Joint Committee on Pensions

2021 Interim Report

Annapolis, Maryland
January 2022

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THE MARYLAND GENERAL ASSEMBLY
ANNAPOLIS, MARYLAND 21401-1991

JOINT COMMITTEE ON PENSIONS

December 20, 2021

The Honorable Bill Ferguson, Co-Chair
The Honorable Adrienne A. Jones, Co-Chair
Members of the Legislative Policy Committee

Ladies and Gentlemen:

During the 2021 interim, the Joint Committee on Pensions met four times. The joint committee addressed legislative proposals requested by the Board of Trustees for the State Retirement and Pension System and legislative proposals regarding system investment climate risk, administration of death benefits related to COVID-19, and providing additional waivers from reemployment offsets for retired teachers returning to aid in COVID-19-related workforce support. The joint committee made recommendations on these items at its final meeting for the 2021 interim, voting to sponsor nine legislative proposals. The joint committee also had briefings on the actuarial valuation of the system and the system's investments, climate risk to the system's investments, system investment in Maryland, and briefings by employee unions. A complete report of the joint committee's 2021 interim activities and legislative recommendations will be published in January 2022.

We thank the joint committee members for their diligence and attention to the work of the committee. Also, on behalf of the committee members, we thank Phillip S. Anthony, June Chung, and Katylee Cannon of the Department of Legislative Services and the staff of the Maryland State Retirement Agency for their assistance. Additionally, on behalf of the joint committee, we congratulate Treasurer Nancy K. Kopp on her retirement and extend our thanks for her 20 years of faithful service on the Board of Trustees for the State Retirement and Pension System. As Chair of the Board of Trustees since 2007, Treasurer Kopp has worked diligently to ensure the health and sustainability of the State Retirement and Pension System for its more than 400,000 participants.

Sincerely,

Senator Sarah K. Elfreth
Senate Chair

Delegate Brooke E. Lierman
House Chair

SKE:BEL/PSA:JC/kmc

cc: Ms. Victoria L. Gruber
Mr. Ryan Bishop
Ms. Alexandra Hughes
Mr. Jeremy Baker
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Joint Committee on Pensions
2021 Interim
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2021 Interim Report

Over the course of four meetings during the 2021 interim, the Joint Committee on Pensions had briefings on legislative proposals requested by the Board of Trustees for the State Retirement and Pension System (SRPS) and its annual briefings on the actuarial valuation of the system and the system's investments. The joint committee also had briefings on climate risk and the State economic ecosystem and presentations by system member union representatives.

Results of the 2021 Actuarial Valuation and Fiscal 2023 Contribution Rates

SRPS's funded status (the ratio of projected actuarial assets to projected actuarial liabilities) improved from 72.9% at the end of fiscal 2020 to 76.2% at the end of fiscal 2021 (these figures exclude funding for local governments that participate in the State plan). In addition to the system's improved investment performance, the system has also benefited from reforms. The reformed benefit structure enacted in 2011 increased employee contributions, added additional caps to cost-of-living adjustments earned after 2011, increased the vesting period and reduced the multiplier for employees hired after 2011, and appropriated a share of savings as supplemental contributions. The State also eliminated the corridor funding method. From fiscal 2020 to 2021, the total State unfunded liability decreased from $19.1 billion to $17.9 billion.

Fiscal 2023 Contribution Rates

Exhibit 1 shows that the fiscal 2023 employer contribution rates with reinvestment savings are relatively stable when compared with the fiscal 2022 rates. The aggregate contribution rate for all systems increases from 18.18% in fiscal 2022 to 18.21% in fiscal 2023. Based on projected payroll growth and other factors, the SRPS actuary estimates that total employer pension contributions will increase by $39 million, from $2.106 billion in fiscal 2022 to $2.145 billion in fiscal 2023. The funding levels and contribution amounts include the $75 million supplemental contribution required by Chapter 489 of 2015 but not the pension sweeper as required by Section 7-311(j) of the State Finance and Procurement Article. The fiscal 2023 contribution rates are the actuarially determined contribution rates and reflect an investment return assumption of 6.8% adopted by the SRPS board for the current fiscal year.

Exhibit 1
State Pension Contributions
Fiscal 2022 and 2023 Projected
($ in Millions)

	2022		2023 Projected	
Plan	**Rate**	**Contribution**	**Rate**	**Contribution**
Teachers' Combined	15.33%	$1,184.0	15.29%	$1,208.2
Employees' Combined	21.12%	751.6	21.30%	759.9
State Police	76.16%	92.8	77.30%	95.9
Judges	41.92%	22.8	40.02%	21.7
Law Enforcement Officers	43.18%	55.3	45.62%	59.5
Aggregate	**18.18%**	**$2,106.4**	**18.21%**	**$2,145.2**

Note: Except for the Teachers' Combined System (TCS), contribution rates and dollar amounts reflect State funds only, excluding municipal contributions. For TCS, they reflect the combined total of State and local contributions. Figures also reflect the $75 million supplemental contribution required by Chapter 489 of 2015.

Source: Gabriel, Roeder, Smith, & Co., Results of the June 30, 2021, Actuarial Valuation for Fiscal Year 2023

Fiscal 2021 Investment Performance

The SRPS investment return for the fiscal year that ended on June 30, 2021, was 26.7%, exceeding the assumed rate of return of 7.4% in effect for the fiscal year. System assets grew by $13.1 billion to a market value of $67.9 billion as of June 30, 2021. Investment returns have exceeded the assumed rate of return in 3 of the last 5 years. The system, as a whole, outperformed its policy benchmark by 2.27% (227 basis points). The 5-year weighted average annual return as of June 30, 2021, is 10.7%, which is 0.48% (48 basis points) above the plan return benchmark for that period. The weighted average annual return for the past 10 years is 8.2%, which is 0.61% (61 basis points) above its benchmark for that period. Both the 5- and 10-year averages also exceed the system's 7.4% assumed rate of return.

Informational Briefings

Briefing on Climate Initiatives and Risk Investment Policies

Chapter 769 of 2018 required the Board of Trustees for SRPS, consistent with its fiduciary duties, to adopt policies regarding the management of risk and report annually on the risk assessment of the system's investments, including climate risk. In the context of Chapter 769 and the increasing public interest in the effects of climate change, the joint committee was briefed on current best practices regarding assessing, monitoring, and responding to climate-related risk and the effect of climate change in the system. Topics covered in the briefing included legal and fiduciary duties of the system's fiduciaries, climate initiatives, best practices related to managing climate risk in the system, membership in associations with climate change commitments, engagement with companies, and the use of proxy voting as tools for influencing companies and fund managers to address climate risk. See the SRPS Investment Climate Risk section for more information.

Briefing on Investing and Entrepreneurial Ecosystem in Maryland

The joint committee was briefed on in-state investment and the entrepreneurial ecosystem in the State, with an emphasis on investment opportunity in Maryland-based companies. The State Retirement Agency (SRA) reported on their investment strategy and methods for investing locally and in private equity, including the area of venture capital. The agency reported that venture capital investment reflects 10% of the private equity portfolio that is set at a target of 16% in the investment portfolio. SRA noted investment in venture capital presents both the highest risk with the potential for exceptional returns. Johns Hopkins Technology Ventures briefed the joint committee on their work in supporting startups in life sciences and transforming the research into investable business opportunities. The Director of Economic Development for the City of Frederick and the Chief Executive Officer of the Maryland Technology Development Corporation briefed the joint committee on their respective activities in supporting a favorable entrepreneurial ecosystem in the State and reported on the current climate for entrepreneurs and venture capital investment in the State.

Briefings by Employee Union Representatives

At the November 18 meeting, members of the American Federation of State, County, and Municipal Employees (AFSCME), the State Law Enforcement Officers Labor Alliance (SLEOLA), AFT Healthcare-Maryland, and the Maryland State Education Association (MSEA) provided testimony to the joint committee. Members reported on the extension of the sunset on COVID-19 line-of-duty death benefits, concern with "long covid" symptoms, and support for legislation to add a parole and probation reemployment exemption provision to the Correctional Officers' Retirement provisions. AFSCME also commended the system on the board's adoption of a responsible contractor policy. MSEA and AFT Healthcare-Maryland reported on staffing issues in local school systems and issues with procedures for disability applications. SLEOLA commented on its support for enhancements to the deferred retirement option programs.

Board Requested Legislation

Trustee Election Clarification

Provisions of the State Personnel and Pensions Article provide that the composition of the Board of Trustees for SRPS includes one member of each of the Correctional Officers' Retirement System (CORS), Employees' Pension or Retirement System (EPS or ERS), Judges' Retirement

System (JRS), Legislative Pension Plan (LPP), Law Enforcement Officers' Pension System (LEOPS), or Teachers' Retirement or Pension System (TRS or TPS); and one member or retiree of the State Police Retirement System (SPRS). With regard to the trustees representing the members of the several systems, current law only provides that these trustees be members of the systems that they are representing; it does not limit the individuals who serve in these positions to be active members.

Additionally, current law also provides that the trustees on the board who are members or retirees of CORS, EPS, ERS, JRS, LPP, or LEOPS shall be elected to the board by the members and retirees of those State systems. The trustee who is a member of TRS or TPS shall be elected to the board by the members and retirees of those State systems. The trustee who is a member or retiree of SPRS shall be elected to the board by the members and retirees of that State system. Similar to the board membership provisions, this section of the State Personnel and Pensions Article also does not expressly limit the members who can vote in these elections to active members.

A review of the legislative history of these provisions on board membership and trustee elections supports that the intent of the legislature when referring to "members" was to limit this pool to active members of the several systems and not to include former nonvested members who are still within their four-year membership window. SRA staff researched the past 10 years of elections and could not find any instance when an individual who was not an active member ran for a position on the board.

Regarding trustee elections, there is not reliable data for the number of individuals who are not vested when they leave service but are still within their four-year membership window. However, SRA noted that including former nonvested members still within their four-year membership window in the pool of eligible voters for trustee elections presents challenges for staff in acquiring current addresses for each of these individuals. Once members leave active service, SRA does not always receive notifications when they move. For the 2021 election, staff reported that SRA spent $65,033 on postage to mail the ballots. Voter turnout for the 2021 election was 4.73%. Since the election ended, SRA received nearly 1,000 returned ballots with incorrect addresses. SRA is concerned that if its existing practice is not codified, the cost of postage will increase significantly with the success of ballots reaching these individuals not increasing proportionally.

For these reasons, the board recommended (1) clarifying existing law to provide that only active members may serve in certain trustee positions on the board and (2) codifying its existing practice to limit ballots to active members by amending current law to reflect this practice.

The joint committee will sponsor the requested legislation.

Purchase of Service – Judges' Retirement System

Members of JRS are eligible to purchase only two types of prior service credit in JRS. These types of prior service include (1) a magistrate in chancery or magistrate in juvenile causes on or before June 30, 1975, or (2) a member of the State Workers' Compensation Commission (WCC) on or before June 30, 1977. A magistrate in chancery or juvenile causes are individuals appointed by a sitting judge as an officer of the court to perform specific functions that will deal primarily with domestic issues and include assisting the court in handling family law and juvenile matters.

At this time, individuals serving on the bench have a mandatory retirement age of 70. Factoring in this mandatory retirement age in 2021, an active member of JRS would be eligible to purchase prior service credit under these provisions only if the member had been younger than 24 when appointed as a magistrate or younger than 26 when appointed to WCC. SRA has not received an application from a member of JRS who would be eligible to purchase this service in the last 20 years. Accordingly, the board noted these purchase provisions are now obsolete and should be repealed.

The joint committee will sponsor the requested legislation.

State Police Retirement System Deferred Retirement Option Program Death Benefits

Chapter 570 of 2008 increased the SPRS retiree death benefit for the surviving spouse and minor children of a deceased SPRS retiree from 50% of the deceased retiree's allowance at the time of death to 80% of the retirement. However, when this change occurred, Chapter 570 did not include a similar amendment to provisions of the SPRS Deferred Retirement Option Program (DROP) that reference the SPRS retiree death benefit for surviving spouses and minor children. As a result, the SPRS DROP provisions that address SPRS retiree death benefits continue to state that the benefit will equal 50% of the retiree's allowance at the time of death.

A review of the legislative history for Chapter 570 indicates that this was a technical drafting error. A review of the SPRS retiree death benefits paid since 2008, when the benefit was increased to 80%, found no instances when the board paid a death benefit equal to 50% of the deceased retiree's allowance. To avoid any confusion in the future, the board recommended legislation that would amend the SPRS DROP provisions addressing the SPRS retiree death benefit to remove the reference to the SPRS retiree death benefit equaling 50% of a deceased retiree's death benefit, leaving only the language that indicates the SPRS DROP retiree death benefit shall be paid in accordance with the provision of the State Personnel and Pensions Article that establishes the SPRS retiree death benefit.

The joint committee will sponsor the requested legislation.

Investment Division Compensation Issues

Chapters 727 and 728 of 2018 provided the board with the authority to determine and create positions necessary to carry out the professional investment functions of the Investment Division and to set their compensation, subject to provisions included in the legislation. Specifically, Chapters 727 and 728 require the board to adopt objective, performance-based criteria for setting the qualifications and compensation of the Chief Investment Officer (CIO) and Investment Division staff, including incentive compensation. This legislation provides detailed guidance to the board regarding how it should establish and implement the staffing and compensation program created by Chapters 727 and 728. Included in these bills are provisions that limit the amount by which compensation may be increased to no more than 10% each year for certain Investment Division positions. Additionally, this legislation also prohibits the board from paying out any unpaid incentive compensation to the CIO or Investment Division staff after they separate from employment in the Investment Division. Since the enactment of Chapters 727 and 728, SRA has found that these provisions have unintentionally created inequities among Investment Division staff. SRA also believes provisions of this legislation will inadvertently place Investment Division staff in a position where they will ultimately have to choose between retirement and receiving financial incentives they have justifiably earned.

Compensation Levels

One of the issues that the legislature intended to address through Chapters 727 and 728 was to provide the board with the authority to develop objective criteria for setting compensation for Investment Division staff that would be competitive with similar positions in comparable public pension funds across the country. At the time that this legislation was enacted in 2018, the majority of the Investment Division staff that had discretion over investment-related decisions were receiving compensation well below the national midpoint salaries of their peers. The legislation provided the board with the authority to set the compensation for staff hired after the enactment of Chapters 727 and 728 at levels that were very near the midpoint salaries of their peers in other comparable public pension plans. For those individuals who were employed in the Investment Division prior to the passage of the legislation, the legislature included a provision that limits compensation increases to no more than 10% each year. The intent of this provision was to help "fast-track" the existing staff to reach the higher salaries new employees would be receiving.

The board developed a policy in its Investment Policy Manual that included adopting objective criteria for increasing compensation for the Investment Division staff that had discretion over investment-related decisions. To date, no employees hired on or after July 1, 2018, have received a 10% annual increase to their compensation, inasmuch as their starting compensation was already set near the midpoint salaries of their peers in comparable public pension plans.

While SRA fully appreciates the legislative intent of the 10% cap on compensation increases for Investment Division staff that have discretion over investment-related decisions, SRA believes a review of the compensation received by each of these individuals since 2018 reveals unintended instances of inequity between peers within the Investment Division performing the same functions and, in some instances, inequity between a supervisor and a subordinate. Currently, the Investment Division has 27 employees who have discretion over investment-related decisions. Of these, 14 employees are receiving compensation near the national midpoint salary of their peers, placing them within one year of reaching the midpoint salary goal. Eleven of these 14 were hired after Chapters 727 and 728 were enacted.

Of the remaining 13 employees of the Investment Division that have discretion over investment-related decisions (who were hired before the enactment of Chapters 727 and 728), 9 employees are receiving compensation that would take at least two or more years to reach the midpoint salary range of their peers in comparable public pension plans. The compensation for the four individuals serving as senior portfolio managers is lagging significantly behind, not just the national midpoint of salaries but also some of their peers within the Investment Division, because, at the time that they were hired, their compensation was subject to the salary schedule of the State Personnel Management System. For example, two of the senior portfolio managers with at least 10 years of service are currently receiving compensation that is less than compensation received by a peer hired after the enactment of Chapters 727 and 728 in their same asset group and performing their same functions. It will take another two years of 10% increases each year before these individuals reach the national midpoint salary of their peers in comparable plans and the level of compensation received by their peers in their asset group within the Investment Division. Meanwhile, their peers with considerably less service in the Investment Division who were hired after the enactment of Chapters 727 and 728 will continue to receive compensation increases (albeit not 10% annual increases) that will continually place them above these employees who were hired prior to July 1, 2018.

Because of legislation passed in 2012, the compensation for the deputy CIO and the managing director positions for the Investment Division were removed from the State Personnel Management System and placed in the Executive Pay Plan. While the Investment Division greatly appreciates the assistance that the legislature provided these employees in 2013, since that time, their salaries have also fallen well below the national midpoint salaries of their peers in comparable public pension plans. For example, a new managing director for the division was recently hired (within the last six months) very near the national midpoint salary for that position. Conversely, the existing four managing directors that were employed by the Investment Division before the enactment of Chapters 727 and 728 are all receiving compensation that is significantly less than this recent hire. Assuming consistent 10% annual increases each year, these four managing directors will not reach the midpoint salary for three or four years (depending on their current salary); while their recently hired peer, performing essentially the same duties as a managing director, will continue to outpace these employees regarding their compensation. Moreover, the deputy CIO who oversees and supervises the managing directors of the Investment Division has 20 years of service with the division. Nevertheless, this individual is currently earning less than the managing director that was recently hired and will not reach the national midpoint salary of the deputy's peers in comparable public pension plans for two more years.

Although limiting annual compensation increases to 10% for staff hired prior to the passage of Chapters 727 and 728 was reasonable at that time, this legislation has resulted in significant disparities among individuals performing the same duties within the Investment Division for what appears, at this time, nearly 10 years after the passage of the legislation granting the board independent salary setting authority for the division. This, coupled with the hiring of more individuals each year at the national midpoint compensation level, raises the potential for morale issues that could result in experienced staff leaving employment with the Investment Division. This result would be directly counter to the fundamental purpose of Chapters 727 and 728, which was, in part, to create retention within the Investment Division.

To address this issue, the board has recommended legislation that would grant the board the authority to provide the staff of the Investment Division who have discretion over investment-related decisions, were employed prior to the passage of Chapters 727 and 728, and continue to receive compensation that is more than 10% below the midpoint of their respective salary ranges relative to the national midpoint, with not more than two one-time salary increases to be approved with the intent to move these individuals up to the midpoint of their respective salary ranges.

Forfeiting Incentive Compensation

A second provision from Chapters 727 and 728 that SRA recommends amending addresses the forfeiture of any unpaid incentive compensation if an employee of the Investment Division ceases employment with the division. Current law provides that, "[i]f an individual who has earned financial incentives separates from employment in the Investment Division, the Board of Trustees may not pay out any remaining financial incentives due to be paid after the date of separation from employment."

As previously discussed, any incentive compensation awarded to Investment Division staff shall be paid over two years. The intent of paying the award over a period of time is to serve as an incentive tool for retention within the Investment Division. With a two-year payout timeframe, if an Investment Division employee ceases employment within the division, that individual may be forfeiting 50% of the previous year's incentive compensation and 100% of the current year's award. Such a financial loss would likely serve as a deterrent to move on to another employer, which was the intent. However, this provision does not provide for an exception for retirement. As a result of the law being silent with regard to retirements, Investment Division staff may forfeit incentive compensation they may have earned at the time they retire. The vagueness of this provision could ultimately serve as a disincentive for individuals to retire from State service at their normal retirement age in order not to forfeit financial incentives the individuals may have earned in their service to the system and the State.

To address this issue, the board has recommended amending this provision to provide an exception for retirements of Investment Division staff. A provision could be added for Investment Division staff that provides that the individual will be entitled to receive any outstanding incentive compensation if the individual retires from State service on or before 30 days after ceasing employment with the Investment Division.

The joint committee will sponsor the requested legislation.

