

2022 ANNUAL COMPREHENSIVE FINANCIAL REPORT

For the Fiscal Year Ended June 30, 2022



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



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

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

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

FUNDS MANAGED BY INPRS

ABBREVIATIONS USED

Defined Benefit

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

Defined Contribution

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

Other Postemployment Benefit

14. Special Death Benefit Fund
15. Retirement Medical Benefits Account Plan

Custodial

16. Local Public Safety Pension Relief Fund

DB Fund

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

DC Fund

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

OPEB Fund

- SDBF
RMBA

Custodial Fund

- LPSPR

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\$36.1 Billion

Fair value of defined benefit assets

\$6.0 Billion

Fair value of defined contribution assets

-6.59%

Annualized time-weighted rate of return on defined benefit investments





August 26, 2022

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 and a summary of recent developments for the fiscal year ended June 30, 2022.

Market Environment

The broad story was a tale of two halves over the fiscal year, as global markets delivered mildly positive returns in the latter half of 2021, with below-average volatility, spurred by easy monetary policy, pandemic reopening demand, and a resurgence in economic growth. The reopening story painted a more optimistic picture in advanced economies, while emerging economies struggled due to less access to quality vaccines and more stringent pandemic lockdown measures, specifically within China. However, this optimism began to fade as inflation surged and central banks turned more hawkish.

The first half of 2022 proved to be an incredibly different environment from what was experienced during 2021. The persistence of inflation was a driving narrative, as the supply shocks coming from Russia’s invasion of Ukraine and supply chain issues from China’s continued zero-covid policy accelerated already fast price growth. Central banks, keen to lower inflation, reacted more aggressively as a result. The quick, but relatively small, tightening cycle hurt both equities and bonds alike. Nearly all asset classes have produced losses year-to-date—a somewhat rare occurrence which left most diversified portfolios materially in the red. The spur of tightening also increased fears of recession and possibly stagflation, as inflation ceased to moderate (U.S. headline CPI hit 9.1% in June—a four-decade high).

U.S. Equity

While the S&P 500 delivered a fantastic 11.7% return in the second half of 2021, the first half of 2022 saw a significant reversal of -20%, qualifying as a technical market correction. In an effort to curb four-decade high inflation within the U.S., the Federal Reserve raised their policy rate by 25 bps, 50 bps, and 75 bps at their respective March, May, and June meetings. It’s important to note that although the pace of rate hikes has been rapid compared to most previous tightening cycles, the overall magnitude of tightening has been small.

Report on Investment Activities, continued

Higher interest rates have diminished the present value of cash flows further out in the future, hitting growth-orientated sectors the hardest (Consumer Discretionary -32.8%, Communication Services -30.2%, Information Technology -27.0% YTD).

Investors began recognizing the potential for recession in the second quarter of 2022, as economic data indicated a slowdown alongside Federal Reserve tightening. Persistent inflation in the face of multiple rate hikes impacted company revenues and profits. On the sales front, declines in real purchasing power slashed consumer sentiment and impacted discretionary spending. With regard to corporate profits, higher expenses, particularly for companies unable to pass through prices, have resulted in earnings compression (MSCI U.S. Profit Margins down from 12.9% in December 2021 to 12.2% in June 2022). Ultimately, U.S. equities have faced a tough environment in the first half of 2022, with the S&P 500 falling 20.0% as of June 30th.

Briefly looking at size and style, the Value factor outperformed the Growth factor during the fiscal year (Russell 1000 Value -7.4%, Russell 1000 Growth -19.0%). The Russell 1000 Value Index has declined -12.9% versus -28.1% for the Russell 1000 Growth Index year-to-date. As expected, rising rates inflicted more pain on duration-sensitive equities. From a size perspective, small-cap equities underperformed significantly during the fiscal year (Russell 2000 -25.2%, Russell 1000 -13.0%).

International Equity

International developed equities lagged U.S. equities over the fiscal year, as the MSCI EAFE Index returned -17.8% relative to the S&P 500 -10.6% return. Dollar strength hurt U.S. investors with unhedged foreign currency exposure, as the Bloomberg Dollar Spot Index advanced 10.3% during the period. Despite the underperformance over the full fiscal year, both developed and emerging market equities outperformed U.S. shares on a year-to-date basis through June 30th, as the MSCI EAFE and MSCI EM Indices returned -19.6% and -17.6%, respectively.

Emerging market equities underperformance during the fiscal year was primarily due to the large drop in Chinese equities (MSCI China -31.8%), as the country locked down major cities and cracked down on sectors including technology, education, and real estate. This narrative switched gears during the first half of 2022, as news of potential easing of government restrictions and the reopening of several large cities boosted share prices of the largest country constituent in the MSCI EM Index (35.4%). While being the worst performer over the full fiscal year, emerging market equities ended the first half of 2022 as the best performing market.

Developed economies faced a similar equity environment to that of the United States. Positive performance in the second half of 2021 due to reopening growth was reversed in the first half of 2022, as rising inflation was amplified by Russia's invasion of Ukraine in late February. Ensuing sanctions against Russian petroleum exports from the West squeezed energy prices upward, forcing the Bank of England and European Central Bank to shift gears in terms of monetary policy. The MSCI EAFE Index fell -19.6% over the year-to-date, wiping out the 2.3% gain seen during the second half of 2021. International developed equities continue to be challenged, as the energy crisis escalates,



Report on Investment Activities, continued

and consumer strength remains less resilient than that of the U.S.

Fixed Income

Core fixed income suffered losses of -10.3% over the full fiscal year (BBgBarc U.S. Aggregate), though losses occurred in the first half of 2022. All eyes have been on inflation, which has forced central bankers to tighten conditions while attempting to avoid pushing their economies into recession. Rate hikes and forward guidance from central banks have hammered equity and bond markets alike, created a rare environment of sharp losses across both asset classes.

The magnitude of expected rate hikes has jumped materially since late 2021. During December 2021, Fed funds futures contracts suggested the Fed Funds Rate would end 2022 at 0.82% (only three 25 bps rate hikes expected). By the end of March 2022, markets were pricing in a total of *nine* 25 bps rate hikes. This placed the implied Fed Funds Rate at 2.39% by the end of 2022. The trend continued in Q2, as inflation remained persistent. The Federal Reserve pushed through an additional 50 bps hike in May and a 75 bps hike in June (the largest single meeting hike since 1994). Going forward, markets are pricing in an additional seven rate hikes (not including the six previously implemented) by the end of 2022, bringing the year-end implied rate in line with the Fed's expectation of 3.4%. Many countries currently face similar problems, as inflation remains a challenge.

The impact of policy tightening on duration-sensitive assets has been significant. Performance was negative across all fixed income asset classes over the year-to-date, as rates jumped from historically low levels. The Bloomberg Global Treasury Index returned -14.8% in dollar terms over the year-to-date. In the U.S., the Bloomberg Universal Index suffered its worst quarterly loss in Q1 2022—down -6.1%—while the Bloomberg Aggregate Index fell -5.9% (its third worst quarterly loss, dating back to 1976). Performance during Q2 was also negative, with the Universal and Aggregate Indices down -5.1% and -4.7%, respectively. Longer duration assets underperformed. The Bloomberg U.S. Long Treasury Index fell -21.3% year-to-date, compared to the -3.0% decline of the Bloomberg U.S. Treasury 1-3 Year index.

Looking at credit, spreads significantly widened over the course of 2022. Investment grade spreads widened by 63 bps, moving from 0.92% to 1.55% at the end of June. High yield spreads also jumped, starting the year at 283 bps before moving to 569 bps over the same period. Spread movements widely reflected the risk off tone and growing concerns over a slowing economy. Despite spread expansion, default rates for par weighted U.S. high yield and bank loans ended Q2 at 0.76% and 0.74%—far below the longer-term historical averages of 3.2% and 3.1%. The variable rate characteristic of bank loans helped as rates rose, resulting in bank loan outperformance over high yield bonds, declining -4.4% versus -14.2% over the year-to-date. Outside of the U.S., emerging market debt struggled in both hard and local currency terms. Hard currency underperformed, with the JPM EMBI GD Index falling -20.3%, relative to the -14.5% decline of the JPM GBI-EM GD Index.

Commodities

Commodities were the best performing asset class over the fiscal year, with the Bloomberg



Report on Investment Activities, continued

Commodity Index returning 24.3%. Commodities moved higher in Q3 2021, driven by supply chain imbalances and rising signs of inflation. These gains tailed off towards the end of 2021, as signals of tighter monetary policy crimped global economic growth expectations.

The real story emerged in the first quarter of 2022, specifically following Russia’s invasion of Ukraine. Both Russia and Ukraine being large suppliers of energy and grain commodities spiked prices, propelling inflation higher. Natural gas and WTI Crude Oil prices shot up +58.4% and 38.3%, while Wheat and Corn bounced 29.6% and 26.3%, respectively. Despite the sharp tick up in prices, commodities have begun to normalize, as recession fears have cut demand forecasts, shipping costs have moved down, and supply chain pressures have started to ease.

Outlook

A key question going forward is whether global central banks will be able to bring inflation under control without dragging their respective economies into recession. This task is perhaps more difficult than past inflationary regimes, given the war in Ukraine, lockdowns in China, and acute pandemic-related supply shortages which have led to high prices that perhaps cannot be brought down via traditional central bank policy. Within the U.S, the possibility of a “soft landing” for the economy seems to be off the table, as the economy appears to be in recession, or at least very close to one. Uncertainty remains high, although the recent drawdown of most major asset classes has reversed the “low return environment” dynamic that has been common for nearly a decade. Many asset classes now appear to offer robust yields and prospective returns relative to past years—perhaps a silver lining in an environment which has proved challenging for investors with diversified portfolios.

Plan Activity

During the 2022 fiscal year, Verus and INPRS’ staff collaborated on several different initiatives. Together we worked on an active risk budgeting project to determine the appropriate amount of active risk required to meet portfolio objectives. Key considerations were to standardize the decomposition of active risk/return and establish a defined benefit plan limit for active risk and public markets active risk target. The project will continue into the 2023 fiscal year to create the necessary infrastructure to implement the applicable limit and target.

Verus and INPRS also began conducting an in-depth review of the portfolio’s public equity structure. The goal of the project is to determine the appropriate public equity allocation by capitalization, active versus passive mix, and style moving forward. While significant progress has been made, the project will be finalized in the 2023 fiscal year.

As part of continuing education, Verus was pleased to provide an overview of Environmental, Social, and Governance. This resulted in a draft revision to the Investment Policy Statement. Additional ongoing work involved public market asset class reviews, annual fee benchmarking, investment and operational due diligence on existing managers, and natural collaboration with staff on a variety of smaller projects and issues.



Report on Investment Activities, continued

Conclusion

Verus values our relationship with INPRS and we appreciate the privilege of working with the Board and staff in designing policies and supporting decisions aimed at meeting the Plan's investment objectives. We remain confident in the direction of the Portfolio given the System's demographics, fiscal strength, and well-designed investment strategy. We look forward to continuing our partnership as we navigate ever-changing capital markets.

Sincerely,



Jeffrey J. MacLean
Chief Executive Officer

Past performance is no guarantee of future results. This document is provided for informational purposes only and is directed to institutional clients and eligible institutional counterparties only and is not intended for retail investors. Nothing herein constitutes investment, legal, accounting or tax investment vehicle or any trading strategy. This document may include or imply estimates, outlooks, projections and other "forward-looking statements." No assurance can be given that future results described or implied by any forward looking information will be achieved. Investing entails risks, including possible loss of principal. Verus – also known as Verus Advisory™.



