annuitants includes retirees, beneficiaries, and disabled members. <sup>2</sup>Calculated using the prior year census data, adjusted for certain activity during the fiscal year.

# Schedule of Benefit Recipients by Type of Benefit Option For the Year Ended June 30, 2018<sup>1</sup>

#### **Number of Benefit Recipients by Benefit Option**

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
\$ 1 - 500	1,194	568	576	69	129	798	58	3,392
501 - 1,000	1,710	995	1,103	259	390	1,463	128	6,048
1,001 - 1,500	2,934	1,914	2,630	754	1,085	1,299	185	10,801
1,501 - 2,000	3,522	2,929	3,738	1,374	1,633	953	132	14,281
2,001 - 3,000	3,517	3,790	3,823	1,441	1,914	538	54	15,077
Over 3,000	796	1,012	883	401	449	87		3,628
Total	13,673	11,208	12,753	4,298	5,600	5,138	557	53,227



5-Year Certain & Life — Provides a monthly benefit for retiree's life. If retiree receives benefits for at least five years prior to death, there is no benefit payable to a designated beneficiary. In the event the retiree dies before receiving five years of payments, the beneficiary receives the remainder of those five years of monthly benefits, or the present value of those remaining payments in a lump sum.

Straight Life — Provides a monthly benefit for retiree's life. The benefit ceases upon the death of the retiree.

Joint With 100% Survivor Benefits — Provides a monthly benefit for retiree's life. Upon the death of the retiree, the qualified designated survivor receives 100 percent of the member's monthly benefit for the remainder of the survivor's life.

Joint With Two-Thirds Survivor Benefits — Provides a monthly benefit for retiree's life. Upon the death of the retiree, the qualified designated survivor receives 66 2/3 percent of the member's monthly benefit for the remainder of the survivor's life.

Joint With One-Half Survivor Benefits — Provides a monthly benefit for retiree's life. Upon the death of the retiree, the qualified designated survivor receives 50 percent of the member's monthly benefit for the remainder of the survivor's life.

Survivors — Members receiving a survivor benefit in accordance with the applicable statute. The benefit ceases upon the death of the survivor.

**Disability** — Members receiving a disability benefit in accordance with the applicable statute. For TRF, five or more years of creditable service is required to be eligible for a disability benefit. Includes Classroom Disability which provides a benefit of \$125 per month plus \$5 for each additional year of TRF-covered service over five years.

Members who choose social security integration have a higher monthly benefit for a retiree between the ages of 50 and 62 who elects to integrate social security with their monthly benefit. For TRF retirees, social security integration can be incorporated with 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. The number of retirees electing social security integration is included in the number of retirees of the selected benefit option. For TRF retirees, the monthly benefit is reduced or terminated at age 62 depending on the estimated monthly benefit from social security at age 62.

<sup>&</sup>lt;sup>1</sup>Calculated using the prior year census data, adjusted for certain activity during the fiscal year.

### Schedule of Average Benefit Payments<sup>1</sup>

						Years	of C	redited	Serv	rice			
		< 10²	_	10 - 14	_ 1	5 - 19	_ :	20 - 24	_ 2	25 - 29		30+	Total
For the Year Ended June 30, 2018 <sup>3</sup>													
Average Monthly Defined Benefit	\$	169	\$	309	\$	550	\$	910	\$	1,286	\$	1,884	\$ 1,550
Average Monthly ASA Annuity <sup>4</sup>	\$	47	\$	205	\$	202	\$	278	\$	374	\$	615	\$ 478
Average Final Average Salary	\$	31,463	\$	25,025	\$	39,194	\$	48,790	\$	54,160	\$	59,913	\$ 55,486
Number of Benefit Recipients		167		1,294		3,551		5,675		8,638		33,902	53,227
For the Year Ended June 30, 2017 <sup>3</sup>													
Average Monthly Defined Benefit	\$	122	\$	270	\$	542	\$	897	\$	1,270	\$	1,869	\$ 1,532
Average Monthly ASA Annuity <sup>4</sup>	\$	31	\$	198	\$	196	\$	270	\$	366	\$	604	\$ 468
Average Final Average Salary	\$	28,702	\$	23,692	\$	38,245	\$	47,641	\$	53,051	\$	59,073	\$ 54,482
Number of Benefit Recipients		160		1,291		3,648		5,769		8,630	;	33,742	53,240
For the Year Ended June 30, 2016 <sup>3</sup>													
Average Monthly Defined Benefit	\$	577	\$	268	\$	539	\$	884	\$	1,247	\$	1,849	\$ 1,512
Average Monthly ASA Annuity <sup>4</sup>	\$	249	\$	190	\$	191	\$	263	\$	357	\$	592	\$ 458
Average Final Average Salary	\$	23,593	\$	23,432	\$	37,605	\$	46,482	\$	51,701	\$	58,014	\$ 53,393
Number of Benefit Recipients		49		1,279		3,755		5,766		8,540	;	33,186	52,575
For the Year Ended June 30, 2015 <sup>3</sup>	_												
Average Monthly Defined Benefit	\$	449	\$	263	\$	530	\$	854	\$	1,214	\$	1,811	\$ 1,471
Average Monthly ASA Annuity <sup>5</sup>	\$	73	\$	113	\$	106	\$	133	\$	163	\$	228	\$ 195
Average Final Average Salary	\$	37,993	\$	23,424	\$	37,281	\$	45,256	\$	50,441	\$	56,938	\$ 52,253
Number of Benefit Recipients		42		1,238		3,779		5,610		8,175	;	31,370	50,214
For the Year Ended June 30, 2014 <sup>3</sup>													
Average Monthly Defined Benefit	\$	405	\$	258	\$	517	\$	834	\$	1,187	\$	1,793	\$ 1,453
Average Monthly ASA Annuity <sup>5</sup>	\$	57	\$	108	\$	104	\$	128	\$	159	\$	225	\$ 191
Average Final Average Salary	\$	24,193	\$	22,426	\$	35,702	\$	43,604	\$	48,801	\$	55,636	\$ 50,855
Number of Benefit Recipients		36		1,185		3,720		5,541		7,987	;	30,876	49,345
For the Year Ended June 30, 2013													
Average Monthly Defined Benefit	\$	405	\$	258	\$	517	\$	834	\$	1,187	\$	1,793	\$ 1,453
Average Monthly ASA Annuity⁵	\$	57	\$	108	\$	104	\$	128	\$	159	\$	225	\$ 191
Average Final Average Salary	\$	24,193	\$	22,426	\$	35,702	\$	43,604	\$	48,801	\$	55,636	\$ 50,855
Number of Benefit Recipients		36		1,185		3,720		5,541		7,987	;	30,876	49,345

<sup>&</sup>lt;sup>1</sup>INPRS intends to make this schedule a 10-year schedule over time.

<sup>&</sup>lt;sup>2</sup>Members with less than 10 years of service are primarily members receiving a disability benefit.
<sup>3</sup>Calculated using the prior year census data, adjusted for certain activity during the fiscal year.
<sup>4</sup>Represents the average of only the retirees who elected to receive their Defined Contribution Account as a supplemental monthly payment in addition to the monthly Defined

FRepresents the average of all retirees, regardless if they elected to receive their Defined Contribution Account as a supplemental monthly payment in addition to the monthly Defined Benefit payment.

## Schedule of Average Benefit Payments, continued<sup>1</sup>

						Years	of C	redited	Serv	rice				
	<	< 10²	_	10 - 14	_1	5 - 19		20 - 24	_ 2	25 - 29		30+	_	Total
For the Year Ended June 30, 2012														
Average Monthly Defined Benefit	\$	311	\$	252	\$	503	\$	804	\$	1,150	\$	1,747	\$	1,405
Average Monthly ASA Annuity⁵	\$	14	\$	101	\$	101	\$	126	\$	156	\$	222	\$	187
Average Final Average Salary	\$	23,116	\$	21,575	\$ 3	34,714	\$	41,788	\$	47,172	\$ !	54,014	\$	49,136
Number of Benefit Recipients		39		1,178		3,719		5,366		7,672	2	29,026		47,000
For the Year Ended June 30, 2011														
Average Monthly Defined Benefit	\$	239	\$	250	\$	493	\$	785	\$	1,130	\$	1,722	\$	1,376
Average Monthly ASA Annuity <sup>5</sup>	\$	15	\$	99	\$	96	\$	125	\$	154	\$	220	\$	185
Average Final Average Salary	\$ 2	20,085	\$	21,205	\$ 3	3,684	\$	40,472	\$	45,837	\$ !	52,751	\$	47,787
Number of Benefit Recipients		37		1,170		3,735		5,252		7,467	2	27,760		45,421

<sup>&</sup>lt;sup>1</sup>INPRS intends to make this schedule a 10-year schedule over time.

<sup>2</sup>Members with less than 10 years of service are primarily members receiving a disability benefit.

<sup>5</sup>Represents the average of all retirees, regardless if they elected to receive their Defined Contribution Account as a supplemental monthly payment in addition to the monthly Defined Benefit payment.

Schedule of Participating Employers: Top 10

June 30, 2018 Jun	<b>_ 30</b>	2009

	Co	vered Membe	ers			Total TDF		
Top 10 Employers	TRF Pre-'96 DB	TRF '96 DB	Total TRF	Rank	Percentage of Total	Total TRF Covered Members	Rank	Percentage of Total
Indianapolis Public Schools	354	2,612	2,966	1	4.1 %	3,243	1	4.4 %
Fort Wayne Community Schools	410	1,730	2,140	2	3.0	2,435	2	3.3
Evansville-Vanderburgh School Corporation	349	1,211	1,560	3	2.2	1,687	3	2.3
South Bend Community School Corporation	240	1,300	1,540	4	2.1	1,606	4	2.2
Hamilton Southeastern Schools	142	1,209	1,351	5	1.9	1,097	9	1.5
Wayne Township Metropolitan School District	122	1,019	1,141	6	1.6	1,148	6	1.5
Elkhart Community Schools	147	943	1,090	7	1.5	1,078	10	1.4
Carmel Clay Schools	119	969	1,088	8	1.5	1,101	8	1.5
School City of Hammond	175	878	1,053	9	1.5			
Vigo County School Corporation	229	821	1,050	10	1.5	1,218	5	1.6
Gary Community School Corporation						1,139	7	1.5
Total – Top 10 Employers	2,287	12,692	14,979		20.9	15,752		21.2
All Other *	9,423	47,304	56,727		79.1	58,591		78.8
Grand Total	11,710	59,996	71,706		100.0 %	74,343		100.0 %

345 TRF Pre-'96 DB and 373 TRF '96 DB employers in 2018, and 360 Total TRF employers in 2009.

<sup>\*</sup> As of June 30, 2018, "All Other" consisted of:

	TRF Pre	e-'96 DB	TRF '96 DB			
Type of Employer	Employers	Members	Employers	Members		
State	1	121	1	654		
School Districts & Education	334	9,302	362	46,650		
Total All Other	335	9,423	363	47,304		

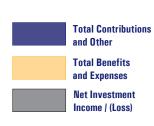
<sup>&</sup>lt;sup>1</sup>June 30, 2013 was the first year to split the Teachers' Retirement Fund (TRF) into two, TRF Pre-'96 DB and TRF '96 DB Accounts. June 30, 2009 "Top 10" Employers information is only available for Total TRF.