Approval Process for Real Estate Transactions

In 2007, the board requested the joint committee to introduce legislation on its behalf that would amend Chapter 235 of 1993, which required the Board of Public Works (BPW) to provide final approval on all real estate transactions of the system. At that time, the board pointed out to the joint committee that since 1993, it had hired two real estate investment firms, LaSalle Investment Management and PCA Real Estate, that served as fiduciaries to the board. LaSalle served to identify appropriate properties for the system to consider for purchase or sale, while PCA was hired to serve as the board's real estate investment consultant, reviewing every sale or purchase proposed by LaSalle. The board shared with the joint committee that both LaSalle and PCA agreed that the 1993 BPW approval provision was at that time consistent with how other public pension plans handled their real estate transactions; but, by 2007, LaSalle and PCA found that the review and approval process of real estate transactions had significantly evolved, with very few public pension plans requiring outside approval of their real estate transactions. Additionally, the board noted that the BPW approval process placed the system at a competitive disadvantage in the marketplace for commercial real estate investments. The 1993 approval process enacted by Chapter 235 had added such a considerable amount of time to the process of completing real estate transactions for the system within the real estate market that the system was unable to compete effectively.

The committee agreed to sponsor the board's 2007 requested legislation to remove the BPW approval process but, in its place, added a new approval process that requires a majority of the Comptroller, Treasurer, and Secretary of Budget and Management, in their capacity as the three ex-officio trustees of the board, to approve the sale or purchase of real estate by the system. This legislation was enacted as Chapter 506 of 2008. The board stated in its testimony supporting Chapter 506 that the system already had extensive measures built into the system's direct equity real estate program to protect the system's and the State's interests and, as such, would not necessitate the need for the additional approval of BPW. The board's testimony went on to state that one of the most significant protections was the board's review of the system's real estate deals. Therefore, amending the provision requiring the approval of BPW to instead require the approval of a majority of the Comptroller, Treasurer, and Secretary of Budget and Management, was much less onerous and would not take the amount of time BPW approval required.

At the time Chapter 506 was enacted, the Real Estate Policy included in the board's Investment Policy Manual (IPM) for the system stated in part that "[t]he Board of Trustees (the "Board" or "BOT") has the final responsibility for establishing and directing the real estate investment program (the "Program") of the System." The 2008 IPM went on to provide:

> The Board of Trustees preserves unto itself the following:
> 1. Establishment and direction of the Program.
> 2. Approval of the Policy, the Strategic Plan, and Program processes to be maintained in the Investment Policy Manual (IPM).
> 3. Selection and/or termination of the Consultant.
> 4. Right to pre-screen potential real estate investment opportunities in the Type I: Private market real estate investments – Direct Equity component, of the Program.

It is evident from these provisions included in the 2008 IPM that at the time Chapter 506 was enacted, the board's involvement in the real estate program was significant. As a result, requiring a majority of the three ex-officio trustees to approve the purchase or sale of real estate for the system would not be nearly as burdensome as the prior BPW approval process, since the full board (including the three ex-officio trustees) was routinely being briefed on these transactions.

Chapter 368 of 2007, in part, granted the CIO for the system with the authority to hire and terminate all investment managers of the system. When Chapter 506 was enacted, the board was just beginning to amend the IPM to reflect the CIO's expanded authority pertaining to the system's investment program. Since the passage of Chapter 368, the IPM has been amended 28 times, many times to reflect the expanded authority of not just the CIO but the entire Investment Division staff regarding the system's investment program. The board should note that the most recent edition of the IPM no longer includes the language from the 2008 IPM that addressed the real estate investment program. In fact, the 2021 IPM now states:

> The Chief Investment Officer is delegated the responsibility for managing and overseeing the investment process, including (i) hiring external investment managers to invest the assets of the several systems, (ii) developing and implementing internal management strategies (iii) creating or selecting and purchasing interests in specific investment vehicles, including limited partnerships, limited liability companies, private equity investments, private real estate investments, and co-investments, (iv) ensuring legal review of proposed investments by the Office of the Attorney General and (v) monitoring compliance with investment contracts, State law, and both the public market and private market program policies and processes enumerated in this Investment Policy Manual.

As evidenced by this provision in the 2021 IPM, the board would no longer review each real estate transaction. In fact, it is also important to note that with the evolution of the CIO's authority over the investment program since the enactment of Chapter 368, the purchase or sale of real estate are the only investment transactions that continue to require any type of board approval. Therefore, because the full board no longer receives pre-transaction due diligence analysis and information on these transactions, any direct real estate transactions brought for review by the ex-officio trustees would now place these trustees at a disadvantage from where they stood in 2008, when the legislation was first passed. Without the system's real estate transactions going before the board for review, the ex-officio trustees, as fiduciaries to the system, would now have to assume the responsibility of independently reviewing each purchase or sale or seeking out the counsel of the Investment Division staff with any questions or concerns they may have. As a result, the system has not entered into any direct real estate transactions due to the time it would still take the ex-officio trustees to reach a level of comfort with these transactions prior to voting. These challenges presented by the 2008 legislation are very similar to the challenges the Investment Division was facing in 2007 when it sought to remove BPW approval for all real estate transactions.

Accordingly, the board recommended legislation that would remove the requirement that a majority of the ex-officio trustees approve all real estate transactions for the system. SRA reached out to its real estate consultant for information on the practices of similar peer plans. The consultant confirmed that the industry standard was to apply consistent governance processes across all asset classes, and in no case did clients delegate authority to a group outside the governing body of the pension. This review of the procedures of the system's peers plainly indicates that the approval process put in place, first by Chapter 235 of 1993 and later amended by Chapter 368 of 2008, is outdated in light of the expanded authority that not just the system's CIO has received over the last several years but CIOs of similar public pension plans across the country.

The joint committee held this request to conduct further review.

Retirement Application – Special Legislation

On May 5, 2021, SRA received an application for retirement that was signed on April 27, 2021. The member selected Option 1, which would provide for a return of the present value of the retiree's retirement benefit that is remaining at the time of the retiree's death. After reviewing the application, SRA staff rejected it due to flaws with the notarization of the document. Staff attempted to notify the member of the defects in her application on May 18, 2021. However, on June 1, 2021, SRA was notified by the family of the member that the member had passed away unexpectedly on May 5, 2021. Because the member passed away prior to receiving the notice that the notarization on her application was flawed, SRA does not have a properly completed retirement application on file for this deceased member. As a result, the Option 1 benefit cannot be paid to the deceased member's designated beneficiary. Moreover, because the deceased member was a deferred vested member of the non-contributory tier of EPS, there is no active death benefit that will be paid.

Section 22.01.14.03A(1) of COMAR provides, in part, that a retirement application is properly completed if it is completed in accordance with the form's instructions, dated, signed by the member or former member, and properly acknowledged by a notary public. This is the basis for SRA's rejection of the deceased member's application. The board noted that, but for the flawed notarization, the deceased member's application was properly completed. Given that the member did not have an opportunity to correct the flawed notarization on her application prior to her death, the board recommended special legislation that would direct SRA to accept the retirement application that was received on May 5, 2021.

The joint committee will sponsor the requested legislation.

Parole and Probation Reemployment Provision

Chapters 526 and 527 of 2012 exempt a reemployed retiree of the ERS or EPS from a retirement allowance reduction if the retiree is reemployed as a contractual parole and probation officer. Five years later, Chapters 688 and 689 of 2017 were enacted, providing that any individual serving as a parole and probation officer on or after July 1, 2017, would now be a member of CORS. The 2017 legislation did not include a reemployment exemption within CORS for parole and probation officers like the exemption established in the 2012 legislation. As a result, the enactment of Chapters 688 and 689 created an inconsistency with regard to the reemployment exemption for parole and probation officers.

Currently, an individual who retired from ERS or EPS as a reemployed retiree is eligible for a reemployment exemption if they return to work as a contractual parole and probation officer. The inconsistency in this policy occurs for parole and probation officers who will retire from CORS on or after July 1, 2017. These individuals are not eligible for a similar earnings exemption. Because this is an issue that relates to plan design, the board did not believe it could make a specific recommendation to the joint committee regarding this issue. Nevertheless, the board recommended alerting the Joint Committee on Pensions to this issue and offered two options. The first proposed option would be to add a similar exemption in the CORS reemployment provisions. The second proposed option would be to remove the exemption from the ERS and EPS reemployment provisions. The board noted it is not aware of any ERS or EPS retirees that have taken advantage of this reemployment exemption since its inception in 2012.

The joint committee will sponsor legislation to add a consistent reemployment exemption under CORS.

Presentations to the Joint Committee

COVID-19 Death Benefits – Chapters 421 and 422 of 2021

Existing law provides a benefit for a line-of-duty death of a member of one of the several systems. These benefits are found under Title 29, Subtitle 2 of the State Personnel and Pensions Article. Chapters 421 and 422 of 2021 established a uniform standard for determining eligibility for line-of-duty death benefits to be administered in an equitable and consistent manner when COVID-19 is the cause or a contributing cause to an active member’s death. In its interim report to the committee, SRA reported a total of 44 claims being made under the legislation. As Chapters 421 and 422 are scheduled to terminate on June 30, 2022, the joint committee discussed extending the sunset termination to ensure that the uniform standards established under the legislation are continued for the duration of the COVID-19 pandemic.

The joint committee will sponsor legislation to extend the sunset terminations of Chapters 421 and 422 of 2021.

Teacher Reemployment

At the November 18 meeting, the joint committee heard from MSEA about staffing issues within local school systems in the State. MSEA noted that schools and teachers are interested in bringing retired teachers back into employment on a part-time basis but are having difficulty doing so. It was noted that one reason for the difficulty may be that a retiree of the system may be subject to a reemployed earnings offset to their pension benefit. A retiree is subject to an offset when the sum of the retiree’s initial annual basic allowance and their annual compensation while reemployed exceeds the average final compensation used to compute the retiree’s allowance. Sections 22-406 and 23-407 of the State Personnel and Pensions Article do provide for exemptions for retirees reemployed at certain schools or certain teaching functions. Additionally, those sections also authorize each superintendent of a local school system to rehire a maximum of five retirees of TPS or TRS in any position in any school. These retirees are exempt from the reemployed earnings offset.

The joint committee discussed increasing the number of general exemptions for school systems to rehire TPS or TRS retirees without a reemployed earnings offset, which would remove the offset as a potential deterrent for retired teachers to return to work in a full- or part-time capacity. The joint committee also discussed including a sunset provision with reporting requirements on the use of additional waivers.

The joint committee will sponsor legislation to temporarily increase the number of exemptions from retirement offsets for retirees reemployed by a local school system in the State.

SRPS Investment Climate Risk

At its October 7 meeting, the joint committee received briefings on the issue of climate risk in relation to SRPS's investment portfolio. The effects of climate change related to carbon emissions are and will continue to be a global, national, State, and local threat to the health, safety, and prosperity of all people. For large institutional investors like SRPS and other public pension systems, climate change also presents risk to the investment portfolios held in trust to provide benefits to system participants. In recent years, many public pension plans, including SRPS, have begun more thoroughly taking into consideration the relationship between climate change and system investments. Given the long-term investment horizon of a public pension system, the consideration of the relationship between risks of climate change and a system's investments is increasingly being viewed as a proper and necessary fiduciary consideration.

The joint committee received a briefing by the SRPS principal counsel outlining the legal and fiduciary duties of the system's fiduciaries. A fiduciary of the system is bound to act solely in the interests of the system participants for the exclusive purpose of providing benefits to participants (and for reasonable expenses to administer those benefits). A fiduciary of the system is also required to act with the care, skill, prudence, and diligence that a prudent person acting in a like capacity would use. Additionally, fiduciaries have an obligation to diversify investments to minimize the risk of large losses and to act in accordance with applicable laws and documents governing the system. While SRPS is not subject to federal Employee Retirement Income Security Act law as a governmental plan, the system does look to federal Department of Labor (DOL) rules and guidance regarding fiduciary obligations in managing investments. While DOL guidance on investing related to environmental, social, and governance factors has shifted over the years, the consideration of the environmental factor of climate risk can be a proper component of a fiduciary's analysis of the economic merits of an investment.

The joint committee also received briefings on current best practices regarding assessing, monitoring, and responding to climate-related risks. Best practices included risk analysis and disclosure, net zero portfolio targets, stress-testing various climate scenarios, corporate engagement and advocacy, and consideration of transition and physical risk to assets. The joint committee was also briefed on factoring climate risk when considering investment opportunities as well as using divestment as a tool to address climate risk.

The joint committee was also briefed by the SRPS CIO regarding the system's current practices regarding climate risk. The briefing noted that climate risk to SRPS investments is not restricted to the energy sector but has impact across a number of asset classes. SRPS's current practices include both engagement and proxy voting policies that promote disclosure of relevant metrics, such as environmental practices, risks, reports, liabilities, and net zero goals. SRPS is also one of seven U.S. state pension plans that are signatories to the United Nations Principles for Responsible Investing. Finally, the CIO briefed the joint committee on the drawbacks of using divestment as a primary source of action to address climate change. The briefing noted a preference for engagement over divestment, as divestment can transfer ownership to investors for whom the impacts of climate change may not be a priority.

The joint committee discussed sponsoring legislation to address the manner in which the SRPS investment portfolio incorporates the consideration of climate risk when managing the investments of the system's beneficiaries and identified the following policy considerations as relevant:

- codification as a fiduciary duty in the consideration of the potential systemic risks of climate change's impact on the assets of the several systems, including identification of net zero aligned investments and climate change solutions to ensure a long-term sustainable portfolio;
- requiring review of the total investment portfolio to determine the level of climate risk across industry sectors;
- identification of high-impact sectors responsible for greenhouse gas emissions;
- identification of investment opportunities in emerging technologies in renewable energy and transitioning, reducing, and eliminating carbon-emitting technology;
- regular reassessment of climate risks and investment opportunities;
- utilization of best data and practices in addressing climate risk;
- evaluation of whether internal and external investment managers are taking steps to address investment climate risk;
- utilization of asset ownership to perform direct engagement, including proxy voting, to mitigate climate risk in SRPS investments;
- utilization of divestment when assets are not in conformity with system climate risk objectives; and
- managing climate risk consistent with the fiduciary duties established in law.

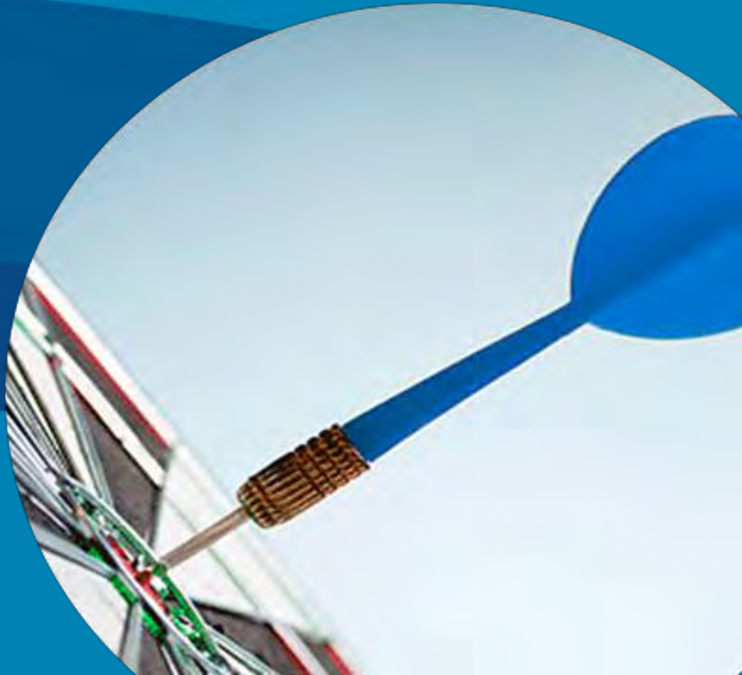
The joint committee will sponsor legislation to codify system fiduciary duties to require consideration of climate risk in managing the system's investment portfolio.

Appendix 1

Maryland State Retirement and Pension System

Results of the June 30, 2021
Actuarial Valuation for Fiscal Year 2023

November 18, 2021 Meeting of the
Joint Committee on Pensions



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BACKGROUND

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Purpose of the Actuarial Valuation

- Measure the financial position of MSRPS
- Provide the Board with State and PGU contribution rates for certification
- Provide disclosure information for financial reporting 18
  – Provided by separate GASB 67 and 68 valuations
- Analyze aggregate experience over the last year

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Funding Objectives

- Benefit Security
  - Plan sponsor commitment, strong governance, effective administration, and accommodated by sources of revenue.
- Stable pattern of contribution rates
  - Average State Actuarial Contribution rate increased by 0.05% of payroll this year.
- Intergenerational equity with respect to plan costs
  - This is a long term goal. We will only know in hindsight if it is achieved. The break with corridor funding was a step in the right direction.
- Stable or increasing ratio of assets to liabilities
  - Funded ratio improved this year on an actuarial value of assets basis and on a market value basis.

Primary Assumptions

- Economic assumptions updated for 2021 valuation
  - Economic Assumptions
    - 6.80% investment return; 2.75% payroll growth; 2.25% CPI (decreased from 7.40%/3.10%/2.60%)
    - 1.96% COLA, 2.24% COLA, 2.25% COLA for service where COLA is capped at 3%, 5% or not capped, respectively
    - 1.30% COLA for service earned after July 1, 2011 where COLA is capped at 2.5% in years when the System earns at least the investment assumption or capped at 1% in years when the System earns less than the investment assumption
- Valuation asset method adjusted in conjunction with assumption change
  - 40% of FY 2021 investment gains recognized in initial year (rather than 20%)
    - 15% recognized in each following year
- Demographic actuarial assumptions based on the 2014-2018 experience study (first used in 2019 Valuation)
  - Demographic Assumptions
    - Public Sector mortality tables with generational mortality projection using scale MP-2018
      - Calibrated to MSRPS experience
    - Retirement, termination, disability and seniority and merit salary increase rates based on plan experience

2011 Benefit Reform Scorecard

	Projected June 30, 2021 Results Based on June 30, 2010 Valuation		Actual Results
	Before Reforms	**After Reforms**	**2021 Valuation**
FY 2023 Contribution Rates No Reinvestment (% of Pay)			
ECS (State)	24.13%	19.92%	20.68%
TCS	22.39%	18.45%	14.65%
All State Plans	24.13%	20.03%	17.55%
June 30, 2021 Funded Ratio No Reinvestment			
All State Plans	70.7%	70.5%	72.7%
June 30, 2021 Funded Ratio Reinvestment			
All State Plans	70.7%	75.1%	76.2%

The 2010 valuation was the basis for the original estimates and projections related to potential effects of the 2011 reforms. Certain changes since implementation of reforms affect the comparability of the figures:

1. Systems are now receiving Actuarially Determined Contributions based on a 25 year closed amortization of UAAL ending in FY 2039. Elimination of the corridor funding method resulted in a large contribution increase for ECS State. The change was very small for TCS.
2. The General Assembly lowered reinvested savings to $75 Million from the original $300 Million in two steps beginning in FY 2014.
3. Both demographic and economic assumptions have changed since 2010 acting to increase contributions and decrease funded ratios.
4. There was overall favorable experience since 2010 (except ECS) which decreased actuarial contribution rates and increased funded ratios.

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Variables Affecting Valuation Results

- Benefits (Retirement, Disability, Survivor)
- Actual past experience
- Legislative Changes
  - 2020 General Assembly passed HB 588
    - Member contributions cease upon reaching maximum benefit for State Police (28 yrs.) and LEOPS (32.5 yrs.)
  - 2018 General Assembly passed HB 1042 and 1049
    - Increased LEOPs maximum benefit and extended State Police DROP participation
  - 2017 General Assembly passed HB 28
    - Amended provisions of HB 72, below.
    - Beginning in FY 2021 and continuing until the System is 85% funded, 25% of the budget surplus in excess of $10 million, up to a maximum of $25 million, would be made as an additional contribution to SRPS.
  - 2016 General Assembly changed amortization policy for Municipal ECS
  - 2015 General Assembly passed HB 72
    - For FY 2017-2020, 50% of the budget surplus in excess of $10 million, up to a maximum of $50 million, would be made as an additional contribution to SRPS.
    - $50 million was received in FY 2017.
    - These excess funds were eliminated in the FY 2018 and FY 2019 budgets.
  - 2011 General Assembly reforms result in a gradually decreasing normal cost rate, also increased participant contribution rates for most people

Funding Policy

- Entry Age Actuarial Cost Method
- 5-year asset smoothing/20% market value collar
  - 40% of FY2021 gains recognized, with 15% recognized in each following year
- Amortization policy
  - State Systems
    - Single period closed amortization ending in FY 2039 (17 years remaining in 2021 valuation)
  - Municipal Systems
    - ECS: Single period closed amortization period ending in FY 2043. Phased-in at 22 years in 2021 valuation (FY 2023) grading down to 20 years for the 2022 valuation (FY 2024).
    - LEOPS: Single period closed amortization period ending in FY 2040
    - CORS: Single period closed amortization period ending in FY 2047
  - Level % of payroll (except for first few years of Municipal ECS phase-in).
  - Needs to be reconsidered to control volatility once remaining period falls below about 10-15 years.
    - See Amortization Policy section for recommendations.