Report from the Chief Investment Officer

Member Visionary Team Meetings INPRS's Defined Benefit Investment Imperatives

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. Following the fiscal year 2021 Asset-Liability Study, the Board approved 6.25 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. **Maintain enough liquidity to make retirement payments on time.** 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 and without causing undue stress to the investment portfolio.

The Fiscal Year in Review (Defined Benefit Portfolio)¹

A year that started with moderate volatility and positive returns across asset classes quickly reversed course as inflation accelerated across the globe and discount rates increased. Inflationary dynamics built-up as policy makers unleashed the largest fiscal and monetary stimulus since World War II to help bridge the demand and income gap caused by the COVID-19 pandemic. As the first COVID-19 vaccines were produced in record time, demand came roaring back as the unemployment rate dropped and consumers were left with excess savings from fiscal stimulus. Supply chain issues and the Russia-Ukraine war created supply shortages across many goods and services, aiding the dramatic rise in inflation. To combat inflationary pressures, central bankers across the globe began aggressively raising rates, contrary to what market participants priced-in at the start of the year.

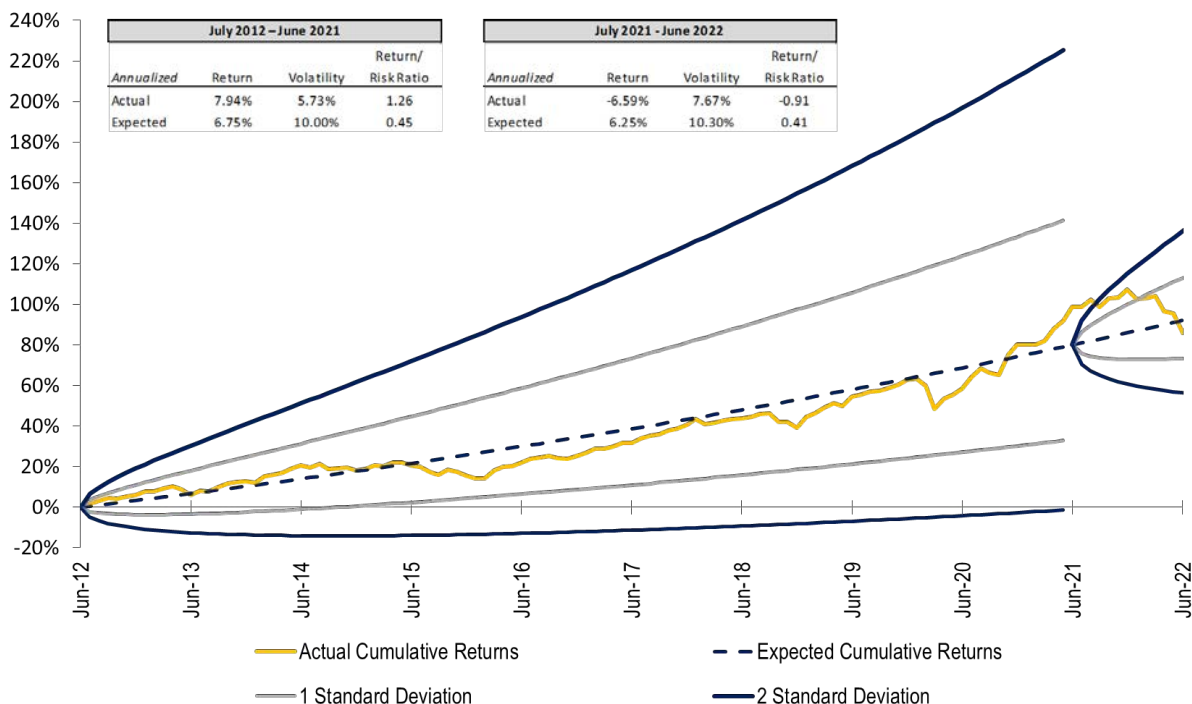
The consolidated defined benefit assets returned -6.59 percent net of all fees over the fiscal year, underperforming the 6.25 percent target rate of return, and ended with a fair value of \$36.1 billion. In the first half of the year, the portfolio continued to benefit from economies reopening and easy central bank policy, which pushed interest rates to historically low levels. As a result, each asset class had positive returns over this period, and the portfolio generated a 4.19 percent return. In the second half of the year, commodities, absolute return, real estate, and private markets anchored the portfolio as nominal bonds and equities experienced the worst start to a calendar year in decades. By limiting the severity of losses, the portfolio earned a -10.34 percent return in the second half of the year.

Based on 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 fit our first two imperatives. Developed from that research, the following chart illustrates the projected range of outcomes for INPRS's asset allocation around the blended 6.75 percent and recent Board-approved 6.25 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. After outperforming the target rate of return from the start of fiscal year 2013 through the end of fiscal year 2021, the portfolio underperformed the target rate of return during a difficult fiscal year 2022 market environment.

¹ 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

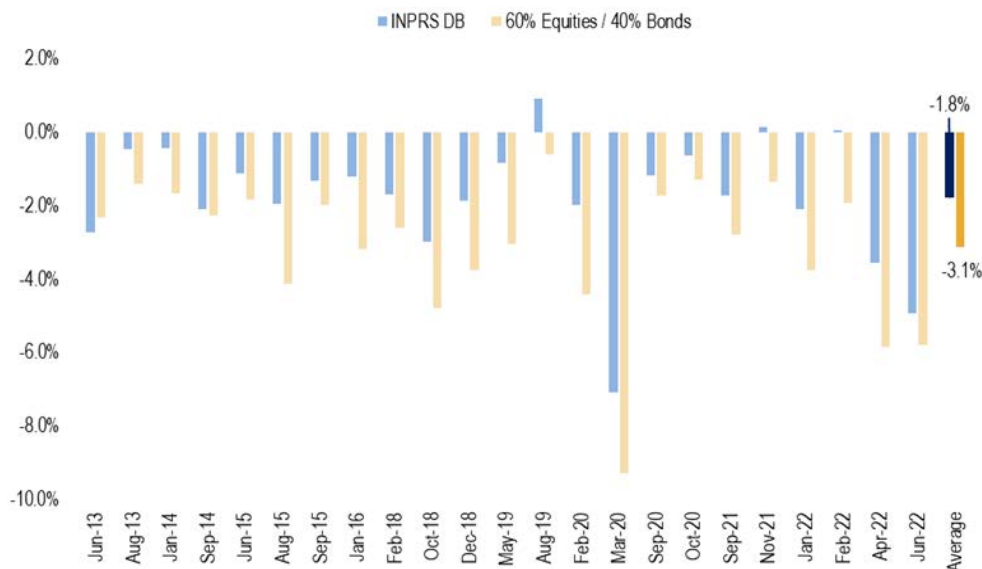
INPRS Defined Benefit Net of Fee Cumulative Return



Since inception of the revised strategy in 2012, the portfolio has generated an annual return of 5.77 percent above the return of cash. While a historically low interest rate environment caused cash returns to be low over this timeframe, the portfolio benefited from a generally strong beta environment as well as from asset allocation and manager selection decisions.

Given our long-term focus, it is important that we constantly monitor the portfolio over various market environments and evaluate whether it performed as we expected. One of the primary reasons for diversifying the portfolio was to be less impacted by the performance of equities. In the chart below, we evaluate this by looking at various historical months that global equities had a loss of 2 percent or worse since July 2012. As shown, INPRS’s defined benefit portfolio continues to hold-up well on a relative basis during nearly all of these occurrences and, consistent with our expectations, has a materially lower loss on average than a portfolio with 60 percent equities and 40 percent bonds.

Defined Benefit Performance During Equity Drawdowns >2% Since July 2012

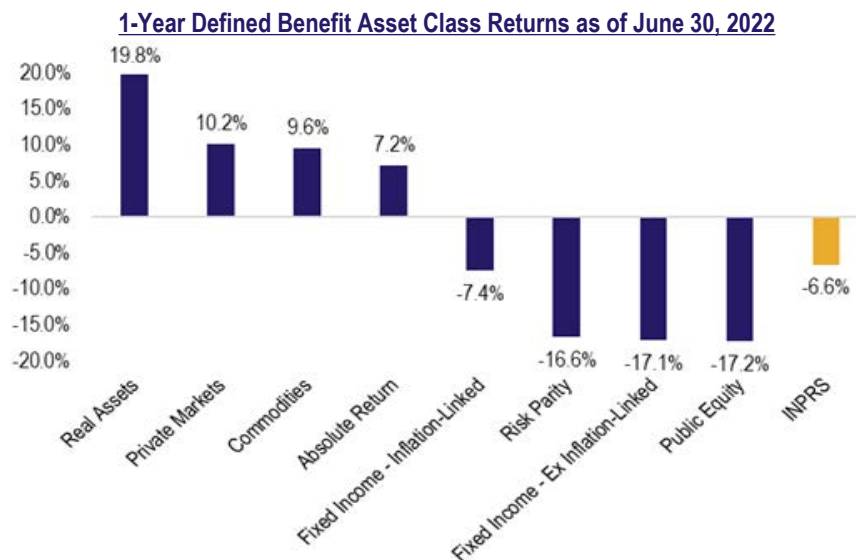


Report from the Chief Investment Officer, continued

Performance Attribution

To understand the key drivers of the asset allocation's performance over the course of the year, it is important to analyze how reality transpired relative to what the market had been pricing-in for the various asset classes to start the fiscal year. As economies continued to reopen, COVID-19 vaccines as well as unprecedented monetary and fiscal stimulus led to a sharp rebound in incomes, spending, and asset prices. Central banks kept interest rates at historically low levels while fiscal policy was putting money in the hands of individuals and businesses. As a result, the market discounted higher growth, moderate inflation, and lower interest rates for the foreseeable future. As the year progressed, demand growth, unforeseen supply shocks, and the Russia-Ukraine war accelerated inflation to levels not seen since the 1980s. The dramatic rise in the cost of goods and services resulted in central banks aggressively raising interest rates to combat the effects of inflation. This led to the market discounting higher rates and lower economic growth.

This abrupt shift in monetary policy set the stage for a difficult environment for risk assets in the back half of the year. Public equities were down 17.21 percent as inflation rose, economic growth projections weakened, and consumer sentiment fell. Fixed income (ex inflation-linked) fell 17.09 percent on the back of higher interest rates, with a stronger dollar also impacting emerging market returns. With inflation exceeding market expectations over the course of the year, real assets were the leading asset class in terms of performance, finishing the year up 19.77 percent. Commodities also continued to perform well as shortages persisted, resulting in a gain of 9.63 percent for the year. The positive returns in commodities were unable to offset the declines in equities and bonds, resulting in the balanced risk parity allocation being down 16.63 percent for the year.



In fiscal year 2022, one of the biggest stories was clearly the return of inflation after a decade of low and stable inflation within the U.S. Assets that perform well when inflation is higher than expected (e.g. commodities and inflation-linked bonds) outperformed those that perform well when inflation is lower than expected (e.g. equities and nominal government bonds). The table below shows how the fiscal year 2022 environment differed from the prevailing dynamic since 2012, which has generally favored assets that perform well when growth is higher and inflation lower than expected.