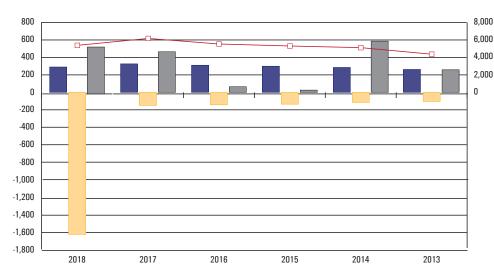
# Schedule of Changes and Growth in Fiduciary Net Position<sup>1</sup> For the Year Ended June 30

(dollars in thousands)	2018 <sup>2</sup>	2017	2016	2015	2014	2013	
Net Position - Beginning of Year	\$ 6,252,040	\$ 5,611,230	\$ 5,379,113	\$ 5,189,442	\$ 4,433,677	\$ 4,018,149	
Contributions / (Benefits and Expenses)							
Employer Contributions	235,819	227,207	215,626	205,763	194,751	180,714	
Member Contributions	47,176	92,838	88,430	86,515	81,802	77,532	
Member Reassignments	7,131	6,345	6,587	7,134	8,884	4,322	
Miscellaneous Income	299	34	16	24	21	4	
Total Contributions and Other	290,425	326,424	310,659	299,436	285,458	262,572	
Pension Benefits	(140,199)	(127,618)	(119,754)	(112,533)	(94,615)	(84,814)	
Disability Benefits	(1,700)	(1,717)	(1,942)	(1,692)	(1,790)	(6)	
Survivor Benefits <sup>2</sup>	(3,584)	(3,257)	(2,606)	(1,962)	(1,581)	(1,412)	
Distributions of Contributions and Interest	(5,135)	(11,133)	(10,988)	(11,712)	(10,734)	(10,925)	
Administrative Expenses	(5,208)	(5,553)	(5,603)	(6,184)	(6,707)	(6,482)	
Transfer to Defined Contribution	(1,469,542)	-	-	-	-	-	
Member Reassignments	(1,530)	(1,229)	(1,852)	(1,269)	(1,048)	(1,516)	
Miscellaneous Expense	(159)						
Total Benefits and Expenses	(1,627,057)	(150,507)	(142,745)	(135,352)	(116,475)	(105,155)	
Net Contributions / (Benefits and Expenses)	(1,336,632)	175,917	167,914	164,084	168,983	157,417	
Net Investment Income / (Loss)	536,944	464,893	64,203	25,587	586,782	258,111	
Net Increase / (Decrease)	(799,688)	640,810	232,117	189,671	755,765	415,528	
Net Position - End of Year	\$ 5,452,352	\$ 6,252,040	\$ 5,611,230	\$ 5,379,113	\$ 5,189,442	\$ 4,433,677	

<sup>&</sup>lt;sup>1</sup>June 30, 2013 was the first year to split the Teachers' Retirement Fund (TRF) into two, TRF Pre-1996 DB and TRF 1996 DB Accounts. INPRS intends to make this schedule a 10-year schedule over time

#### (in thousands of dollars)





Net Position-End of Year

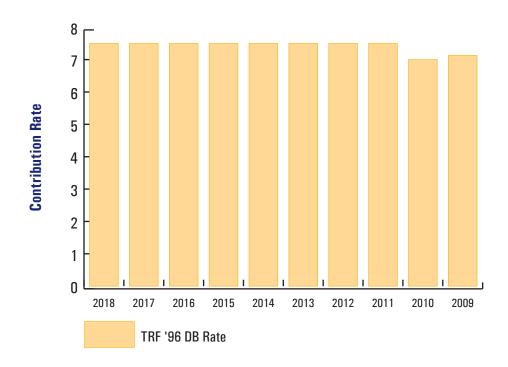
a 10-year schedule over time.

2TRF DC was split from the TRF Hybrid plan as of January 1, 2018, therefore 2018 includes only the first six months of DC activity. The balances were transferred out on January 1, 2018.

### Schedule of Historical Contribution Rates For the Year Ended June 30

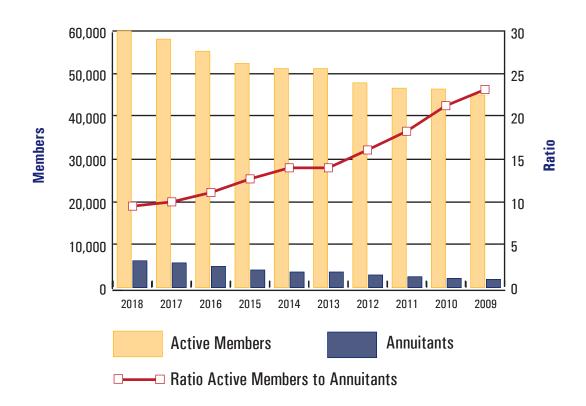
	TRF '96 DB Rate
2018	7.50 %
2017	7.50
2016	7.50
2015	7.50
2014	7.50
2013	7.50
2012	7.50
2011	7.50
2010	7.00
2009 <sup>1</sup>	7.13
Memo: Effective Date	July 1

<sup>&</sup>lt;sup>1</sup>7.25 percent from July 1 - December 31, 2008; 7.0 percent from January 1 - June 30, 2009



### Ratio of Active Members to Annuitants For the Year Ended June 30

	Active Members	Annuitants <sup>1</sup>	Ratio Active Members to Annuitants
2018 <sup>2</sup>	59,996	6,289	9.5
2017 <sup>2</sup>	58,097	5,796	10.0
2016 <sup>2</sup>	55,265	4,977	11.1
2015 <sup>2</sup>	52,424	4,136	12.7
2014 <sup>2</sup>	51,204	3,665	14.0
2013	51,204	3,665	14.0
2012	47,885	2,971	16.1
2011	46,633	2,554	18.3
2010	46,433	2,181	21.3
2009	45,046	1,944	23.2

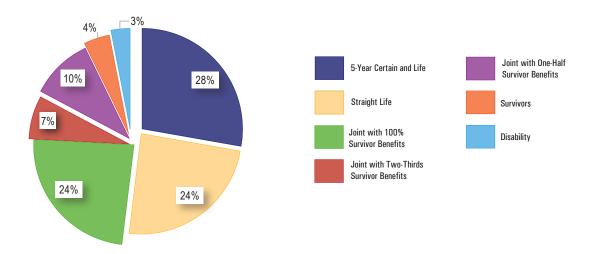


<sup>&</sup>lt;sup>1</sup>Annuitants includes retirees, beneficiaries, and disabled members. <sup>2</sup>Calculated using the prior year census data, adjusted for certain activity during the fiscal year.

### Schedule of Benefit Recipients by Type of Benefit Option For the Year Ended June 30, 2018<sup>1</sup>

#### Number of Benefit Recipients by Benefit Option

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
\$ 1 - 500	255	190	138	24	38	65	54	764
501 - 1,000	495	401	369	84	150	89	72	1,660
1,001 - 1,500	395	364	313	97	125	40	34	1,368
1,501 - 2,000	283	240	260	78	111	25	8	1,005
2,001 - 3,000	227	237	296	89	134	28	10	1,021
Over 3,000	89	101	150	58	66	6	1	471
Total	1,744	1,533	1,526	430	624	253	179	6,289



5-Year Certain & Life — Provides a monthly benefit for retiree's life. If retiree receives benefits for at least five years prior to death, there is no benefit payable to a designated beneficiary. In the event the retiree dies before receiving five years of payments, the beneficiary receives the remainder of those five years of monthly benefits, or the present value of those remaining payments in a lump sum.

Straight Life — Provides a monthly benefit for retiree's life. The benefit ceases upon the death of the retiree.

Joint With 100% Survivor Benefits — Provides a monthly benefit for retiree's life. Upon the death of the retiree, the qualified designated survivor receives 100 percent of the member's monthly benefit for the remainder of the survivor's life.

Joint With Two-Thirds Survivor Benefits — Provides a monthly benefit for retiree's life. Upon the death of the retiree, the qualified designated survivor receives 66 2/3 percent of the member's monthly benefit for the remainder of the survivor's life.

Joint With One-Half Survivor Benefits — Provides a monthly benefit for retiree's life. Upon the death of the retiree, the qualified designated survivor receives 50 percent of the member's monthly benefit for the remainder of the survivor's life.

Survivors — Members receiving a survivor benefit in accordance with the applicable statute. The benefit ceases upon the death of the survivor.

Disability — Members receiving a disability benefit in accordance with the applicable statute. For TRF, five or more years of creditable service is required to be eligible for a disability benefit. Includes Classroom Disability which provides a benefit of \$125 per month plus \$5 for each additional year of TRF-covered service over five years.

Members who choose social security integration have a higher monthly benefit for a retiree between the ages of 50 and 62 who elects to integrate social security with their monthly benefit. For TRF retirees, social security integration can be incorporated with 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. The number of retirees electing social security integration is included in the number of retirees of the selected benefit option. For TRF retirees, the monthly benefit is reduced or terminated at age 62 depending on the estimated monthly benefit from social security at age 62.

<sup>&</sup>lt;sup>1</sup>Calculated using the prior year census data, adjusted for certain activity during the fiscal year.

## Schedule of Average Benefit Payments<sup>1</sup>

						Years	of C	redited	Serv	vice		
	<	10 <sup>2</sup>	1	10 - 14	15	- 19	_ 2	20 - 24	_ 2	25 - 29	30+	Total
For the Year Ended June 30, 2018 <sup>3</sup>												
Average Monthly Defined Benefit	\$	175	\$	493	\$	779	\$	1,133	\$	1,530	\$ 2,278	\$ 1,312
Average Monthly ASA Annuity <sup>4</sup>	\$	67	\$	150	\$	243	\$	334	\$	494	\$ 742	\$ 393
Average Final Average Salary	\$ 3	8,058	\$	46,696	\$ 5	5,207	\$	61,506	\$	66,412	\$ 75,286	\$ 61,952
Number of Benefit Recipients		181		790		1,645		1,019		873	1,781	6,289
For the Year Ended June 30, 2017 <sup>3</sup>												
Average Monthly Defined Benefit	\$	153	\$	484	\$	775	\$	1,131	\$	1,512	\$ 2,266	\$ 1,312
Average Monthly ASA Annuity <sup>4</sup>	\$	71	\$	151	\$	248	\$	343	\$	498	\$ 745	\$ 404
Average Final Average Salary	\$ 3	5,860	\$	44,235	\$ 5	4,609	\$	61,152	\$	65,476	\$ 74,829	\$ 61,121
Number of Benefit Recipients		179		748		1,478		898		794	1,699	5,796
For the Year Ended June 30, 2016 <sup>3</sup>												
Average Monthly Defined Benefit	\$	403	\$	478	\$	760	\$	1,113	\$	1,481	\$ 2,263	\$ 1,355
Average Monthly ASA Annuity <sup>4</sup>	\$	162	\$	152	\$	247	\$	346	\$	507	\$ 735	\$ 417
Average Final Average Salary	\$ 3	5,250	\$	45,420	\$ 5	2,554	\$	59,740	\$	64,060	\$ 73,994	\$ 61,008
Number of Benefit Recipients		59		611		1,267		764		688	1,588	4,977
For the Year Ended June 30, 2015 <sup>3</sup>												
Average Monthly Defined Benefit	\$	437	\$	467	\$	740	\$	1,085	\$	1,458	\$ 2,225	\$ 1,360
Average Monthly ASA Annuity <sup>5</sup>	\$	80	\$	74	\$	102	\$	130	\$	214	\$ 240	\$ 165
Average Final Average Salary	\$ 3	5,509	\$	45,483	\$ 5	2,501	\$	58,946	\$	62,883	\$ 72,912	\$ 60,815
Number of Benefit Recipients		45		499		998		614		570	1,410	4,136
For the Year Ended June 30, 2014 <sup>3</sup>												
Average Monthly Defined Benefit	\$	263	\$	450	\$	730	\$	1,041	\$	1,426	\$ 2,158	\$ 1,366
Average Monthly ASA Annuity <sup>5</sup>	\$	23	\$	71	\$	102	\$	124	\$	200	\$ 230	\$ 162
Average Final Average Salary	\$ 3	9,665	\$	44,142	\$ 5	1,558	\$	57,665	\$	61,752	\$ 70,633	\$ 59,995
Number of Benefit Recipients		36		406		822		537		504	1,360	3,665
For the Year Ended June 30, 2013	_											
Average Monthly Defined Benefit	\$	263	\$	450	\$	730	\$	1,041	\$	1,426	\$ 2,158	\$ 1,366
Average Monthly ASA Annuity <sup>5</sup>	\$	23	\$	71	\$	102	\$	124	\$	200	\$ 230	\$ 162
Average Final Average Salary	\$ 3	9,665	\$	44,142	\$ 5	1,558	\$	57,665	\$	61,752	\$ 70,633	\$ 59,995
Number of Benefit Recipients		36		406		822		537		504	1,360	3,665

<sup>&</sup>lt;sup>1</sup>INPRS intends to make this schedule a 10-year schedule over time.

<sup>&</sup>lt;sup>2</sup>Members with less than 10 years of service are primarily members receiving a disability benefit.

<sup>&</sup>lt;sup>3</sup>Calculated using the prior year census data, adjusted for certain activity during the fiscal year.

4Represents the average of only the retirees who elected to receive their Defined Contribution Account as a supplemental monthly payment in addition to the monthly Defined

Represents the average of all retirees, regardless if they elected to receive their Defined Contribution Account as a supplemental monthly payment in addition to the monthly Defined Benefit payment.

