State Retirement Agency

Response to Questions Received from DLS

December 17, 2022

DLS requests SRA to comment on the fiscal 2022 return performance in relation to the policy benchmarks. For any asset classes and asset sub-classes that underperformed the benchmark, SRA should comment on the factors that led to the underperformance, whether those factors are expected to negatively affect performance in fiscal 2023, and what actions are being taken to mitigate those factors from impacting the fiscal 2023 returns.

In fiscal year 2022, the System achieved an investment return of -2.97%. While this performance did not meet the long-term assumed actuarial rate of 6.8%, it exceeded the Board's policy benchmark by 0.51%, or 51 basis points. The fiscal year performance also outperformed the median return of the System's peer group, resulting in savings of more than $1 billion and demonstrating the effectiveness of the Board's risk-balanced asset allocation policy. In fact, based on a commonly-used measure of risk-adjusted investment returns, the System's performance over the last five years ranks in the top decile among a peer universe of similar plans. The policy benchmark is the weighted average of each of the individual asset class benchmarks and represents what the System would have returned if the asset class benchmark returns were achieved. The System's excess return relative to its policy benchmark equates to approximately $337 million in added value. The total fund excess return of 51 basis points was a product of strong performance in the asset classes of private equity, credit and real assets. Over the ten years ending June 30, 2022, the System has achieved an average annualized return of 7.79%, beating the policy benchmark of 7.14% by 65 basis points annualized net of all fees and expenses.

The Board of Trustees does not expect each asset class to outperform every year, but instead over time and across economic cycles. Investment Division staff reviews the performance of underperforming asset classes to assess whether the performance is consistent with expectations, or a sign of a longer-term problem. In fiscal year 2022, three major asset classes trailed the performance of their respective benchmarks – public equity, rate sensitive and absolute return.

The underperformance of public equity and rates sensitive for the fiscal year is due to security and sector selection by investment managers. Fiscal year 2022 was marked by significant volatility for stocks and bonds, with both broad asset classes down more that ten percent. The worst performing sector of the stock market was technology companies. Due to the high-growth nature of these companies and a greater focus on future earnings, they are more sensitive to duration, or changes in interest rates. Longer duration assets performed poorly in fiscal year 2022 as yields increased significantly across the treasury curve. The System's public equity portfolio had more exposure to these technology companies than the benchmark, which contributed to the underperformance for the fiscal year. Conversely, the best-performing sector of the equity market in fiscal year 2022 was energy. To the extent the System's managers were underweight this sector, this led to underperformance.

The fixed income markets also struggled in fiscal year 2022 as the Federal Reserve raised interest rates to combat inflation. The sectors of the bond market most sensitive to this environment are longer duration bonds whose values decrease more as rates rise, and corporate debt, particularly lower quality debt, which is more closely linked to the equity market with greater credit risk. The System's managers were overweight these sectors in fiscal year 2022, which contributed to the relative underperformance.

While the System's public equity and bond portfolios underperformed their respective benchmarks in fiscal year 2022 due to security and sector allocation, these factors are not expected to persist as the market environment evolves and transitions to another economic regime. Over the longer term, these asset classes have achieved strong relative performance, as shown in the tables below.

Table 1
MSRPS Public Equity Performance
As of June 30, 2022

	1-Year	3-Years	5-Years	10-Years
Maryland Public Equity	-19.38%	5.93%	6.44%	8.90%
Public Equity Benchmark	-18.05%	4.94%	6.00%	8.37%
Excess	-1.34%	+0.98%	+0.44%	+0.53%

Table 2
MSRPS Rate Sensitive Performance
As of June 30, 2022

	1-Year	3-Years	5-Years	10-Years
Maryland Rate Sensitive	-15.28%	-0.84%	1.41%	2.16%
Rate Sensitive Benchmark	-13.70%	-0.96%	1.38%	1.91%
Excess	-1.58%	+0.12%	+0.03%	+0.25%

While the absolute return segment lagged its benchmark in fiscal year 2022, the portfolio provided meaningful diversification and downside protection, returning +1.40% when stocks and bonds generated double-digit negative returns. The objective of the absolute return portfolio is to generate a positive return over cash of 4% over time with low correlation to stocks and bonds. While this portfolio did not meet the spread target of 4% in fiscal year 2022, it was able to produce a positive return in a very challenging environment.