DB Public Asset Class Returns as of June 30, 2022

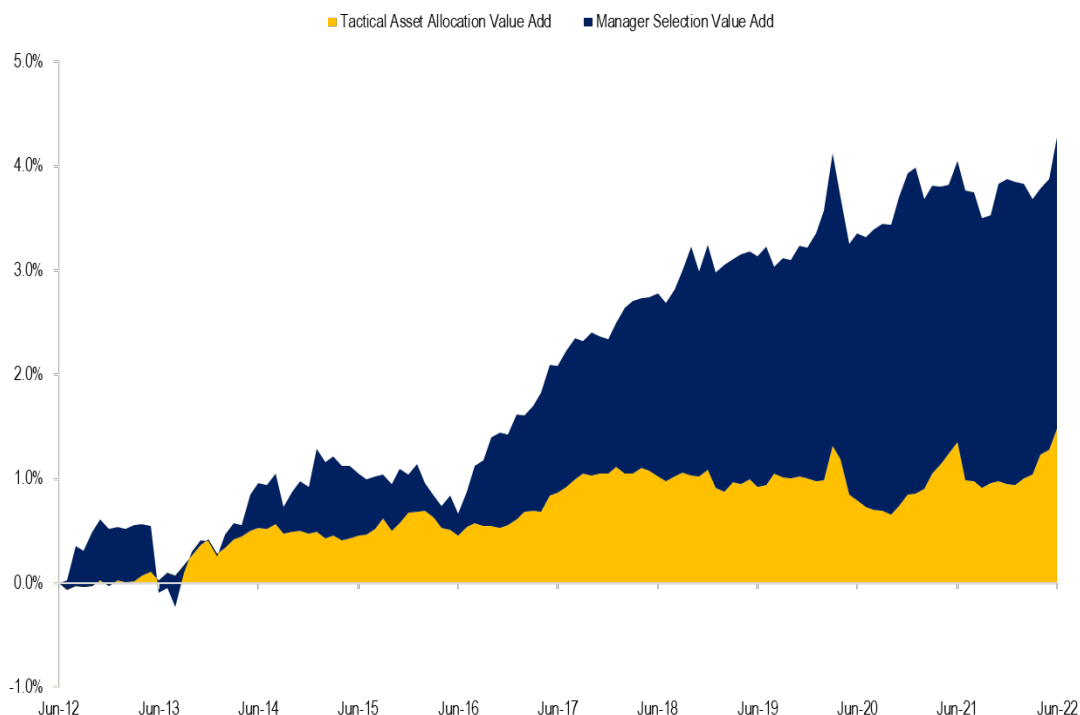
Asset Class Returns	Economic Environmental Bias	FY2022	Since July 2012
Commodities	Higher Growth/Higher Inflation	9.63%	-2.39%
Public Equity	Higher Growth/Lower Inflation	-17.21%	9.37%
Fixed Income (Inflation-Linked)	Lower Growth/Higher Inflation	-7.44%	3.01%
Fixed Income (ex Inflation-Linked)	Lower Growth/Lower Inflation	-17.09%	2.41%
Risk Parity	Balanced Across Environments	-16.63%	4.09%

Report from the Chief Investment Officer, continued

Performance Relative to the Benchmark

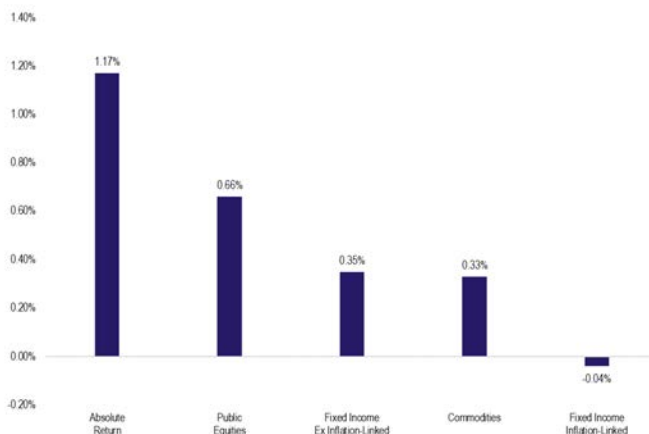
In fiscal year 2022, the investment team achieved a return that was 0.23 percent above the Passive Target w Notional benchmark, net of all fees. The benchmark is meant to reflect what performance would have been had the portfolio been at target weights in each asset class the entire year and invested 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. The outperformance generated by the investment team since July 2012 has produced approximately \$1.2 billion in added value (asset allocation + manager selection) over a portfolio of merely passive investments.

Cumulative Excess Returns over the Defined Benefit Target Allocation (Net of Fees)



Breaking that result down further, you can see that manager selection has created a large portion of the outperformance over the past ten years because most public asset classes outperformed their benchmarks.

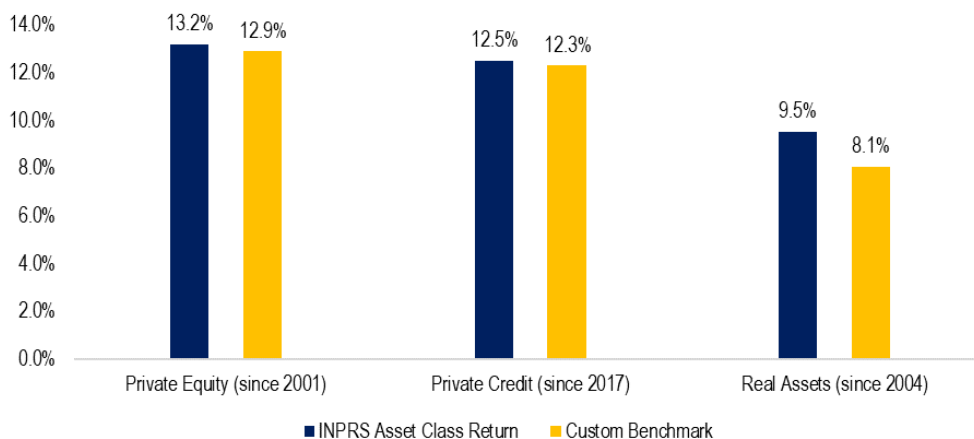
Annualized Performance Relative to Benchmarks (Public Markets) - July 2012 to June 2022



INPRS's investments in private markets and real assets are not included in the value-add chart above because the managers in these asset classes control the timing of cash flows and, thus, we believe a different measure better captures their performance relative to a benchmark (i.e. internal rate of return or IRR). However, the chart below gives some perspective on their outperformance since inception.

Report from the Chief Investment Officer, continued

Annualized Performance (IRR) Relative to Benchmarks (Private Markets) Since Inception of Each Asset Class²

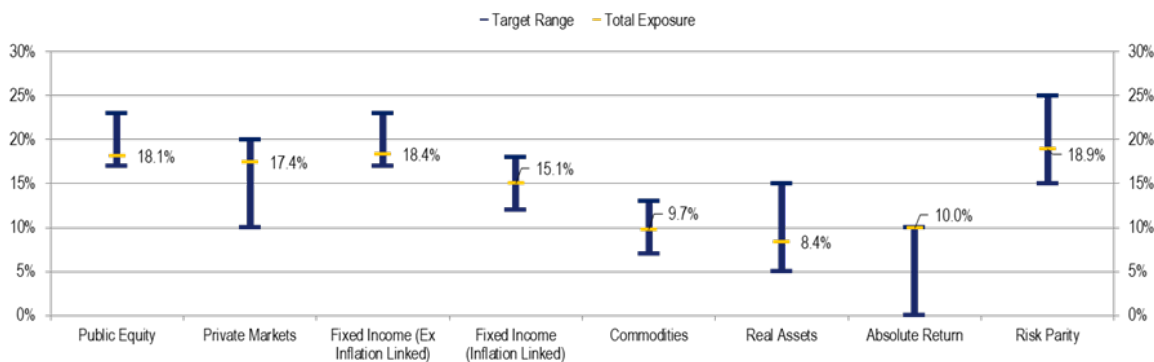


The private equity portfolio has continued to be a strong performer since inception with an annualized return of 13.20 percent since 2001, outperforming a blend of comparable public market indices, which includes small-cap equities and high yield bond indices. The private equity benchmark shown above includes the returns of these public market equivalents plus an additional 3 percent return that is meant to factor-in the illiquidity and complexity that comes with investing in the asset class². Also, the portfolio has continued to outperform the private equity universe over 10 years and since inception, as represented by the Cambridge Associates median benchmark³. The private credit portfolio is outperforming its benchmark after the team was quick to deploy capital to structured credit following the initial COVID-induced sell-off. Finally, the real estate portfolio continues to be accretive to the plan with an annualized return of 9.50 percent since 2004, outperforming its public market equivalent benchmark since inception.

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 2021, the outcome reaffirmed the path of diversification that INPRS had previously chosen and continues to pursue. The allocation as of June 30, 2022 can be found in the chart below.

Defined Benefit Asset Allocation as of June 30, 2022



² As of June 30, 2022. Based on the first capital calls made by INPRS: Private Equity inception date is 5/14/2001; Private Credit inception date is 10/17/2017; and Real Estate inception date is 2/26/2004. The Private Equity custom benchmark is comprised of the following components lagged one quarter plus 3.00%: 60% Russell 2000 Index, 20% EAFE Small Cap Index, 15% CS High Yield Index, and 5% CS Western European High Index (Hedged). The Private Credit custom benchmark is comprised of the following components plus 1.50%: 50% Credit Suisse Leveraged Loan Total Return, 33% S&P BDC Index, and 17% Credit Suisse Western European Leveraged Loan. The Real Estate custom benchmark is comprised of the following components lagged one quarter: 70% FTSE NAREIT All Equity REITS Index and 30% Barclays CMBS Index.

³ Source: INPRS's Aksia 1Q 2022 Private Equity Report. As of March 31, 2022. 10-year performance: INPRS = 14.7% and Cambridge (median) = 12.5%. Since 2001 inception: INPRS = 13.2% and Cambridge (median) = 12.3%.

Report from the Chief Investment Officer, continued

Liquidity

Given continued uncertainty around the duration and severity of inflation as well as the effects restrictive monetary policy have on economic growth, INPRS continued to prioritize liquidity in fiscal year 2022. To help monitor liquidity, the investment team maintains a liquidity measure that assesses 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 outflows (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, 2022, INPRS's liquid assets and projected inflows are 1.5 times the projected outflows over the next five years.

This acute focus on liquidity management has enabled INPRS to retain meaningful exposure to less liquid asset classes (with 35.80 percent allocated across private markets, real assets, and absolute return), each of which, in our view, serves a unique purpose within the construct of the allocation.

INPRS's Defined Contribution Investment Imperatives

Known as the Annuity Savings Account ("ASA"), My Choice: Retirement Savings Plan ("My Choice"), and Legislators' Defined Contribution Plan, 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 ASA and My Choice 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 manage their asset allocation for them by defaulting to this option, it is crucial that we 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 we maintain focus on utilizing the large asset base across the defined benefit and defined contribution plans to continually drive costs lower.

Performance Attribution

The defined contribution line-up is constructed using the basic building blocks of an asset allocation, including various equity and fixed income portfolios. As such, INPRS's investment options were influenced by the same forces mentioned in the defined benefit section above. Accelerating inflation and restrictive monetary policy dampened economic growth. As such, the small/mid cap equity fund was the largest detractor, with a 28.09 percent loss, and the best performing options were INPRS's capital preservation options (stable value and money market).