## Schedule of Average Benefit Payments, continued<sup>1</sup>

						Years	of C	redited	Serv	/ice				
	_	10 <sup>2</sup>	_	10 - 14	_15	5 - 19		20 - 24		25 - 29	;	30+	_	Total
For the Year Ended June 30, 2012														
Average Monthly Defined Benefit	\$	274	\$	444	\$	682	\$	995	\$	1,401	\$	2,124	\$	1,391
Average Monthly ASA Annuity <sup>5</sup>	\$	29	\$	72	\$	97	\$	125	\$	207	\$	223	\$	165
Average Final Average Salary	\$ 3	39,141	\$	43,284	\$ 4	18,634	\$	55,970	\$	60,295	\$6	9,381	\$	59,171
Number of Benefit Recipients		33		308		577		411		420		1,222		2,971
For the Year Ended June 30, 2011														
Average Monthly Defined Benefit	\$	241	\$	419	\$	665	\$	963	\$	1,381	\$	2,080	\$	1,400
Average Monthly ASA Annuity <sup>5</sup>	\$	25	\$	76	\$	92	\$	122	\$	188	\$	216	\$	162
Average Final Average Salary	\$ 3	37,883	\$	40,581	\$ 4	17,337	\$	54,686	\$	59,531	\$6	7,586	\$	58,202
Number of Benefit Recipients		27		247		453		341		363		1,123		2,554

<sup>&</sup>lt;sup>1</sup>INPRS intends to make this schedule a 10-year schedule over time.

<sup>2</sup>Members with less than 10 years of service are primarily members receiving a disability benefit.

<sup>5</sup>Represents the average of all retirees, regardless if they elected to receive their Defined Contribution Account as a supplemental monthly payment in addition to the monthly Defined Benefit payment.

Schedule of Participating Employers: Top 10

		Ju	June 30, 2009¹					
	Co	vered Membe	ers			Total TRF		
Top 10 Employers	TRF Pre-'96 DB	TRF '96 DB	Total TRF	Rank	Percentage of Total	Covered Members	Rank	Percentage of Total
Indianapolis Public Schools	354	2,612	2,966	1	4.1 %	3,243	1	4.4 %
Fort Wayne Community Schools	410	1,730	2,140	2	3.0	2,435	2	3.3
Evansville-Vanderburgh School Corporation	349	1,211	1,560	3	2.2	1,687	3	2.3
South Bend Community School Corporation	240	1,300	1,540	4	2.1	1,606	4	2.2
Hamilton Southeastern Schools	142	1,209	1,351	5	1.9	1,097	9	1.5
Wayne Township Metropolitan School District	122	1,019	1,141	6	1.6	1,148	6	1.5
Elkhart Community Schools	147	943	1,090	7	1.5	1,078	10	1.4
Carmel Clay Schools	119	969	1,088	8	1.5	1,101	8	1.5
School City of Hammond	175	878	1,053	9	1.5			
Vigo County School Corporation	229	821	1,050	10	1.5	1,218	5	1.6
Gary Community School Corporation						1,139	7	1.5
Total – Top 10 Employers	2,287	12,692	14,979		20.9	15,752		21.2
All Other *	9,423	47,304	56,727		79.1	58,591		78.8
Grand Total	11,710	59,996	71,706		100.0 %	74,343		100.0 %

345 TRF Pre-'96 DB and 373 TRF '96 DB employers in 2018, and 360 Total TRF employers in 2009.

<sup>\*</sup> As of June 30, 2018, "All Other" consisted of:

	TRF Pre	e-'96 DB	TRF '96 DB			
Type of Employer	Employers	Members	Employers	Members		
State	1	121	1	654		
School Districts & Education	334	9,302	362	46,650		
Total All Other	335	9,423	363	47,304		

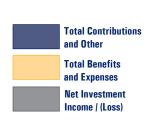
<sup>&</sup>lt;sup>1</sup>June 30, 2013 was the first year to split the Teachers' Retirement Fund (TRF) into two, TRF Pre-1996 DB and TRF 1996 DB Accounts. June 30, 2009 "Top 10" Employers information is only available for Total TRF.

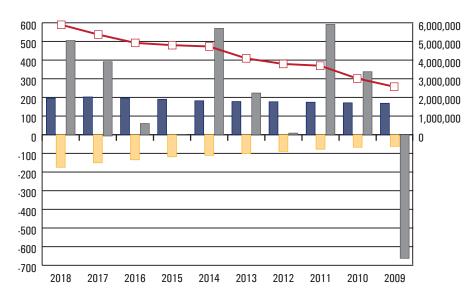
### Schedule of Changes and Growth in Fiduciary Net Position For the Year Ended June 30

(dollars in thousands)	2018	2017	2016	2015	2014	2013	2012	2011	2010	2009	
Net Position - Beginning of Year	\$ 5,401,179	\$ 4,950,999	\$ 4,828,415	\$ 4,757,978	\$ 4,116,861	\$ 3,817,013	\$ 3,721,366	\$ 3,033,285	\$ 2,591,674	\$ 3,148,396	
Contributions / (Benefits and Expenses)											
Employer Contributions	147,094	150,857	151,674	146,697	140,119	137,111	135,605	135,605 133,726		130,002	
Member Contributions	48,839	51,521	44,918	43,523	41,791	40,786	40,870	40,532	39,826	38,520	
Member Reassignments	-	-	-	-	-	71	123	-	237	131	
Miscellaneous Income	18	78	143	15	30	18	41	83	90	115	
Total Contributions and Other	195,951	202,456	196,735	190,235	181,940	177,986	176,639	174,341	170,927	168,768	
Pension Benefits	(133,791)	(112,282)	(97,445)	(83,239)	(76,462)	(68,622)	(67,920)	(56,503)	(47,150)	(41,019)	
Disability Benefits	(21,805)	(19,950)	(18,647)	(17,620)	(17,767)	(17,429)	(16,288)	(15,710)	(15,199)	(14,541)	
Survivor Benefits <sup>1</sup>	(13,455)	(12,550)	(11,843)	(11,156)	(10,573)	(9,884)	-	-	-	-	
Death Benefits	(884)	(809)	(774)	(860)	(720)	(794)	(738)	(624)	(564)	(306)	
Distributions of Contributions and Interest	(2,973)	(3,274)	(4,037)	(3,615)	(3,572)	(3,074)	(3,101)	(2,662)	(2,304)	(3,172)	
Administrative Expenses	(1,643)	(1,607)	(1,651)	(1,708)	(1,787)	(1,845)	(1,662)	(2,108)	(1,865)	(3,766)	
Member Reassignments			(74)				(33)	(61)		(5)	
Total Benefits and Expenses	(174,551)	(150,472)	(134,471)	(118,198)	(110,881)	(101,648)	(89,742)	(77,668)	(67,082)	(62,809)	
Net Contributions / (Benefits and Expenses)	21,400	51,984	62,264	72,037	71,059	76,338	86,897	96,673	103,845	105,959	
Net Investment Income / (Loss)	504,991	398,196	60,320	(1,600)	570,058	223,510	8,750	591,408	337,766	(662,681)	
Net Increase / (Decrease)	526,391	450,180	122,584	70,437	641,117	299,848	95,647	688,081	441,611	(556,722)	
Net Position - End of Year	\$ 5,927,570	\$ 5,401,179	\$ 4,950,999	\$ 4,828,415	\$ 4,757,978	\$ 4,116,861	\$ 3,817,013	\$ 3,721,366	\$ 3,033,285	\$ 2,591,674	

Survivor benefits information is available since June 30, 2013. Prior to June 30, 2013 amounts were contained within pension and disability benefits.

### (in thousands of dollars)

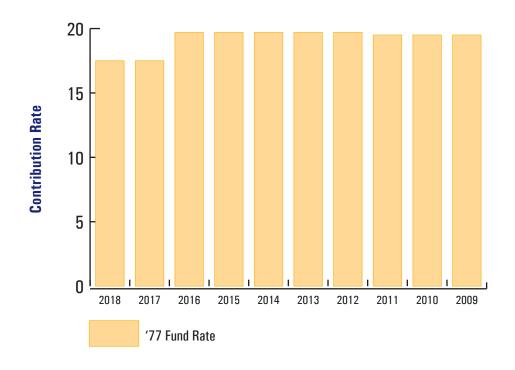






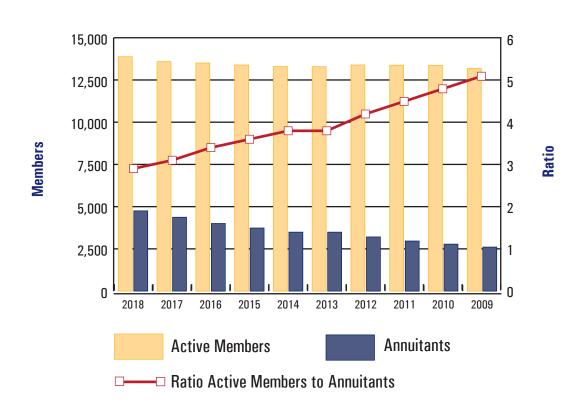
Schedule of Historical Contribution Rates For the Year Ended June 30

	'77 Fund Rate
2018	17.5 %
2017	17.5
2016	19.7
2015	19.7
2014	19.7
2013	19.7
2012	19.7
2011	19.5
2010	19.5
2009	19.5
Memo: Effective Date	January 1



### Ratio of Active Members to Annuitants For the Year Ended June 30

	Active Members	Annuitants <sup>1</sup>	Ratio Active Members to Annuitants
2018 <sup>2</sup>	13,879	4,751	2.9
2017 <sup>2</sup>	13,587	4,374	3.1
2016 <sup>2</sup>	13,506	4,004	3.4
2015 <sup>2</sup>	13,390	3,736	3.6
2014 <sup>2</sup>	13,295	3,491	3.8
2013	13,287	3,491	3.8
2012	13,390	3,208	4.2
2011	13,376	2,966	4.5
2010	13,362	2,782	4.8
2009	13,184	2,608	5.1



<sup>&</sup>lt;sup>1</sup>Annuitants includes retirees, beneficiaries, and disabled members. <sup>2</sup>Calculated using the prior year census data, adjusted for certain activity during the fiscal year.

Schedule of Benefit Recipients by Type of Benefit Option For the Year Ended June 30, 2018<sup>1</sup>

**Number of Benefit Recipients by Benefit Option** 

_			<u>.</u>	
Amount of Monthly Benefit (in dollars)	Retirees	Survivors	Disability	Total Benefit Recipients
\$ 1 - 500	-	12	-	12
501 - 1,000	4	144	23	171
1,001 - 1,500	112	367	83	562
1,501 - 2,000	474	163	210	847
2,001 - 3,000	1,830	66	415	2,311
Over 3,000	762	11	75	848
Total	3,182	763	806	4,751

**Retirees** — Provides a monthly benefit for retiree's life. Upon the death of the retiree, a surviving spouse receives 60 percent of the monthly benefit for life and each surviving child receives 20 percent of the monthly benefit until age 18 or 23 if enrolled in a secondary school or accredited college or university. If no eligible surviving spouse or children, a dependent parent(s) may receive 50 percent of the monthly benefit for life.

**Survivors** — Members receiving a survivor benefit in accordance with the applicable statute. The benefit ceases upon the death of the survivor.

**Disability** — Members receiving a disability benefit in accordance with the applicable statute. For the '77 Fund, there is no minimum creditable service requirement.

<sup>&</sup>lt;sup>1</sup>Calculated using the prior year census data, adjusted for certain activity during the fiscal year.