The absolute return segment is invested primarily in hedge funds and other strategies that focus on public market securities so returns will not be as smooth as a cash plus 4% target. To enable a more relevant analysis and comparison over the shorter term, the Board has adopted a benchmark comprised of other managers who employ similar absolute return strategies since publicly traded benchmarks are not available in this asset class. In November 2021, the Board approved a benchmark change for the absolute return portfolio. The former benchmark was the HFRI Fund of Funds Conservative Index + 100 basis points while the current index is a strategy-blended benchmark consisting of 50% HFRI Relative Value, 25% HFRI Event-Driven and 25% HFRI Macro. The reason for the change was the dwindling number of universe observations in the HFRI Fund of Funds Conservative Index. The effective date of this change was December 1, 2021. These two benchmarks have similar long-term return histories but vary over shorter periods because of the differences in strategy composition.

The timing of this change distorted the benchmark return for the absolute return portfolio for fiscal year 2022 as the linked returns, comprised of 5 months of the old benchmark and 7 months of the new benchmark, overstates the performance of the asset class for the full year by over 1%. Table 3 below shows the full year performance of the two HFRI indices compared to the linked combination of the two.

Table 3

Benchmark	***Fiscal Year 2022 Return***
Absolute Return Benchmark	2.99%
HFRI FOF Conservative +1% (old benchmark)	1.10%
HFRI Blended 50/25/25 Benchmark (new Benchmark)	1.82%

In looking at the two HFRI benchmarks, one would expect the total absolute return benchmark to fall somewhere in between 1.10% and 1.82%, since it represents a combination of the two HFRI indices. The reason for the distortion is the timing of the change from the old to the new benchmark. The 2.99% asset class benchmark for the fiscal year includes five months of the old benchmark (July 1, 2021 – November 30, 2021) and seven months of the new benchmark (December 1, 2021 – June 30, 2022). The former benchmark performed significantly better than the new benchmark during the first five months of the fiscal year, while the current benchmark did much better in the last seven months of the year. This disparity is demonstrated in Table 4 below.

Table 4

	July 1, 2021 – November 30, 2021	December 1, 2021 – June 30, 2022
HFRI FOF Conservative +1% (old benchmark)	1.42%	-0.32%
HFRI Blended 50/25/25 (new Benchmark)	0.07%	1.75%

This disparity, due to the timing of the benchmark change, has resulted in an overstated absolute return benchmark return for fiscal year 2022 relative to the two individual benchmarks on a stand-alone basis, as well as the actual performance of the asset class. In fiscal year 2022, the absolute return portfolio achieved a return of 1.40%, which is more consistent with the returns generated by the two individual benchmarks.

While the absolute return portfolio provided a significant positive contribution to the System's performance in fiscal year 2022, it did not achieve its longer-term objective of cash plus 4%. Over the three years ending June 30, 2022, the portfolio's performance exceeded cash by 3.93%. For the five-year period, the absolute return program outpaced the cash return by 2.88%. Staff, in collaboration with external consultants, will continue to adjust the portfolio, through strategy allocation and manager changes, to best position the portfolio to meet long-term risk and return objectives.

DLS requests that SRA comment on the relative TUCS performance rankings by asset class and how overall asset allocation impacts the total system's TUCS rankings.

As noted in the DLS Investment Overview, the System's one-year total fund performance compared against a peer group of other large public pension plans ranked in the 37th percentile, which means the System outperformed 63% of the peer group. Peer group rankings are driven mainly by two factors – asset allocation and implementation of the asset allocation. Asset allocation refers to the way the fund assets are distributed to the various asset classes, and implementation refers to staff's ability to select skillful managers and tactically position the portfolio to take advantage of market opportunities.