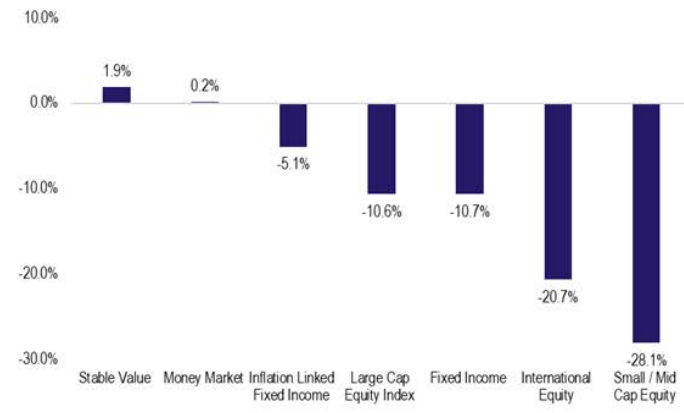
There were also interesting dynamics at play across the fixed income investment options. Since both inflation-linked bonds (e.g. U.S. treasury inflation-protected securities or TIPS) and nominal bonds (e.g. U.S. treasuries in the fixed income fund) are both backed by the federal government, investors will demand the same expected returns from each investment. Therefore, the difference between the yields on the two bonds reflects investors' inflation expectations (i.e. the breakeven inflation rate), and if actual inflation comes in above these expectations, inflation-linked bonds will outperform nominal bonds. Given the positive inflation surprises in fiscal year 2022, the inflation-linked fixed income fund was the best performing fixed income fund across the DC investment line-up with a 5.13 percent loss versus a 10.66 percent loss for the fixed income fund.

Over a longer time period going back to July 2011, each stand-alone investment option has generated strong performance (right chart below). As expected, the higher-risk equity options have been the best performers while the fixed income related options have provided steady, positive returns.

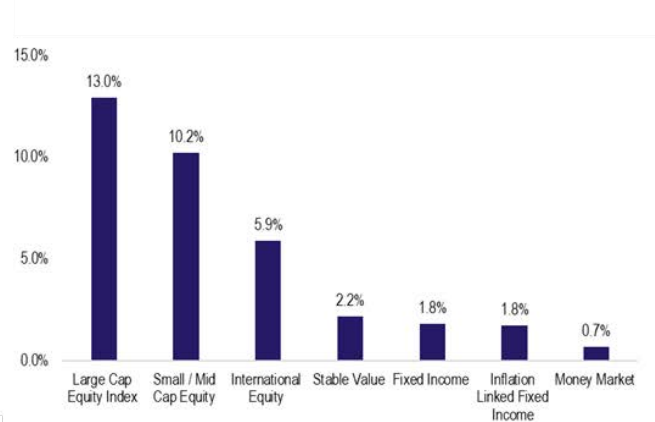
Report from the Chief Investment Officer, continued

Defined Contribution Investment Option Returns as of June 30, 2022

DC Stand-Alone Investment Options 1-Year Return (Net of Fees)



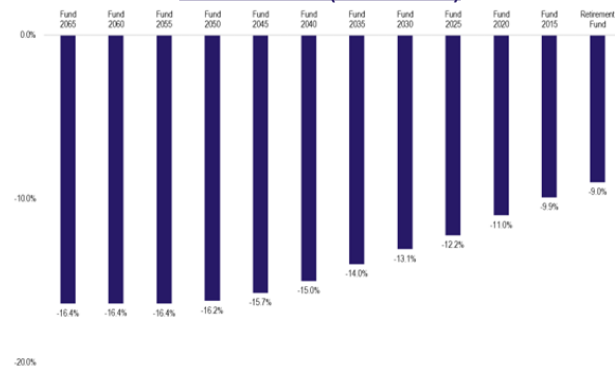
DC Stand-Alone Investment Options July 2011 – June 2022 (Net of Fees)



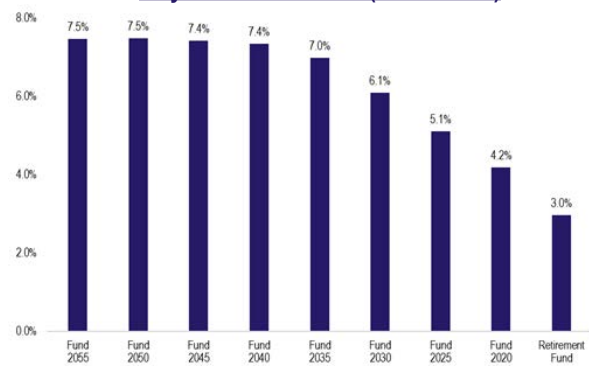
Given that INPRS's target date funds are constructed using different mixes of the INPRS stand-alone investment options, each such fund's return is merely an amalgamation of the returns shown above. As designed, the funds farther from retirement have had higher returns since 2011 due to their higher allocations to equity exposure. In fiscal year 2022, each fund had negative returns in excess of 8.99 percent due to equity and nominal bond drawdowns. The following charts illustrate these performance differences since the target date funds became INPRS's default investment option in 2011.

Defined Contribution Target Date Fund Returns as of June 30, 2022

Target Date Funds 1-Year Return (Net of Fees)



Target Date Funds July 2011 - June 2022 (Net of Fees)



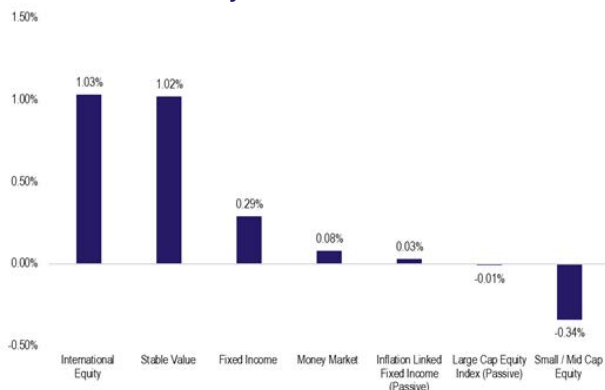
By including a moderate amount of active management within the fund line-up, the investment team was able to beat the benchmarks in four out of five of the stand-alone investment options with an active management component⁴ over the past eleven years by 0.08 to 1.03 percent annually, depending on the fund. The small/mid cap equity fund had underperformance of 0.34 percent annually over this time frame due to an overweight to small cap equities, which have underperformed mid cap equities over this period. The target date funds had outperformance across the glide path.

⁴ The following DC investment options are only passively managed: Large Cap Equity Index Fund and Inflation-Linked Fixed Income Fund.

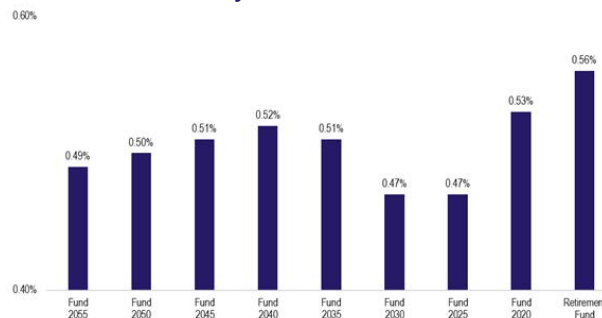
Report from the Chief Investment Officer, continued

Defined Contribution Annualized Performance Relative to Benchmarks as of June 30, 2022

DC Standalone Investment Options Outperformance vs. Benchmarks (Net of Fees) July 2011 – June 2022



Target Date Funds Outperformance vs. Benchmarks (Net of Fees) July 2011 – June 2022



Changing Tides

Fiscal year 2022, yet again, demonstrated just how difficult it is to accurately predict short-term economic and market fluctuations. After decades of historically low inflation, low interest rates, and rising globalization, the environment that manifested over the course of the year was one that many in their careers had never experienced. As humans, our natural behavioral biases can lead us to be over-confident in our predictive capabilities (especially after a decade of strong equity returns) and assume the future will look much like our most recent experience. However, fiscal year 2022 serves as a great reminder on how important it is to consider various economic and market outcomes to ensure your portfolio can weather the inevitable storms on the horizon, no matter what they are and when they last occurred.

At INPRS, the investment staff continues to conduct extensive research and stress testing in consideration of a variety of outcomes. From asset allocation to manager selection to liquidity management, each facet of what we do has its own inherent risks in different environments. We diligently prepare for the base case as well as the unexpected though. It is this risk-focus that continues to serve as the anchor for our investment process and gives us confidence that INPRS's portfolios are well-positioned to navigate the unknowable short-term in search of achieving our long-term vision.

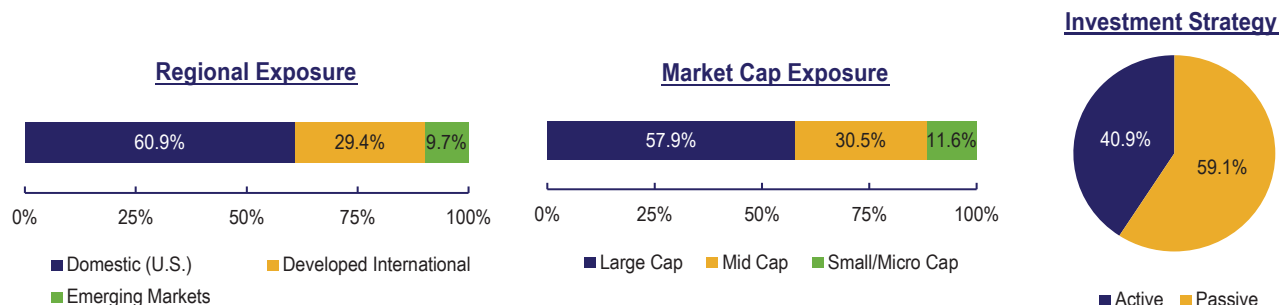
Sincerely,

Scott B. Davis, CFA
Chief Investment Officer

Asset Class Summaries

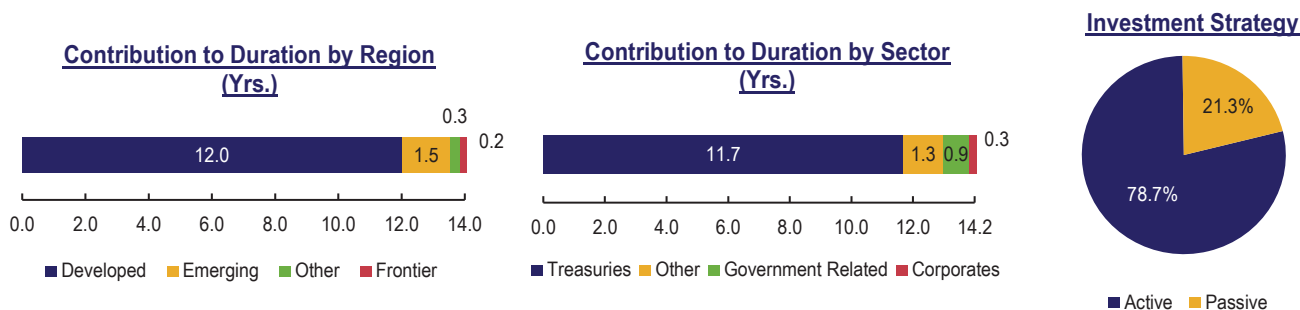
Public Equity¹

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.