## Schedule of Average Benefit Payments<sup>1</sup>

				Years	of C	redited	Service			
	< 10 <sup>2</sup> 10 - 14 <sup>2</sup>		- 14 <sup>2</sup>	15 - 19 <sup>2</sup>		20 - 24	25 - 29	30+		Total
For the Year Ended June 30, 2018 <sup>3</sup>										
Average Monthly Defined Benefit	\$ 1,924	\$	1,993	\$ 1,938	\$	1,984	\$ 2,589	\$ 2,984	\$	2,319
Average Final Average Salary	\$ 43,021	\$ 5	50,113	\$ 47,985	\$	46,569	\$ 49,576	\$52,614	\$	48,753
Number of Benefit Recipients	239		241	286		1,843	1,330	812		4,751
For the Year Ended June 30, 2017 <sup>3</sup>										
Average Monthly Defined Benefit	\$ 1,643	\$	1,975	\$ 1,893	\$	2,010	\$ 2,546	\$ 2,892	\$	2,257
Average Final Average Salary	\$ 42,129	\$ 4	18,847	\$ 47,060	\$	45,714	\$ 48,551	\$51,649	\$	47,703
Number of Benefit Recipients	382		234	271		1,586	1,202	699		4,374
For the Year Ended June 30, 2016 <sup>3</sup>										
Average Monthly Defined Benefit	\$ 1,624	\$	1,901	\$ 1,839	\$	1,969	\$ 2,498	\$ 2,799	\$	2,190
Average Final Average Salary	\$ 41,299	\$ 4	17,438	\$ 45,587	\$	44,846	\$ 47,841	\$51,017	\$	46,803
Number of Benefit Recipients	380		226	262		1,463	1,071	602		4,004
For the Year Ended June 30, 2015 <sup>3</sup>										
Average Monthly Defined Benefit	\$ 1,709	\$	1,862	\$ 1,812	\$	1,953	\$ 2,473	\$ 2,714	\$	2,149
Average Final Average Salary	\$ 40,564	\$ 4	16,871	\$ 44,876	\$	43,912	\$ 47,030	\$50,367	\$	45,862
Number of Benefit Recipients	421		222	256		1,361	963	513		3,736
For the Year Ended June 30, 2014 <sup>3</sup>										
Average Monthly Defined Benefit	\$ 1,841	\$	1,748	\$ 1,734	\$	1,864	\$ 2,362	\$ 2,553	\$	2,084
Average Final Average Salary	\$ 42,408	\$ 4	15,969	\$ 44,636	\$	43,120	\$ 46,421	\$48,656	\$	45,245
Number of Benefit Recipients	290		226	273		1,243	883	576		3,491
For the Year Ended June 30, 2013	_									
Average Monthly Defined Benefit	\$ 1,841	\$	1,748	\$ 1,734	\$	1,864	\$ 2,362	\$ 2,553	\$	2,084
Average Final Average Salary	\$ 42,408	\$ 4	15,969	\$ 44,636	\$	43,120	\$ 46,421	\$48,656	\$	45,245
Number of Benefit Recipients	290		226	273		1,243	883	576		3,491
For the Year Ended June 30, 2012	_									
Average Monthly Defined Benefit	\$ 1,766	\$	1,685	\$ 1,685	\$	1,815	\$ 2,284	\$ 2,396	\$	1,999
Average Final Average Salary	\$ 40,609	\$ 4	15,578	\$ 43,738	\$	42,368	\$ 45,510	\$47,219	\$	44,173
Number of Benefit Recipients	251		215	266		1,178	822	476		3,208
For the Year Ended June 30, 2011	-									
Average Monthly Defined Benefit	\$ 1,708	\$	1,609	\$ 1,636	\$	1,758	\$ 2,206	\$ 2,272	\$	1,916
Average Final Average Salary	\$ 40,474	\$ 4	14,601	\$ 43,597	\$	41,438	\$ 44,731	\$47,365	\$	43,362
Number of Benefit Recipients	241		208	264		1,102	755	396		2,966

<sup>&</sup>lt;sup>1</sup>INPRS intends to make this schedule a 10-year schedule over time.

<sup>2</sup>Members with less than 20 years of service are primarily members receiving a disability benefit from INPRS.

<sup>3</sup>Calculated using the prior year census data, adjusted for certain activity during the fiscal year.

Schedule of Participating Employers: Top 10

June 30, 2018 June 30, 2009 Percentage of Total Percentage Covered of Total Covered **Top 10 Employers Members** Rank '77 Fund **Members** Rank '77 Fund City of Indianapolis 2,567 18.5 % 2,122 1 15.9 % 1 City of Fort Wayne 810 2 808 2 5.8 6.1 City of Evansville 544 3 3.9 545 3 4.1 City of South Bend 482 4 3.5 469 4 3.5 City of Gary 359 5 2.6 464 5 3.5 City of Hammond 358 6 2.6 388 6 2.9 7 7 2.0 City of Terre Haute 282 2.0 274 City of Lafayette 272 8 2.0 261 8 2.0 City of Muncie 260 9 1.9 City of Carmel 252 251 9 1.9 10 1.8 243 10 1.8 City of Elkhart Total - Top 10 Employers 6,186 44.6 5,825 43.7 All Other \* 7,693 55.4 7,505 56.3 **Grand Total** 13,879 100.0 % 13,330 100.0 %

<sup>\*</sup> As of June 30, 2018, "All Other" consisted of:

Type of Employer	Number of Employers	Covered Members
Cities	109	6,000
Towns	34	1,136
Townships	13	531
Other	2	26
Total All Other	158	7,693

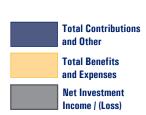
<sup>168</sup> Employers in 2018, and 163 in 2009

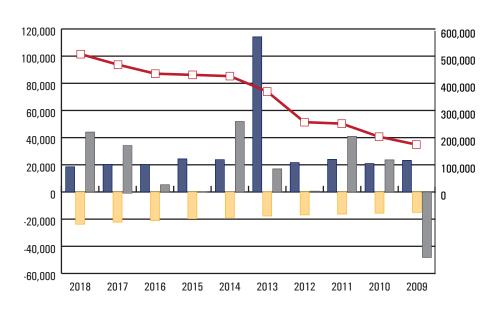
## **Judges' Retirement System**

### Schedule of Changes and Growth in Fiduciary Net Position For the Year Ended June 30

(dollars in thousands)	201		2017	2016	2015	2014	2013	 2012 2011		2011	_	2010	2009
Net Position - Beginning of Year	\$	475,055	\$ 441,790	\$ 437,352	\$ 432,730	\$ 375,752	\$ 262,326	\$ 256,986	\$	208,395	\$	179,428	\$ 219,426
Contributions / (Benefits and Expenses)													
Employer Contributions <sup>1</sup>		15,117	16,824	16,946	21,020	20,895	111,419	18,896		19,200		18,631	20,861
Member Contributions		3,418	3,468	3,239	3,292	2,856	2,631	2,468		3,492		2,229	2,196
Member Reassignments		-	-	-	-	4	121	257		1,281		59	151
Miscellaneous Income		-	-	-	9	6	5	2		-		-	-
Total Contributions and Other		18,535	20,292	20,185	24,321	23,761	114,176	21,623		23,973		20,919	23,208
Pension Benefits		(20,312)	(19,223)	(18,194)	(16,613)	(15,819)	(15,115)	(16,569)		(15,996)		(15,441)	(14,595)
Disability Benefits		(126)	(136)	(90)	(230)	(134)	(193)	(158)		(92)		(29)	(54)
Survivor Benefits <sup>2</sup>		(2,926)	(2,696)	(2,627)	(2,578)	(2,574)	(2,218)	-		-		-	-
Distributions of Contributions and Interest		(259)	(44)	(11)	(11)	-	(53)	(19)		(5)		-	(55)
Administrative Expenses		(119)	(124)	(148)	(165)	(146)	(126)	(132)		(160)		(104)	(308)
Total Benefits and Expenses		(23,742)	(22,223)	(21,070)	(19,597)	(18,673)	(17,705)	(16,878)		(16,253)		(15,574)	(15,012)
Net Contributions / (Benefits and Expenses)		(5,207)	(1,931)	(885)	4,724	5,088	96,471	4,745		7,720		5,345	8,196
Net Investment Income / (Loss)		44,104	35,196	5,323	(102)	51,890	16,955	595		40,871		23,622	(48,194)
Net Increase / (Decrease)		38,897	33,265	4,438	4,622	56,978	113,426	5,340		48,591		28,967	(39,998)
Net Position - End of Year	\$	513,952	\$ 475,055	\$ 441,790	\$ 437,352	\$ 432,730	\$ 375,752	\$ 262,326	\$	256,986	\$	208,395	\$ 179,428

### (in thousands of dollars)





**Net Position-End of Year** 

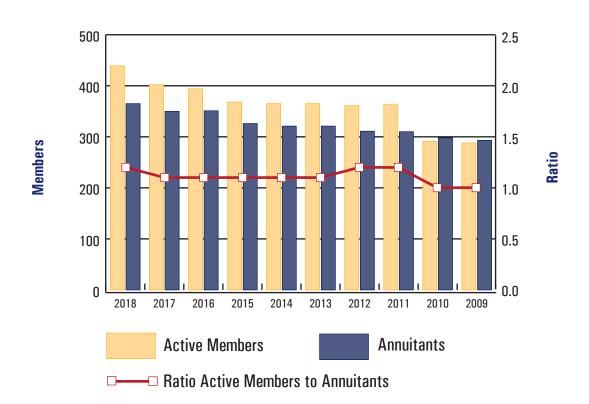
<sup>&</sup>lt;sup>1</sup>In 2013, the State of Indiana contributed additional monies of \$90,187 thousand. <sup>2</sup>Survivor benefit information is available since June 30, 2013. Prior to June 30, 2013 amounts were contained within pension and disability benefits.

# Judges' Retirement System

### Ratio of Active Members to Annuitants For the Year Ended June 30

		Active Members	Annuitants <sup>1</sup>	Ratio Active Members to Annuitants
20	18 <sup>2</sup>	439	365	1.2
20	17 <sup>2</sup>	402	350	1.1
20	16 <sup>2</sup>	394	351	1.1
20	15 <sup>2</sup>	368	326	1.1
20	142	365	321	1.1
20	13	365	321	1.1
20	12	361	311	1.2
20	11	363	310	1.2
20	10	291	298	1.0
20	09	288	293	1.0

<sup>&</sup>lt;sup>1</sup>Annuitants includes retirees, beneficiaries, and disabled members.



<sup>&</sup>lt;sup>2</sup>Calculated using the prior year census data, adjusted for certain activity during the fiscal year.

### **Judges' Retirement System**

Schedule of Benefit Recipients by Type of Benefit Option For the Year Ended June 30, 2018<sup>1</sup>

**Number of Benefit Recipients by Benefit Option** 

Amount of Monthly Benefit (in dollars)	Retirees	Survivors	Disability	Total Benefit Recipients
\$ 1 - 500	-	-	-	-
501 - 1,000	-	-	-	-
1,001 - 1,500	-	29	-	29
1,501 - 2,000	-	13	-	13
2,001 - 3,000	12	33	-	45
Over 3,000	248	28	2	278
Total	260	103	2	365

Retirees — Provides a monthly benefit for retiree's life. Upon the death of the retiree, the qualified designated survivor receives 50 percent of the member's monthly benefit for the remainder of the survivor's life.

Survivors — Members receiving a survivor benefit in accordance with the applicable statute. The benefit ceases upon the death of the survivor.

Disability — Members receiving a disability benefit in accordance with the applicable statute. For the Judges' Retirement System, there is no minimum creditable service requirement.

<sup>&</sup>lt;sup>1</sup>Calculated using the prior year census data, adjusted for certain activity during the fiscal year.