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PARTICIPANT DATA

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Demographic Data

	Statistics as of June 30				
	2021			2020	
Number Counts	**State**	**PGU**	**Total**	**Total**	**% Chg**
Active Members	168,758	25,553	194,311	195,851	-0.8%
Vested Former Members	41,787	6,264	48,051	48,902	-1.7%
Retired Members	149,541	19,827	169,368	167,644	1.0%
Total Members	360,086	51,644	411,730	412,397	-0.2%
Total Valuation Payroll ($ in Millions)	$11,411.0	$1,338.2	$12,749.2	$12,501.4	2.0%
Active Member Averages					
Age	46.1	49.0	46.4	46.3	0.3%
Service	12.5	11.4	12.4	12.2	1.5%
Pay	$ 67,618	$ 52,371	$ 65,613	$ 63,831	2.8%
Total Retiree Benefits ($ in Millions)	$3,940.5	$323.3	$ 4,263.8	$ 4,140.6	3.0%
Average Retiree Benefit	$ 26,351	$ 16,308	$ 25,175	$ 24,699	1.9%

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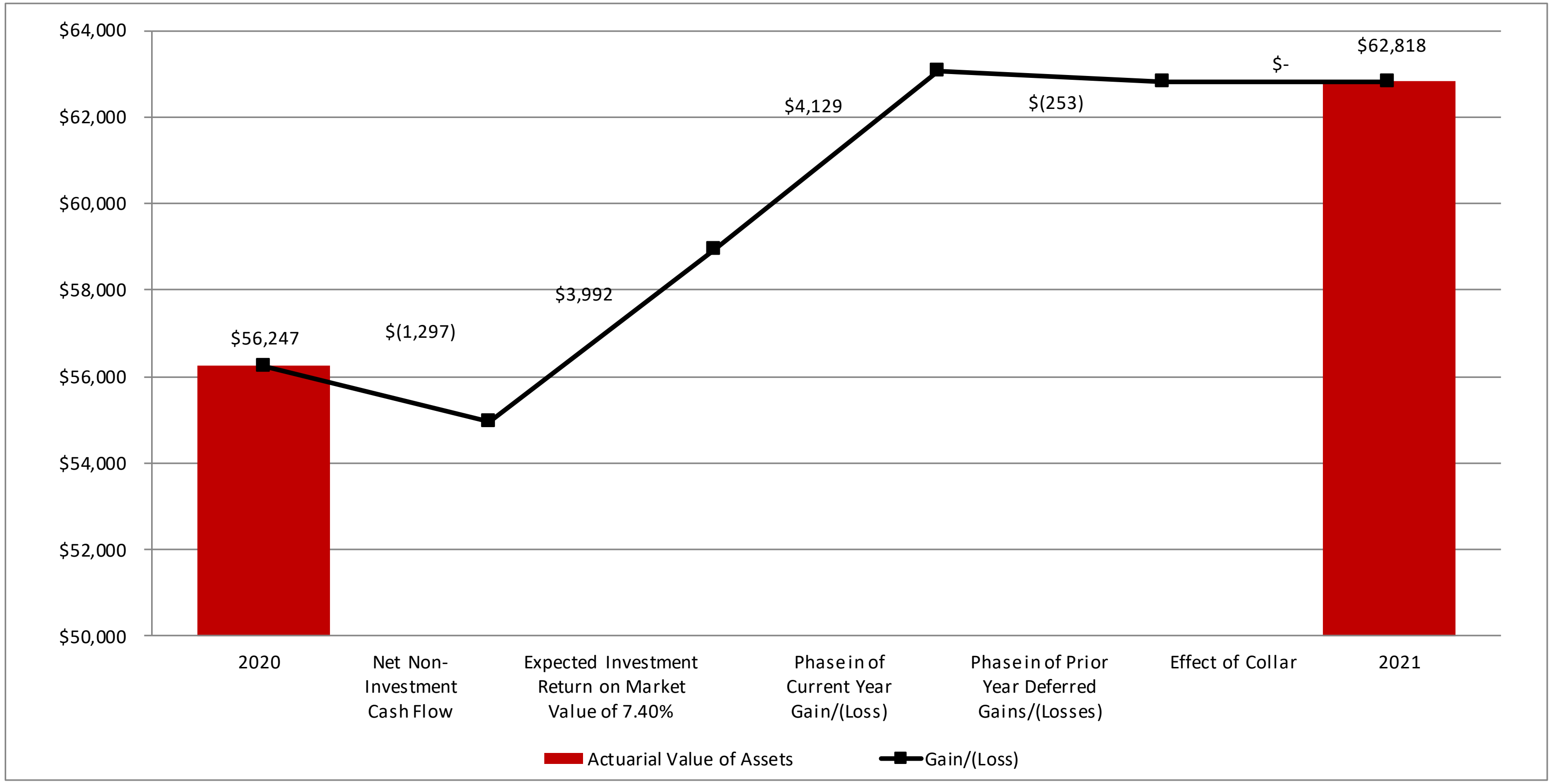
Asset Data

Actuarial Value of Assets - ($ Millions)



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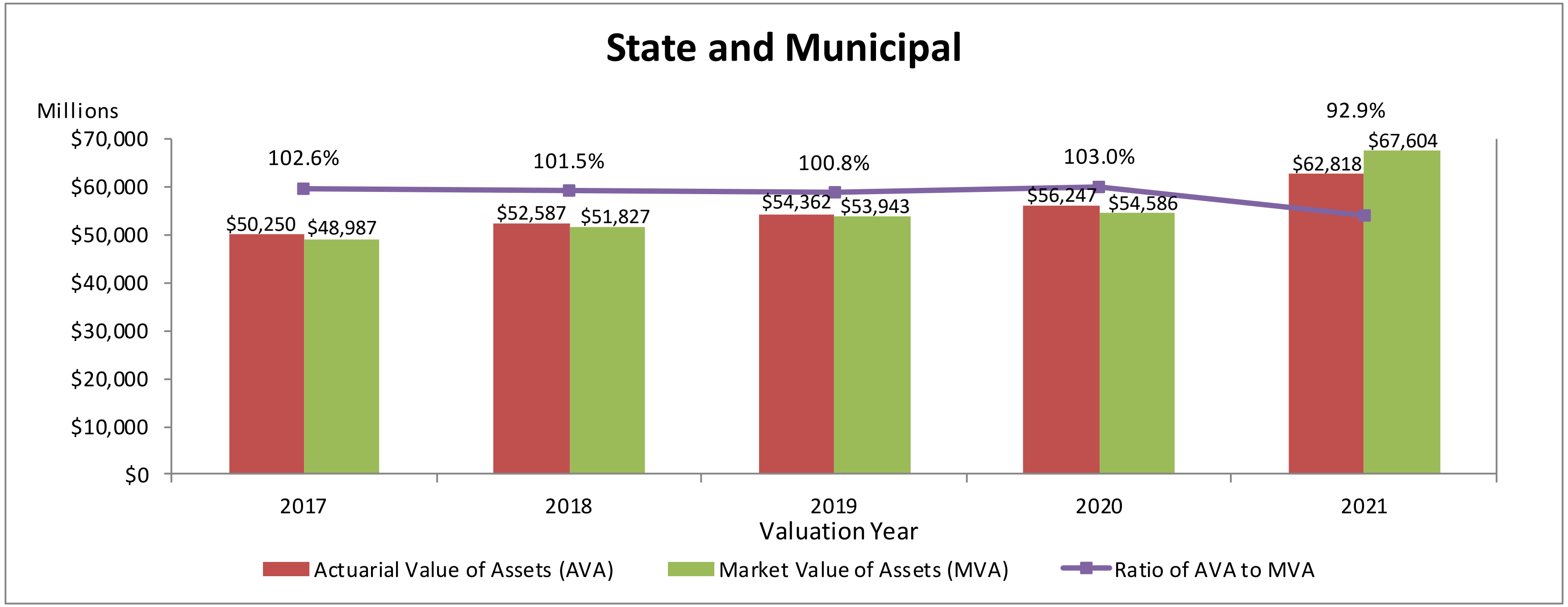
Actuarial Value of Assets - ($ Millions)



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The actuarial valuation is not based directly upon market value, but rather uses a smoothed value of assets that phases in each year's gain or loss above/below the investment return assumption over 5 years.

The $4.8B difference between the MVA and the AVA will be recognized over the next 4 valuations.

STATE RESULTS

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Net Increase in State Rates

Downward Forces

- More Investment Return (14.15% actuarial, 26.54% market[1]) than 7.40% assumed
- More Members in Reformed Systems
- FY 2022 COLA below assumption (1.234% vs. 2.60% for unlimited, 2.19% for 3% Cap, or 1.42% for Reformed)
- Individual Pay Increases below assumptions

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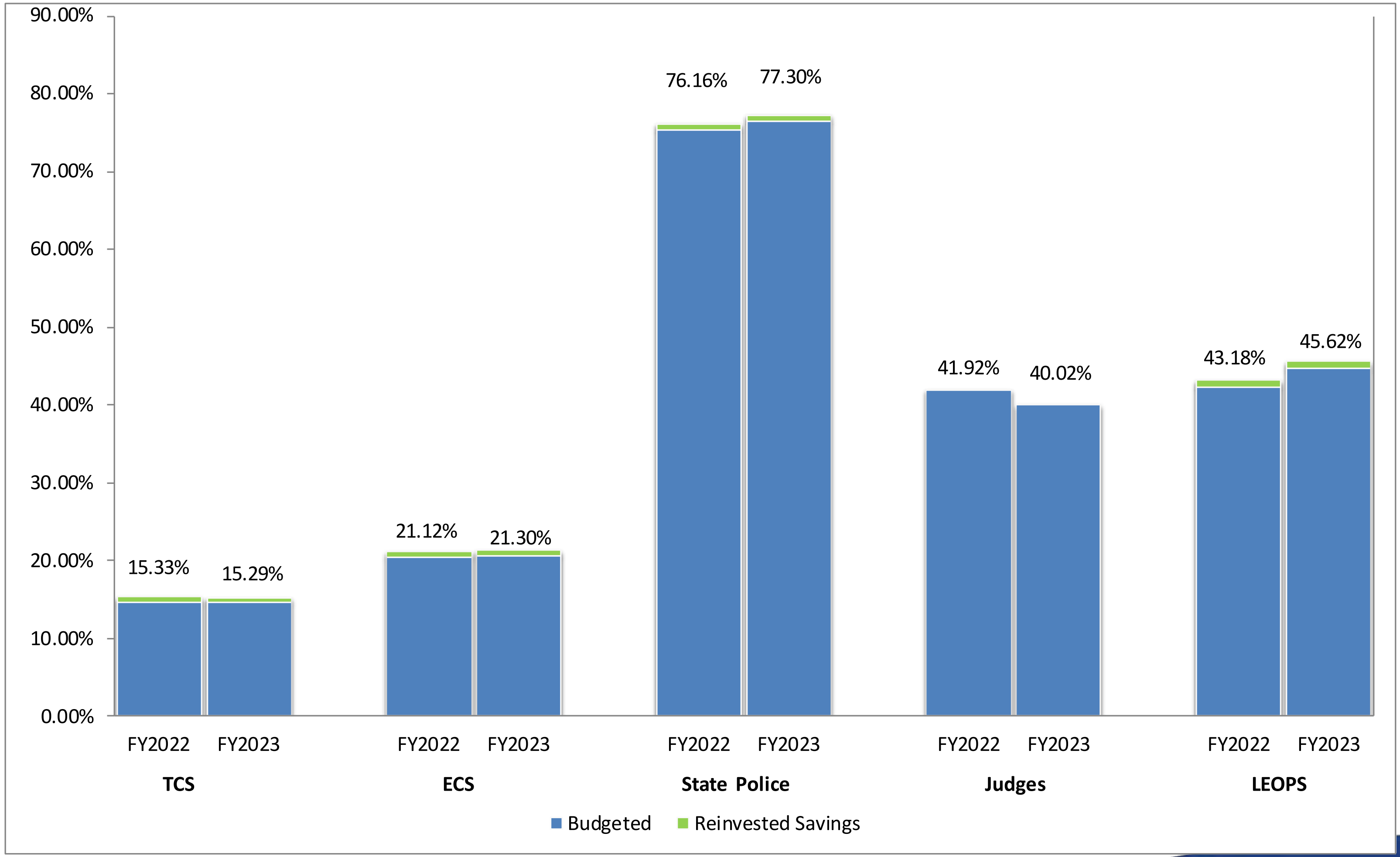
Upward forces

- Economic assumption changes
- Payroll increase of 2.0% vs. 3.10% assumed (affects UAAL rate)

[1] Rate shown is based on actuarial estimation method and differs modestly from figures reported by the System.

Actuarially Determined Contribution Rates (% of Pay)



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Year to Year Comparison of Results: STATE Systems

(STATE ONLY except as noted, $ in Millions)

	Teachers' Combined System	Employees' Combined System	State Police	Judges	LEOPS	Total
FY 2023 Contr. Rate (w. Reinv. Savings)[1]	15.29%	21.30%	77.30%	40.02%	45.62%	18.21%
FY 2022 Contr. Rate (w. Reinv. Savings)[1]	15.33%	21.12%	76.16%	41.92%	43.18%	18.18%
FY 2023 Actuarial Contribution Rate[2]	14.65%	20.68%	76.45%	40.02%	44.73%	17.55%
FY 2022 Actuarial Contribution Rate[3]	14.67%	20.50%	75.30%	41.92%	42.28%	17.50%
2021 Actuarial Value of Assets	$ 38,216	$ 15,868	$ 1,772	$ 570	$ 875	$ 57,302
2021 Unfunded Actuarial Liability	$ 9,419	$ 7,245	$ 756	$ 52	$ 424	$ 17,896
2020 Unfunded Actuarial Liability	$ 10,228	$ 7,601	$ 780	$ 77	$ 418	$ 19,104
Funded Ratios						
2021	80.2%	68.7%	70.1%	91.6%	67.4%	76.2%
(Including Municipal) [4]		*72.1%*			*68.7%*	*76.9%*
2020	77.0%	65.2%	67.0%	86.9%	64.8%	72.9%
(Including Municipal)		*68.7%*			*65.9%*	*73.6%*

[1]Contribution rates with Reinvested Savings are illustrative only and are shown to facilitate comparison when including the $75M as a percent of payroll.
[2]FY 2023 Actuarial Contribution Rate assumes Reinvested Savings of $75 will be contributed in FY 2022.
[3]FY 2022 Actuarial Contribution Rate assumes Reinvested Savings of $75 will be contributed in FY 2021.
[4]Municipal Actuarial Value of Assets of $5,516 Million and Municipal Unfunded Actuarial Liability of $1,024 Million are also included in the development of the Total Funded Ratio of 76.9%. Contribution rates are percent of pay. Contribution rates are percent of pay.

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Reconciliation of Employer Contribution Rates (% of Pay)

(STATE ONLY)

	Teachers' Combined System	Employees' Combined System	State Police	Judges	LEOPS	Total
FY 2022 Actuarial Contribution Rate	**14.67%**	**20.50%**	**75.30%**	**41.92%**	**42.28%**	**17.50%**
Change due to Investment Return	-1.09%	-1.05%	-3.34%	-2.43%	-1.52%	-1.11%
Change due to Demographic and Non-Inv. Exp.	-0.49%	-0.63%	-0.39%	-0.78%	-0.13%	-0.53%
Change due to Assumption Changes	3.09%	2.84%	8.92%	3.69%	5.84%	3.11%
Change due to Method Changes	-1.29%	-1.23%	-3.93%	-2.89%	-1.80%	-1.31%
Change due to Total Payroll Experience	0.04%	0.37%	0.34%	0.20%	0.20%	0.13%
Change due to Other	-0.28%	-0.12%	-0.45%	0.31%	-0.14%	-0.24%
FY 2023 Actuarial Contribution Rate	**14.65%**	**20.68%**	**76.45%**	**40.02%**	**44.73%**	**17.55%**
Reinvested Savings Rate	0.64%	0.62%	0.85%	0.00%	0.89%	0.66%
Final FY 2023 Total Budgeted Contr. Rate	**15.29%**	**21.30%**	**77.30%**	**40.02%**	**45.62%**	**18.21%**

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Contributions for FY 2022 were based upon the June 30, 2020 valuation.
"Change due to investment return" is the effect of the investment gain under the asset valuation method that recognizes 20% of gains/losses each year.
"Change due to method changes" is the effect of recognizing 40% of the FY 2021 investment gain.
Sources of change due to demographic experience are described on slide 16.

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Allocation of Contribution to Local Employers (Boards of Education)

Teachers Combined System

	FY2023 Contribution ($ in Millions)			
	% of Pay	Total	Local Employers	State
Employer Normal Cost	5.12%	$ 404.6	$ 373.0	$ 31.6
UAAL Amortization	9.53%	752.8	-	752.8
Reinvested Savings	0.64%	50.8	-	50.8
Total	15.29%	$ 1,208.2	**$ 373.0**	$ 835.2

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	FY2022 Contribution ($ in Millions)			
	% of Pay	Total	Local Employers	State
Employer Normal Cost	4.17%	$ 322.1	$ 296.5	$ 25.6
UAAL Amortization	10.50%	811.1	-	811.1
Reinvested Savings	0.66%	50.8	-	50.8
Total	15.33%	$ 1,184.0	**$ 296.5**	$ 887.5

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Calculation of Contributions Attributable to Reinvestment Amounts

(STATE ONLY, $ in Millions)

	Teachers' Combined System	Employees' Combined System	State Police	Judges	LEOPS	Total
% of Total Pension Reform Savings#	67.7%	29.4%	1.4%	0.0%	1.5%	100.0%
Reinvested Savings	$ 50.8	$ 22.0	$ 1.1	$ -	$ 1.2	$ 75.0
FY 2023 Contributions						
Illustrated Dollar Contributions	$ 1,157.4	$ 737.9	$ 94.8	$ 21.7	$ 58.3	$ 2,070.1
TCS Local Employer Contributions	$ (373.0)	$ -	$ -	$ -	$ -	$ (373.0)
Reinvested Savings	$ 50.8	$ 22.0	$ 1.1	$ -	$ 1.2	$ 75.0
State Total Illustrated Contribution	**$ 835.2**	**$ 759.9**	**$ 95.9**	**$ 21.7**	**$ 59.5**	**$ 1,772.1**
FY 2022 Contributions						
Illustrated Dollar Contributions	$ 1,133.2	$ 729.6	$ 91.7	$ 22.8	$ 54.1	$ 2,031.4
TCS Local Employer Contributions	$ (296.5)	$ -	$ -	$ -	$ -	$ (296.5)
Reinvested Savings	$ 50.8	$ 22.0	$ 1.1	$ -	$ 1.2	$ 75.0
State Total Illustrated Contribution	**$ 887.5**	**$ 751.6**	**$ 92.8**	**$ 22.8**	**$ 55.3**	**$ 1,809.9**
State Year over Year Change	$ (52.3)	$ 8.3	$ 3.1	$ (1.1)	$ 4.2	$ (37.8)

 # Based on Calculations from June 30, 2011 Valuation.

FY 2023 Contribution based on payroll as of June 30, 2021, projected to FY 2022 for TCS and FY 2023 for all other systems. FY 2022 Contribution based on payroll as of June 30, 2020, projected to FY 2021 for TCS and FY 2022 for all other systems. FY 2022 and FY 2023 Contributions for TCS would be $1,215 Million and $1,240 Million, respectively, if payroll was projected in the same manner as for the other systems (based on payroll projected one additional year to FY 2022 and FY 2023, respectively).