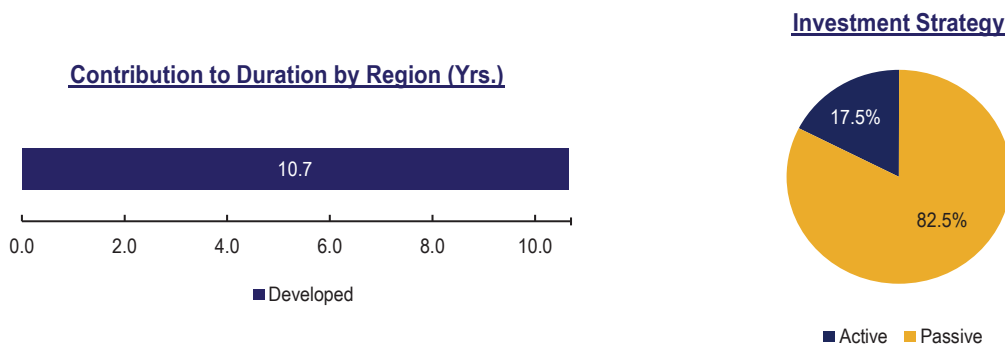
Fixed Income (ex Inflation Linked)²

The fixed income - ex inflation-linked portfolio seeks to provide 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.



Fixed Income (Inflation-Linked)²

The fixed income - inflation-linked portfolio seeks to provide 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.



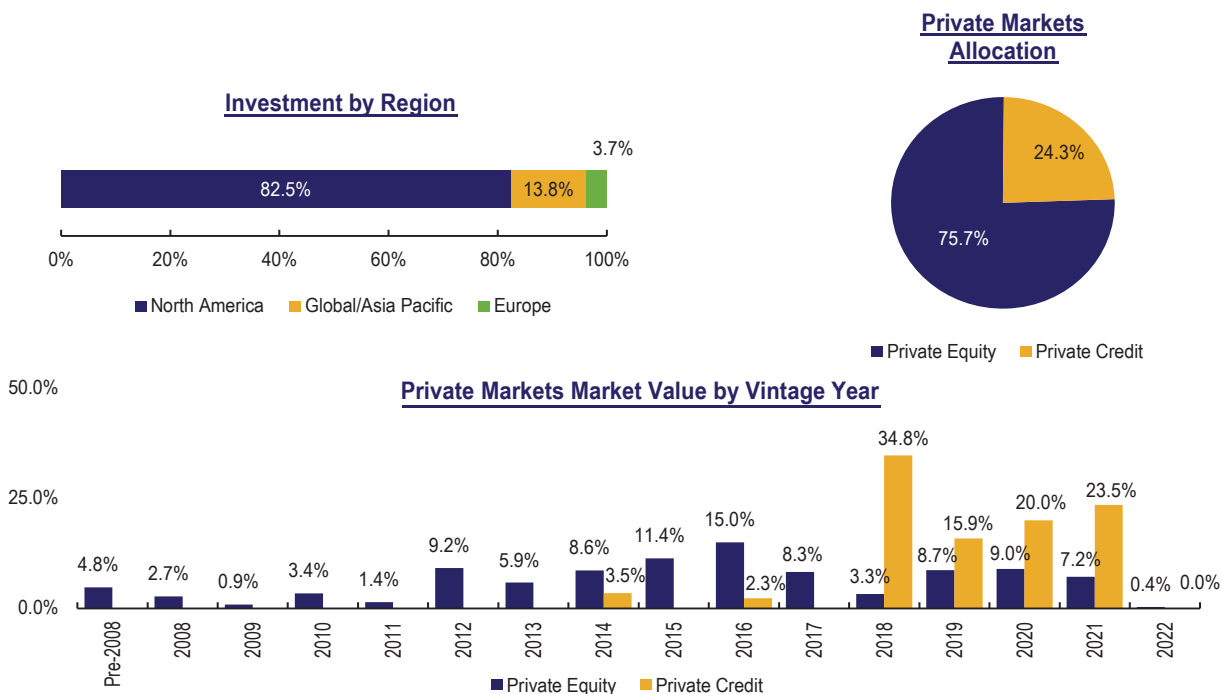
¹ Portfolio data provided by BNY Mellon, INPRS's Custodian

² Portfolio data provided by MSCI Barra One and BNY Mellon, INPRS's Custodian

Asset Class Summaries, continued

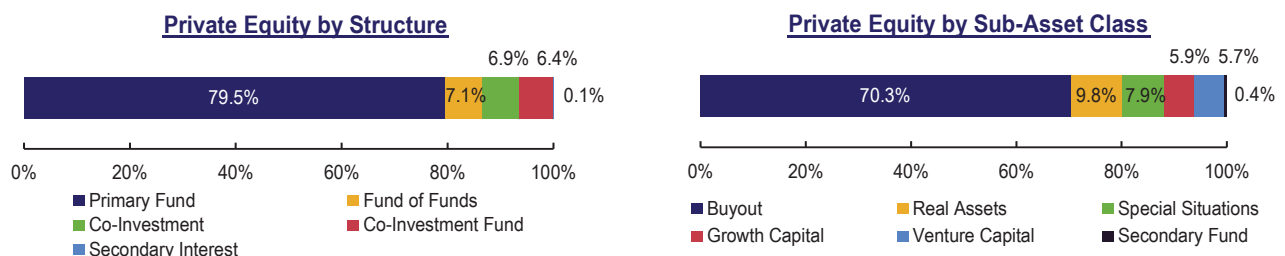
Private Markets³

The private markets portfolio is comprised of Private Equity and Private Credit. More information on these asset classes is listed below.



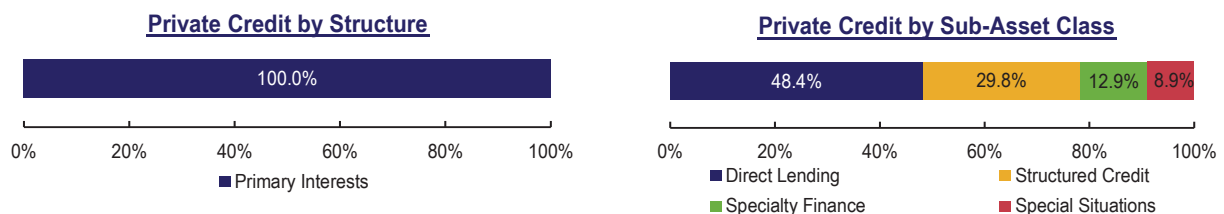
Private Equity³

The private equity portfolio seeks to provide attractive risk-adjusted returns by investing in opportunities not typically available through public markets. These investments have historically delivered returns that are higher than public markets while attempting to reduce risk through diversification.



Private Credit³

The private credit portfolio seeks to provide attractive risk-adjusted returns by acquiring the debt of private companies. Private credit, which is characterized by predictable and contractual returns, is relatively low risk compared to other alternative asset classes and offers a viable alternative to fixed income investing. These investments also seek to decrease the volatility of the investment portfolio through diversification.

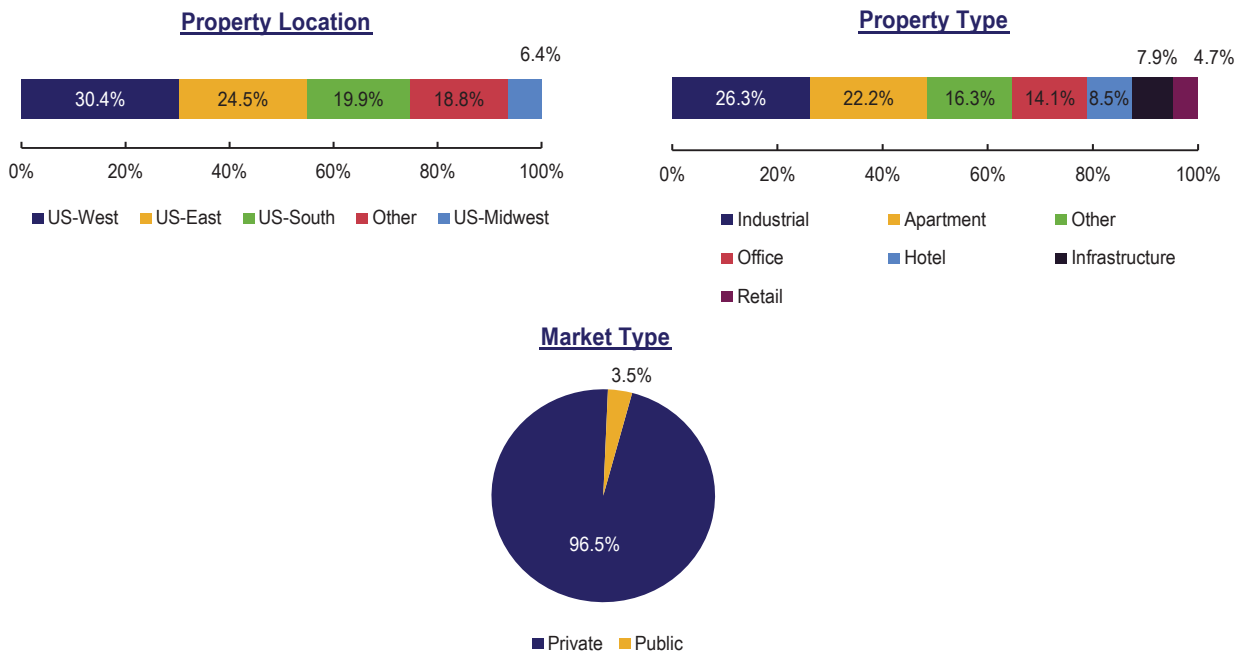


³ Portfolio data provided by Aksia, INPRS's Private Markets consultant

Asset Class Summaries, continued

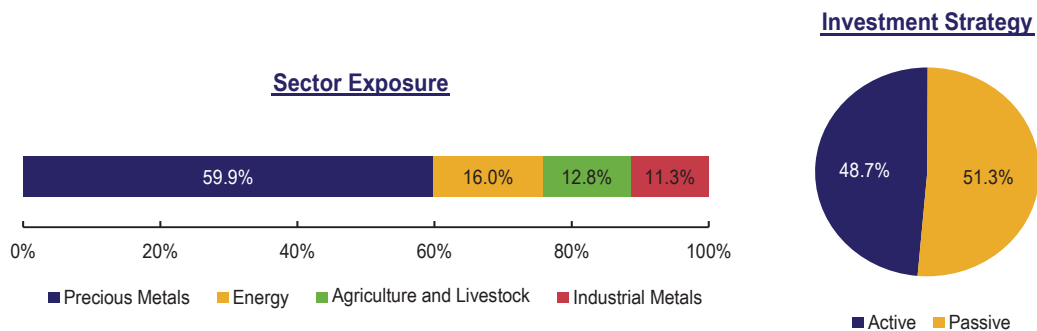
Real Assets⁴

The real assets portfolio is comprised of real estate and infrastructure and seeks to provide 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 asset investments. The real asset portfolio is mostly comprised of investments in private real estate and infrastructure partnerships, and the underlying exposures are a mix of debt and equity holdings.



Commodities⁵

The commodities portfolio seeks to provide 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.