An effective method to determine which of these factors is driving the total fund peer rankings is to analyze the peer ranking of each individual asset class. As noted in the DLS report, most of the System's asset classes have achieved above median returns over time. Private equity, the System's best-performing asset class, representing 21.5 percent of total fund assets, has consistently ranked in the top quartile of the peer group over time. In fact, for the ten-year period ending June 30, 2022, the System's private equity portfolio is ranked in the 1st percentile. That the individual asset class rankings are higher than those of the total fund supports the notion that the mix of asset classes is mainly driving the results, and not the performance of the individual asset classes. For example, the System has higher target allocations to non-U.S. equities than the average peer in the universe. Over the past ten years, U.S. stocks have significantly outperformed foreign stocks. The System's relative underweight to U.S. stocks has resulted in a lower peer ranking than would be assumed based solely on rankings of individual asset classes. This is also demonstrated by the System's total equity ranking in the 96th percentile for the fiscal year, while the rankings of the regional components are significantly better.

While the asset class rankings for the System's fixed income portfolio are strong over the longer-term, the performance trailed the peer group in fiscal year 2022. This is due to the longer duration profile of the System's portfolio relative to peers, who typically hold more core and shorter-duration bonds. Yields increased significantly over the fiscal year, with the ten-year treasury rate increasing from 1.5 percent to 3.0 percent. Longer-duration bonds are more sensitive to changes in interest rates and lost more in value in fiscal year 2022 than shorter-duration debt. The System allocates more to long-duration bonds for greater protection in disinflationary environments, to better match the plan's longer-term liabilities and to hedge against stock market drawdowns to preserve more principle. While bonds did not provide the desired protection in fiscal year 2022 as both stocks and bonds produced negative returns, the correlation between the two asset classes is typically negative, meaning as stocks go down, bonds will increase in value.

The System typically reports its peer rankings against a relatively small universe of roughly thirty public pension plans on a gross-of-fee basis. Given the System's asset allocation, with a relatively higher allocation to private market investments like private equity, private credit and real estate, it might also be instructive to measure performance against a larger universe on a net-of-fee basis. Private investments typically do not report gross investment returns, but only performance net of all fees. As a result, the System's gross returns are a combination of gross and net performance. To the extent the System invests more heavily in private investments, the difference between the gross and net numbers will be smaller relative to a peer plan that employs a higher allocation to traditional assets. This is illustrated in Table 5 below, which ranks the System's performance against a larger universe of sixty-four public pension plans after investment expenses have been netted out.

Table 5
Total System vs. Public Plans > $1 Billion Universe
(June 30, 2022 net of fees)

	1 Year	3 Years	5 Years	10 Years
Total System	**-2.97%**	**8.38%**	**7.93%**	**7.79%**
Rank	**14**	**8**	**13**	**47**

* **Represents the InvMetrics Public Defined Benefit > $1 billion peer group**

The focus on investment performance tends to be on returns. However, the Board and staff recognize that risk is equally important. To get a more complete picture of the System's investment program, risk-adjusted returns should also be evaluated. The System's risk profile, as measured by the dispersion of returns around the mean, falls in the bottom quartile of the peer group. This lower risk posture has been achieved by targeting a lower relative weighting to public stocks versus the peer group. Sharpe ratio is another metric that accounts for risk in the assessment of investment performance, and represents risk-adjusted returns, or returns per unit of risk. Based on the Sharpe ratio measure, the System ranks in or near the top decile (better than 90% of funds) over the last three and five years. This is illustrated in Table 6 below, which ranks the System's Sharpe ratio against a larger universe of sixty-four public pension plans after investment expenses have been netted out.

Table 6
Total System vs. Public Plans > $1 Billion Universe
Sharpe Ratio Comparison
(June 30, 2022 net of fees)

	3 Years	5 Years
Total System	1.0%	0.9%
Rank	7	7

Represents the InvMetrics Public Defined Benefit > $1 billion peer group

DLS requests that SRA comment on how the system's asset allocation strategy mitigated investment losses in fiscal year 2022 and the impact to the system of those mitigated losses.