MUNICIPAL RESULTS 36

Year-to-Year Comparison of Results: MUNICIPAL Systems

(MUNICIPAL ONLY, $ in Millions)

	Employees' Combined System	LEOPS	CORS	Total
FY 2023 Basic (Pooled) Contribution Rate	7.40%	36.20%	12.19%	**9.02%**
FY 2022 Basic (Pooled) Contribution Rate	7.04%	34.21%	11.06%	**8.55%**
2021 Actuarial Value of Assets	$ 5,064	$ 414	$ 38	$ 5,516
2021 Unfunded Actuarial Liability	$ 856	$ 162	$ 6	$ 1,024
2020 Unfunded Actuarial Liability	$ 953	$ 162	$ 6	$ 1,120
Funded Ratios				
2021	85.5%	71.8%	87.2%	**84.3%**
2020	82.7%	68.5%	85.8%	**81.5%**

Contribution rates are percent of pay.

RISK/MATURITY MEASURES

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Risk Measures Summary

State and Municipal ($ in Millions)

Valuation Date (6/30)	(10) Market Value Funded Ratio[1]	(11) RetLiab / AAL[2]	(12) AAL / Payroll[3]	(13) Assets / Payroll[3]	(14) Non-Investment Cash Flow	(15) NICF / Assets[4]
2015	69.1%	58.2%	599.1%	413.9%	$ (748)	-1.6%
2016	66.9%	58.7%	607.6%	406.7%	(921)	-2.0%
2017	70.0%	58.7%	612.9%	429.0%	(852)	-1.7%
2018	71.4%	59.6%	627.5%	448.1%	(1,059)	-2.0%
2019	72.4%	59.6%	626.0%	453.1%	(1,172)	-2.2%
2020	71.4%	59.3%	611.7%	436.6%	(1,224)	-2.2%
2021	82.7%	58.4%	641.1%	530.3%	(1,297)	-1.9%

[1] The Funded ratio is the most widely known measure of a plan's financial strength, but the trend in the funded ratio is much more important than the absolute ratio. The funded ratio should trend to 100%. As it approaches 100%, it is important to re-evaluate the level of investment risk in the portfolio and potentially to re-evaluate the assumed rate of return.
[2] The ratio of retiree liabilities to total accrued liabilities gives an indication of the maturity of the system. As the ratio increases, cash flow needs increase, and the liquidity needs of the portfolio change. A ratio on the order of 50% indicates a maturing system.
[3] The ratios of liabilities and assets to payroll gives an indication of both maturity and volatility. Many systems have ratios between 500% and 700%. Ratios significantly above that range may indicate difficulty in supporting the benefit level as a level % of payroll.
[4] A positive net cash flow means contributions exceed benefits and expenses. A negative cash flow means existing funds are being used to make payments. A certain amount of negative net cash flow is generally expected to occur when benefits are prefunded through a qualified trust. Large negative net cash flows as a percent of assets may indicate a very mature plan or a need for additional contributions.

CONCLUSION

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Recommended Budgeted Contributions Fiscal Year 2023: STATE

System	Fiscal 2023 Budgeted Rate	Fiscal 2023 Illustrated Dollars (Millions)	Prior Year Budgeted Rate	Prior Year Illustrated Dollars (Millions)
TCS	**14.65%**	$1,157	14.67%	$1,133
ECS	**20.68%**	738	20.50%	730
State Police	**76.45%**	95	75.30%	92
Judges	**40.02%**	22	41.92%	23
LEOPS	**44.73%**	58	42.28%	54
Total	17.55%	$2,070	17.50%	$2,031
TCS Local Employer Portion		373		297
Total State Only Portion		$1,697		$1,735

Reinvested savings of $75 Million are to be added to the amounts above. The final Illustrated State Total for FY 2023 is therefore $1,772 Million plus any amounts resulting from the sweeper amendment. Contribution rates are percent of pay.

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Recommended Basic Contributions Fiscal Year 2023: MUNICIPAL

System	FY 2023	FY 2022
ECS	**7.40%**	7.04%
LEOPS	**36.20%**	34.21%
CORS	**12.19%**	11.06%

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PGU Contributions consist of the basic pooled rate shown above, certain surcharges, deficits or credits related to pre-2001 ECS liability, and new entrant and withdrawal payments and credits, all of which are shown in the full report. Contribution rates are percent of pay.

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Concluding Comments

– Experience in total was favorable during FY 2021, which was offset by increases in liability due to new assumptions.
– Aggregate State employer contribution rates increased very slightly, although some Systems' rates decreased.
– Downward pressure on contribution rates expected through FY 2027 due to deferred asset gains.
– State Systems on a path to reach a 100% funded ratio by 2039.

AMORTIZATION POLICY

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Current Maryland Amortization Policy

- GRS performed a Comprehensive Maryland Specific Funding Policy Study in 2009 and the legislature implemented changes
- State Plans
  - 25-year closed for State plans ending June 30, 2039
    - 17 years remaining as of June 30, 2021 actuarial valuation
  - Corridor funding method eliminated
- Municipal Plans
  - ECS Municipal is phasing down to 20-year closed (for the June 30, 2022 valuation) ending June 30, 2043
  - LEOPS Municipal 18-year closed ending June 30, 2040
  - CORS Municipal 25-year closed ending June 30, 2047
- 2011 Reforms in place
- Further change recommended because gains and losses could introduce too much volatility when remaining period is short

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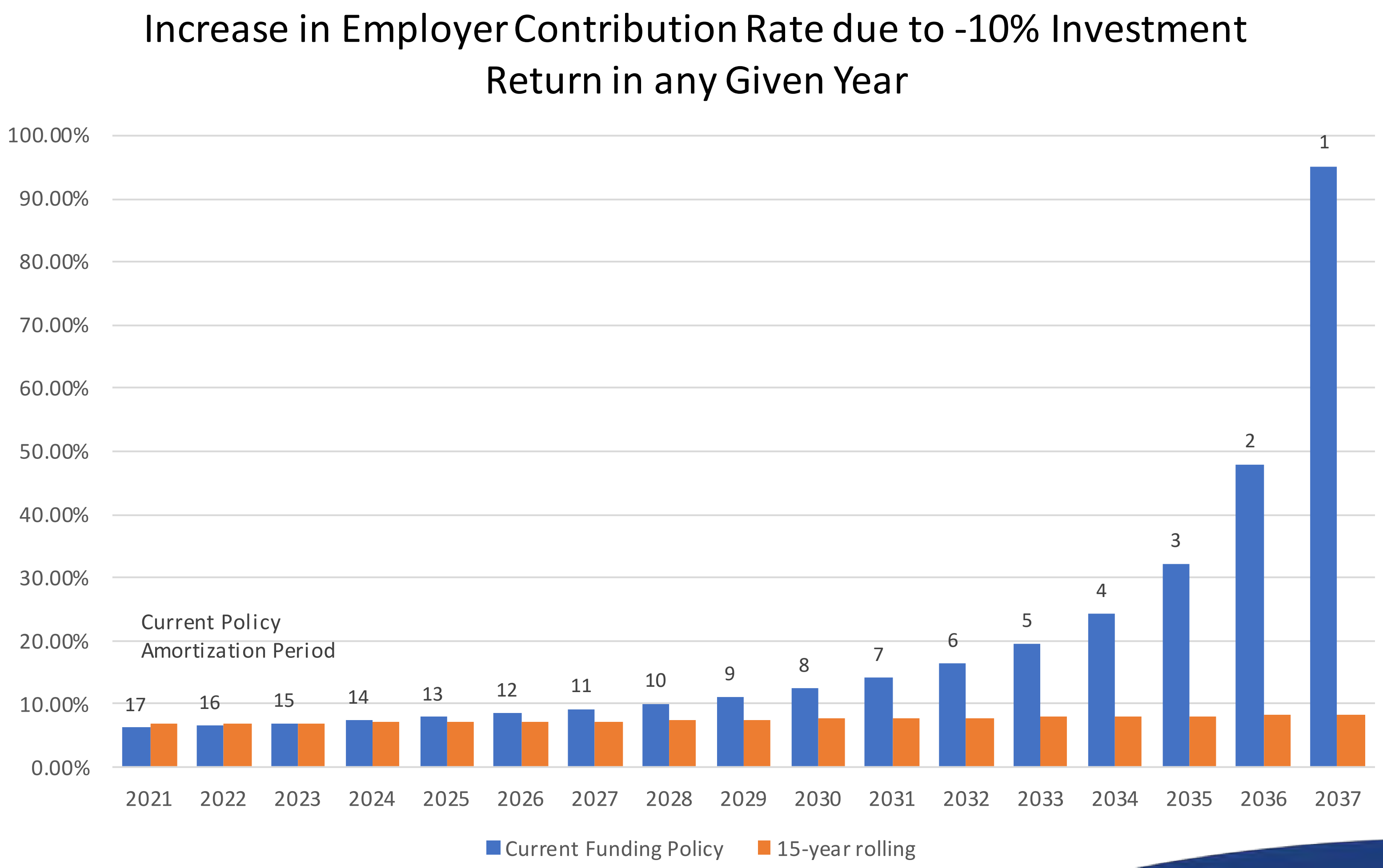
Illustration of Potential Contribution Volatility



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Amortization Policy Considerations

- The ideal solution would include moving to a policy that is compatible with the guidelines by the Conference of Consulting Actuaries (CCA), and not having the policy defined in statute.
- If the policy is to remain in statute, the Board/Staff should have flexibility to make periodic adjustments as needed to avoid unnecessary volatility
- Possible alternatives were discussed by an Ad Hoc Committee and recommended to the Board
- The Board adopted the recommended policy at the September meeting. Legislation would be needed to enable this policy.

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Adopted Amortization Policy

	Board Adopted Amortization Policy
Policy Change Point	Current period reaches *15* years
Amortization of:	
Current UAAL	Continue closed schedule (17 years remaining in 2021)
Gains/Losses	15 years *pooled*; *rolling (open)*
Assumption Changes	25 years layered; closed
Plan Amendments	10-15 years layered depending on group affected; closed ERP: 5 years; closed
CCA Evaluation	*Acceptable with conditions*

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Summary of Deliberations & Recommendation

- Current policy will inevitably lead to volatile contribution requirements
- In the near future the adopted policy can moderate extreme contribution changes due to investment gains and losses.
- Adopted policy has a longer amortization period for assumption changes than the current policy
  - Lessens the first year impact of changes that increase cost
  - Easier for the Board to adjust assumptions in response to changing conditions
- We note the use of any rolling periods may result in a GASB crossover point
  - This could result in accounting liabilities being calculated at a lower rate than the funding valuation rate (6.8%), resulting in higher liabilities for accounting purposes

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Other Recommendations

- Don’t let contribution rate go below the Normal Cost
- Maintain flexibility to combine and offset bases as needed in order to avoid unnecessary volatility
- Reconsider portfolio risk as funding level increases
  – Ideal would be 100% funded at a relatively low level of risk
- Coordinate the Municipal funding policy with that for the State, but consider Municipal specific issues
- Develop a risk centered policy for withdrawal liability (currently statutory) and for early retirement windows
- GRS can work with staff to spell out policy in detail in preparation for final approval or legislative package

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Disclosures

- This presentation is intended to be used in conjunction with the June 30, 2021 actuarial valuation reports. This presentation should not be relied on for any purpose other than the purpose(s) described in the valuation reports.

- This presentation shall not be construed to provide tax advice, legal advice or investment advice.

- The actuaries submitting this presentation (Brian Murphy, Brad Armstrong, and Amy Williams) are Members of the American Academy of Actuaries and meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinions contained herein. 51

- The purposes of the actuarial valuation are to measure the financial position of MSRPS, assist the Board in establishing employer contribution rates necessary to fund the benefits provided by MSRPS, and provide certain actuarial reporting and disclosure information for financial reporting. There is an additional report and documents with other actuarial reporting and disclosure information for financial reporting.

Disclosures

- Future actuarial measurements may differ significantly from the current and projected measurements presented in this presentation due to such factors as the following: plan experience differing from that anticipated by the economic or demographic assumptions; changes in economic or demographic assumptions; increases or decreases expected as part of the natural operation of the methodology used for these measurements (such as the end of an amortization period or additional cost or contribution requirements based on the plan's funded status); and changes in plan provisions or applicable law.

- This presentation was prepared using our proprietary valuation model and related software which in our professional judgment has the capability to provide results that are consistent with the purposes of the valuation. We performed tests to ensure that the model reasonably represents that which is intended to be modeled.

- This is one of multiple documents comprising the actuarial reports for the combined systems and the municipal corporations. Additional information regarding actuarial assumptions and methods, and important additional disclosures are provided in the Actuarial Valuations as of June 30, 2021.

- If you need additional information to make an informed decision about the contents of this presentation, or if anything appears to be missing or incomplete, please contact us before relying on this presentation.

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Appendix 2

Annual State Retirement and Pension System Investment Overview

Presented to the
Joint Committee on Pensions

Department of Legislative Services
Office of Policy Analysis
Annapolis, Maryland

December 2021

Annual State Retirement and Pension System's Investment Overview

At the request of the Joint Committee on Pensions, the Department of Legislative Services (DLS) annually reviews the investment performance of the State Retirement and Pension System (SRPS) for the preceding fiscal year. This report is intended to provide an overview of SRPS performance, a comparison of this performance to its peers, and an identification of issues meriting further comment by the State Retirement Agency (SRA).

State Retirement and Pension System Investment Performance

Asset Allocation

The SRPS Board of Trustees sets the allocation of assets to each investment class and continuously monitors the appropriateness of the allocation in light of its investment objectives. The SRPS *Investment Policy Manual* sets forth the investment objectives:

> The Board desires to balance the goal of higher long-term returns with the goal of minimizing contribution volatility, recognizing that they are often competing goals. This requires taking both assets and liabilities into account when setting investment strategy, as well as an awareness of external factors such as inflation. Therefore, the investment objectives over extended periods of time (generally, 10 to 20 years) are to achieve an annualized investment return that:
>
> 1. In nominal terms, equals or exceeds the actuarial investment return assumption of the System adopted by the Board. The actuarial investment return assumption is a measure of the long-term rate of growth of the System's assets. In adopting the actuarial return assumption, the board anticipates that the investment portfolio may achieve higher returns in some years and lower returns in other years.
>
> 2. In real terms, exceeds the U.S. inflation rate by at least 3%. The inflation-related objective compares the investment performance against the rate of inflation as measured by the Consumer Price Index (CPI) plus 3%. The inflation measure provides a link to the system's liabilities.
>
> 3. Meets or exceeds the system's Investment Policy Benchmark. The Investment Policy Benchmark is calculated by using a weighted

average of the board-established benchmarks for each asset class. The Policy Benchmark enables comparison of the system's actual performance to a passively managed proxy and measures the contribution of active investment management and policy implementation.

The assets allocation is structured into five categories:

- ***Growth Equity:*** public equity (domestic, international developed, and international emerging markets) and private equity investments;

- ***Rate Sensitive:*** investments in bonds, loans, or associated derivatives with an average portfolio credit quality of investment grade;

- ***Credit:*** investments in bonds, loans, or associated derivatives with an average portfolio credit quality of below investment grade;

- ***Real Assets:*** investments whose performance is expected to exceed the rate of inflation over an economic cycle; and

- ***Absolute Return:*** consists of investments that are expected to exceed the three-month U.S. Treasury bill by 4-5% over a full market cycle and exhibit low correlation to public stocks.

Included within these asset classes are sub-asset classes. The board approves adjustments to the asset allocations and sets transitional targets. The board also approves target ranges for sub-asset classes as well as constraints on hedge fund exposure, with total hedge fund investments capped across all asset classes. In fall 2021, the board made adjustments to the system's asset allocation. **Exhibit 1** shows system asset allocations in relation to the strategic targets in effect on June 30, 2021, and under the changes adopted in September 2021.

Exhibit 1

State Retirement and Pension System Asset Allocation

Asset Class	Target June 30, 2021	Target September 21, 2021
Growth Equity		
U.S. Equity	16%	15%
International Equity	10%	9%
Emerging Markets Equity	11%	10%
Private Equity	13%	16%
Subtotal	***50%***	***50%***
Rate Sensitive		
Long-term Government Bonds	10%	10%
Cash and U.S. Investment Grade Bonds	5%	6%
Inflation-linked Bonds	4%	5%
Subtotal	***19%***	***21%***
Credit/Debt		
High Yield Bonds and Bank Loans	7%	4%
Emerging Market Debt	2%	4%
Subtotal	***9%***	***8%***
Real Assets		
Real Estate	10%	10%
Natural Resources and Infrastructure	4%	5%
Subtotal	***14%***	***15%***
Absolute Return	**8%**	**6%**
Total Fund	**100%**	**100%**

Note: Columns may not add to total due to rounding.

Source: State Street – State Retirement Agency of Maryland – Rates of Return – Net Mgr – Periods Ending June 30, 2021; State Retirement and Pension System

The system's asset allocation is reflective of a decision to restructure the portfolio in fiscal 2008 and 2009. The overall strategy is part of an approach by the board to decrease risk through diversification in the wake of the 2008 financial crisis. Increased investment in private equity has resulted in positive returns for the system with less experienced volatility than public equity. Lower allocations to public equity investments are expected to result in lower returns when public equities are in growth patterns. However, as public equity can be a highly volatile asset class, a more diverse investment allocation should reduce volatility to provide protection when equity markets perform poorly or decline. While mitigating volatility will result in not taking full advantage of highly performing public equity markets, more stable investment returns will also mitigate swings in employer contribution rates. The board of trustees and the investment committee monitor the allocation of assets and continue to discuss the appropriate allocation (in consultation with the system's investment staff and investment consultants) that will achieve the system's investment return needs. Given the certain nature of defined benefit payment obligations, prudent allocation strategy should consider both achieving positive returns as well as being positioned to avoid losses. While investment division staff have some authority to make tactical, short-term adjustments to asset allocations, the *Investment Policy Manual* states an objective of long-term investment strategy, acknowledging the system's long-term investment horizon may lead to short-term volatility.

The asset allocation targets for the period ending June 30, 2021, were put in effect on October 1, 2017. As part of its periodic review of the asset allocation targets, the board-adopted changes recommended by the system's investment consultant and the investment division. The changes adopted in September 2021 include increased allocations to private equity (one of the strongest performing asset classes) and a decrease in the target allocation to the absolute return asset class. The system's *Investment Policy Manual* for the board of trustees for SRPS will reflect actions of the board altering the asset allocation and can be found on SRA's website.

Investment Performance

The system's investment return for fiscal 2021 was 26.69% net of management fees, exceeding the assumed rate of return of 7.40%. The system also exceeded its policy benchmarks for the system as a whole, driven by returns in the growth equity asset class. System performance was driven primarily by growth equity returns, which made up 52.6% of the portfolio and returned 47.08% for the fiscal year, which was 253 basis points above its benchmark. The system was able to weather the volatility introduced into markets with the spread of the COVID-19 pandemic and the interruption of economic activity resulting from public health measures taken to curb the spread of the virus.

As shown in **Exhibit 2**, the system's assets totaled $67.9 billion as of June 30, 2021 – a significant increase over the $54.8 billion in assets at the end of fiscal 2020.

Significant investment gains or losses can impact the allocation of the investment portfolio to certain asset classes. The asset allocation targets set by the board are intended to maintain an acceptable risk tolerance for the system, providing protection for the system against investment volatility. The investment returns of each asset class can result in deviation from the target allocations, requiring additional oversight to maintain the overall asset allocation within the system's established risk tolerance.

Exhibit 2

State Retirement and Pension System of Maryland

Fund Investment Performance for Periods Ending June 30, 2021
($ in Millions)

			Time Weighted Total Returns		
	Assets	% Total	1 Year	5 Years	10 Years
Growth Equity					
Public Equity	$24,155	35.5%	44.54%	15.07%	10.50%
Private Equity	11,577	17.1%	51.85%	19.76%	15.97%
Subtotal	***$35,732***	***52.6%***	***47.08%***	***16.38%***	***11.62%***
Rate Sensitive					
Nominal Fixed Income	$8,148	12.0%	-5.31%	4.36%	4.81%
Inflation Sensitive	2,677	3.9%	6.61%	4.29%	3.85%
Subtotal	***$10,825***	***15.9%***	***-2.53%***	***4.40%***	***4.70%***
Credit/Debt					
High Yield Bonds and Bank Loans	$4,918	7.2%	15.90%	7.33%	6.98%
Non-U.S. Credit	1,316	1.9%	8.70%	4.55%	0.60%
Subtotal	***$6,235***	***9.2%***	***14.36%***	***6.41%***	***6.08%***
Real Assets					
Real Estate	$5,023	7.4%	8.80%	6.42%	9.04%
Natural Resources and Infrastructure	2,565	3.8%	27.31%	4.88%	5.22%
Subtotal	***$7,599***	***11.2%***	***14.81%***	***5.29%***	***2.90%***
Absolute Return	**$5,882**	**8.7%**	**15.51%**	**4.36%**	**3.38%**
Multi Asset	**$668**	**1.0%**	**24.11%**	**n/a**	**n/a**
Cash and Cash Equitization	**$943**	**1.4%**	**2.04%**	**5.32%**	**3.85%**
Total Fund	**$67,883**	**100.0%**	**26.69%**	**10.68%**	**8.15%**

Note: Returns beyond one year are annualized. Returns are net of fees. Columns may not add to total due to rounding.