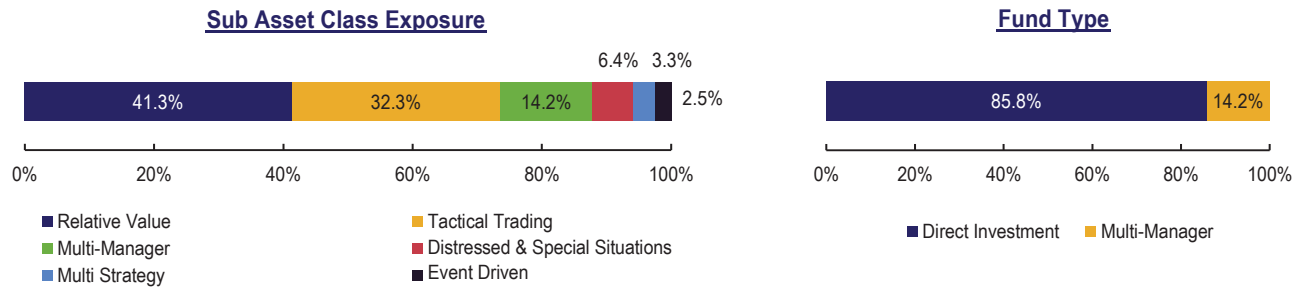
⁴ Portfolio data provided by Mercer, INPRS's Real Assets consultant

⁵ Portfolio data provided by portfolio managers and BNY Mellon, INPRS's Custodian

Asset Class Summaries, continued

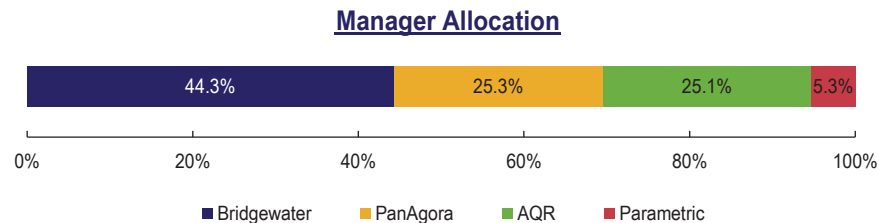
Absolute Return⁶

The absolute return portfolio seeks 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.



Risk Parity⁷

The risk parity portfolio seeks to provide consistent and high risk-adjusted rates of returns as a standalone investment through the allocation of capital that equalizes risks across a myriad of macroeconomic environments. While traditional asset allocation is highly dependent on favorable equity returns, risk parity can be considered an “all weather” portfolio to garner consistent, high returns from multiple asset classes without long-term inclination towards any single asset class.



⁶ Portfolio data provided by Aksia, INPRS's Absolute Return consultant

⁷ Portfolio data provided by BNY Mellon, INPRS's Custodian

Outline of Investment Policies

Objective and Guiding Principles

The Indiana Public Retirement System's (INPRS) Board serves as the ultimate fiduciary of INPRS. The Board establishes investment policies while the State of Indiana enacts guidelines on the investment of the System's assets. At all times, INPRS must invest its assets according to the "Prudent Investor" standard.

The Investment Policy Statement (IPS) ensures that INPRS will maintain funding for each retirement fund to pay the benefits or actuarially determined liabilities over time in a cost-effective manner. It is a dynamic document and periodic reviews are undertaken. The Investment Policy Statement was last revised on June 25, 2021.

Core tenets of the IPS are:

- Set investment policies that the Board judges to be appropriate and prudent.
- Develop clear, distinctive roles and responsibilities of the Board, staff and each service provider.
- Serve as a guide for continual oversight of the invested assets.
- Establish formal criteria to measure, monitor and evaluate the performance results of the investment managers.
- Communicate investment policies, directives and performance criteria to the external and internal stakeholders.

Consolidated Defined Benefit Assets Objectives and Structure

The Board recognizes that the allocation of defined benefit assets is the most important factor of investment returns over long periods of time. An asset liability study is conducted every five years to analyze the expected returns of various global 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. With a long-term investment focus, the current defined benefit portfolio was invested across diverse asset classes.

To maximize the probability of achieving the target rate of return over a 30-year time horizon, INPRS's Board of Trustees approved a new asset allocation on May 7, 2021 that included the increased use of leverage. The explicit leverage enables the Plan to obtain additional investment exposure, which results in an asset allocation that exceeds 100% of invested assets. Beginning in fiscal year 2022, the plan's target allocation for total exposure is 115%. Further details of INPRS's leverage policy are available in the IPS:

<u>Global Asset Class:</u>	<u>Current Target Allocation</u>	<u>Current Target Range</u>
Public Equity	20.0 %	17.0 to 23.0 %
Private Markets	15.0	10.0 to 20.0
Fixed Income - Ex Inflation-Linked	20.0	17.0 to 23.0
Fixed Income - Inflation-Linked	15.0	12.0 to 18.0
Commodities	10.0	7.0 to 13.0
Real Assets	10.0	5.0 to 15.0
Absolute Return	5.0	0.0 to 10.0
Risk Parity	20.0	15.0 to 25.0

Defined Contribution Assets Objectives and Structure

The defined contribution plans are structured to provide members with a choice of diverse investment options that offer a range of risk and return characteristics appropriate for members. Members can self-direct their investment options or leave their contributions invested in the default target date retirement fund. The investment options undergo periodic reviews by the Board. The defined contribution investments are outlined in Investment Results - Consolidated Defined Contribution Assets. Additional DC Fund Facts are available online at: <https://www.in.gov/inprs/publications/investment-fact-sheets/>.

Other Funds

Other plans under the administration of the Board include the Special Death Benefit Fund (SDBF), Retirement Medical Benefits Account Plan (RMBA) and Local Public Safety Pension Relief Fund (LPSPR). The assets of SDBF and RMBA are invested in intermediate U.S. government and U.S. credit bonds. The assets of LPSPR are invested in short-term money market instruments, including but not limited to, commercial paper and securities issued or guaranteed by the U.S. government.

Notes to the Investment Schedules

Accompanying Notes to the Actual and Benchmark Returns

- Returns are time-weighted based on calculations made by the System's custodian, Bank of New York Mellon.
- Returns are net of fees.
- Defined Benefit asset class custom benchmark descriptions are as follows:

Global Asset Class	Benchmark Description
Public Equity	MSCI All Country World Investable Market Net Index
Private Markets	Benchmark comprised of two custom benchmarks for Private Equity and Private Credit. 100% Private Equity from July 2008-September 2017 and 96% Private Equity and 4% Private Credit from October 2017-Present. October 2017 marked the inception of Private Credit. Private Equity Benchmark is comprised of the following components: 60% Russell 2000 Index, 20% MSCI EAFE Small Cap Index, 15% CS High Yield Index, and 5% Credit Suisse Western European High Yield Index (Hedged) plus 3.00%. Private Credit Benchmark is comprised of the following components : 50% CS Leverage Loan Index, 33% S&P Business Development Company ("BDC") Index, and 17% CS Western European Leveraged Loan Index plus 1.50%.
Fixed Income - Ex Inflation-Linked	Benchmark comprised of 28.6% BB US Long Government, 28.6% WGBI ex-US 25% Japan Cap (USD Hedged), 14.3% JPM GBI EM, 14.3% JPM EMBI, 5.7% CS Leveraged Loan Total Return Index, 3.6% BofA ML US High Yield Total Return Index, 3.6% BofA ML Non-Financial Developed Markets High Yield Constrained Total Return Index, 1.4% CS Western Europe Leveraged Loan Total Return Index.
Fixed Income - Inflation-Linked	Benchmark comprised of 34.5% ICE BofA ML Treasury Inflation-Linked 15+ years, 34.5% BB US Treasury Inflation Notes 1-10 years, 17.2% BlackRock: Bloomberg Global Inflation Linked 1 and 13.8% Custom weighted mix of country indices within the Barclays Capital World Government Inflation-Linked Bond Index, 100% Hedged to USD (Country weights: 45% US, 20% UK, 10% Canada, 10% France, 7% Germany, 5% Sweden, and 3% Australia).
Commodities	Benchmark comprised of 50% Bloomberg Commodity Excess Return Index and 50% Bloomberg Gold Excess Return.
Real Assets	Benchmark comprised of Real Estate Custom PME made up of the following components: 70% FTSE NAREIT All Equity REITS and 30% Barclays CMBS.
Absolute Return	Benchmark comprised of 40% HFRI Macro (Total) Index, 45% HFRI Relative Value (Total) Index, 5% HFRI Event Driven Index, 10% HFRI Fund of Funds Composite Index, and 0.0% HFRX Equity Hedge Index.
Risk Parity	Benchmark comprised of 60% MSCI ACWI IMI Index (equities) and 40% Barclays Global Aggregate Bond Index (bonds).
Cash + Cash Overlay	Benchmark comprised of 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.
Consolidated Defined Benefit Assets	The target index weights for each asset class benchmark are set by the target asset allocation. The return for Risk Parity, Real Assets, and Private Markets are equal to the asset class returns and not the benchmark.

- Defined Contribution Target Date Fund benchmarks are comprised of performance data using a passive strategy with the same asset allocation glide path of each Target Date Fund.
- Defined Contribution Target Date Fund 2065 was added to the investment line-up May 1, 2020. Historical performance for 3-year and 5-year periods is not available.
- Defined Contribution Target Date Fund 2015 was added to the investment line-up July 1, 2019. Historical performance for 3-year and 5-year periods is not available.
- Defined Contribution International Equity Fund benchmark changed to MSCI ACWI ex US IMI Index on 02/01/2019. The prior benchmark was MSCI ACWI ex US Index.

Investment Results - Consolidated Defined Benefit Assets

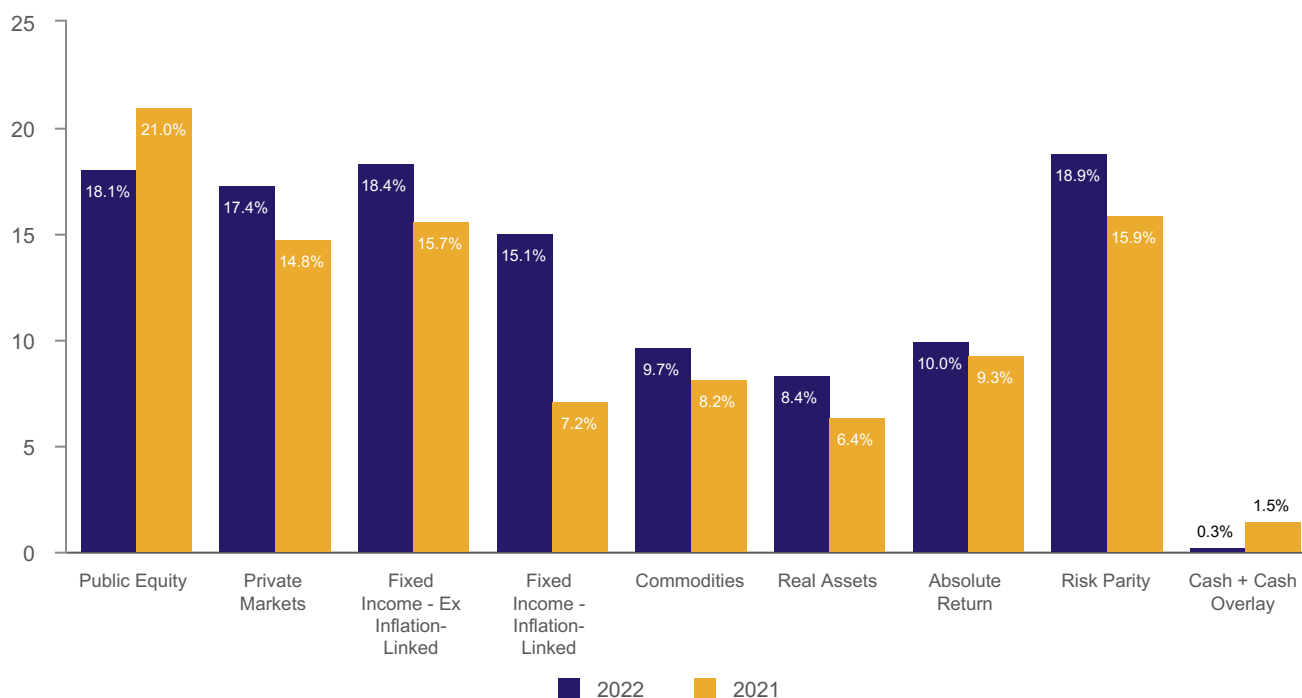
Asset Allocation Summary: June 30, 2022 Actual vs. June 30, 2021 Actual

The Total Consolidated Defined Benefit Investments shown below are grouped by global asset classes approved in the Investment Policy Statement, whereas the investments in the Statement of Fiduciary Net Position are grouped in assets and liabilities according to GASB and the security type assigned to each investment.