The Board's asset allocation policy is designed to achieve the actuarial rate of return over long periods of time by assembling a diversified portfolio of asset classes, each of which may have a large or small, positive or negative return in any given year. By assembling assets that exhibit distinct risk and return characteristics in different market environments, the Board expects more stable investment returns over time than a less diversified portfolio. This lower risk portfolio should result in a larger asset pool for the System's beneficiaries than a more volatile portfolio with the same average return. This diversified approach allowed the System to significantly outperform its peers in fiscal year 2022, resulting in savings of more than a $1 billion relative to the median peer return.

Fiscal 2022 was a challenging year for investment returns, marked by high inflation, rising interest rates and slowing growth. These conditions are not conducive for generating attractive returns in traditional stocks and bonds. Historically, bonds have acted as a ballast to a declining stock market and slowing economy, as interest rates typically fall in anticipation of stimulative monetary policy. That was not the case in fiscal year 2022, as central banks were raising interest rates to curb inflation, with the ten-year Treasury yield climbing from roughly 1.5% to 3.0% over the course of the year. As a result, both stocks and bonds generated returns of roughly -15% in fiscal year 2022.

While fiscal year 2022 was challenging for publicly traded stocks and bonds, other alternative asset classes performed quite well. The System's more diversified and balanced asset allocation provides exposure to asset classes like private equity, real estate, private credit and hedge funds. These asset classes generated positive returns in fiscal year 2022. Real estate was the System's best performing asset class for the year, producing a return of over 30%. Private equity, which represented 21.5% of the total portfolio, achieved a return of over 24%, and remains the System's top performing asset class over the last ten years. Private credit, a subset of the credit portfolio, represented just under 3% of System assets and provided a return of 15.7% for the year. The absolute return portfolio, which consists of mostly lower risk hedge funds that are largely not dependent on the performance of traditional asset classes, generated a positive return of 1.4%.

A simple allocation consisting of 60% stocks and 40% bonds would have produced a negative total return of less than ten percent. This return profile would have increased the State's contribution for fiscal year 2024 by an amount equivalent to approximately $118 million. While the System's -2.97% return did not meet the long-term target, it helped preserve the value of System assets and reduce the required future performance to maintain and improve the funded ratio. This demonstrates the importance of a diversified and balanced asset allocation that provides exposure to several different asset classes whose investment performance is linked to many different economic variables. The Board of Trustees recognizes the importance of risk management and has adopted an asset allocation that is designed to meet the long-term objectives of the fund while providing meaning protection against significant drawdowns in asset valuation.

Given the historic low rate of return, underperformance relative to benchmarks, and high management fee structures, DLS requests SRA to comment on the returns of the absolute return asset class, including the market conditions leading to the low level of returns and benchmark underperformance, and what market conditions would result in markedly improved returns for investments in the asset class.

The objective of the System's absolute return asset class is to provide diversification and risk reduction to the total fund by having little exposure to the common risk factors found in the rest of the portfolio. The return objective is to outperform a cash return by 4% over a full market cycle, recognizing that shorter-term performance can deviate from this objective significantly. The portfolio has a further objective of maintaining diversification when equity markets are volatile, and returns are negative. While the long-term return objective was not met in fiscal year 2022, the absolute return portfolio provided meaningful downside protection by generating a positive return of +1.4% when stocks and bonds were down roughly 15%. However, over the longer-term, this return objective has not been met. There are several reasons for this underperformance related to the market environment and exposure to common risk factors.

Hedge funds comprise most of this asset class and are characterized by trading strategies that attempt to take advantage of relative value opportunities between different securities and asset classes. The most favorable environment for this type of trading is one where volatility is high, correlations are low, and dispersion is high. Volatility is the degree to which asset prices fluctuate, correlation is the degree to which assets move in the same direction, and dispersion refers to the difference in asset price movements regardless of whether they are moving in the same direction. Essentially, hedge funds have historically performed best in more chaotic markets. If high dispersion and uncertainty remain in the markets, and stocks and other risk assets do not move consistently higher, hedge funds are likely to do well.