## **Judges' Retirement System**

### Schedule of Average Benefit Payments<sup>1</sup>

	Years of Credited Service													
	< 10		10 - 14		15 - 19		20 - 24		25 - 29		30+		Total	
For the Year Ended June 30, 2018 <sup>2</sup>														
Average Monthly Defined Benefit	\$ 2,035	\$	4,437	\$	5,613	\$	6,180	\$	6,640	\$	6,656	\$	5,168	
Average Final Average Salary	\$ 108,346	\$	120,668	\$	124,939	\$	126,707	\$	116,646	\$	125,976	\$	122,254	
Number of Benefit Recipients	51		85		74		86		40		29		365	
For the Year Ended June 30, 2017 <sup>2</sup>														
Average Monthly Defined Benefit	\$ 2,095	\$	4,416	\$	5,589	\$	5,945	\$	6,804	\$	6,788	\$	5,130	
Average Final Average Salary	\$ 98,954	\$	117,996	\$	120,010	\$	121,926	\$	113,184	\$	124,489	\$	117,814	
Number of Benefit Recipients	52		81		72		81		37		27		350	
For the Year Ended June 30, 2016 <sup>2</sup>														
Average Monthly Defined Benefit	\$ 2,158	\$	4,308	\$	5,125	\$	5,959	\$	6,695	\$	6,707	\$	4,989	
Average Final Average Salary	\$ 98,226	\$	117,568	\$	119,378	\$	120,551	\$	113,184	\$	123,658	\$	117,193	
Number of Benefit Recipients	57		79		71		80		37		27		351	
For the Year Ended June 30, 2015 <sup>2</sup>														
Average Monthly Defined Benefit	\$ 2,046	\$	4,145	\$	5,297	\$	5,479	\$	6,555	\$	6,558	\$	4,749	
Average Final Average Salary	\$ 59,251	\$	116,014	\$	117,354	\$	114,577	\$	112,207	\$	122,815	\$	114,494	
Number of Benefit Recipients	57		75		61		69		38		26		326	
For the Year Ended June 30, 2014 <sup>2</sup>														
Average Monthly Defined Benefit	\$ 3,519	\$	4,090	\$	5,039	\$	5,544	\$	6,538	\$	6,545	\$	4,796	
Average Final Average Salary	\$ 108,307	\$	113,994	\$	113,254	\$	114,783	\$	111,708	\$	122,579	\$	114,885	
Number of Benefit Recipients	88		66		47		62		34		24		321	
For the Year Ended June 30, 2013														
Average Monthly Defined Benefit	\$ 3,519	\$	4,090	\$	5,039	\$	5,544	\$	6,538	\$	6,545	\$	4,796	
Average Final Average Salary	\$ 108,307	\$	113,994	\$	113,254	\$	114,783	\$	111,708	\$	122,579	\$	114,885	
Number of Benefit Recipients	88		66		47		62		34		24		321	
For the Year Ended June 30, 2012														
Average Monthly Defined Benefit	\$ 2,508	\$	4,006	\$	4,999	\$	5,265	\$	6,212	\$	6,230	\$	4,478	
Average Final Average Salary	\$ 73,561	\$	114,043	\$	112,826	\$	114,625	\$	111,708	\$	122,579	\$	112,885	
Number of Benefit Recipients	74		67		48		63		34		25		311	
For the Year Ended June 30, 2011														
Average Monthly Defined Benefit	\$ 2,495	\$	4,104	\$	5,043	\$	5,317	\$	6,337	\$	6,162	\$	4,513	
Average Final Average Salary	\$ 57,717	\$	113,387	\$	112,461	\$	113,606	\$	111,708	\$	120,715	\$	111,151	
Number of Benefit Recipients	75		66		47		64		35		23		310	

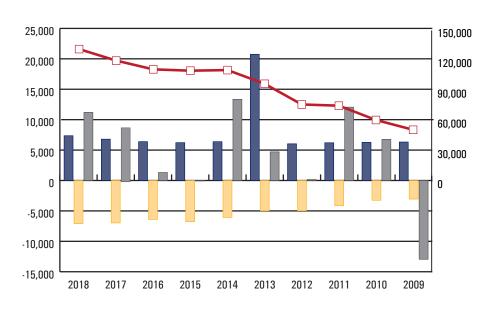
¹INPRS intends to make this schedule a 10-year schedule over time. ²Calculated using the prior year census data, adjusted for certain activity during the fiscal year.

#### Schedule of Changes and Growth in Fiduciary Net Position For the Year Ended June 30

(dollars in thousands)	2018	2018 2017		2015	2014	2013	2012	2011	2010	2009
Net Position - Beginning of Year	\$ 120,016	\$ 111,329	\$ 110,038	\$ 110,657	\$ 97,019	\$ 76,543	\$ 75,305	\$ 61,174	\$ 51,404	\$ 61,076
Contributions / (Benefits and Expenses)										
Employer Contributions <sup>1</sup>	6,175	5,691	5,367	5,215	5,359	19,740	5,054	5,197	5,256	5,294
Member Contributions	1,172	1,102	1,016	1,004	1,019	1,006	972	1,002	1,010	1,025
Member Reassignments	-	-	-	-	-	-	-	-	9	5
Miscellaneous Income	10	-	-	-	-	-	-	-	-	-
Total Contributions and Other	7,357	6,793	6,383	6,219	6,378	20,746	6,026	6,199	6,275	6,324
Pension Benefits	(6,288)	(6,223)	(5,639)	(6,068)	(5,379)	(4,393)	(4,656)	(3,851)	(3,092)	(2,855)
Disability Benefits	(49)	(49)	(58)	(60)	(92)	(64)	(61)	(58)	(58)	(60)
Survivor Benefits <sup>2</sup>	(483)	(437)	(435)	(395)	(367)	(342)	-	-	-	-
Distributions of Contributions and Interest	(115)	(117)	(113)	(85)	(100)	(37)	(100)	(99)	(31)	(36)
Administrative Expenses	(136)	(123)	(139)	(159)	(141)	(121)	(131)	(112)	(73)	(94)
Member Reassignments		(26)	(21)			(15)				
Total Benefits and Expenses	(7,071)	(6,975)	(6,405)	(6,767)	(6,079)	(4,972)	(4,948)	(4,120)	(3,254)	(3,045)
Net Contributions / (Benefits and Expenses)	286	(182)	(22)	(548)	299	15,774	1,078	2,079	3,021	3,279
Net Investment Income / (Loss)	11,189	8,869	1,313	(71)	13,339	4,702	160	12,052	6,749	(12,951)
Net Increase / (Decrease)	11,475	8,687	1,291	(619)	13,638	20,476	1,238	14,131	9,770	(9,672)
Net Position - End of Year	\$ 131,491	\$ 120,016	\$ 111,329	\$ 110,038	\$ 110,657	\$ 97,019	\$ 76,543	\$ 75,305	\$ 61,174	\$ 51,404

#### (in thousands of dollars)

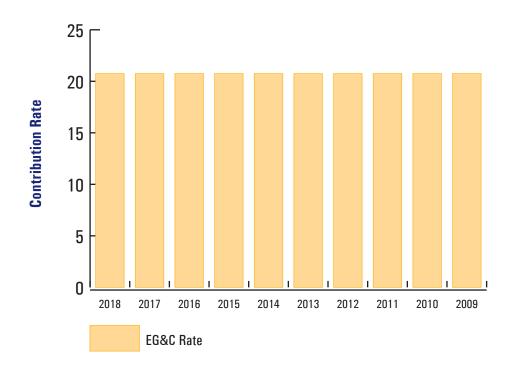




<sup>&</sup>lt;sup>1</sup>The State of Indiana contributed additional monies of \$80 thousand in 2018, \$70 thousand in 2016 and \$14,619 thousand in 2013. <sup>2</sup>Survivor benefits information is available since June 30, 2013. Prior to June 30, 2013 amounts were contained within pension and disability benefits.

Schedule of Historical Contribution Rates For the Year Ended June 30

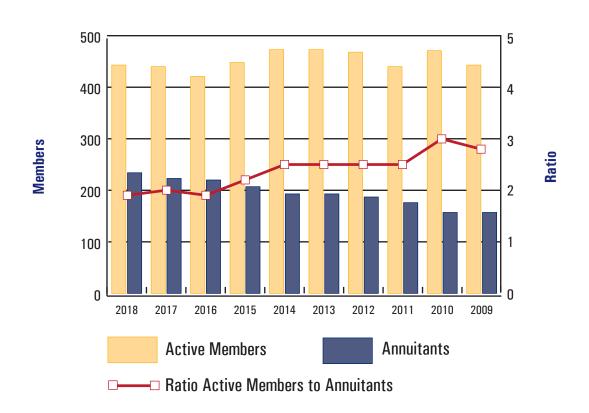
	EG&C Rate
2018	20.75 %
2017	20.75
2016	20.75
2015	20.75
2014	20.75
2013	20.75
2012	20.75
2011	20.75
2010	20.75
2009	20.75
Memo: Effective Date	January 1



#### Ratio of Active Members to Annuitants For the Year Ended June 30

	Active Members	Annuitants <sup>1</sup>	Ratio Active Members to Annuitants
2018 <sup>2</sup>	443	234	1.9
2017 <sup>2</sup>	440	223	2.0
2016 <sup>2</sup>	421	220	1.9
2015 <sup>2</sup>	448	207	2.2
2014 <sup>2</sup>	473	193	2.5
2013	473	193	2.5
2012	468	187	2.5
2011	440	176	2.5
2010	471	157	3.0
2009	443	157	2.8

<sup>&</sup>lt;sup>1</sup>Annuitants includes retirees, beneficiaries, and disabled members.



<sup>&</sup>lt;sup>2</sup>Calculated using the prior year census data, adjusted for certain activity during the fiscal year.

Schedule of Benefit Recipients by Type of Benefit Option For the Year Ended June 30, 2018<sup>1</sup>

**Number of Benefit Recipients by Benefit Option** 

Amount of Monthly Benefit (in dollars)	Retirees	Survivors	Disability	Total Benefit Recipients
\$ 1 - 500	2	11	1	14
501 - 1,000	11	21	-	32
1,001 - 1,500	19	12	1	32
1,501 - 2,000	10	2	-	12
2,001 - 3,000	81	-	1	82
Over 3,000	62			62
Total	185	46	3	234

**Retirees** — Provides a monthly benefit for retiree's life. Upon the death of the retiree, the qualified designated survivor receives 50 percent of the member's monthly benefit for the remainder of the survivor's life.

**Survivors** — Members receiving a survivor benefit in accordance with the applicable statute. The benefit ceases upon the death of the survivor.

**Disability** — Members receiving a disability benefit in accordance with the applicable statute. For EG&C, there is no minimum creditable service requirement.

<sup>&</sup>lt;sup>1</sup>Calculated using the prior year census data, adjusted for certain activity during the fiscal year.

### Schedule of Average Benefit Payments<sup>1</sup>

	Years of Credited Service													
		< 10	_	10 - 14	_	15 - 19		20 - 24		25 - 29		30+	Total	
For the Year Ended June 30, 2018 <sup>2</sup>														
Average Monthly Defined Benefit	\$	851	\$	1,421	\$	561	\$	1,020	\$	2,162	\$	2,814	\$	2,224
Average Final Average Salary	\$	51,086	\$	67,123	\$	29,132	\$	39,323	\$	52,606	\$	56,496	\$	52,758
Number of Benefit Recipients		2		4		20		20		73		115		234
For the Year Ended June 30, 2017 <sup>2</sup>														
Average Monthly Defined Benefit	\$	504	\$	1,386	\$	615	\$	999	\$	2,101	\$	2,810	\$	2,209
Average Final Average Salary	\$	33,205	\$	66,535	\$	26,878	\$	37,858	\$	51,105	\$	56,019	\$	51,549
Number of Benefit Recipients		15		1		7		19		68		113		223
For the Year Ended June 30, 2016 <sup>2</sup>														
Average Monthly Defined Benefit	\$	504	\$	-	\$	589	\$	983	\$	2,073	\$	2,746	\$	2,144
Average Final Average Salary	\$	33,205	\$	-	\$	26,025	\$	37,093	\$	50,468	\$	54,912	\$	50,294
Number of Benefit Recipients		15		-		8		21		66		110		220
For the Year Ended June 30, 2015 <sup>2</sup>														
Average Monthly Defined Benefit	\$	504	\$	-	\$	562	\$	983	\$	2,031	\$	2,729	\$	2,097
Average Final Average Salary	\$	33,205	\$	-	\$	26,025	\$	37,093	\$	48,424	\$	54,007	\$	49,010
Number of Benefit Recipients		15		-		9		21		59		103		207
For the Year Ended June 30, 2014 <sup>2</sup>														
Average Monthly Defined Benefit	\$	2,141	\$	-	\$	439	\$	886	\$	1,816	\$	2,571	\$	2,015
Average Final Average Salary	\$	58,827	\$	-	\$	22,436	\$	36,499	\$	45,830	\$	52,650	\$	47,776
Number of Benefit Recipients		14		-		11		22		54		92		193
For the Year Ended June 30, 2013														
Average Monthly Defined Benefit	\$	2,141	\$	-	\$	439	\$	886	\$	1,816	\$	2,571	\$	2,015
Average Final Average Salary	\$	58,827	\$	-	\$	22,436	\$	36,499	\$	45,830	\$	52,650	\$	47,776
Number of Benefit Recipients		14		-		11		22		54		92		193
For the Year Ended June 30, 2012														
Average Monthly Defined Benefit	\$	1,498	\$	-	\$	439	\$	923	\$	1,791	\$	2,593	\$	1,984
Average Final Average Salary	\$	-	\$	-	\$	22,436	\$	37,858	\$	45,830	\$	52,589	\$	47,203
Number of Benefit Recipients		7		-		11		23		55		91		187
For the Year Ended June 30, 2011														
Average Monthly Defined Benefit	\$	1,339	\$	-	\$	439	\$	894	\$	1,757	\$	2,507	\$	1,884
Average Final Average Salary	\$	-	\$	-	\$	22,436	\$	35,889	\$	45,638	\$	50,797	\$	45,695
Number of Benefit Recipients		8		-		11		23		54		80		176

<sup>&</sup>lt;sup>1</sup>INPRS intends to make this schedule a 10-year schedule over time. <sup>2</sup>Calculated using the prior year census data, adjusted for certain activity during the fiscal year.