Global Asset Class	June 30, 2022			Allowable Range for Investments	June 30, 2021	
	Amount ¹	Percent	Target %		Amount	Percent
Public Equity	\$ 6,545,173	18.1 %	20.0 %	17.0 to 23.0 %	\$ 8,084,004	21.0 %
Private Markets	6,279,811	17.4	15.0	10.0 to 20.0	5,696,996	14.8
Fixed Income - Ex Inflation-Linked	6,627,681	18.4	20.0	17.0 to 23.0	6,065,207	15.7
Fixed Income - Inflation-Linked	5,446,942	15.1	15.0	12.0 to 18.0	2,765,232	7.2
Commodities	3,504,850	9.7	10.0	7.0 to 13.0	3,177,373	8.2
Real Assets	3,014,102	8.4	10.0	5.0 to 15.0	2,454,464	6.4
Absolute Return	3,595,968	10.0	5.0	0.0 to 10.0	3,601,879	9.3
Risk Parity	6,829,025	18.9	20.0	15.0 to 25.0	6,134,417	15.9
Cash and Cash Overlay	104,165	0.3	N/A	N/A	582,085	1.5
Consolidated Defined Benefit Assets	\$ 36,082,903	116.3 %	115.0 %		\$ 38,561,657	100.0 %

¹ The defined benefit plans target allocation for total exposure is 115%. Asset Classes are presented using exposure/notional amounts for Public Equity, Fixed Income - Ex Inflation-Linked, and Commodities.

Percent of Total Investments by Asset Class



Investment Results - Consolidated Defined Benefit Assets, continued

Time-Weighted Rate of Return by Asset Class vs. Benchmark Returns ¹

For the Year Ended June 30, 2022

Global Asset Class	Actual Return	Benchmark Return	Actual Over / (Under) Benchmark
Public Equity	(17.2)%	(16.5)%	(0.7)%
Private Markets	10.2	7.5	2.7
Fixed Income - Ex Inflation-Linked	(17.1)	(14.9)	(2.2)
Fixed Income - Inflation-Linked	(7.4)	(7.9)	0.5
Commodities	9.6	13.3	(3.7)
Real Assets	19.8	13.3	6.5
Absolute Return	7.2	1.7	5.5
Risk Parity	(16.6)	(13.4)	(3.2)
Cash and Cash Overlay	(12.5)	(11.8)	(0.7)
Consolidated Defined Benefit Assets	(6.6)%	(6.1)%	(0.5)%

Historical Time-Weighted Investment Rates of Return

For the Years Ended June 30

(dollars in thousands)	Fair Value of Assets	Rate of Return ¹	Target Return
2022	\$ 36,082,903	(6.6)%	6.25 %
2021	38,561,657	25.5	6.75
2020	30,657,831	2.6	6.75
2019	30,370,574	7.4	6.75
2018	28,475,760	9.3	6.75
2017	26,364,510	8.0	6.75
2016	24,775,551	1.2	6.75
2015	24,629,820	—	6.75
2014	24,560,323	13.7	6.75
2013	21,488,715	6.0	6.75

¹ See Accompanying Notes to the Actual and Benchmark Returns.

Investment Results - Consolidated Defined Benefit Assets, continued

Time-Weighted Rates of Return by Asset Class vs Benchmark Returns ¹

As of June 30, 2022

Global Asset Class	1-Year	Annualized	
		3-Years	5-Years
Public Equity	(17.2)%	6.6 %	7.4 %
Benchmark	(16.5)	6.0	6.7
Private Markets	10.2	18.6	18.4
Benchmark	7.5	15.9	13.2
Fixed Income - Ex Inflation - Linked	(17.1)	(2.1)	0.9
Benchmark	(14.9)	(2.1)	0.8
Fixed Income - Inflation - Linked	(7.4)	4.1	4.8
Benchmark	(7.9)	4.3	4.8
Commodities	9.6	7.6	6.9
Benchmark	13.3	6.9	5.9
Real Assets	19.8	12.8	11.8
Benchmark	13.3	8.6	8.2
Absolute Return	7.2	6.5	5.8
Benchmark	1.7	6.1	4.7
Risk Parity	(16.6)	2.1	4.5
Benchmark	(13.4)	3.5	4.8
Cash + Cash Overlay	(12.5)	(3.2)	0.9
Benchmark	(11.8)	3.9	5.3
Consolidated Defined Benefit Assets	(6.6)	6.3	7.1
Target Index	(6.1)	6.2	6.8

¹ See Accompanying Notes to the Actual and Benchmark Returns.

Investment Results - Consolidated Defined Benefit Assets, continued

Statistical Performance

As of June 30, 2022

Statistic	Annualized			
	1-Year	3-Years	5-Years	10-Years
Time-Weighted Rate of Return	(6.6)%	6.3 %	7.1 %	6.4 %
Standard Deviation	7.3	8.5	7.3	6.0
Sharpe Ratio ¹	(0.9)	0.7	0.8	1.0
Beta ²	0.4	0.4	0.4	0.4
Correlation ²	0.9	0.9	0.9	0.9

¹ Risk Free Proxy is the Citigroup 3 Month T-Bill.

² 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.

Investment Results - Consolidated Defined Contribution Assets

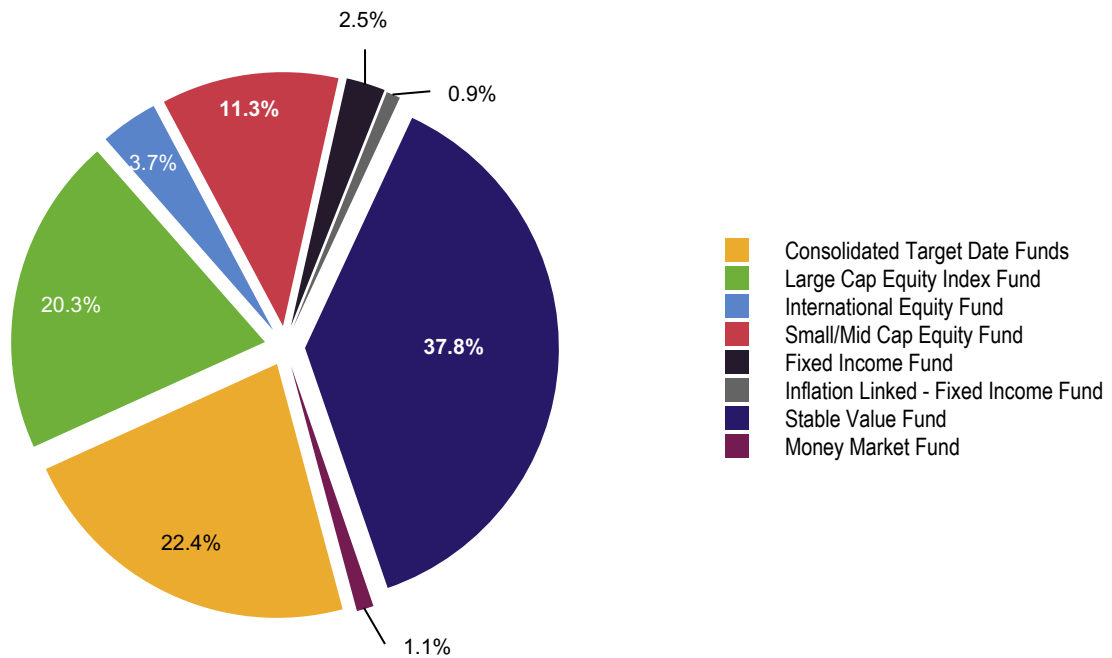
Assets by Investment Option

As of June 30, 2022

The Total Consolidated Defined Contribution Investments shown below are grouped by asset classes approved in the Investment Policy Statement, whereas the investments in the Statement of Fiduciary Net Position are grouped in assets and liabilities according to GASB and the security type assigned to each investment.

(dollars in thousands)

Investment Option	Plan Assets	Percent of Total Self-Directed Investments
Consolidated Target Date Funds	\$ 1,342,292	22.4 %
Large Cap Equity Index Fund	1,215,797	20.3
International Equity Fund	221,458	3.7
Small/Mid Cap Equity Fund	680,423	11.3
Fixed Income Fund	151,540	2.5
Inflation Linked - Fixed Income Fund	50,688	0.9
Stable Value Fund	2,268,740	37.8
Money Market Fund	68,281	1.1
Total Defined Contribution Assets	\$ 5,999,219	100.0 %



Investment Results - Consolidated Defined Contribution Assets, continued

Rate of Return by Investment Option vs. Benchmark Returns ¹

For the Year Ended June 30, 2022

Investment Option	1-Year	Annualized	
		3-Year	5-Year
Target Date Funds:			
Fund 2065	(16.4)%	5.7 %	6.3 %
2065 Fund Index	(16.2)	5.4	6.0
Fund 2060	(16.4)	5.9	6.4
2060 Fund Index	(16.2)	5.3	6.0
Fund 2055	(16.4)	5.9	6.4
2055 Fund Index	(16.2)	5.3	6.0
Fund 2050	(16.2)	6.0	6.4
2050 Fund Index	(16.0)	5.4	6.0
Fund 2045	(15.7)	5.7	6.3
2045 Fund Index	(15.6)	5.1	5.9
Fund 2040	(15.0)	5.6	6.2
2040 Fund Index	(14.9)	5.0	5.7
Fund 2035	(14.0)	5.2	5.8
2035 Fund Index	(13.9)	4.6	5.3
Fund 2030	(13.1)	4.8	5.2
2030 Fund Index	(13.0)	4.1	4.7
Fund 2025	(12.2)	4.7	4.8
2025 Fund Index	(12.2)	4.1	4.3
Fund 2020	(11.0)	4.2	4.2
2020 Fund Index	(11.0)	3.5	3.7
Fund 2015	(9.9)	3.5	3.7
2015 Fund Index	(10.1)	2.8	3.2
Retirement Fund	(9.0)	2.8	3.2
Retirement Fund Index	(9.0)	2.3	2.9
All Other Funds:			
Large Cap Equity Index Fund	(10.6)	10.6	11.3
S&P 500 Index	(10.6)	10.6	11.3
International Equity Fund	(20.7)	2.3	3.4
MSCI ACWI ex US IMI Index	(19.9)	1.6	2.6
Small/Mid Cap Equity Fund	(28.1)	4.9	6.7
Russell Small Cap Completeness Index	(28.5)	5.3	6.9
Fixed Income Fund	(10.7)	(0.7)	1.1
Bloomberg Barclays U.S. Aggregate Bond Index	(10.3)	(0.9)	0.9
Inflation - Linked Fixed Income Fund	(5.1)	3.1	3.3
Bloomberg Barclays U.S. TIPS Index	(5.1)	3.0	3.2
Stable Value Fund	1.9	2.2	2.2
Federal Reserve 3 Yr Constant Maturity	1.4	0.9	1.5
Money Market Fund	0.2	0.6	1.1
FTSE 3 Month U.S. T-Bill Index	0.2	0.6	1.1

¹ See Accompanying Notes to the Actual and Benchmark Returns.