The absolute return asset class has struggled to outperform its benchmark, which was recently changed from the HFRI Fund of Funds Conservative Index plus 100 basis points to a strategy-blended benchmark consisting of 50% HFRI Relative Value, 25% HFRI Event-Driven and 25% HFRI Macro. The HFRI benchmark captured most of the risk and return nature of the asset class, but it is comprised of funds of funds that have significant exposure to the direction of stocks. The benchmark does not have the attribute of protecting asset values when stocks are falling sharply. Much of the past underperformance can be attributed to purposeful portfolio design to have less equity risk relative to this benchmark to offer better downside protection in a period of strong stock market returns which were partially reflected in the benchmark. In addition, the portfolio was overly concentrated in low volatility, low correlation multi-strategy relative value managers that were mostly focused on investing in the U.S. Essentially, the portfolio was too conservative, running with less volatility than the benchmark and did not include an appropriate number of return drivers.

The absolute return portfolio has been able to provide significant downside protection during equity drawdowns due to its lower risk posture and lower equity sensitivity. The fourth quarter of 2018, first quarter of 2020 and the first half of calendar 2022 are examples of a market where absolute return performed significantly better than stocks. Going forward, the objective is to continue to preserve value when equity markets struggle but also keep pace during normal equity environments.

The absolute return portfolio has undergone a significant amount of change over the last several years. In December of 2021, the benchmark was changed, and in the first half of calendar year 2022, the portfolio's target allocation was lowered from 8% to 6%. Those two changes to the mandate prompted a re-balancing of the portfolio to align with the new benchmark at the lower target allocation. In 2022, three managers have been hired through December 1st, representing $425 million dollars in committed value. Additionally, three managers have been terminated through this period.

Staff has continued to focus on increasing the efficiency of the portfolio through improved cash management and seeking higher-return or diversifying mandates that will better position the portfolio for the future. Staff continues to focus on improving management fee arrangements by lowering the base management fees in exchange for higher manager performance incentives, thereby improving alignment between the manager and the System. Staff has not closed any new co-investments in calendar year 2022, due to the need to reach the lower target allocation. However, staff expects to increase co-investment activity in 2023 and has several opportunities in the pipeline. The changes implemented to date have improved the performance of the asset class over the last few years, as the absolute return portfolio has generated excess returns relative to cash equal to 3.93%, very close to the longer-term target.

The restructuring to date, in addition to what is planned for the near future, will result in a more diversified and balanced strategy allocation that should increase the volatility to a level closer to target, provide more consistent returns relative to the benchmark, and still provide diversification benefits to the plan during challenging market periods.

As a result of the recent asset allocation, the Board reduced the target allocation to absolute return from 8% to 6% of the total fund. This change acknowledges the continued attractiveness of the risk and return profile of the asset class, but at a reduced level, in recognition of the diversifying properties of other asset classes with lower cost structures.

DLS requests SRA to provide an update on estimated carried interest for calendar year 2022.

The System records carried interest earned by its managers on a calendar year basis to align with the reporting schedule for audited financial statements for most of the System's alternative investment vehicles. In calendar year 2021, the System's managers earned carried interest of $370.3 million. It is important to distinguish the difference between management fees and carried interest, or performance incentives, as many private market investors do not consider incentive fees to be management fees. Management fees are contractual obligations that must be paid regardless of performance. Incentive fees, which primarily apply only to private market investments and not traditional asset classes, represent a portion of investment profits that is earned by a manager, and are only paid if performance thresholds are achieved and generally after the investor has recouped all management fees and expenses. They are used to motivate the manager to make profitable investments, and to ensure alignment of interests. The percentage of profits that is allocated to the manager is substantially lower than the amount received by the System. Because of this disproportionate sharing of profits, the amounts realized by the System would far exceed any incentive fees paid to managers. Large amounts of carried interest should be considered a positive result, as this would imply much greater gains to the System at a level of roughly fourfold. Based on the amount of carried interest earned in 2021, the implied gains to the System over a period of several years would equate to approximately $1.5 billion. While the System would like to see an improved profit-sharing allocation in favor of the investor, and negotiates contract terms aggressively where possible, the overall market, consisting of both managers and investors, establishes the sharing percentages. If the System avoided these investments based on the fee structure alone, it would not have experienced the superior net-of-fee returns provided by private equity relative to all other asset classes.