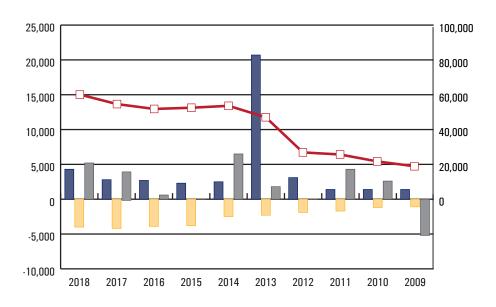
# Schedule of Changes and Growth in Fiduciary Net Position For the Year Ended June 30

(dollars in thousands)	2018 2017		2016 20			2015	2014		_	2013		2012		2011		2010		2009	
Net Position - Beginning of Year	\$	55,575	\$ 52,792	\$	53,424	\$	54,507	\$	47,920	\$	27,689	\$	\$ 26,478		22,431	\$	19,696	\$	24,613
Contributions / (Benefits and Expenses)																			
Employer Contributions <sup>1</sup>		3,014	1,486		1,440		1,063		1,174		19,443		1,839		170		170		170
Member Contributions		1,294	1,357		1,279		1,269		1,334		1,271		1,277		1,271		1,268		1,274
Miscellaneous Income		-	-		-		-		4		-		-		-		-		-
Total Contributions and Other		4,308	2,843		2,719		2,332		2,512		20,714		3,116		1,441		1,438		1,444
Pension Benefits		(3,575)	(3,390)		(3,270)		(2,898)		(2,283)		(1,982)		(1,783)		(1,372)		(1,143)		(988)
Disability Benefits		(97)	(97)		(136)		(19)		(20)		(19)		(19)		(19)		(20)		(19)
Survivor Benefits <sup>2</sup>		(181)	(137)		(87)		(78)		(44)		(39)		-		-		-		-
Distributions of Contributions and Interest		(142)	(445)		(254)		(259)		(51)		(195)		(63)		(263)		(80)		(55)
Administrative Expenses		(87)	(158)		(193)		(127)		(108)		(145)		(82)		(78)		(55)		(45)
Member Reassignments		-					-		-		-		-		(32)				-
Total Benefits and Expenses		(4,082)	(4,227)		(3,940)		(3,381)		(2,506)		(2,380)		(1,947)		(1,764)		(1,298)		(1,107)
Net Contributions / (Benefits and Expenses)		226	(1,384)		(1,221)		(1,049)		6		18,334		1,169		(323)		140		337
Net Investment Income / (Loss)		5,218	4,167		589		(34)		6,581		1,897		42		4,370		2,595		(5,254)
Net Increase / (Decrease)		5,444	2,783		(632)		(1,083)		6,587		20,231		1,211		4,047		2,735		(4,917)
Net Position - End of Year	\$	61,019	\$ 55,575	\$	52,792	\$	53,424	\$	54,507	\$	47,920	\$	27,689	\$	26,478	\$	22,431	\$	19,696

<sup>&</sup>lt;sup>1</sup>In 2013, the State of Indiana contributed additional monies of \$17,363 thousand.

#### (in thousands of dollars)





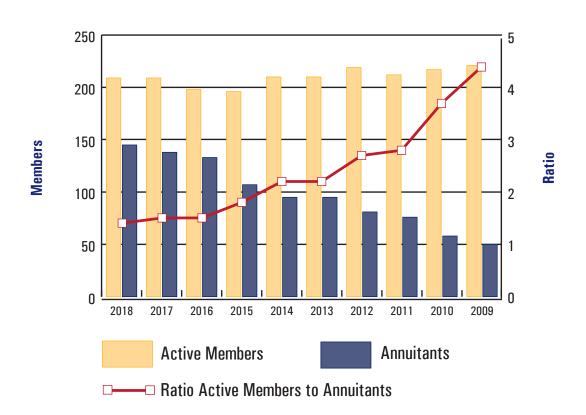
Net Position-End of Year

<sup>&</sup>lt;sup>2</sup>Survivor benefit information is available since June 30, 2013. Prior to June 30, 2013 amounts were contained within pension and disability benefits.

### Ratio of Active Members to Annuitants For the Year Ended June 30

	Active Members	Annuitants <sup>1</sup>	Ratio Active Members to Annuitants
20182	209	145	1.4
2017 <sup>2</sup>	209	138	1.5
2016 <sup>2</sup>	198	133	1.5
2015 <sup>2</sup>	196	107	1.8
2014 <sup>2</sup>	210	95	2.2
2013	210	95	2.2
2012	219	81	2.7
2011	212	76	2.8
2010	217	58	3.7
2009	221	50	4.4

<sup>&</sup>lt;sup>1</sup>Annuitants includes retirees, beneficiaries, and disabled members.



<sup>&</sup>lt;sup>2</sup>Calculated using the prior year census data, adjusted for certain activity during the fiscal year.

Schedule of Benefit Recipients by Type of Benefit Option For the Year Ended June 30, 2018<sup>1</sup>

Number of Benefit Recipients by Benefit Option

Amount of Monthly Benefit (in dollars)	Retirees	Survivors	Disability	Total Benefit Recipients
\$ 1 - 500	6	3	-	9
501 - 1,000	17	6	-	23
1,001 - 1,500	23	3	-	26
1,501 - 2,000	15	2	1	18
2,001 - 3,000	33	-	-	33
Over 3,000	35		1	36
Total	129	14	2	145

**Retirees** — Provides a monthly benefit for retiree's life. Upon the death of the retiree, the qualified designated survivor receives 50 percent of the member's monthly benefit for the remainder of the survivor's life.

**Survivors** — Members receiving a survivor benefit in accordance with the applicable statute. The benefit ceases upon the death of the survivor.

**Disability** — Members receiving a disability benefit in accordance with the applicable statute. For PARF, five or more years of creditable service is required to be eligible for a disability benefit.

<sup>&</sup>lt;sup>1</sup>Calculated using the prior year census data, adjusted for certain activity during the fiscal year.

### Schedule of Average Benefit Payments<sup>1</sup>

	Years of Credited Service													
		< 10	_	10 - 14	_	15 - 19		20 - 24		25 - 29		30+	Total	
For the Year Ended June 30, 2018 <sup>2</sup>														
Average Monthly Defined Benefit	\$	1,277	\$	1,802	\$	2,202	\$	2,651	\$	2,977	\$	2,307	\$	2,154
Average Final Average Salary	\$	69,684	\$	71,503	\$	81,176	\$	92,089	\$	108,040	\$	124,231	\$	83,440
Number of Benefit Recipients		9		51		36		27		11		11		145
For the Year Ended June 30, 2017 <sup>2</sup>														
Average Monthly Defined Benefit	\$	1,013	\$	1,735	\$	2,128	\$	2,704	\$	2,977	\$	2,423	\$	2,098
Average Final Average Salary	\$	64,922	\$	69,798	\$	77,790	\$	91,342	\$	108,040	\$	126,756	\$	81,499
Number of Benefit Recipients		10		50		32		25		11		10		138
For the Year Ended June 30, 2016 <sup>2</sup>														
Average Monthly Defined Benefit	\$	1,013	\$	1,729	\$	2,136	\$	2,665	\$	2,901	\$	2,423	\$	2,088
Average Final Average Salary	\$	64,922	\$	68,303	\$	77,439	\$	90,943	\$	108,734	\$	126,756	\$	80,869
Number of Benefit Recipients		10		47		31		24		11		10		133
For the Year Ended June 30, 2015 <sup>2</sup>														
Average Monthly Defined Benefit	\$	1,163	\$	1,498	\$	1,969	\$	2,467	\$	2,589	\$	1,693	\$	1,865
Average Final Average Salary	\$	83,896	\$	62,194	\$	73,614	\$	86,752	\$	99,686	\$	113,499	\$	76,315
Number of Benefit Recipients		8		38		27		20		8		6		107
For the Year Ended June 30, 2014 <sup>2</sup>														
Average Monthly Defined Benefit	\$	1,694	\$	1,445	\$	1,875	\$	2,340	\$	2,626	\$	2,187	\$	1,843
Average Final Average Salary	\$	77,001	\$	54,908	\$	71,821	\$	83,707	\$	103,220	\$	110,167	\$	72,709
Number of Benefit Recipients		28		22		22		14		5		4		95
For the Year Ended June 30, 2013														
Average Monthly Defined Benefit	\$	1,694	\$	1,445	\$	1,875	\$	2,340	\$	2,626	\$	2,187	\$	1,843
Average Final Average Salary	\$	77,001	\$	54,908	\$	71,821	\$	83,707	\$	103,220	\$	110,167	\$	72,709
Number of Benefit Recipients		28		22		22		14		5		4		95
For the Year Ended June 30, 2012														
Average Monthly Defined Benefit	\$	1,541	\$	1,421	\$	1,874	\$	2,283	\$	2,488	\$	2,496	\$	1,821
Average Final Average Salary	\$	63,714	\$	54,908	\$	72,709	\$	83,534	\$	103,220	\$	110,167	\$	72,130
Number of Benefit Recipients		17		21		21		13		5		4		81
For the Year Ended June 30, 2011														
Average Monthly Defined Benefit	\$	1,541	\$	1,413	\$	1,831	\$	2,252	\$	2,219	\$	2,615	\$	1,774
Average Final Average Salary	\$	58,939	\$	55,721	\$	69,668	\$	79,113	\$	95,745	\$	101,967	\$	68,573
Number of Benefit Recipients		17		20		20		12		4		3		76

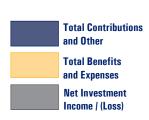
<sup>&</sup>lt;sup>1</sup>INPRS intends to make this schedule a 10-year schedule over time. <sup>2</sup>Calculated using the prior year census data, adjusted for certain activity during the fiscal year.

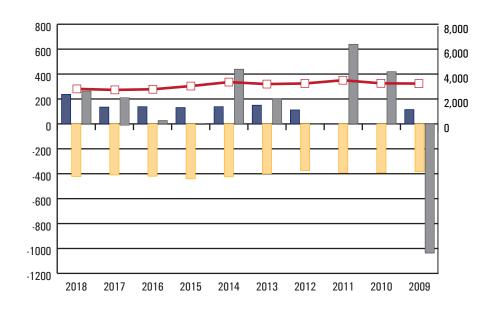
# Schedule of Changes and Growth in Fiduciary Net Position For the Year Ended June 30

(dollars in thousands)	2018	2017		2016		2015		2014		2013		2012		2011		2010		2009	
Net Position - Beginning of Year	\$ 2,865	\$	2,919	\$	3,174	\$	3,489	\$	3,337	\$	3,385	\$	3,645	\$	3,396	\$	3,368	\$	4,674
Contributions / (Benefits and Expenses)																			
Employer Contributions	237		135		138		131		138		150		112		-		-		100
Miscellaneous Income	 -		-						-		-		-				-		15
Total Contributions and Other	237		135		138		131		138		150		112		-		-		115
Pension Benefits	(303)		(304)		(311)		(331)		(324)		(321)		(335)		(337)		(353)		(360)
Disability Benefits	-		-		-		-		(2)		(3)		(3)		(3)		(3)		(3)
Survivor Benefits <sup>1</sup>	(56)		(53)		(48)		(39)		(37)		(41)		-		-		-		-
Administrative Expenses	(64)		(53)		(61)		(71)		(62)		(34)		(37)		(50)		(35)		(21)
Total Benefit and Expenses	(423)		(410)		(420)		(441)		(425)		(399)		(375)		(390)		(391)		(384)
Net Contributions / (Benefits and Expenses)	(186)		(275)		(282)		(310)		(287)		(249)		(263)		(390)		(391)		(269)
Net Investment Income / (Loss)	263		221		27		(5)		439		201		3		639		419		(1,037)
Net Increase / (Decrease)	77		(54)		(255)		(315)		152		(48)		(260)		249	_	28		(1,306)
Net Position - End of Year	\$ 2,942	\$	2,865	\$	2,919	\$	3,174	\$	3,489	\$	3,337	\$	3,385	\$	3,645	\$	3,396	\$	3,368

Survivor benefit information is available since June 30, 2013. Prior to June 30, 2013 amounts were contained within pension and disability benefits.