Source: State Street – State Retirement Agency of Maryland – Rates of Return – Net Mgr – Periods Ending June 30, 2021

DLS requests SRA to comment on actions taken to maintain target asset allocations, and how the system managed its asset allocation during fiscal 2021 while experiencing significant investment growth.

As shown in **Exhibit 3**, the system as a whole performed 2.27% (227 basis points) above the benchmark, further enhancing the system's record returns for the fiscal year. With the exception of the rate sensitive asset class, all of the major asset classes – including their sub-asset classes – achieved returns in excess of the assumed rate of return of 7.40%. The rate sensitive asset class returned -2.53% for the year, though this outperformed the benchmark of -3.91%. The system's private equity assets had the most significant return – 51.85% – though underperforming its benchmark. Public equity had the most significant performance, beating its benchmark by 4.03%. The real assets, absolute return, and multi asset classes all returned at least twice the assumed rate of return, but also all underperformed their benchmarks.

Exhibit 3

State Retirement and Pension System of Maryland

Benchmark Performance for Year Ending June 30, 2021

	Return	Return Benchmark	Excess
Growth Equity	**47.08%**	**44.55%**	**2.53%**
Public Equity	44.54%	40.52%	4.03%
Private Equity	51.85%	53.13%	-1.28%
Rate Sensitive	**-2.53%**	**-3.91%**	**1.37%**
Nominal Fixed Income	-5.31%	-6.50%	1.20%
Inflation Sensitive	6.61%	6.51%	0.10%
Credit	**14.36%**	**12.82%**	**1.53%**
High Yield Bonds and Bank Loans	15.90%	14.63%	1.27%
Non-U.S. Credit	8.70%	6.56%	2.14%
Real Assets	**14.81%**	**16.30%**	**-1.48%**
Real Estate	8.80%	7.51%	1.29%
Natural Resources and Infrastructure	27.34%	37.07%	-9.73%
Absolute Return	**15.51%**	**15.86%**	**-0.34%**
Multi Asset	**24.11%**	**24.42%**	**-0.31%**
Cash and Cash Equitization	**2.04%**	**0.08%**	**1.95%**
Total Fund	**26.69%**	**24.42%**	**2.27%**

Source: State Street – State Retirement Agency of Maryland – Rates of Return – Net Mgr – Periods Ending June 30, 2021

DLS requests SRA to comment on the fiscal 2021 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 2022, and what actions are being taken to mitigate those factors from impacting the fiscal 2022 returns.

Performance Relative to Other Systems

One method of evaluating the system's investment performance is to compare the system's investment performance with the performance of other systems. The Wilshire Trust Universe Comparison Service (TUCS) rankings are useful for providing a big picture, snapshot assessment of the system's performance relative to other large public pension plans. In the TUCS analysis, the one-hundredth percentile represents the lowest investment return, and the first percentile is the highest investment return. According to TUCS, the system's fiscal 2021 total fund investment performance was rated in the sixty-fourth percentile among the public pension funds with at least $25 billion in assets, as shown in **Exhibit 4**. As the system has historically had a low allocation to equity investments compared to its peers – and domestic equity in particular – the system's investment policy will have a low TUCS ranking when equity markets are experiencing strong performance, as has been the case for a number of recent years. The long-term relative performance rankings have placed SRPS' relative total fund performance in the bottom quartile, with improvement in recent years. The TUCS rankings are based on returns gross of fees.

Exhibit 4

TUCS Percentile Rankings for Periods Ending June 30

Fiscal 2018-2021

	2018	2019	2020	2021
1 Year	75	60	53	64
3 Years	94	92	60	57
5 Years	84	88	71	75
10 Years	94	87	87	88

TUCS: Wilshire Trust Universe Comparison Service

Note: Rankings for systems greater than $25 billion.

Source: Wilshire Trust Universe Comparison Service

The impact of asset allocation on total system TUCS rankings can be seen in the system's TUCS rankings on performance within individual asset classes. While the system as a whole has experienced relatively low rankings when compared to peer systems, the system has experienced better relative performance by asset class, as shown in **Exhibit 5**. The difference in relative rankings between the system as a whole and the system by asset class – particularly for the long-term rankings – indicates that the asset allocation has impacted the relative ranking of the total system return, with the system having lower allocations to public equity, and domestic public equity in particular. This effect can also be seen in the ranking for total equity. The system does not have a bias to U.S. equity, which had strong performance in recent years. While the system ranks well in its performance in U.S. equity, the lesser amount of assets in U.S. equity will impact the total equity ranking compared to peer systems with higher allocations in U.S. equity.

Exhibit 5

TUCS Percentile Rankings for Periods Ending June 30, 2021

Asset Class	1-year	3-year	5-year	10-year
Total Equity	9	29	45	50
U.S. Equity	11	27	27	36
International Developed	49	37	42	63
International Emerging	33	40	30	n/a
Fixed Income	93	5	30	31
Private Equity	13	14	18	1
Real Estate	33	5	46	55

TUCS: Wilshire Trust Universe Comparison Service

Note: Rankings for systems greater than $1 billion.

Source: Wilshire Trust Universe Comparison Service

Recent historical returns have seen strong returns in public equity, which can be a highly volatile asset class. Allocations that limit exposure to more volatile assets should result in more stable employer contribution rates over time. An allocation that would result in mitigating volatility of returns (whether excess gains, returns below the assumed rate of return, or investment losses) will also mitigate the impact to employer contributions from contribution rate increases. A system's asset allocation should be impacted by a number of considerations that reflect a system's risk tolerance. A system's maturity (ratio of retirees to active members), funded status, assumed rate of return, benefit structure, regularity of full contributions, and other considerations factor into a system's risk tolerance. The importance of these factors will vary from plan to plan leading to different tolerances for risk, variation in investment allocations, and differences in annual returns.

TUCS provides data on the risk-return profile of its members that shows that the system's level of risk over the three-year period ending June 30, 2021, was below the median for other public funds with assets greater than $25 billion. This is consistent with the system's comparatively lower allocation to public equity that can be a highly volatile asset class. The system's asset allocation strategy is intended to protect against more extreme losses in down markets. Due to the nature of the benefits that the system's investments ultimately fund, there is prudence in setting an asset allocation that achieves the necessary investment returns with the lowest level of risk capable of achieving those returns.

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.

Investment Management Fees

As shown in **Exhibit 6**, SRPS incurred $544.0 million in investment management fees during fiscal 2021, an increase from $364.1 million in fiscal 2020 fees. The increase is largely attributable to the $13.6 billion in growth of the system's assets and corresponding incentive-based fee arrangements, which increased from $38.6 million in fiscal 2020 to $169.2 million in fiscal 2021. Management fees for the plan have grown substantially since the system adjusted its asset allocation to invest more heavily in alternative asset classes with higher fee structures. The shift of public equity assets to global and emerging market equity managers, which are almost all active managers, has also contributed to the growth in fees over the past few years. As a percent of assets under management, management fees in fiscal 2021 were higher than in fiscal 2020 by 18.4 basis points.

Exhibit 6
Asset Management Fees Paid by Asset Class
Fiscal 2019-2020
($ in Millions)

	2020				2021			
Asset Class	**Management Fee**	**Incentive Fee**	**Total**	**Fees as % of Asset**	**Management Fee**	**Incentive Fee**	**Total**	**Fees as % of Asset**
Equity	$69.4	$1.2	$70.7	0.39%	$83.1	$43.5	$126.6	0.64%
Rate Sensitive	13.4	6.0	19.4	0.30%	14.2	19.9	34.1	0.50%
Credit	6.3	n/a	6.3	0.17%	7.5	n/a	7.5	0.17%
Private Equity	108.8	n/a	108.8	1.43%	125.3	n/a	125.3	1.27%
Real Estate	36.7	2.7	39.4	0.85%	38.1	0.4	38.5	0.81%
Real Return	16.2	n/a	16.2	0.87%	14.8	n/a	14.8	0.65%
Absolute Return	41.9	24.9	66.8	1.60%	52.6	91.5	144.1	2.75%
Multi Asset	1.5	n/a	1.5	0.18%	1.1	n/a	1.1	0.18%
Private Credit/Debt	15.1	n/a	15.1	1.36%	21.4	n/a	21.4	1.43%
Equity Long Short	8.6	3.8	12.5	1.99%	8.7	13.8	22.5	3.27%
Service Providers	7.8	n/a	7.8	n/a	8.1	n/a	8.1	n/a
Total Fund	**$325.5**	**$38.6**	**$364.1**	**0.68%**	**$374.9**	**$169.2**	**$544.0**	**0.87%**

Note: Columns may not sum to total due to rounding. "Fees as % of Asset" column indicates fees as a percentage of the average market value of the asset under management.

Source: State Retirement Agency

Review of the SRPS fees by the system's investment consultant has noted that SRPS has been effective at negotiating more favorable fee arrangements than peer systems. Transitioning assets to internal management is also expected to result in fee savings to the system.

Active Management

While active management of assets results in higher overall fees, the system has benefited from active management. The system has found passive investment strategies to be effective where available. However, active management is able to add more diversification to system investments by investing in assets where active management can generate returns in assets where passive investment is not available or efficient. **Exhibit 7** shows the system's performance where active and passive management are utilized. Actively managed U.S. and emerging market equities outperformed the passively managed assets during the short term as well as for the whole fiscal year. Actively managed U.S. nominal fixed income investments underperformed passively managed assets in short term. With respect to U.S. nominal fixed income, active management outperformed passively managed assets for the fiscal year by avoiding more losses.

Exhibit 7
Active and Passive Management Performance
Periods Ending June 30, 2021
($ in Millions)

	Assets	1 Month	3 Months	FYTD
U.S. Equity				
Passive Management	$3,552.4	2.20%	7.99%	45.26%
Active Management	$4,556.0	2.78%	8.25%	48.25%
Emerging Market Equity				
Passive Management	$41.0	0.15%	4.99%	40.44%
Active Management	$6,572.7	1.12%	6.31%	50.97%
U.S. Nominal Fixed Income				
Passive Management	$1,840.6	2.88%	4.99%	-5.41%
Active Management	$5,969.9	2.24%	4.17%	-1.70%

FYTD: fiscal year-to-date

Source: State Street – State Retirement Agency of Maryland – Rates of Return – Net Mgr – Periods Ending June 30, 2021

Absolute Return Fees

Absolute return fee structures typically include base fixed management fees and incentive compensation based on performance. Fees paid for absolute return were $144.1 million in fiscal 2021, which represents approximately 26.5% of all management fees. Absolute return comprises 8.7% of SRPS investments. After a number of years of returns below the assumed rate of return, absolute return achieved a 15.51% investment return for the fiscal year, though this return was once again below the benchmark. The system's *Investment Policy Manual* describes the absolute return asset class as, "investments whose performance is expected to exceed the three-month U.S. Treasury bill by 4-5% over a full market cycle and exhibit low correlation to public stocks."

In fiscal 2021, 13 managers achieved returns above the system's 7.40% assumed rate of return. Performance relative to benchmarks was mixed within the asset class, with a little less than half of the absolute return managers achieving returns above the asset class benchmark. A significant number of investments sustained losses with six managers underperforming their benchmarks by more than -10% and one underperforming by more than -20%. Absolute return has returned below benchmarks for the 1-, 3-, 5-, and 10-year periods ending June 30, 2021. Since inception, the returns have exceeded the benchmarks, but that return is only 3.64% against a benchmark of 2.69%. In contrast, the system's cash assets (1.4% of total system assets) have returned 3.68% since inception (against a benchmark of 0.54%) and have outperformed the absolute return assets over the 5- and 10-year periods ending June 30, 2021.

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.

Private Equity Fees

Management fees for private equity comprised nearly 23% of total management fees, while constituting 17.1% of system assets in fiscal 2021. The reason for the higher amount of fees in private equity involves a substantial degree of active management. Fee structures typically include a fixed base management fee, plus a portion of earnings referred to as "carried interest." The management fees only reflect the base fees, not carried interest. Because of the nature of private equity fee arrangements, carried interest fees are tied to performance. When the system pays higher carried interest fees, a higher return on investment is earned by the system. SRA indicates that private equity returns are reported net of management fees and carried interest.

The private equity return was 51.85%, with a benchmark of 53.13%. Investment in private equity has resulted in positive returns for the system with less experienced volatility than public equity. Returns for the 1-, 3-, 5-, and 10-year periods ending June 30, 2021, were 51.85%, 20.93%, 19.76%, and 15.97%, respectively. Returns for the 3-, 5-, and 10-year periods also provided excess returns over the asset class benchmarks. Private equity investment performance has also outperformed peer systems consistently, as noted in Exhibit 5, with the system ranking first for its 10-year returns.

SRA has also been utilizing co-investments in private equity. Such investments are companion investments to private equity funds that SRPS is already investing in but would not carry the same associated fee structure. Under this approach, SRPS is effectively reducing its fees for any private equity investments it co-invests by increasing the invested funds with the co-invested portion of the investment being subject to a lower fee structure. One potential risk in co-investing is that it can result in decreased diversification by consolidating private equity assets in fewer investments. Management of private equity assets will play a crucial role in the continued success of the asset class.

Chapter 202 of 2019 requires SRA to provide more detailed information on carried interest on investments. In the past five years, calls for greater transparency in the reporting of carried interest have led to changes in the investment management industry. Carried interest is earned by investment managers in private markets (*e.g.*, private equity, private real estate) and is the amount that a general partner (investment manager) retains as an ownership interest in the investment profits generated by the partnership. Carried interest typically represents a percentage of the profits generated, with that proportion negotiated among the parties involved. As carried interest represents shared profits that are retained by the general partner rather than paid by the investor, it is not typically reported as investment management fees.

Several public pension plans have begun releasing reports showing carried interest earned by general partners managing investments on their behalf. In addition, the Institutional Limited Partners Association developed a reporting template that includes carried interest that has been endorsed by many investment managers and public pension funds (including SRPS). Chapter 202 requires the board's annual report on investment management services to include the amount of carried interest on any assets of the system. Carried interest is reported on a calendar year basis to track the system's financial auditing schedule. For calendar 2020, carried interest was $203.6 million, which indicates an implied share of investment profit of over $1 billion for that period.

DLS requests SRA to provide an update on estimated carried interest for calendar 2021.

Investment Division Staffing

Chapters 727 and 728 of 2018 granted the board authority to set the compensation of personnel in the SRA Investment Division and to establish positions within the division, subject to certain limitations. Investment Division staff are now to be "off-budget" and funded as system expenses. Investment positions are also now outside the State personnel system. The legislation included the creation of the Objective Criteria Committee (OCC) that is charged with making recommendations to the board on the objective criteria to be used for setting compensation and governing the payment of financial incentives to eligible Investment Division staff. OCC made recommendations to the board, and the board included provisions governing the compensation (including incentive compensation) for division staff.

The stated purpose of the legislation by SRA and the board was twofold. First, SRA's Chief Investment Officer (CIO) noted that the ability to create positions and set compensation would reduce compensation-related turnover in the division and help in recruitment to adequately staff the division to perform its existing functions. Testimony submitted in support of the legislation noted that the authority is expected to enhance system investment performance by maintaining and adding staff. The testimony noted that additional staffing resources will "enable the division to expand the universe of potential managers or investments to pursue, enhance the methodology of evaluating those opportunities, or design tactical strategies to adjust the mix of investments for intermediate-term performance." Additional staffing is also intended to free senior investment staff of administrative duties, resulting in increased focus on enhancing investments. The testimony noted that providing the board with authority over positions and compensation "will not result in paying the existing staff more money for doing the same job, but instead, will allow these positions to be more focused on the investment process rather than the administrative and reporting functions." The request for staffing authority contemplated SRA's need to expand its staff resources, as both the complexity of the fund assets and the size of the assets under management is expected to grow.

Since the passage of Chapters 727 and 728, SRA has been able to hire additional staff and move forward into internal management of assets. The Investment Division has grown by an additional 15 positions since passage of the legislation. Periodic review of the division's operations will evaluate the need for additional future positions.

Incentive Compensation

Fiscal 2020 was the first year in which Investment Division staff and the CIO were eligible for incentive compensation under Chapters 727 and 728. SRA reports that based on fiscal 2020 investment performance, 19 staff are eligible for incentive compensation under the guidelines incorporated into the system's *Investment Policy Manual*. Based on fiscal 2021 returns, 21 staff are eligible for incentive compensation. Due to restrictions included in the legislation on payment of incentive compensation in years in which State employees are subject to a furlough, incentive payments are subject to deferral to ensure compliance with this restriction. Incentive compensation is paid out over a two-year period.

Incentive compensation is earned based on the performance of assets under an employee's management. The incentive compensation earned is based on the performance of assets related to the system's actuarial rate of return, the system's policy benchmark, and asset class-specific performance benchmarks. At its November 2021 investment committee meeting, the board approved changes to various asset benchmarks.

As part of Investment Division staff's incentive compensation is tied to performance relative to benchmarks, DLS requests SRA to comment on whether there will be any review

of the benchmark performance thresholds that must be met to be eligible for incentive compensation.

Internal Management of Assets

The second purpose under Chapters 727 and 728 was that the authority over positions and compensation would be necessary to expand and begin moving externally managed assets to internal management by division staff. The timeline indicated for internal management contemplated beginning with passively managed assets toward the end of an initial 2-year phase-in. Internal management would be broadened in years 3 through 5 to types of assets directly managed, including co-investment in private assets. By year 10, as much as 50% of assets could be managed internally. One of the arguments for internal management is that it can reduce fees paid for asset management. SRA estimates savings opportunity through internal management of assets. SRA noted that fee savings of just 1 basis point would net the system approximately $5 million. DLS has previously noted that SRA has been effective at negotiating favorable fee arrangements with external managers, and external management provides SRPS with options to select asset managers and to diversify the management of assets among multiple managers. DLS also previously noted that a shift to internal management would require significant operational changes. Performance measures would need to be adopted to monitor and evaluate the effectiveness of internal management of system assets compared to external management. Additionally, guidelines and reporting requirements would need to be implemented to track the internal management of system funds as well as any expansion or reduction of internal management once implemented.

At the September 2021 board meeting, the system's CIO noted that implementation of the Investment Division staffing and internal management objectives over the next four years will cost roughly $9.4 million and result in an estimated 2025 total budget of $24.6 million. While the Investment Division budget is expected to increase over the next several years, SRA estimates the management fee savings from internal management will far exceed the additional costs. By 2025, SRA expects the total amount of public assets managed internally to be roughly $24.5 billion, while private market co-investments are expected to reach about $2.2 billion. SRA estimates the expansion of internal management to result in fee savings of roughly $86 million in 2025, exceeding the estimated additional cost by approximately $76 million.

Since the passage of Chapters 727 and 728, the system has begun to move assets under internal management. A $2.6 billion U.S. Treasury Inflation Protected Securities passive portfolio was initially funded for July 1, 2019. A $1.1 billion Long Government Bond portfolio was funded for March 1, 2020. The $3.1 billion Russell 1000 portfolio was funded for October 1, 2020, and expanded to its current size in March, and the $0.5 billion Corporate Bond portfolio was funded at the end of fiscal 2021. **Exhibit 8** shows the performance of the system's internal management program.