DLS requests SRA comment on the use of the compensation adjustment authority provided under Chapter 356 of 2022 and whether there are any remaining compensation disparity issues.

At the request of the Board of Trustees, during the 2018 session, the General Assembly enacted legislation that provided the Board with the authority to determine and create the type and number of Investment Division staff, as well as compensation for these positions, subject to certain constraints. These constraints included limiting annual increases to no more than 10%. This annual cap on salary increases has resulted in a disparity between legacy employees hired prior to the 2018 legislation and newer employees hired within the last few years under the new classification and salary structure. We were able to offer these recent hires a higher salary closer to the market midpoint, while legacy employees with the similar skills, experience and responsibilities would have to wait several years to reach an equivalent salary level.

During the 2022 legislative session, the Board requested the Joint Committee on Pensions to sponsor legislation to address this disparity. The Joint Committee agreed and on July 1, 2022 this legislation became effective. This legislation authorizes the Board of Trustees to provide two adjustments before June 30, 2024, to the compensation for legacy employees within the Investment Division whose salary is below the midpoint for their positions. The legislation specifically provides that these adjustments do not preclude the Board from also providing annual salary increases to all employees of the Investment Division.

Nine legacy employees have a current salary below the midpoint of the approved range. In October of 2022, the Board approved salary adjustments for these individuals closer to the midpoint of their respective ranges. For employees with a salary closer to the midpoint or target salary, the Board approved a one-time adjustment to be effective in November 2022. For individuals with a significant difference between current salaries and the midpoint or target salary, the implementation of the salary adjustments will occur in two stages. The first increase to be effective in November 2022, and the second adjustment to be implemented in the Spring of 2023 to coincide with the regular schedule of salary reviews for the entire Investment Division. Once these second adjustments are implemented, there will be no remaining compensation disparity issues among investment-focused employees.

The 2018 legislation requires the Board to engage a compensation consultant and reconstitute the objective criteria committee every five years. This activity is scheduled for 2023. The consultant and committee will consider two ongoing challenges of the legislation.

The Investment Division has experienced challenges in recruiting for positions in the accounting and operations area, marked by lower response rates to job postings and a mismatch in skills, qualifications and experience. Employees in this unit were included in the 2018 legislation that granted the Board authority to create positions and set compensation levels for Investment Division employees, but the authority was limited, tying compensation to that of others in state government with similar responsibility rather than public pension plan peers. These individuals are included in state compensation actions unlike the rest of the investment staff and are not eligible for incentive compensation. This hybrid designation for one group has kept salaries from being competitive in the marketplace and has been viewed as a lower tier group of employees, creating disparity within the division where different compensation policies are applied to the two groups.

This year, with a period of high inflation, the 10% salary adjustment limit for most of the investment staff presents a challenge to adjust the salary scale to keep up with inflation and provide any meaningful merit increases or promotions. In comparison, state employees covered under the standard salary schedule received salary increases totaling more than 10% in calendar 2022, more than most investment staff are eligible to receive.

DLS requests SRA update the Committee on the use of incentive compensation for recruitment and retention, and provide information on the number of division staff eligible for incentive compensation based on fiscal 2022 returns.