#### (in thousands of dollars)



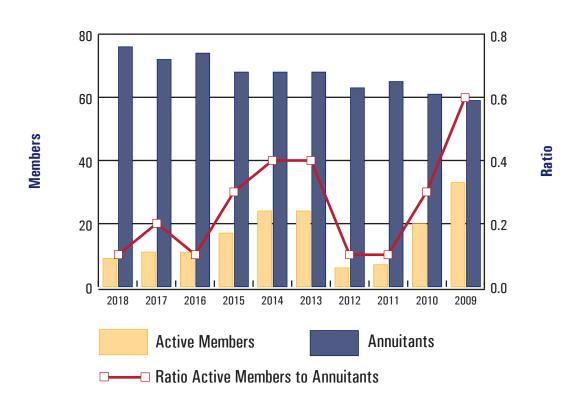




#### Ratio of Active Members to Annuitants For the Year Ended June 30

Active Members	Annuitants <sup>1</sup>	Ratio Active Members to Annuitants
9	76	0.1
11	72	0.2
11	74	0.1
17	68	0.3
24	68	0.4
24	68	0.4
6	63	0.1
7	65	0.1
20	61	0.3
33	59	0.6
	9 11 17 24 24 6 7 20	Members         Annuitants¹           9         76           11         72           11         74           17         68           24         68           24         68           6         63           7         65           20         61

<sup>&</sup>lt;sup>1</sup>Annuitants includes retirees, beneficiaries, and disabled members.



<sup>&</sup>lt;sup>2</sup>Calculated using the prior year census data, adjusted for certain activity during the fiscal year.

Schedule of Benefit Recipients by Type of Benefit Option For the Year Ended June 30, 2018<sup>1</sup>

Number of Benefit Recipients by Benefit Option

Amount of Monthly Benefit (in dollars)	Retirees	Survivors	Disability	Total Benefit Recipients
\$ 1 - 500	36	16	-	52
501 - 1,000	21	2	-	23
1,001 - 1,500	1	-	-	1
1,501 - 2,000	-	-	-	-
2,001 - 3,000	-	-	-	-
Over 3,000 _				
Total _	58	18		76

**Retirees** — Provides a monthly benefit for retiree's life. Upon the death of the retiree, the qualified designated survivor receives 50 percent of the member's monthly benefit for the remainder of the survivor's life.

**Survivors** — Members receiving a survivor benefit in accordance with the applicable statute. The benefit ceases upon the death of the survivor.

**Disability** — Members receiving a disability benefit in accordance with the applicable statute. For LE DB, five or more years of creditable service is required to be eligible for a disability benefit.

<sup>&</sup>lt;sup>1</sup>Calculated using the prior year census data, adjusted for certain activity during the fiscal year.

### Schedule of Average Benefit Payments<sup>1</sup>

	Years of Credited Service										
		< 10	_	10 - 14	_	15 - 19		20 - 24	 25 - 29	30+	Total
For the Year Ended June 30, 2018 <sup>2</sup>											
Average Monthly Defined Benefit <sup>3</sup>	\$	191	\$	388	\$	646	\$	1,008	\$ 577	\$ 784	\$ 392
Average Final Average Salary	\$	24,040	\$	26,330	\$	24,244		N/A	N/A	N/A	\$ 24,709
Number of Benefit Recipients		30		25		17		2	1	1	76
For the Year Ended June 30, 2017 <sup>2</sup>											
Average Monthly Defined Benefit <sup>3</sup>	\$	247	\$	451	\$	667	\$	1,008	\$ 577	\$ 784	\$ 413
Average Final Average Salary	\$	25,847	\$	22,383	\$	24,244		N/A	N/A	N/A	\$ 24,709
Number of Benefit Recipients		37		16		15		2	1	1	72
For the Year Ended June 30, 2016 <sup>2</sup>											
Average Monthly Defined Benefit <sup>3</sup>	\$	250	\$	451	\$	667	\$	1,008	\$ 577	\$ 784	\$ 410
Average Final Average Salary	\$	25,932	\$	22,383	\$	24,244		N/A	N/A	N/A	\$ 24,785
Number of Benefit Recipients		39		16		15		2	1	1	74
For the Year Ended June 30, 2015 <sup>2</sup>											
Average Monthly Defined Benefit <sup>3</sup>	\$	255	\$	443	\$	679	\$	1,008	\$ 577	\$ 1,568	\$ 448
Average Final Average Salary	\$	25,872	\$	22,383	\$	24,244		N/A	N/A	N/A	\$ 24,781
Number of Benefit Recipients		31		17		16		2	1	1	68
For the Year Ended June 30, 2014 <sup>2</sup>											
Average Monthly Defined Benefit <sup>3</sup>	\$	386	\$	351	\$	459	\$	629	\$ 472	\$ 669	\$ 447
Average Final Average Salary	\$	12,154	\$	19,636	\$	29,430	\$	32,868	\$ 27,614	\$ 31,870	\$ 24,372
Number of Benefit Recipients		17		21		14		7	2	7	68
For the Year Ended June 30, 2013											
Average Monthly Defined Benefit <sup>3</sup>	\$	386	\$	351	\$	459	\$	629	\$ 472	\$ 669	\$ 447
Average Final Average Salary	\$	12,154	\$	19,636	\$	29,430	\$	32,868	\$ 27,614	\$ 31,870	\$ 24,372
Number of Benefit Recipients		17		21		14		7	2	7	68
For the Year Ended June 30, 2012											
Average Monthly Defined Benefit <sup>3</sup>	\$	341	\$	356	\$	458	\$	629	\$ 699	\$ 669	\$ 461
Average Final Average Salary	\$	7,078	\$	19,636	\$	27,391	\$	32,868	\$ 27,614	\$ 31,870	\$ 27,195
Number of Benefit Recipients		8		22		16		7	3	7	63
For the Year Ended June 30, 2011											
Average Monthly Defined Benefit <sup>3</sup>	\$	341	\$	348	\$	448	\$	563	\$ 699	\$ 645	\$ 456
Average Final Average Salary	\$	7,078	\$	18,880	\$	30,641	\$	32,804	\$ 27,614	\$ 32,151	\$ 28,439
Number of Benefit Recipients		8		21		15		10	3	8	65

<sup>&</sup>lt;sup>1</sup>INPRS intends to make this schedule a 10-year schedule over time.
<sup>2</sup>Calculated using the prior year census data, adjusted for certain activity during the fiscal year.
<sup>3</sup>Benefit calculations for the LE DB benefit recipients are based on years of service, not final average salary.

## **Public Employees' Defined Contribution Account**

### Schedule of Changes and Growth in Fiduciary Net Position<sup>1</sup> For the Year Ended June 30

(dollars in thousands)	2018 <sup>2</sup>			
Net Position - Beginning of Year	\$	-		
Contributions / (Benefits and Expenses)				
Member Contributions		88,052		
Transfer from Defined Benefit		2,849,380		
Total Contributions and Other		2,937,432		
Distributions of Contributions and Interest		(106,749)		
Administrative Expenses		(3,839)		
Miscellaneous Expense		(50)		
Total Benefits and Expenses		(110,638)		
Net Contributions / (Benefits and Expenses)		2,826,794		
Net Investment Income / (Loss)		40,937		
Net Increase / (Decrease)		2,867,731		
Net Position - End of Year	\$	2,867,731		

<sup>&</sup>lt;sup>1</sup>PERF DC was split from the PERF DB Hybrid plan as of January 1, 2018. INPRS intends

to make this schedule a 10-year schedule over time.

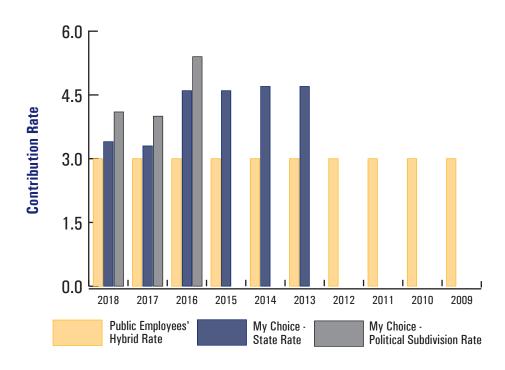
Represents only a half year of activity as the split from PERF DB Hybrid plan was effective January 1, 2018.

### **Public Employees' Defined Contribution Account**

#### Schedule of Historical Contribution Rates For the Year Ended June 30

	Public Employees'	My Choice: Retirement Saving Plan for Public Employees					
	Hybrid Members Defined Contribution Account <sup>1</sup>	State	Political Subdivision <sup>2</sup>				
2018	3.0 %	3.4 %	4.1 %				
2017	3.0	3.3	4.0				
2016	3.0	4.6	5.4				
2015	3.0	4.6	N/A				
2014	3.0	4.7	N/A				
2013	3.0	4.7	N/A				
2012	3.0	N/A	N/A				
2011	3.0	N/A	N/A				
2010	3.0	N/A	N/A				
2009	3.0	N/A	N/A				
Memo:							
Effective Date	July 1	July 1	January 1				

<sup>&</sup>lt;sup>1</sup>Represents the member's portion of the PERF DB Hybrid Rate.



<sup>&</sup>lt;sup>2</sup>Represents the maximum rate employers may provide their member's.

### **Teachers' Defined Contribution Account**

### Schedule of Changes and Growth in Fiduciary Net Position<sup>1</sup> For the Year Ended June 30

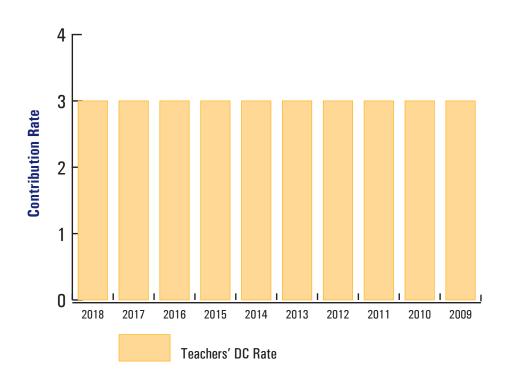
(dollars in thousands)	20182			
Net Position - Beginning of Year	\$	-		
Contributions / (Benefits and Expenses)				
Member Contributions		63,026		
Transfer from Defined Benefit		2,674,819		
Total Contributions and Other		2,737,845		
Distributions of Contributions and Interest		(37,514)		
Administrative Expenses		(1,652)		
Miscellaneous Expense		(22)		
Total Benefits and Expenses		(39,188)		
Net Contributions / (Benefits and Expenses)		2,698,657		
Net Investment Income / (Loss)		45,446		
Net Increase / (Decrease)		2,744,103		
Net Position - End of Year	\$	2,744,103		

<sup>&</sup>lt;sup>1</sup>TRF DC was split from the TRF Pre-'96 DB and TRF '96 DB plans as of January 1, 2018. INPRS intends to make this schedule a 10-year schedule over time. 
<sup>2</sup>Represents only a half year of activity as the split from TRF Pre-'96 DB and TRF '96 DB plans was effective January 1, 2018.