Exhibit 8
SRPS Internal Management Performance
Investment Performance for Periods Ending June 30, 2021
($ in Millions)

	Total Assets	Fiscal 2021 Actual	Fiscal 2021 Benchmark	Inception Actual	Inception Benchmark	Inception Date
MD TIPS	$2,563.8	6.40%	6.51%	7.61%	7.62%	7/1/2019
MD Long Government Bonds	1,077.9	-9.39%	-10.42%	-2.95%	-4.84%	3/1/2020
MD U.S. Large Cap Equity	3,132.6	n/a	n/a	30.62%	30.69%	10/1/2021
MD Investment Grade Corporate Bonds	530.0	n/a	n/a	n/a	n/a	7/1/2021

MD: Maryland
TIPS: Treasury inflation-protected securities

Source: State Retirement Agency

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.**

Terra Maria Program

The Terra Maria program is the system's emerging manager program. One of the Terra Maria program's stated goals is to achieve returns in excess of benchmarks. The program has demonstrated the ability to achieve excess returns over benchmarks, with instances of significant returns over benchmarks at times. Over the past few years, SRPS reorganized the program to better utilize the asset diversification that the program can bring to SRPS. The program transition included eliminating mandates for allocations to large-cap domestic equity and increasing mandates for international small-cap and emerging markets. The program consolidated under five program managers. Program investments in domestic equity in recent years were tracking close to markets, making it more difficult to achieve excess returns in an asset class where it is already difficult to outperform the market, in addition to incurring active management fees. The program has maintained a diverse roster of managers through the transition.

Total assets devoted to the program increased to $2.7 billion in fiscal 2021, up from $2.5 billion in fiscal 2020. As a proportion of total assets, Terra Maria decreased from 4.5% of total assets in fiscal 2020 to 4.0% in fiscal 2021. **Exhibit 9** provides an overview of the Terra Maria program by program manager and asset class.

Exhibit 9

Terra Maria Program Performance

Investment Performance for Periods Ending June 30, 2021
($ in Millions)

		Performance			
	Total Assets	**Fiscal 2021 Actual**	**Fiscal 2021 Benchmark**	**Inception Actual**	**Inception Benchmark**
Program Manager					
Attucks	$580.4	40.51%	33.60%	12.22%	8.51%
Capital Prospects	1,189.7	23.57%	20.78%	12.76%	12.52%
Xponance	374.4	39.89%	43.96%	10.79%	11.24%
Leading Edge	566.7	32.91%	33.60%	11.35%	8.51%
Asset Class[1]					
U.S. Equity	$494.5	63.25%	60.47%	9.39%	9.68%
International Developed Equity	1,519.1	38.23%	35.35%	4.64%	3.14%
Rate Sensitive	637.1	2.10%	-0.07%	5.09%	4.33%
Credit/Debt	58.2	14.20%	12.22%	6.56%	6.24%
Total	**$2,711.3**	**32.10%**	**30.26%**	**6.40%**	**5.92%**

[1] Excludes $2.5 million in emerging market investments.

Note: Actual returns are net of fees; returns beyond one year are annualized. Total assets may not sum to total due to rounding.

Source: State Street – State Retirement Agency of Maryland – Rates of Return – Net Mgr – Periods Ending June 30, 2021

In fiscal 2021, the program experienced a substantial return of 32.10%, outperforming the program benchmark by 1.83%. All four program managers experienced significant returns, and two of the four had a return above the benchmark. Attucks had the strongest performance, with its return of 40.51% outperforming its benchmark by 6.91%. By asset class, three of the four had significant returns that were multiples of the 7.4% assumed rate of return. Only the rate sensitive asset class failed to exceed that mark, though its return of 2.10% was above its benchmark, which expected a loss of -0.07%. Since inception, all four program managers have had returns above the system's assumed rate of return, with three of the four outperforming their benchmark.

Of particular note, the actively managed Terra Maria portfolio experience investment returns that outperformed passively managed system assets and non-Terra Maria actively managed assets. Terra Maria U.S. equity investments returned 63.25% during the fiscal year. Passively managed U.S. equity returned 45.26% during the fiscal year. Actively managed non-Terra Maria U.S. equity investments returned 46.35% during the fiscal year. Terra Maria international developed equity investments returned 38.23% for the fiscal year, compared to a 32.19% return for actively managed non-Terra Maria investments. For U.S. nominal fixed income investments, Terra Maria returned 2.10% compared to returns of -2.13% for actively managed non-Terra Maria investments, and -5.41% for passively managed investments.

Currency Program

Adopted in fiscal 2009, the program is designed to protect against losing value when the dollar appreciates relative to some foreign currencies in countries in which the system holds assets. During periods when the dollar is weak, the currency management program's cost manifests as a slight drag on international equity holdings. However, when the dollar appreciates, the program provides gains that help offset the currency losses generated by the strengthening dollar. As of June 30, 2021, the currency program added total value of $274.7 million since inception. Gains when the dollar is strong should outweigh losses when the dollar is weak, and the system has taken steps to lock in program gains. The primary objective of the program is to lower volatility related to currency fluctuations.

The currency hedging program has limited application and is only applied to a relatively small portion of the system's total assets. In addition, not all foreign currencies are included in the hedging program. Due to liquidity constraints and higher transaction costs in some currencies, the program is currently limited to the euro, Japanese yen, Swedish krona, Swiss franc, Canadian dollar, Australian dollar, and British pound.

Appendix 3

State Retirement Agency

Response to Questions Received from DLS

December 16, 2021

DLS requests SRA to comment on actions taken to maintain target asset allocations, and how the system managed its asset allocation during fiscal 2021 while experiencing significant investment growth.

During periods of high volatility and large swings in asset prices, allocations to various assets classes can change significantly and abruptly. Fiscal year 2021 was a good example of this kind of environment, with stocks up 40% and bonds earning a modest negative return. To manage these large swings, it is important to be able to measure and report exposures to the various asset classes on a daily basis. As part of the risk management function, staff has developed a process to report asset class exposures each day with detailed information regarding overweights and underweights relative to the policy benchmarks. With this information, staff can choose to rebalance by selling assets classes that are above the desired allocation or buying asset classes that are underweight. While the Board has set target allocations to each asset class, it has also provided discretion to staff by approving ranges around the targets. Staff is in compliance with the Board's asset allocation policy if the asset class exposures fall within the approved ranges. For example, the Board's approved long-term target allocation to investment grade bonds is 21%. The approved range around this target is +/- 5%, providing staff the flexibility to position this asset class between 16% - 26%. These ranges allow staff to make tactical portfolio tilts to take advantage of perceived market opportunities and avoid excessive trading costs associated with strict policy targets.

Not all asset classes have the same level of liquidity. While traditional asset classes like public stocks and bonds are liquid and can be traded relatively easily, other asset classes like private equity and real estate are illiquid and staff has limited ability to rebalance these asset classes. The Board has addressed this liquidity mismatch among asset classes by using liquid public asset classes to offset the deviations from policy targets in illiquid private assets. For example, the long-term policy target allocation to private equity is currently 16%. However, due to the strong performance of this asset class, the current allocation to private equity is 18%. To accommodate this difference, the over-allocation to private equity is offset by a corresponding reduction in the target allocation to public equities. For private real estate, deviations from policy targets are allocated to the rate sensitive asset class. This flexible asset allocation policy has allowed the System to avoid forced transacting in the private markets at potentially sub-optimal pricing levels.

Staff has also developed efficient and flexible ways to rebalance the portfolio. Asset class exposures can be adjusted by buying cash securities in the open market, or staff can rebalance using derivative instruments. While effective, transacting in cash securities can be less efficient and take longer to implement. This method requires staff to instruct an account manager to trade on the System's behalf, and it takes time for the manager to model the transaction and execute through a broker. As an alternative to cash securities, staff can also adjust exposures through the derivatives market. This process is quicker than trading in cash securities and provides staff more control in the timing and execution of the trade.

The derivatives market also provides staff with more flexibility regarding liquidity, as these instruments can be funded with margin collateral that is typically much less than the notional amount of the trade.

DLS requests SRA to comment on the fiscal 2021 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 2022, and to comment on what actions are being taken to mitigate those factors from impacting the fiscal 2022 returns.

In fiscal year 2021, the System achieved an investment return of 26.69%, marking one of the best fiscal year performance on record. This return significantly outpaced the Board's policy benchmark of 24.43% by 2.26% and far exceeded the assumed actuarial rate of 7.40%. 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 $1.2 billion in added value. Roughly 70% of the value of the total fund achieved excess returns over respective policy benchmarks, while 30% underperformed. The total fund excess return of 226 basis points was a product of strong performance in the asset classes of public equity, rate sensitive, credit and real estate. Over the ten years ending June 30, 2021, the System has achieved an average annualized return of 8.15%, beating the policy benchmark of 7.55% by 60 basis points annualized net of all fees and expenses. In dollar terms, this represents approximately $2.8 billion in additional value.

The Board of Trustees does not expect each asset class to outperform every year, but instead 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 2021, three asset classes representing roughly 30% of the portfolio trailed the performance of their respective benchmarks – natural resources and infrastructure, private equity and absolute return.

The natural resources and infrastructure portfolio, which is a sub-asset class of the real assets category, achieved a return of 27.34%, trailing its benchmark return of 37.07% by 9.73%. This portfolio is difficult to benchmark, as it consists of roughly 34% private market investments, while the benchmark includes only publicly traded securities. Fiscal year 2021 was unique in that public equities rebounded sharply as the economy recovered from the effects of Covid-19. While the System's natural resources and infrastructure portfolio achieved a strongly positive return of over 27%, it was not able to keep up with the public equity benchmark. The private market component of the System's portfolio consists of some strategies that have different risk and return characteristics than the benchmark and results are reported with a lag. For example, the System's portfolio includes private timber investments that have lower long-term return expectations than public equity, but with lower volatility linked more closely to inflation. In fiscal 2021, the timber portfolio achieved a return of 5%, closely matching long-term return expectations, but falling well short of the public equity benchmark. The reporting lag was an important factor in 2021. Private asset valuations move in tandem with public markets but are smoothed through the use of appraisal pricing and they usually are reported with a one quarter lag. The private natural resources and infrastructure assets included valuations for the period March 31, 2020 to March 31, 2021, including the relatively weak period ending June 30, 2020 and not including the strong period ending June 30, 2021. Going forward, the focus of this portfolio will transition to a higher allocation to private infrastructure investments. As this transition is implemented, staff and the consultant will work with the Board to possibly move to a more appropriate manager universe benchmark with more of a private market focus.

The absolute return segment also slightly lagged its benchmark in fiscal year 2021, returning 15.51% versus the benchmark return of 16.15%. The absolute return portfolio has less sensitivity, or correlation, to the public equity markets than the asset class benchmark. Because of this lower equity beta, the portfolio is prone to underperform during periods of strong performance in stocks as seen in fiscal year 2021. In addition, several managers in the System's global macro strategy segment significantly underperformed their respective benchmarks, generating a return of 5.15% against the global macro benchmark return of 14.58%. The absolute return benchmark in fiscal year 2021 was the HFRI Fund of Funds Conservative Index plus 100 basis points. This index historically had reflected many of the attributes that the Board sought for the asset class, including less volatility and lower correlation to equity markets. Over recent years, the composition of this index has changed as there are far fewer constituents than there were ten years ago, which has resulted in a less diversified index. As a result, the Board recently changed the absolute return benchmark to a blended index that consists of 50% HFRI Relative Value, 25% HFRI Global Macro, and 25% HFRI Event Driven. This new benchmark will align more closely with the implementation of the portfolio and be less sensitive to the performance of individual fund outliers.

For the year ending June 30, 2021, private equity was the System's top-performing asset class, returning 51.85%. Despite the strong performance, it underperformed its benchmark performance of 53.13%. The return difference was mainly driven by the System's relative underweight and underperformance in venture capital investments, which was the best performing sub-strategy within private equity in fiscal year 2021. As of June 30, 2021, the System's exposure to venture capital was 11% versus roughly 14% for its benchmark. For the fiscal year, the System's venture capital portfolio returned 57.64%. While this return represents very strong performance, it trailed the venture capital return of a common industry database of 82.05%. While the private equity portfolio underperformed its benchmark for the fiscal year, it consistently outperforms the benchmark over longer periods. Further, the venture capital performance is the result of the System having a relatively young venture portfolio compared to the benchmark. The System's venture funds continue to perform well relative to similar vintage funds but not relative to funds just a few years more mature. Table 1 below shows the performance of the System's private equity program relative to the benchmark over the last ten years.

Table 1
MSRPS Private Equity Performance
As of June 30, 2021

	1-Year	3-Years	5-Years	10-Years
Maryland Private Equity	51.85%	20.93%	19.76%	15.97%
Private Equity Index	53.13%	18.52%	17.00%	13.08%
Excess	-1.28%	+2.41%	+2.75%	+2.89%

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 64th percentile. Peer group rankings are mainly driven 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. Private equity, the System's best-performing asset class, representing roughly 17 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, 2021, 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.

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, with the gross returns reflecting approximately 25 basis points of the roughly 65 basis points to total management fees incurred. 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 a higher allocation to traditional assets. This is illustrated in Table 2 below, which ranks the System's performance against a larger universe of seventy-seven public pension plans after investment expenses have been netted out.

Table 2
Total System vs. Public Plans > $1 Billion Universe
(June 30, 2021 net of fees)

	1 Year	3 Years	5 Years	10 Years
Total System	**26.69%**	**11.78%**	**10.68%**	**8.15%**
Rank	**53**	**21**	**43**	**51**

* **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 3 below, which ranks the System's Sharpe ratio against a larger universe of seventy-seven public pension plans after investment expenses have been netted out.

Table 3
Total System vs. Public Plans > $1 Billion Universe
Sharpe Ratio Comparison
(June 30, 2021 net of fees)

	3 Years	5 Years
Total System	**1.3%**	**1.4%**
Rank	**5**	**11**

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

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. Recently, the absolute return portfolio has met this objective, achieving a strong 2021 fiscal year return of 15.51% and outpacing the return target over the last two years. 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 has been the HFRI Fund of Funds Conservative Index plus 100 basis points. 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 over a ten-year period of rising equity prices. 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. It is important to note that the System was unique in adding 1% to a market index as a benchmark. As of fiscal 2019, 17 of the 30 largest U.S. public plans had absolute return/hedge funds as part of their asset allocation. Six of those used a benchmark of a positive spread over cash returns such as T-bills plus 3%. Of the remaining 11, Maryland was the only System to add a spread (1%) to its market benchmark. The addition of 1% improves the likelihood that the benchmark achieves the long-term return objectives but carries an implied level of outperformance that does not exist in other asset classes. It is important to note that the new absolute return benchmark, effective December 1, 2021, does not include this 1% spread.

The absolute return portfolio has been able to generate positive relative performance during equity drawdowns due to its lower risk posture and lower equity sensitivity. The fourth quarter of 2018 and first quarter of 2020 are examples of markets where absolute return outperformed by 2.2% and 0.5%, respectively. These periods demonstrate the diversifying characteristics of the portfolio to the plan, and potential for outperformance versus the benchmark during drawdowns. 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 2021 alone, seven managers have been hired through December 1st, representing one billion dollars in committed value. Additionally, two managers have been terminated through this period. Staff has continued to improve management fee arrangements by lowering the base management fees and increasing the incentive fees, improving alignment between the manager and the System. Staff has also been more active in co-investments in calendar year 2021, investing approximately $77 million in co-investments and related fee-advantaged accounts. Staff is working on additional changes, including increasing the efficiency of the portfolio through improved cash management and seeking higher return or diversifying mandates that will better position the portfolio in the future. 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 fiscal 2021.

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 2020, the System's managers earned carried interest of $203.6 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. 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 2020, the implied gains to the System over a period of several years would equate to approximately $800 million. 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.

As part of the Investment Division staff's incentive compensation is tied to performance relative to benchmarks, DLS requests SRA to comment on whether there will be any review of the benchmark performance thresholds that must be met to be eligible for incentive compensation.

Most of the recent asset allocation changes involve small changes to benchmark weightings, and not changes to the benchmarks themselves. As a result, these minor changes to the benchmark weightings would not warrant adjustments of performance thresholds for incentive eligibility. For example, in the Growth asset category, the Board approved an increase in the target allocation to private equity from 13% to 16%. To offset this increase in private equity, public equity was reduced by 3%, with 1% taken from each of the public equity sub-asset classes – U.S. equity, developed international equity and emerging markets equity. These 1% reductions resulted in slight changes to the sub-asset class weightings in the total equity benchmark, but not to the underlying benchmarks. Table 4 below shows the public equity benchmark weightings before and after the asset allocation changes

Table 4
Public Equity Benchmarks

Index	*Before Asset Allocation Change*	*After Asset Allocation Change*
Russell 3000	43%	44%
MSCI World ex-U.S.	27%	27%
MSCI Emerging Markets	30%	29%

As highlighter earlier, the recent asset allocation review did result in one significant benchmark change to the absolute return asset class. This change was adopted out of necessity as the prior benchmark was becoming obsolete due to an insufficient number of fund constituents to make the benchmark meaningful. The new benchmark offers similar correlation and equity market sensitivity to what is targeted for the absolute return portfolio. It also captures the majority of the opportunity set being pursued by staff and will exhibit better diversification than the prior benchmark. The current incentive thresholds for the absolute return asset class appear to be appropriate relative to the new benchmark, as the returns for this benchmark have outperformed the System's absolute return portfolio over the last 5, 7 and 10 years on an annualized basis.

While the recent benchmark changes did not warrant changes to the incentive thresholds, the Board is required to review staff's compensation and incentive structure at least every five years. This review includes input and recommendations from the Objective Criteria Committee and an independent external compensation consultant. The Board conducted the initial review in 2018 and the next analysis is expected to be completed within the next two years.

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, 2021, three internal portfolios valued at $6.8 billion had been established following this process: U.S. TIPS, U.S. Long Government Bonds and Russell 1000 equity. Since that time, three additional internal portfolios have been funded: U.S. small cap equity, investment-grade corporate bonds and U.S. securitized bonds. As of October 31, 2021, these six internally managed portfolios totaled $9.1 billion, representing 13% of the total fund.

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.

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 3 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 2021, the System's asset allocation changed to include more higher cost asset classes (private equity, private real estate and emerging market stocks), resulting in a higher modeled total fund fee structure of roughly 69 basis points. The actual fees paid by the System were much less than this level, falling to 56.3 bps by the end of 2020. These savings are the result of a combination of lower fees negotiated with managers, the growth of the co-investment portfolio and the growth of assets being managed internally. The large drop in fiscal 2021 was driven by two factors: the growth of internally managed assets including private market co-investments and the greater than 50% growth in the value of the private equity portfolio. Private equity fees are computed on the amount committed to funds, not the net asset value. Committing $100 million to a fund with 2% management fee will result in $2 million in annual management fees. If the fund is fully invested and the net asset value grows to $200 million, the fee will remain unchanged at $2 million, but the fee as a proportion of net asset value will fall from 2% to 1%. In 2021, with the strong returns in private equity, this effect resulted in significantly reduced fees as a percentage of net asset value, from 168 basis points in 2020 to 128 basis points in 2021. On this measure, private equity fees should be expected to revert to somewhat higher levels in futures years, but still remain lower than 2020 levels.

The asset allocation changes adopted in September 2021 will increase the fee expectation by roughly 1.5 basis points per year when fully implemented.

The Investment Division will use this methodology to track its effectiveness in lowering the cost of managing assets over the ensuing years and expect an additional 9 basis points 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 5

Management Fee Model

Stylized Model of Fees (Excluding Incentives)		
	BPS	Dollars
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	$562
Impact of Board Asset Allocation Changes through 2021	4.9	$33
Impact of Fee Savings Achieved Through 2021	(12.9)	($87)
Impact of 2022 Allocation Change	1.5	$13
Impact of Fee Savings Projected to 2024	(3.0)	($23)
Impact of Fee Savings Projected to 2025 -2029	(6.0)	($45)
2029 Fees	48.5	$424
Projected Annual Fee Savings	(15.5)	($135)

Appendix 4

2022 Board Requested Legislation
Part 1

The following legislative proposals are recommended by the Board of Trustees for the State Retirement and Pension System (System) for the Joint Committee on Pensions' consideration for the 2022 legislative session. Three of these legislative proposals are technical and clarifying and will remove obsolete provisions within the State Personnel and Pensions Article. In addition, the fourth proposal is intended to alert the Joint Committee to an instance of inconsistency within the State Personnel and Pensions Article.