Investment Results - Consolidated Defined Contribution Assets, continued

Historical Annual Interest Crediting Rates

For the Years Ended June 30

Interest crediting rates are used to calculate a return on contributions made by members who are exiting the fund prior to attaining eligibility for a pension benefit payment. Interest rates are approved by the Board on an annual basis.

	Annual Interest Crediting Rate			
	77 Fund	JRS	EG&C	PARF
2022	1.43 %	1.43 %	1.43 %	1.43 %
2021	1.11	1.11	1.11	1.11
2020	2.59	2.59	2.59	2.59
2019	2.78	2.78	2.78	2.78
2018	2.40	2.40	2.40	2.40
2017	1.82	1.82	1.82	1.82
2016	1.87	1.87	1.87	1.87
2015	2.69	2.69	2.69	2.69
2014	1.90	1.90	1.90	1.90
2013	5.50	—	0.28	5.50

Top 10 Holdings

For the Year Ended June 30, 2022

Equity Holdings by Fair Value ¹

(dollars in thousands)

Company	Shares	Fair Value
APPLE INC	739,431	\$ 101,095
MICROSOFT CORP	366,849	94,217
CLAROS MORTGAGE TRUST INC	3,769,290	63,135
ALPHABET INC	27,962	61,044
TAIWAN SEMICONDUCTOR MANUFACTURING	3,359,000	53,773
SAMSUNG ELECTRONICS CO LTD	1,045,022	45,876
AMAZON.COM INC	426,859	45,336
NESTLE SA	362,648	42,213
ASML HOLDING NV	68,723	32,751
SAP SE	360,263	32,741

Fixed Income Holdings by Fair Value ¹

(dollars in thousands)

Description	Coupon Rate	Maturity Date	Par Value	Fair Value
U.S. Treasury - CPI Inflation Index Bond	1.000 %	2/15/48	\$ 276,891	\$ 286,785
U.S. Treasury Bond	2.250	2/15/52	240,835	270,920
U.S. Treasury - CPI Inflation Index Bond	2.125	2/15/41	227,995	194,116
U.S. Treasury Bond	2.375	2/15/42	156,718	183,800
U.S. Treasury - CPI Inflation Index Bond	0.750	2/15/42	167,925	181,390
U.S. Treasury - CPI Inflation Index Bond	0.625	2/15/43	159,161	177,622
U.S. Treasury - CPI Inflation Index Bond	1.375	2/15/44	181,293	175,043
U.S. Treasury - CPI Inflation Index Bond	0.750	2/15/45	157,482	173,102
U.S. Treasury - CPI Inflation Index Bond	0.875	2/15/47	128,804	137,286
U.S. Treasury - CPI Inflation Index Bond	2.125	2/15/40	146,912	124,492

¹ A complete list of portfolio holdings is available upon request.

Investment Fees

Investment Management Fees

For the Year Ended June 30, 2022

Private Markets and Real Asset 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 Aksia Torrey Cove and Mercer provided additional fee information on a calendar year basis as of December 31, 2021 resulting in reported realized carried interest and expenses for Private Markets of \$164.1 million and Real Assets of \$30.7 million. Reported realized carried interest and expenses exclude funds where data was not provided by the general partners.

(dollars in thousands)

Asset Class	Fees Paid
Consolidated Defined Benefit Assets	
Public Equity	\$ 14,012
Private Markets	48,357
Fixed Income - Ex Inflation-Linked	17,859
Fixed Income - Inflation-Linked	20,388
Commodities	13,938
Real Assets	30,434
Absolute Return	97,517
Risk Parity	22,340
Cash + Cash Overlay	270
Total Consolidated Defined Benefit Assets	265,115
Defined Contribution Assets	8,271
OPEB Assets	45
Total Investment Management Fees	\$ 273,431

Brokers' Commission Fees

For the Year Ended June 30, 2022

(dollars in thousands)

Broker	Fees Paid
MORGAN STANLEY & CO INC	\$ 1,351
GOLDMAN SACHS & CO	665
NEWEDGE USA LLC	407
INSTINET CLEARING SER INC	102
MERRILL LYNCH INTL EQUITIES	80
JEFFERIES & CO INC	55
VIRTU AMERICAS LLC	46
SANFORD C BERNSTEIN & CO INC	43
GOLDMAN SACHS INTL	38
CAP INSTL SVCS INC - EQUITIES	37
Top Ten Brokers' Commission Fees	2,824
Other Brokers	1,269
Total Brokers' Commission Fees	\$ 4,093

Investment Professionals

As of June 30, 2022

Consolidated Defined Benefit Assets

Custodian

Bank of New York Mellon

Consultants

Aksia (Absolute Return)

Aksia Torrey Cove (Private Equity and Private Credit)

Mercer (Real Assets)

Verus (General: Defined Benefit)

Public Equity Managers

Altrinsic Global Advisors, LLC

Arrowstreet Capital, LP

Baillie Gifford & Company

BlackRock Inc.

Disciplined Growth Investors

Leading Edge Investment Advisors

RhumbLine Advisers

TimesSquare Capital Management, LLC

Private Markets Managers

352 Capital

400 Capital Management

A.M. Pappas & Associates

ABRY Partners

Accel-KKR

Accent Equity Partners AB

Actis Capital

Advanced Technology Ventures

Advent International

Aisling Capital

AlpInvest Partners

Apax Partners

Apollo Management

ARCH Venture Partners

Ares Management

Ascribe Capital

Austin Ventures

Bain Capital Partners

Baring Private Equity Asia (BPEA)

Bertram Capital

Black Diamond Capital Management

BlackFin Capital Partners

Blackstone Group

Bregal Sagemount

Brentwood Associates

Butterfly Equity Partners

Caltius Capital Management

Cardinal Partners

Carlyle Group

Centerfield Capital Partners

Cerberus Capital Management

Charterhouse Capital Partners

CID Capital

Cinven

Coller Capital

Columbia Capital

Crescent Capital Group

Crestview Partners

CVC Capital Partners

Doll Capital Management (DCM)

EnCap Investments

Energy Capital Partners

Escalate Capital Partners

Falcon Investment Advisors

First Reserve Corporation

Forbion Capital Partners

Fortress Investment Group

Francisco Partners

Gamut Capital Management

Gilde Buyout Partners

Globespan Capital Partners

Goldman Sachs Merchant Bank

GSO Capital Partners

GTCR Golder Rauner

H2 Equity Partners

Hamilton Lane

Hammond Kennedy Whitney & Co

Hellman & Friedman

Herkules Capital

High Road Capital Partners

Horsley Bridge

HPS Investments Partners

Insight Partners

Institutional Venture Partners (IVP)

Intermediate Capital Group (ICG)

JFM Management

Kailai Investments

Kennedy Lewis Investment Management

Khosla Ventures

Kohlberg Kravis Roberts & Co (KKR)

KPS Capital Partners

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 Capital Management

Oak Investment Partners

Oaktree Capital Management

Opus Capital Venture Partners

Panda Power Funds

Parthenon Capital Partners

Pathlight Capital

Peninsula Capital Partners

Platinum Equity

Portfolio Advisors

Rho Capital Partners

RJD Partners

SAIF Management

Scale Venture Partners

Silver Cup

Silver Lake Partners

Sixth Street Partners

SLR Investment Corp

StepStone Group

Stride Consumer Partners

Sumeru Equity Partners

Sun Capital Partners

TA Associates

Investment Professionals, continued

Private Markets Managers, continued

TCG
TCW Capital Partners
Technology Crossover Ventures
Technology Partners
Terra Firma Capital Partners
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
Waterfall Asset Management
Wayzata Investment Partners
Weston Presidio Capital
White Deer Management
WL Ross & Co.
Xenon Private Equity
York Capital Management

Fixed Income - Ex Inflation-Linked Managers

Goldman Sachs Asset Management, LP
Oak Hill Advisors, LP
Oak Tree Capital Management, LP
Pacific Investment Management Company (PIMCO)
State Street Global Advisors

Fixed Income - Inflation-Linked Managers

BlackRock
Bridgewater Associates, Inc.
Northern Trust Global Investments

Commodities Managers

CoreCommodity Management
Gresham Investment Management, LLC
Wellington Management Company, LLP

Real Asset Managers

Abacus Capital Group, LLC
Angelo Gordon LP
Ardian
Asana Partners, LP
Bain Capital Partners
BlackRock Financial Management
Blackstone Group
Carlyle Group
CenterSquare Investment Management
Digital Bridge
Exeter Property Group, LLC
Greenfield Partners, LLC
H/2 Capital Partners
Hackman
Harrison Street Real Estate Capital, LLC
ICG
InfraVia
JDM Partners
Kayne Anderson
Kohlberg Kravis Roberts & Co (KKR)
LimeTree Capital Advisors
Lone Star Management Co.
Mack Real Estate Group
Mesa West Capital
Noble Investment Group
Prologis
Related Fund Management LLC
Rockpoint Group LLC
Stockbridge Capital Group
TA Realty Associates

Walton Street Capital, LLC
WestRiver Capital, LLC

Absolute Return Managers

AHL Partners (Man Group)
Aeolus Capital Management
Blackstone Group
Bridgewater Associates, Inc.
Davidson Kempner Capital Management
D.E. Shaw & Co
Eisler Capital
Garda Capital Partners
Hudson Structured Capital Management
King Street Capital Management
Kirkoswald Capital Partners LLP
Mariner Investments Group LLC
Nephila Capital
PAAMCO
Perella Weinberg Partners
Pharo Management
Rokos Global Macro
Tenaron Capital Management
Tilden Park Associates
Two Sigma Advisers
Voloridge
Whitebox

Risk Parity Managers

AQR Capital Management
Bridgewater Associates, Inc
PanAgora
Parametric

Cash Overlay Managers

Parametric

Investment Professionals, continued

Defined Contribution Assets and Other Funds

Consultant

Capital Cities, LLC (General: Defined Contribution)

Custodian

Bank of New York Mellon

Large Cap Equity Index Fund Managers

BlackRock Inc.

International Equity Fund Managers

Altrinsic Global Advisors, LLC

Arrowstreet Capital, LP

Baillie Gifford & Company

BlackRock Inc.

Small/Mid Cap Equity Fund Managers

RhumbLine Advisers

TimesSquare Capital Management, LLC

Fixed Income Fund Managers

Loomis Sayles & Company, LP

Northern Trust Global Investments

Pacific Investment Management Company (PIMCO)

Inflation-Linked Fixed Income Fund Managers

Northern Trust Global Investments

Stable Value Fund

Galliard Capital Management (Fund Advisor)

Income Research + Management (Fund Sub-Advisor)

Jennison Associates (Fund Sub-Advisor)

Dodge & Cox (Fund Sub-Advisor)

TCW (Fund Sub-Advisor)

Money Market Fund Manager

Bank of New York Mellon

Retirement Medical Benefit Account

State Street Global Advisors

Special Death Benefit Fund Assets

Northern Trust Global Investments

Local Public Safety Pension Relief Fund Assets

Bank of New York Mellon

Local Public Safety Pension Relief Fund Assets

Bank of New York Mellon