### **Teachers' Defined Contribution Account**

Schedule of Historical Contribution Rates For the Year Ended June 30

	Teachers' DC Rate
2018	3.0 %
2017	3.0
2016	3.0
2015	3.0
2014	3.0
2013	3.0
2012	3.0
2011	3.0
2010	3.0
2009	3.0
Memo:	
Effective Date	July 1

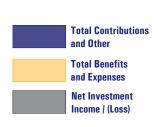


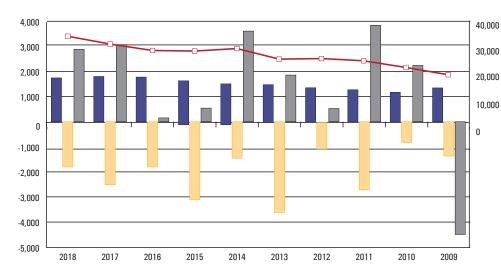
## **Legislators' Defined Contribution Fund**

# Schedule of Changes and Growth in Fiduciary Net Position For the Year Ended June 30

(dollars in thousands)	2018	2017	2016	2015	2014	2013	2012	2011	2010	2009
Net Position - Beginning of Year	\$ 30,772	\$ 28,410	\$ 28,288	\$ 29,103	\$ 25,322	\$ 25,579	\$ 24,755	\$ 22,356	\$ 19,778	\$ 24,298
Contributions / (Benefits and Expenses)										
<b>Employer Contributions</b>	1,334	1,395	-	-	-	-	-	-	-	-
Member Contributions	392	388	1,763	1,715	1,590	1,463	1,303	1,205	1,146	1,342
Miscellaneous Income	18	18	14	36	40	42	49	68	25	4
Total Contributions and Other	1,744	1,801	1,777	1,751	1,630	1,505	1,352	1,273	1,171	1,346
Distributions of Contributions and Interest	(1,794)	(2,504)	(1,794)	(3,100)	(1,452)	(3,616)	(1,033)	(2,675)	(803)	(1,325)
Administrative Expenses	(12)	(7)	(12)	(6)	(5)	(4)	(22)	(39)	(33)	(46)
Total Benefits and Expenses	(1,806)	(2,511)	(1,806)	(3,106)	(1,457)	(3,620)	(1,055)	(2,714)	(836)	(1,371)
Net Contributions / (Benefits and Expenses)	(62)	(710)	(29)	(1,355)	173	(2,115)	297	(1,441)	335	(25)
Net Investment Income / (Loss)	2,886	3,072	151	540	3,608	1,858	527	3,840	2,243	(4,495)
Net Increase / (Decrease)	2,824	2,362	122	(815)	3,781	(257)	824	2,399	2,578	(4,520)
Net Position - End of Year	\$ 33,596	\$ 30,772	\$ 28,410	\$ 28,288	\$ 29,103	\$ 25,322	\$ 25,579	\$ 24,755	\$ 22,356	\$ 19,778

#### (in thousands of dollars)



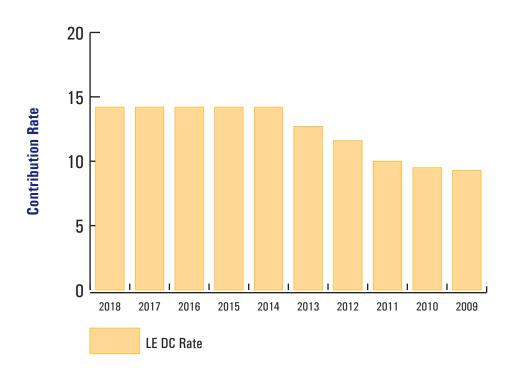


Net Position-End of Year

## **Legislators' Defined Contribution Fund**

**Schedule of Historical Contribution Rates** For the Year Ended June 30

	LE DC Rate
2018	14.2 %
2017	14.2
2016	14.2
2015	14.2
2014	14.2
2013	12.7
2012	11.6
2011	10.0
2010	9.5
2009	9.3
Memo: Effective Date	January 1



### **Special Death Benefit Fund**

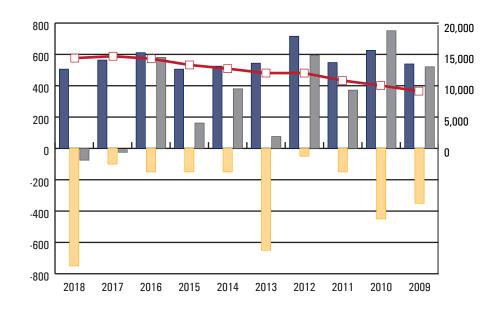
# Schedule of Changes and Growth in Fiduciary Net Position For the Year Ended June 30<sup>1</sup>

(dollars in thousands)	2018	2017	2016	2015	2014	2013	2012	2011	2010	2009
Net Position - Beginning of Year	\$ 15,098	\$ 14,651	\$ 13,609	\$ 13,091	\$ 12,336	\$ 12,366	\$ 11,105	\$ 10,335	\$ 9,408	\$ 8,710
Contributions / (Benefits and Expenses)										
Nonemployer Contributing Entity	506	564	611	506	525	544	716	548	626	539
Total Contributions and Other	506	564	611	506	525	544	716	548	626	539
Death Benefits  Administrative Expenses	(750)	(100)	(150)	(150)	(150)	(650)	(50)	(150)	(450)	(350)
·					(150)					(12)
Total Benefits and Expenses	(750)	(100)	(150)	(150)	(150)	(650)	(50)	(150)	(450)	(362)
Net Contributions / (Benefits and Expenses)	(244)	464	461	356	375	(106)	666	398	176	177
Net Investment Income / (Loss)	(75)	(17)	581	162	380	76	595	372	751	521
Net Increase / (Decrease)	(319)	447	1,042	518	755	(30)	1,261	770	927	698
Net Position - End of Year	\$ 14,779	\$ 15,098	\$ 14,651	\$ 13,609	\$ 13,091	\$ 12,336	\$ 12,366	\$ 11,105	\$ 10,335	\$ 9,408

<sup>&</sup>lt;sup>1</sup>Effective July 1, 2017, the State Employees' Death Benefit Fund and the Public Safety Officers' Special Death Benefit Fund were merged into the new Special Death Benefit Fund. The death benefit of the Local Public Safety Pension Relief Fund was also transferred to the Special Death Benefit Fund.

#### (in thousands of dollars)







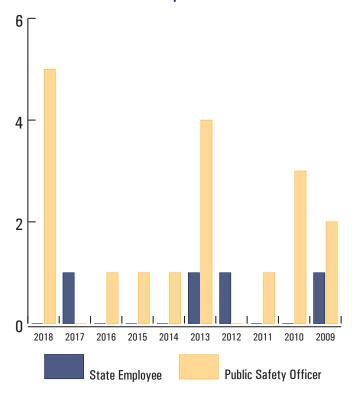
## **Special Death Benefit Fund**

### Schedule of Average Death Benefit Payments

For the Year Ended June 30, 2018	Er	State nployee¹	olic Safety Officer	For the Year Ended June 30, 2013	State ployee¹	olic Safety Officer
Average Death Benefit	\$	-	\$ 150,000	Average Death Benefit	\$ 50,000	\$ 150,000
Average Final Average Salary		N/A	N/A	Average Final Average Salary	N/A	N/A
Number of Benefit Recipients		-	5	Number of Benefit Recipients	1	4
For the Year Ended June 30, 2017				For the Year Ended June 30, 2012		
Average Death Benefit	\$	100,000	\$ -	Average Death Benefit	\$ 50,000	\$ -
Average Final Average Salary		N/A	N/A	Average Final Average Salary	N/A	N/A
Number of Benefit Recipients		1	-	Number of Benefit Recipients	1	-
For the Year Ended June 30, 2016				For the Year Ended June 30, 2011		
Average Death Benefit	\$	-	\$ 150,000	Average Death Benefit	\$ -	\$ 150,000
Average Final Average Salary		N/A	N/A	Average Final Average Salary	N/A	N/A
Number of Benefit Recipients		-	1	Number of Benefit Recipients	-	1
For the Year Ended June 30, 2015				For the Year Ended June 30, 2010		
Average Death Benefit	\$	-	\$ 150,000	Average Death Benefit	\$ -	\$ 150,000
Average Final Average Salary		N/A	N/A	Average Final Average Salary	N/A	N/A
Number of Benefit Recipients		-	1	Number of Benefit Recipients	-	3
For the Year Ended June 30, 2014				For the Year Ended June 30, 2009		
Average Death Benefit	\$	-	\$ 150,000	Average Death Benefit	\$ 50,000	\$ 150,000
Average Final Average Salary		N/A	N/A	Average Final Average Salary	N/A	N/A
Number of Benefit Recipients		-	1	Number of Benefit Recipients	1	2

<sup>&</sup>lt;sup>1</sup>Lump sum death benefit of \$100,000 paid to the surviving spouse or child(ren) of a state employee who dies in the line of duty as defined in statute (IC 5-10-11). Prior to 2014, the death benefit was \$50,000.

### **Number of Benefit Recipients**



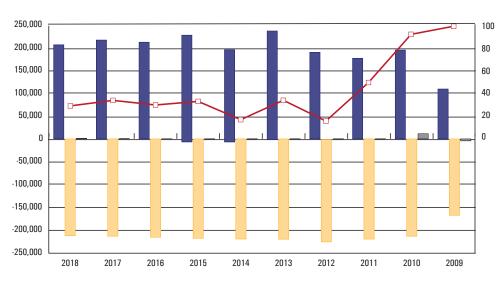
## **Local Public Safety Pension Relief Fund**

# Schedule of Changes and Growth in Fiduciary Net Position For the Year Ended June 30

(dollars in thousands)	2018	2017	2016	2015	2014	2013	2012	2011	2010	2009
Net Position - Beginning of Year	\$ 32,248	\$ 28,127	\$ 31,390	\$ 15,073	\$ 32,375	\$ 13,890	\$ 48,172	\$ 91,050	\$ 98,257	\$ 160,766
Contributions / (Benefits and Expenses)										
Nonemployer Contributing Entity	206,408	216,995	212,322	234,543	202,437	238,588	190,047	176,908	194,991	109,533
Total Contributions and Other	206,408	216,995	212,322	234,543	202,437	238,588	190,047	176,908	194,991	109,533
Death Benefits	-	(300)	-	(600)	(300)	(300)	(150)	(450)	(450)	(150)
Distributions of Custodial Funds	(212,634)	(213,256)	(215,816)	(217,663)	(219,440)	(219,814)	(224,220)	(219,425)	(213,035)	(167,279)
Administrative Expenses	(2)	(31)	(33)	(30)	(48)	(57)	(35)	(70)	(58)	(275)
Miscellaneous Expenses	(25)	(13)								
Total Benefits and Expenses	(212,661)	(213,600)	(215,849)	(218,293)	(219,788)	(220,171)	(224,405)	(219,945)	(213,543)	(167,704)
Net Contributions / (Benefits and Expenses)	(6,253)	3,395	(3,527)	16,250	(17,351)	18,417	(34,358)	(43,037)	(18,552)	(58,171)
Net Investment Income / (Loss)	1,358	726	264	67	49	68	76	159	11,345	(4,338)
Net Increase / (Decrease)	(4,895)	4,121	(3,263)	16,317	(17,302)	18,485	(34,282)	(42,878)	(7,207)	(62,509)
Net Position - End of Year	\$ 27,353	\$ 32,248	\$ 28,127	\$ 31,390	\$ 15,073	\$ 32,375	\$ 13,890	\$ 48,172	\$ 91,050	\$ 98,257

#### (in thousands of dollars)





Net Position-End of Year

### **Local Public Safety Pension Relief Fund**

### Schedule of Average Death Benefit Payments<sup>1</sup>

For the Year Ended June 30, 2018 <sup>2</sup>		For the Year Ended June 30, 2013	
Average Death Benefit	N/A	Average Death Benefit	\$ 150,000
Average Final Average Salary	N/A	Average Final Average Salary	N/A
Number of Benefit Recipients	N/A	Number of Benefit Recipients	2
For the Year Ended June 30, 2017		For the Year Ended June 30, 2012	
Average Death Benefit	\$ 150,000	Average Death Benefit	\$ 150,000
Average Final Average Salary	N/A	Average Final Average Salary	N/A
Number of Benefit Recipients	2	Number of Benefit Recipients	1
For the Year Ended June 30, 2016		For the Year Ended June 30, 2011	
Average Death Benefit	\$ -	Average Death Benefit	\$ 150,000
Average Final Average Salary	N/A	Average Final Average Salary	N/A
Number of Benefit Recipients	-	Number of Benefit Recipients	3
For the Year Ended June 30, 2015		For the Year Ended June 30, 2010	
Average Death Benefit	\$ 150,000	Average Death Benefit	\$ 150,000
Average Final Average Salary	N/A	Average Final Average Salary	N/A
Number of Benefit Recipients	4	Number of Benefit Recipients	3
For the Year Ended June 30, 2014		For the Year Ended June 30, 2009	
Average Death Benefit	\$ 150,000	Average Death Benefit	\$ 150,000
Average Final Average Salary	N/A	Average Final Average Salary	N/A
Number of Benefit Recipients	2	Number of Benefit Recipients	1

<sup>1</sup>Lump sum death benefit of \$150,000 paid to the surviving spouse or child(ren) of a member of the 1977 Fund who dies in the line of duty as defined in statute (IC 36-8-8-20). If there is no surviving spouse or child(ren), the benefit is paid to the parent(s).

<sup>2</sup>Effective July 1, 2017 the death benefit was combined into the Special Death Benefit Fund.

### **Number of Benefit Recipients**