Trustee Election Clarification

Provisions of the State Personnel and Pensions Article provide that the Board composition includes one member of the Correctional Officers' Retirement System (CORS), Employees' Pension or Retirement System (EPS or ERS), Judges' Retirement System (JRS), Legislative Pension Plan (LPP), or the Law Enforcement Officers' Pension System (LEOPS), one member of the Teachers' Retirement or Pension System (TRS or TPS), and one member or retiree of the State Police Retirement System (SPRS). The Board also includes a Trustee who is a retiree of the ERS, EPS, CORS, JRS, LPP, or LEOPS, and a Trustee who is a retiree of the TPS or TRS. With regard to the Trustees representing the members of the several systems, current law only provides that these Trustees be members of the systems they are representing; it does not limit the individuals who serve in these positions to be active members.

Additionally, current law also provides that the Trustees on the Board who are members or retirees of the CORS, EPS, ERS, JRS, LPP, or the LEOPS shall be elected to the Board by the members and retirees of those State systems. The Trustee who is a member of the TRS or TPS shall be elected to the Board by the members and retirees of those State systems. The Trustee who is a member or retiree of the SPRS shall be elected to the Board by the members and retirees of that State system. As is the case with the Board membership provisions, this section of the State Personnel and Pensions Article also does not specifically limit the members who can vote in these elections to active members.

Staff has researched the legislative history of these provisions and believes the intent of the legislature, when referring to "members" in these instances (Board membership and Trustee elections), was to limit this pool to active members of the several systems and not include former non-vested members who are still within their four-year membership window. Chapter 403 of the Acts of 2003 restructured the Board to its current posture and only includes references to "member" in the legislation. However, supporting documentation that the legislature relied on when deliberating Chapter 403 consistently refers to "members" as "active members." Staff could not find any instance in these documents where "member" included former non-vested members still within their four-year membership window. Furthermore, the Agency prepared and presented a comprehensive report regarding Trustee elections to the Joint Committee on Pensions in 2015. This report included a thorough discussion of the process of Trustee elections and cited the legislative history associated with these provisions of the State Personnel and Pensions Article. Throughout this report, reference is made to "active members" and not former non-vested members.

Agency staff has researched the past 10 years of elections and could not find any instance when an individual who was not an active member ran for a position on the Board. Moreover, we are not aware of other states that include former non-vested members still within their membership window who either serve on the board for those plans or who are included in the pool of individuals eligible to vote for board membership.

Regarding Trustee elections, **s**taff does not have reliable data for the number of individuals who are not vested when they leave service but are still within their four-year membership window. However, the Board should note that to include former non-vested members still within their four-year membership window in the pool of eligible voters for Trustee elections, presents challenges to the staff with regard to having current addresses for each of these individuals. Once members leave active service, the Agency does not always receive notifications when they move. For the 2021 election, staff reported that the Agency spent $65,033 on postage to mail the ballots. Voter turn-out for the 2021 election was 4.73%. Since the election ended, the Agency has received nearly 1,000 returned ballots with bad addresses. Staff is concerned that if its existing practice is not codified and the Agency begins to send potentially thousands more ballots to former non-vested members, the cost of postage will increase significantly with the success of ballots reaching these individuals not increasing proportionally.

For these reasons, the Board is recommending: (1) clarifying existing law to provide that only active members may serve in certain Trustee positions on the Board; and (2) codifying its existing practice to limit ballots to active members by amending current law to reflect this practice.

Purchase of Service – Judges' Retirement System (JRS)

Members of the JRS are eligible to purchase only two types of prior service credit in the JRS. These types of prior service include: (1) a magistrate in chancery or magistrate in juvenile causes on or before June 30, 1975; or (2) a member of the State Workers' Compensation Commission on or before June 30, 1977. A magistrate in chancery or juvenile causes are individuals appointed by a sitting judge as an officer of the court to perform specific functions that will deal primarily with domestic issues and include assisting the court in handling family law and juvenile matters.

At this time, individuals serving on the bench have a mandatory retirement age of 70. Factoring in this mandatory retirement age in 2021, an active member of the JRS, would be eligible to purchase prior service credit under these provisions only if the member had been younger than 24 when appointed as a magistrate, or younger than 26 when appointed to the Workers' Compensation Commission. Staff has not received an application from a member of the JRS who would be eligible to purchase this service in the last 20 years. Accordingly, we believe these purchase provisions are now obsolete and should be repealed. In its place, to avoid any confusion with regard to purchasing service in the JRS, we would also recommend adding an explicit provision stating that members of the JRS are not eligible to purchase prior service credit accrued in any of the other systems.

State Police Retirement System DROP Death Benefits

Chapter 570 of 2008 increased the SPRS retiree death benefit for the surviving spouse and minor children of a deceased SPRS retiree from 50% of the deceased retiree's allowance at the time of death, to 80% of the retirement. However, when this change occurred, Chapter 570 did not include a similar amendment to provisions of the SPRS Deferred Retirement Option Program (DROP) that reference the SPRS retiree death benefit for surviving spouses and minor children. As a result, the SPRS DROP provisions that address SPRS retiree death benefits continues to state the benefit will equal 50% of the retiree's allowance at the time of death.

Staff has reviewed the legislative history for Chapter 570 and believe this was a technical drafting error. We have also reviewed the SPRS retiree death benefits that have been paid since 2008, when the benefit was increased to 80%, and found no instances when the Board paid a death benefit equal to 50% of the deceased retiree's allowance. To avoid any confusion in the future, the Board is recommending legislation that would amend the SPRS DROP provisions addressing the SPRS retiree death benefit to remove the reference to the SPRS retiree death benefit equaling 50% of a deceased retiree's death benefit, leaving only the language that indicates the SPRS DROP retiree death benefit shall be paid in accordance with the provision of the State Personnel and Pensions Article that establishes the SPRS retiree death benefit.

Parole and Probation Reemployment Provision

Chapters 526 and 527 of the Acts of 2012 exempts a reemployed retiree of the ERS or EPS from a retirement allowance reduction if the retiree is reemployed as a contractual parole and probation officer. Five years later, Chapters 688 and 689 of the Acts of 2017 was enacted, providing that any individual serving as a parole and probation officer on or after July 1, 2017 would now be a member of the CORS. The 2017 legislation did not include a reemployment exemption within CORS for parole and probation officers like the exemption established in the 2012 legislation. As a result, the enactment of Chapters 688 and 689 created an inconsistency with regard to the reemployment exemption for parole and probation officers.

Currently, an individual who retired from the ERS or EPS as a reemployed retiree is eligible for a reemployment exemption if they return to work as a contractual parole and probation officer. The inconsistency in this policy occurs for parole and probation officers who will retire from the CORS on or after July 1, 2017. These individuals are not eligible for a similar earnings exemption. Because this is an issue that relates to plan design, the Board does not believe it can make a specific recommendation to the Joint Committee regarding this issue. Nevertheless, the Board would recommend alerting the Joint Committee on Pensions to this issue and offer two options. The first option would be to add a similar exemption in the CORS reemployment provisions. The second option would be to remove the exemption from the ERS and EPS reemployment provisions. At this time, staff is not aware of any ERS or EPS retirees that have taken advantage of this reemployment exemption since its inception in 2012.

2022 Board Requested Legislation
Part 2

The following legislative proposals are recommended by the Board of Trustees for the State Retirement and Pension System (System) for the Joint Committee on Pensions' consideration for the 2022 legislative session. Three of these legislative proposals address issues within the Investment Division program. The remaining proposal recommends special legislation to assist the family of a deceased member of the System.

Investment Division Compensation Issues

Chapters 727 and 728 of 2018 provided the Board with the authority to determine and create positions necessary to carry out the professional investment functions of the Investment Division and to set their compensation, subject to provisions included in the legislation. Specifically, Chapters 727 and 728 require the Board to adopt objective, performance-based criteria for setting the qualifications and compensation of the Chief Investment Officer (CIO) and Investment Division staff, including incentive compensation. This legislation provides detailed guidance to the Board regarding how it should establish and implement the staffing and compensation program created by Chapters 727 and 728. Included in these bills are provisions that limit the amount by which compensation may be increased to no more than 10% each year for certain Investment Division positions. Additionally, this legislation also prohibits the Board from paying out any unpaid incentive compensation to the CIO or Investment Division staff after they separate from employment in the Investment Division. Since the enactment of Chapters 727 and 728, staff has found that these provisions have unintentionally created inequities among Investment Division staff. Staff also believes provisions of this legislation will inadvertently place Investment Division staff in a position where they will ultimately have to choose between retirement and receiving financial incentives they have justifiably earned.

Compensation Levels

One of the issues the legislature was intent on addressing through Chapters 727 and 728, was to provide the Board with the authority to develop objective criteria for setting compensation for Investment Division staff that would be competitive with similar positions in comparable public pension funds across the country. At the time this legislation was enacted in 2018, the majority of the Investment Division staff that had discretion over investment-related decisions were receiving compensation well below the national midpoint salaries of their peers. The legislation provided the Board the authority to set the compensation for staff hired after the enactment of the Chapters 727 and 728 at levels that were very near the midpoint salaries of their peers in other comparable public pension plans. For those individuals who were employed in the Investment Division prior to the passage of the legislation, the legislature included a provision that limits compensation increases to no more than 10% each year. The intent of this provision was to help "fast-track" the existing staff to reach the higher salaries new employees would be receiving.

The Board developed a policy in its Investment Policy Manual that included adopting objective criteria for increasing compensation for the Investment Division staff that had discretion over investment-related decisions. The objective criteria included requiring the Board to: (1) consider comparative qualifications and compensation of employees in similar positions at comparable public pension funds; and (2) set objective benchmarks of investment performance that would need to be met or exceeded by an individual to be eligible for a compensation increase. The Board included provisions stating that when the salary for a particular position is at, or above the salary range midpoint, an increase in compensation should only be considered in years when the fund meets or exceeds policy benchmarks. Conversely, if the position's salary is below the salary range midpoint, an increase should be considered, even in years when the fund does not meet or exceed its policy benchmarks. To date, no employees hired on or after July 1, 2018, have received a 10% annual increase to their compensation, inasmuch as their starting compensation was already set near the midpoint salaries of their peers in comparable public pension plans.

While staff fully appreciates the legislative intent of the 10% cap on compensation increases for Investment Division staff that has discretion over investment-related decisions, we believe a review of the compensation received by each of these individuals since 2018 reveals unintended instances of inequity between peers within the Investment Division performing the same functions, and in some instances inequity between a supervisor and a subordinate. Currently, the Investment Division has 27 employees who have discretion over investment-related decisions. Of these, 14 employees are receiving compensation near the national midpoint salary of their peers, placing them within one year of reaching the midpoint salary goal. Eleven of these 14 were hired after Chapters 727 and 728 were enacted.

Of the remaining 13 employees of the Investment Division that have discretion over investment-related decisions--who were hired before the enactment of Chapters 727 and 728--nine are receiving compensation that would take at least two or more years to reach the midpoint salary range of their peers in comparable public pension plans. These nine individuals include the deputy chief investment officer, four managing directors, and four senior portfolio managers. The compensation for the four individuals serving as senior portfolio managers are lagging significantly behind not just the national midpoint of salaries, but also some of their peers within the Investment Division, because at the time they were hired, their compensation was subject to the salary schedule of the State Personnel Management System. For example, two of the senior portfolio managers with at least 10 years of service, are currently receiving compensation that is over $20,000 less than compensation received by a peer hired after the enactment of Chapters 727 and 728, in their same asset group, and performing their same functions. It will take another two years of 10% increases each year, before these individuals reach the national midpoint salary of their peers in comparable plans and the level of compensation received by their peers in their asset group within the Investment Division. Meanwhile, their peers with considerably less service in the Investment Division who were hired after the enactment of Chapters 727 and 728 will continue to receive compensation increases (albeit not 10% annual increases) that will continually place them above these employees who were hired prior to July 1, 2018.

Because of legislation passed in 2012, the compensation for the deputy chief investment officer and the managing director positions for the Investment Division were removed from the State Personnel Management System and placed in the Executive Pay Plan. While the Investment Division greatly appreciates the assistance the legislature provided these employees in 2013, since that time, their salaries have also fallen well below the national midpoint salaries of their peers in comparable public pension plans. For example, a new managing director for the Division was recently hired (within the last six months) very near the national midpoint salary for that position. Conversely, the existing four managing directors that were employed by the Investment Division before the enactment of Chapters 727 and 728 are all receiving compensation that is at least $45,000 less than this recent hire, with one of the four receiving approximately $70,000 less. Assuming consistent 10% annual increases each year, these four managing directors will not reach the midpoint salary for three or four years (depending on their current salary), while their recently hired peer, performing essentially the same duties as a managing director, will continue to outpace these employees regarding their compensation. Moreover, the deputy chief investment officer who oversees and supervises the managing directors of the Investment Division, has 20 years of service with the Division. Nevertheless, this individual is currently earning more than $10,000 less than the managing director that was recently hired and will not reach the national midpoint salary of the deputy's peers in comparable public pension plans for two more years.

Again, staff fully appreciates the motivation behind the legislature limiting annual compensation increases to 10% for staff hired prior to the passage of Chapters 727 and 728 of 2018. However, we do not believe it was the legislative intent of this legislation to maintain such significant disparities among individuals performing the same duties within the Investment Division for, what appears at this time, nearly 10 years after the passage of the legislation granting the Board independent salary setting authority for the Division. This, coupled with the hiring of more individuals each year at the national midpoint compensation level, raises the potential for morale issues that could result in experienced staff leaving employment with the Investment Division. This result would be directly counter to the fundamental purpose of Chapters 727 and 728, which was, in part, to create retention within the Investment Division.

To address this issue, staff is recommending legislation that would grant the Board the authority to provide the staff of the Investment Division who have discretion over investment-related decisions, were employed prior to the passage of Chapters 727 and 728, and continue to receive compensation that is more than 10% below the midpoint of their respective salary ranges relative to the national midpoint, with not more than two one-time salary increases to be approved with the intent to move these individuals up to the midpoint of their respective salary ranges.

Forfeiting Incentive Compensation

A second provision from Chapters 727 and 728 that staff would recommend amending, addresses the forfeiture of any unpaid incentive compensation if an employee of the Investment Divisions ceases employment with the Division. Current law provides that, "[i]f an individual who has earned financial incentives separates form employment in the Investment Division, the

Board of Trustees may not pay out any remaining financial incentives due to be paid after the date of separation from employment."

As previously discussed, any incentive compensation awarded to Investment Division staff shall be paid over two years. The intent of paying the award over a period of time is to serve as an incentive tool for retention within the Investment Division. With a two year payout time frame, if an Investment Division employee ceases employment within the Division, that individual may be forfeiting 50% of the previous year's incentive compensation and 100% of the current year's award. Such a financial loss would likely serve as a deterrent to move on to another employer. While staff fully supports this intent, we would point out that this provision does not provide for an exception for retirement. As a result of the law being silent with regard to retirements, an Investment Division staff may forfeit incentive compensation they may have earned at the time they retire. The vagueness of this provision could ultimately serve as a disincentive to retire. We do not believe it was the intent of the legislature to penalize an individual for retiring from State service; nor was it the intent of the legislature to incentivize individuals to continue working long past their normal retirement age in order not to forfeit financial incentives the individuals may have earned in their service to the System and the State.

To address this issue, staff would recommend amending this provision to provide an exception for retirements of Investment Division staff. We believe this amendment could be structured similarly to provisions of law that address converting unused sick leave to service credit at the time of retirement. In that instance, current law provides, in part, that "a member is entitled to receive creditable service for unused sick leave if the member retires on or before 30 days after the member is separated from employment with a participating employer." A similar provision could be added for Investment Division staff that provides that the individual will be entitled to receive any outstanding incentive compensation if the individual retires from State service on or before 30 days after ceasing employment with the Investment Division.

Approval Process for Real Estate Transactions

In 2007, the Board requested the Joint Committee on Pensions to introduce legislation on its behalf that would amend Chapter 235 of 1993, which required the Board of Public Works to provide final approval on all real estate transactions of the System. At that time, the Board pointed out to the Joint Committee, that since 1993, it had hired two real estate investment firms, LaSalle Investment Management and PCA Real Estate, that served as fiduciaries to the Board. LaSalle served to identify appropriate properties for the System to consider for purchase or sale, while PCA was hired to serve as the Board's real estate investment consultant, reviewing every sale or purchase proposed by LaSalle. The Board shared with the Joint Committee that both LaSalle and PCA agreed that the 1993 Board of Public Works approval provision was, at that time, consistent with how other public pension plans handled their real estate transactions; but, by 2007, LaSalle and PCA found the review and approval process of real estate transactions had significantly evolved, with very few public pension plans requiring outside approval of their real estate transactions. Additionally, the Board noted that the Board of Public Works approval process placed the System at a competitive disadvantage in the marketplace for commercial real estate investments. The 1993 approval process enacted by Chapter 235 had added such a considerable amount of time to the process of completing real estate transactions for the System within the real estate market, that the System was unable to compete effectively.

The Joint Committee agreed to sponsor the Board's 2007 requested legislation to remove the Board of Public Works approval process, but in its place added a new approval process that requires a majority of the Comptroller, Treasurer, and Secretary of Budget and Management, in their capacity as the three ex-officio trustees of the Board, to approve the sale or purchase of real estate by the System. This legislation was enacted as Chapter 506 of 2008. The Board stated in its testimony supporting Chapter 506, that the System already had extensive measures built into the System's direct equity real estate program to protect the System's and the State's interests, and as such would not necessitate the need for the additional approval of the Board of Public Works. The Board's testimony went on to state that one of the most significant protections was the Board's review of the System's real estate deals. Therefore, amending the provision requiring the approval of the Board of Public Works to instead require the approval of a majority of the Comptroller, Treasurer, and Secretary of Budget and Management, was much less onerous and would not take the amount of time Board of Public Works approval required.

At the time Chapter 506 was enacted, the Real Estate Policy included in the Board's Investment Policy Manual (IPM) for the System stated, in part, that "[t]he Board of Trustees (the "Board" or "BOT") has the final responsibility for establishing and directing the real estate investment program (the "Program") of the System." The 2008 IPM went on to provide:

> The Board of Trustees preserves unto itself the following:
> 1. Establishment and direction of the Program.
> 2. Approval of the Policy, the Strategic Plan, and Program processes to be maintained in the Investment Policy Manual (IPM).
> 3. Selection and/or termination of the Consultant.
> 4. Right to pre-screen potential real estate investment opportunities in the Type I: Private market real estate investments - Direct Equity component, of the Program.

It is evident from these provisions included in the 2008 IPM, that at the time Chapter 506 was enacted, the Board's involvement in the real estate program was significant. As a result, requiring a majority of the three ex-officio trustees to approve the purchase or sale of real estate for the System would not be nearly as burdensome as the prior Board of Public Works approval process, since the full Board (including the three ex-officio trustees) was routinely being briefed on these transactions. However, this less burdensome process would be short-lived.

Chapter 368 of 2007, in part, granted the Chief Investment Officer (CIO) for the System with the authority to hire and terminate all investment managers of the System. When Chapter 506 of 2008 was enacted, the Board was just beginning to amend the IPM to reflect the CIO's expanded authority pertaining to the System's investment program. Since the passage of Chapter 368, the IPM has been amended 28 times, many times to reflect the expanded authority of not just the CIO, but the entire Investment Division staff regarding the System's investment program. The Board should note that the most recent edition of the IPM no longer includes the language from the 2008 IPM that addressed the real estate investment program. In fact, the 2021 IPM now states:

> The Chief Investment Officer is delegated the responsibility for managing and overseeing the investment process, including (i) hiring external investment managers to invest the assets of the several systems, (ii) developing and implementing internal management strategies (iii) creating or selecting and purchasing interests in specific investment vehicles, including limited partnerships, limited liability companies, private equity investments, private real estate investments, and co-investments, (iv) ensuring legal review of proposed investments by the Office of the Attorney General and (v) monitoring compliance with investment contracts, State law, and both the public market and private market program policies and processes enumerated in this Investment Policy Manual.