In June 2019 the Board approved an incentive program for certain positions within the Investments Division based on recommendations from the Board's compensation consultant and the Objective Criteria Committee. This program has been an important tool in recruiting and retaining skilled and experienced investment personnel as only one employee resigned from the System in fiscal year 2022 and there have been no departures to date in fiscal 2023. This program is subject to certain constraints, which are highlighted below:

- Financial incentives in any fiscal year shall not exceed 33% of a position's salary
- Any financial incentives paid shall be paid over multiple fiscal years in equal installments
- The Board may not pay out financial incentives in a fiscal year in which state employees are subject to a furlough
- Financial incentives shall be paid on the dates set by the Board at the time of award, and an individual who has been awarded financial incentives but separates from employment in the Investment Division may not receive any remaining financial incentives due to be paid after the date of separation from employment, except for retirement.

The Board also approved the performance metrics for determining incentive awards, which are highlighted below:

- Net total fund returns vs. total fund policy benchmark over 3 years
- Net total fund returns vs. actuarial assumed rate of return over 3 years
- Net asset class returns vs. asset class benchmarks over 3 years

For the three years ending June 30, 2022, the System achieved a net annualized investment return of 8.38%, exceeding the policy benchmark of 7.40 by 98 basis points. This level of excess return resulted in the maximum incentive of 33% for this component of the calculation. A second part of the incentive calculation focuses on the actuarial rate of return, which averaged 7.2% over the last three years. For the three years ending June 30, 2022, the 8.38% return exceeded the actuarial rate by 118 basis points. As a result, staff was eligible to receive the maximum incentive based on this metric.

The last piece of the incentive calculation is based on the performance of the individual asset classes. Most of the asset class teams exceeded the performance of their respective benchmarks and were eligible for incentive compensation based on this metric, while a few were not. In fiscal year 2022, a total of twenty-four employees in the Investment Division were eligible for incentive compensation.

DLS requests SRA to comment on the estimated fee savings attributable for internally managed assets.

The Board and Investment Division have a three-pronged plan to enhance the ability of achieving the investment objectives of the plan. The first prong focuses on continual improvement in the asset allocation process. The second is improving implementation of that asset allocation through improved staffing and resourcing of the division and the third is to lower the cost of managing the assets through direct fee negotiations, direct management of public assets and direct management of private assets through co-investment. To evaluate the effectiveness of the cost improvement plan, the division is using 2017 as a baseline for the cost of the System's investment management program. As shown in Table 7 below, the System ended 2017 with a fee structure that was approximately 64 basis points (0.64%), or $317 million per year on an annual run rate. This figure does not include incentive fees or carried interest, as those are variable making year to year comparisons difficult to interpret and generally carried interest means the System has had a positive investment experience.

Through 2022, the System's asset allocation changed to include more higher cost asset classes (private equity, private real estate and emerging market stocks) so the fees should have moved higher to 71 basis points. In fact, the fees on the policy portfolio fell to 63.5 bps by the end of 2020, reflecting a combination of lower fees negotiated with managers and the growth of the co-investment portfolio and the small amount of assets being managed internally. The division will use this methodology to track its effectiveness in lowering the cost of managing assets over the ensuing years and expect an additional 17 bps of annual fee savings through 2029. The associated costs of achieving these savings are expected to be on the order of 2-3 basis points.

Table 7

Management Fee Model

Stylized Model of Fees (Excluding Incentives)		
	BPS	Dollars (millions)
2017 Actual Allocation and Actual Fees	64.0	$317
2017 Board Allocation and Actual Fees	64.0	$317
2029 Fees with 2017 Asset Allocation and Fees	64.0	$557
Impact of Board Asset Allocation Changes through 2022	8.1	$54
Impact of Fee Savings Achieved Through 2022	(20.4)	($137)
Subtotal - Impact of Asset Allocation and Fee Reduction	(12.3)	(224.0)
2022 Board Asset Allocation and Fees	51.7	$333
Impact of Fee Savings Projected to 2024	(3.0)	($20)
Impact of Fee Savings Projected to 2025 -2029	(6.0)	($40)
2029 Fees	42.7	$373
2029 Fees with 2017		$557
Projected Annual Fee Savings	(21.3)	($186)

Additionally, DLS requests SRA to provide an update on any Investment Division implementation of internal management of system assets and the development of necessary compliance and controls on the use of internal asset management. More specifically, SRA should comment on how the Investment Division:

- **has developed proficiency in managing assets currently being managed internally;**
- **will develop proficiency before expanding into internal management of additional asset classes;**
- **will evaluate the performance of internal management compared to available external management services; and**
- **will develop methodologies for determining fee savings achieved through internal management.**

The System has been working to develop its internal management capabilities since 2016. The initial efforts were geared to building the ability to execute trades internally. Elements of this process included establishing procedures to evaluate and select brokers, create operational processes to execute and communicate trades to the custodian and procure contracts with Futures Clearing Merchants. These processes supported the level of activity that was occurring historically and were necessary steps toward building an internal management process.

In 2019, staff worked with the Attorney General's office and external counsel to create policies and procedures for internal management including enhanced policies governing staffs' personal trading, conflicts of interests and handling of material non-public information. These policies and procedures were approved by the Board or codified in the Division's Operations Manual in early 2020. In 2020, the System procured a trade order management system to handle the processing of trades including pre-trade compliance and straight-through processing.

The proficiency of internal staff to manage internal portfolios has come in two ways. Existing staff had prior experience in managing assets directly and prior direct management experience was a major factor in the hiring process for new staff members.

The System has a rigorous product development process, the elements of which include:

1. Identify a potential product for internal management that staff expects to be able to execute as well or better than external managers
2. Develop guidelines that detail the performance objective, portfolio construction limits, and reporting requirements
3. Create portfolio management tools to execute the strategy
4. Manage a paper portfolio with pre-approval of every trade and creation of complete reporting package
5. Test the trading platform and provide training to middle and back office team as needed
6. Engage with the General Consultant for an independent operational due diligence evaluation and address any shortcomings identified
7. After demonstrating proficiency, present a full diligence memo to the internal investment committee and respond to questions and other follow up items
8. With internal investment committee approval, establish a portfolio inception date with the Chief Investment Officer including a source of funding

As of June 30, 2022, six internal portfolios valued at $9.4 billion had been established following this process: U.S. TIPS, U.S. Long Government Bonds, Russell 1000 large-cap U.S. equity, investment-grade corporate bonds, U.S. small cap equity and U.S. securitized bonds. As of October 31, 2022, these six internally managed portfolios totaled $8.9 billion, representing 14.5% of the total fund. Staff is currently in the development process to implement additional internal portfolios, including enhanced cash, currency hedging and international equity. Staff also expects to gradually increase the level of active management within the existing passive portfolios.

The division has built a process that is designed to evaluate the internal products in a manner similar to the selection and oversight of external managers. This includes presenting the strategy to the internal investment committee in the same manner as external managers. It also includes independent annual evaluation of the product by the System's general consultant. The division has also created an Internal Management Oversight Committee to provide independent evaluation of the efficacy of the strategies and managers. This group exists so that the investment teams are not put in the position of evaluating their own products. Finally, each quarter, every asset class reports to the internal investment committee on the performance of the asset class including individual manager performance. At these meetings, the committee members often challenge the team on the efficacy of continuing to retain underperforming managers.

DLS requests SRA to provide an update on the implementation of Chapters 24 and 25 of 2022.

Some of the provisions of Chapters 24 and 25 of 2022 codify existing practices of the System relating to climate change investment risk, while others require the development of new policies and procedures. To support its ongoing activities in governance and evaluating ESG risks, in 2021, the System created a new Corporate Governance Manager position that was filled on October 5, 2022. This position will lead the implementation. In addition, staff has been working to incorporate the provisions of the legislation into the System's Investment Policy Manual, having presented drafts to the Investment Committee in September and November. Staff has also been attending industry conferences and meeting with peers, industry groups and consultants to learn how other plans are incorporating climate risk into the investment process and identify industry standards and best practices. Going forward, staff will continue to implement the requirements of this legislation through more direct engagement with managers, companies and industry advocacy groups. Staff will also develop a more robust process to identify and report on investment opportunities related to the transition to a lower carbon economy.