As evidenced by this provision in the 2021 IPM, the Board would no longer review each real estate transaction. In fact, it is also important to note, that with the evolution of the CIO's authority over the investment program since the enactment of Chapter 368 of 2007, the purchase or sale of real estate are the only investment transactions that continue to require any type of Board approval. Therefore, because the full Board no longer receives pre-transaction due diligence analysis and information on these transactions, any direct real estate transactions brought for review by the ex-officio trustees would now place these trustees at a disadvantage from where they stood in 2008, when the legislation was first passed. Without the System's real estate transactions going before the Board for review, the ex-officio trustees, as fiduciaries to the System, would now have to assume the responsibility of independently reviewing each purchase or sale or seeking out the counsel of the Investment Division staff with any questions or concerns they may have. As a result, the System has not entered into any direct real estate transactions due to the time it would still take the ex-officio trustees to reach a level of comfort with these transactions prior to voting. These challenges presented by the 2008 legislation are very similar to the challenges the Investment Division was facing in 2007 when it sought to remove Board of Public Works approval for all real estate transactions.

Accordingly, staff is recommending legislation that would remove the requirement that a majority of the ex-officio trustees approve all real estate transactions for the System. Staff has reached out to its real estate consultant for information on the practices of similar peer plans. The consultant confirmed that the industry standard was to apply consistent governance processes across all asset classes, and in no case did clients delegate authority to a group outside the governing body of the pension. This review of the procedures of the System's peers plainly indicates that the approval process put in place, first by Chapter 235 of 1993 and later amended by Chapter 368 of 2008 is outdated in light of the expanded authority not just the System's CIO has received over the last several years, but CIOs of similar public pension plans across the country.

Retirement Application – Special Legislation

On May 5, 2021 the State Retirement Agency (Agency) received an application for retirement that was signed on April 27, 2021. The member selected Option 1, which would provide for a return of the present value of the retiree's retirement benefit that is remaining at the time of the retiree's death. After reviewing the application, staff rejected it, due to flaws with the notarization of the document. Staff attempted to notify the member of the defects in her application on May 18, 2021. However, on June 1, 2021, the Agency was notified by the family of the member, that the member had passed away, unexpectedly, on May 5, 2021. Because the member passed away prior to receiving the Agency's notice that the notarization on her application was flawed, the Agency does not have a properly completed retirement application on file for this deceased member. As a result, the Option 1 benefit cannot be paid to the deceased member's designated beneficiary. Moreover, because the deceased member was a deferred vested member of the Non-Contributory tier of the Employees' Pension System, there is no active death benefit that will be paid.

Section 22.01.14.03A(1) of the Code of Maryland Regulations (COMAR), provides, in part, that a retirement application is properly completed if it is completed in accordance with the form's instructions, dated, signed by the member or former member, and properly acknowledged by a notary public. This is the basis for the Agency rejecting the deceased member's application. Staff notes that but for the flawed notarization, the deceased member's application was properly completed. Given that the member did not have an opportunity to correct the flawed notarization on her application prior to her death, staff is recommending special legislation that would direct the Agency to accept the retirement application that was received on May 5, 2021.

Appendix 5

Maryland State Retirement *and* Pension System

Fiduciary Responsibilities

OCTOBER 7, 2021

Presented by

RACHEL S. COHEN, PRINCIPAL COUNSEL

OFFICE OF THE ATTORNEY GENERAL

Agenda

1. Fundamentals of Fiduciary Responsibilities
2. ESGs, ETIs, Engagement and Divestment – Definitions and Examples
3. Department of Labor Guidance and Relevant Rulings Concerning Social Investing

This material is presented for educational purposes only and does not constitute legal advice.

Part 1: Fundamentals of Fiduciary Responsibilities

MARYLAND STATE RETIREMENT AND PENSION SYSTEM

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Sources of Fiduciary Duties and other Legal Responsibilities

State Law
- State Personnel and Pensions (SPP) Title 21, Subtitle 2
- Code of Maryland Regulations (COMAR)

Common Law
- Restatement (Third) of Trusts
- Uniform Management of Public Employee Retirement Systems Act (UMPERSA)

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Federal Law
- Internal Revenue Code (IRC) and Treasury Regulations
- Employee Retirement Income Security Act (ERISA) and Department of Labor Regulations (useful guidance)

Plan Documents
- Statutes and regulations
- Charters
- Board Policies

Who is a Fiduciary?

- A member of the Board of Trustees
- A member of a committee of the Board of Trustees
- An employee of the State Retirement Agency who exercises any discretionary authority or control over:
  - The management or administration of MSRPS or
  - The management or disposition of the System's assets.

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SPP § 21-201

What are the Fiduciary Duties?

SPP § 21-203

- Loyalty
- Prudence
- Diversification
- Follow the laws, documents, and instruments governing the System

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Fiduciary Duty of Loyalty – The Duty to Act:

Solely in the Interest of the Participants

- Requires **undivided loyalty** - act as if no other competing interests to protect
- Requires excluding self-interest and the interests of third persons (e.g., managers, vendors, taxpayers, party that appoints the fiduciary)
- Fiduciary wearing "two hats" must wear <u>only</u> the fiduciary hat when making fiduciary decisions

For the Exclusive Purposes of Providing Benefits to Participants and for Reasonable Expenses of Administration

- The duty is to the members' and retirees' "**economic interests in their benefits**"
- Treas. Regs: all objects/aims must be "solely designed" for the "proper satisfaction of all liabilities to the participants covered by the trust"
- IRC **prohibits diversion of trust assets** for purposes other than the exclusive benefit of participants

Fiduciary Duty of Loyalty – The Duty to Act:

Independently and Without Conflicts of Interest

- Prohibited Transactions (SPP § 21-205)
- State Ethics Laws and Board Policies

Impartially Among Different Interests

- Act in the best interest of all participants, not merely those responsible for a Trustee's appointment.
- Typical considerations: retirees and active members, different groups of participants (e.g., teachers, public safety), different State systems
- UMPERSA commentary:
  - Differing interests are inevitable
  - Duty does not demand absolute equality, but requires careful weighing and balancing of the differing interests and due regard for them all

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Fiduciary Duty of Prudence

The duty to act:

- with the **care**, **skill**, **prudence** and **diligence**
- under the **circumstances then prevailing**
- that a **prudent person** acting in a **like capacity** and **familiar with such matters** would use
- in the conduct of an **enterprise** of a **like character** and with **like aims**.

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Procedural prudence

- Ascertaining facts, investigating risks/benefits of each alternative
- Adequate documentation of actions

Prudent delegation of responsibilities outside of expertise (e.g., actuary, medical board)

Fiduciary Duty of Diversification

- Statutory duty to diversify “so as to minimize risk of large losses, unless under the circumstances it is clearly prudent not to do so.”
- The duty warns against taking bad risks with unwarranted danger or loss, or volatility that is not compensated by commensurate opportunities for gain.
- Refrain from investing disproportionately large amounts in a single security, type of security, or securities “dependent upon the success of one enterprise or upon conditions in one locality.”

Fiduciary Duty to Act in Accordance with Laws and Documents Governing the MSRPS

Includes:

- State Personnel and Pensions Article, Code of Maryland Regulations (COMAR)
- Other State laws (e.g., State Ethics Laws, Open Meetings Act)
- Federal laws (e.g. Internal Revenue Code, Age Discrimination in Employment Act)
- Governance documents: Investment Policy Manual, Board Charters and Policies

Consistent interpretation and administration

Timely correct plan errors (IRS Employee Plans Compliance Resolution System)

Part 2: ESGs, ETIs, Engagement & Divestment – Definitions and Examples

MARYLAND STATE RETIREMENT AND PENSION SYSTEM

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ESG – Environmental, Social and Governance Factors in Investing

Environmental = Quality and functioning of the natural environment

- Biodiversity
- Carbon Emissions
- Climate Change
- Natural Resources
- Pollution and Waste
- Water Management

Social = Rights, well-being and interests of people and communities

- Human Rights
- Data Security and Privacy
- Diversity
- Labor Standards
- Product Safety
- Social Cohesion and Community

(Corporate) Governance = Management and oversight of companies and other investee entities

- Board Structure, Size, Diversity, Skills and Independence
- Corruption
- Diversity, Equity, and Inclusion
- Executive Compensation
- Shareholder Rights
- Transparency

ESG continued

Example – Maryland Pension Risk Mitigation Act (Chapter 769 of 2018)

"(e)(1) Consistent with its fiduciary duties, the Board of Trustees shall include policies in the investment policy manual adopted under subsection (c) of this section regarding the management of risk, including climate risks, in the investment of system assets, and shall address:

(i) investment principles, guidelines, and policies that govern the selection and retention of the investments of the several systems, including proxy voting and engagement guidelines; and

(ii) a policy that proxy votes and sample due diligence questionnaires for prospective managers be published on the State Retirement Agency's website.

(2)(i) Consistent with its fiduciary duties, on or before January 31, 2019, and every year thereafter, the Board of Trustees shall submit a report on the risk assessment of the several systems, including climate risk, in accordance with § 2-1257 of the State Government Article, to the General Assembly."

SPP § 21-116(e)

- Board of Trustees' Risk Management Policy
- Annual Pension Risk Mitigation Act Risk Assessment
- ESG Risk Committee Biennial Report on MSRA Responsible Investing

ETIs – Economically Targeted Investments

Definition – ETIs are made to generate **collateral** societal (i.e. ESG) benefits apart from the investment return

Example – MD PE and Venture Capital Investments (Chapter 459 of 2016)

> "It is the intent of the General Assembly that State contributions in excess of statutory requirements be invested in the State with a goal to increase the risk capital available in the State, if the investments are consistent with, and do not compromise or conflict with, the fiduciary duties of the Board of Trustees to the participants of the several systems."
>
> Md. Code Ann., State Pers. & Pens. § 21-123.2

Engagement: Definition and Example

Engagement = Activities undertaken by an Investor designed to influence an Investee's ESG practices, governance or operation

Examples of Engagement activities by the Board of Trustees:

- Corporate Governance Committee
- Proxy voting policy and activities
- Participation:
  - Signatory to UN Principles of Responsible Investing
  - Member of Ceres Investor Network on Climate Risk and Sustainability.
  - Sustainability Accounting Standards (SASB) Alliance program
  - Principles for a Responsible Civilian Firearms Industry
- Advocacy letters, direct contact with stakeholders

Divestment

Definition – Selling redeeming, or disposing, and refraining from further investment in certain investments to further collateral environmental, social or governance concerns, apart from the investment return.

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Example – Divestiture from Iran and Sudan (Chapter 342 of 2008)

"WHEREAS, Despite significant pressure from the United States government, the Republic of Sudan fails to take necessary actions to disassociate itself from its ties to terrorism and genocide; and. . .

WHEREAS, Divestiture should be considered with the intent to improve investment performance and, by the rules of prudence, fiduciaries must take into account all relevant substantive factors in arriving at an investment decision; and

WHEREAS, The State is deeply concerned about investments in publicly traded companies that have invested in Iran's petroleum-energy sector; and

WHEREAS, The Maryland Court of Appeals has indicated that the fiduciaries of public pension plans in the State may consider humanitarian and other social issues in their analysis of investments if the associated costs are *de minimis*; and. . ."

Md. Code Ann., State Pers. & Pens. § 21-123.1

Part 3: Department of Labor Guidance and Relevant Rulings Concerning Social Investing

MARYLAND STATE RETIREMENT AND PENSION SYSTEM

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Shifting DOL Guidance

The DOL has issued guidance over the last 26 years characterized by shifts in **tone** and **emphasis**, with Democratic administrations espousing a more permissive approach, and Republican administrations emphasizing caution and skepticism.

A review of the guidance can reveal some common themes.

DOL Interpretive Bulletin (IB) 94-01 (Clinton Administration)

- Defined "economically targeted investments" as investments that are selected for the benefits that they create in addition to the investment return
- Introduced the "**All Things Being Equal**" test for ETI investing
- "The fiduciary standards applicable to ETIs are no different than the standards applicable to plan investments generally."
- An investment will **not** be prudent if:
  - It would be expected to provide a plan with a lower rate of return than available alternative investments with commensurate degrees of risk; or
  - It is riskier than alternative available investments with commensurate rates of return
- Plan fiduciary may consider collateral benefits in choosing between investment that have comparable risks and rates of return but **may not accept expected reduced returns or greater risks to secure collateral benefits.**
- Prudence also requires giving appropriate consideration to the role that an investment or investment course of action plays in terms of such factors as diversification, liquidity and risk/return characteristics with respect to the plan's investment portfolio

DOL Interpretive Bulletin 2008-01 (Bush Administration)

- Superseded IB 94-1.
- "Fiduciaries may never subordinate the economic interests of the plan to unrelated objectives, and may not select investments on the basis of any factor outside the economic interest of the plan except in limited circumstances enumerated [in the IB]"
- Introduced the **"Tiebreaker" test** - ETIs may only serve as a tiebreaker in the case of two **otherwise identical** investment options.
- Before selecting an ETI, a fiduciary must first have concluded that the alternative options are truly equal, taking into account both a quantitative and qualitative analysis of the economic impact on the plan.
- **Tiebreakers are "rare" and Documentation required** - Fiduciaries who rely on factors outside of the plan's economic interest "will rarely be able to demonstrate compliance with ERISA" unless they prepare a written contemporaneous economic analysis showing that investment alternatives were of equal value.

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DOL Interpretive Bulletin 2015-01 (Obama Administration)

- Withdrew I.B. 2008-01 and Reinstated I.B. 94-01 – 2008 “unduly discouraged fiduciaries from considering ESG factors”
- Return to “all things being equal” test: ERISA does not prevent plan fiduciaries from investing in ETIs if the ETI has an expected rate of return that is commensurate to rates of return of alternative investments with similar risk characteristics that are available to the plan, and if the ETI is otherwise an appropriate investment for the plan in terms of such factors as diversification and the investment policy of the plan.
- ESG factors **may** have a direct relationship to the economic value of a plan investment, and therefore are **proper components** of a fiduciary’s primary analysis of the **economic merits** of competing investment choices, and not merely “tiebreakers.”
- Fiduciaries need not treat commercially reasonable investments as “inherently suspect” or “in need of special scrutiny” merely because they take ESG factors into consideration.

DOL Field Assistance Bulletin 2018-01 (Trump Administration)

- *Another tone shift*
- “Fiduciaries must not too readily treat ESG factors as economically relevant to the particular investment choices at issue when making a decision.”
- Fiduciary’s evaluation of the economics of an investment should be focused on “financial factors” that have a material effect on the return and risk of an investment based on appropriate investment horizons consistent with the plan’s funding and investment objectives.

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DOL Financial Factors Regulation (a/k/a the ESG Rule) (Trump Administration)

- Plan fiduciary's evaluation of an investment/course of action must be based only on **"pecuniary"** factors subject to limited exceptions.
- "Pecuniary" factor means a factor that a fiduciary **prudently determines** is expected to have a **material effect** on the risk and/or return of an investment based on **appropriate investment horizons** consistent with a plan's objectives.
- Duty of loyalty prohibits consideration of "**non-pecuniary**" factors except as a **tie-breaker** when the fiduciary is unable to distinguish among investment alternatives on the basis of pecuniary factors alone.
- Documentation required to rely on exception.
- Acknowledgment that ESG factors "could be pecuniary in nature."
- View that non-pecuniary factors should be relatively uncommon.

Latest on the DOL Guidance (Biden Administration)

- Statement on Enforcement (3/10/21): DOL will not enforce its published final rule on Financial Factors in Selecting Plan Investments
  - "Rushed rulemaking" has had "chilling effect on appropriate integration of ESG factors in investment decisions."
- Presidential Executive Order on Climate-Related Financial Risk (5/20/21)
  - Directs Secretary of DOL to consider suspending, revising or rescinding prior administration's rule

Takeaways on DOL Guidance

Fiduciaries may not subordinate the economic interests of the plan to unrelated objectives.

- “All Things Being Equal” v. Documented “Tiebreakers” between otherwise identical investments

ESG factors can be proper components of a fiduciary’s primary analysis of the economic merits of competing investment choices.

- “No need for special scrutiny” v. “Relatively uncommon”

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Relevant Rulings and Other Guidance on Social Investing by Governmental Plans

Sgaglione v. Levitt (NY 1975)

- Pensioners challenged legislation mandating State Comptroller to use public retirement system assets to purchase at face value bonds of a recently-created Municipal Assistance Corporation for the City of NY.
- Court found an unconstitutional impairment of contract.
- As sole trustee, Comptroller "is vested with discretion to make what he determines to be wise investments."
- "The Legislature is powerless in the face of the constitutional non-impairment clause to mandate that [the Comptroller] mindlessly invest in whatever securities they direct, good, indifferent, or bad."
- Legislatively-mandated investments "remove a safeguard integral to the scheme of maintaining the security of the sources of benefits for over a half century."
- 37 N.Y.2d 507, 512–13.

ERS Board of Trustees v. City of Baltimore (Md. 1989)

Trustees challenged legality of ordinance requiring divestment from companies doing business in or with South Africa

Court upheld ordinance, finding that trustees' fiduciary duties are not violated so long as the cost to implement is *de minimis*

Court also addressed issues of federal supremacy and commerce clause

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OAG Opinion on Iran/Sudan Divestment Law (12/23/2008)

-Divestiture law does not conflict with Board's fiduciary duties because the law specifically provides that the Board need not divest unless it determines action is consistent with its fiduciary duties

-Divestment can generally be accomplished consistent with fiduciary duties if:

- System receives fair market value for divested interests;
- Costs of divestment are *de minimis* as compared to total fund assets
- Substitute investments are available that will yield competitive returns at a comparable level of risk (all things being equal)
- Fiduciaries prudently exercise discretion regarding timing and manner of divestment
- Fiduciaries otherwise act in accordance with duties of loyalty and prudence

Questions?

Appendix 6

Climate Related Investment Initiatives for Long-Term Asset Managers

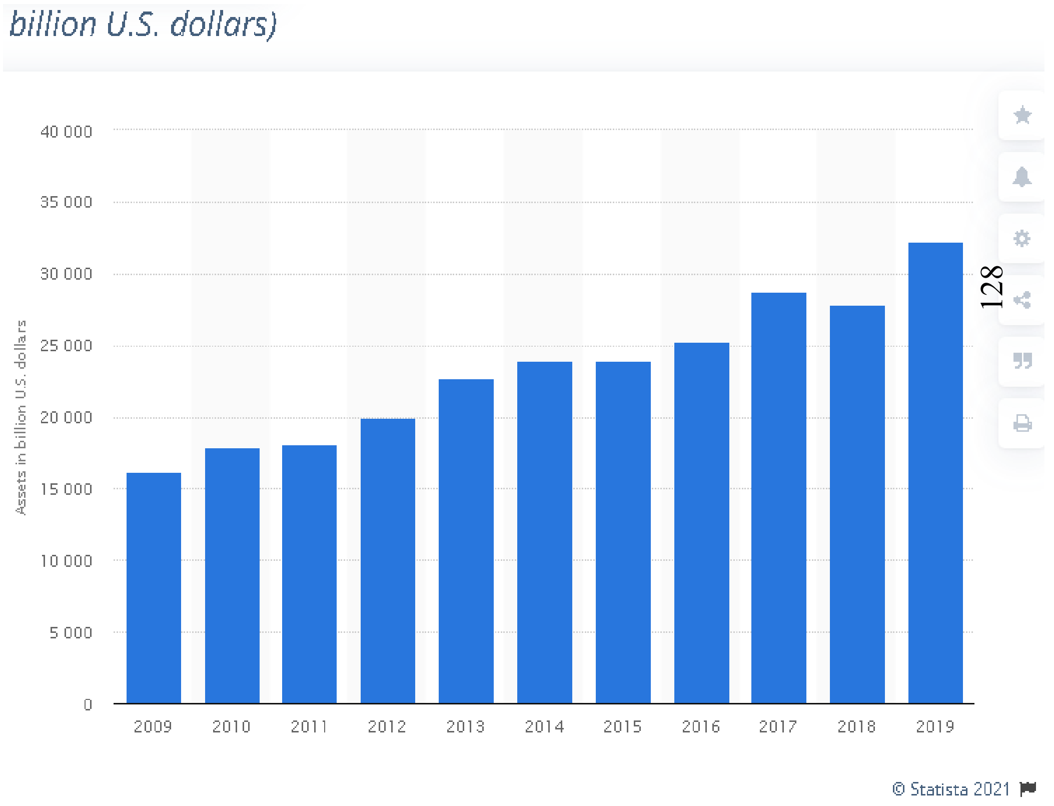
Alan Miller

Presentation to Maryland Joint Committee on Pensions

October 7, 2021

Early recognition pension funds may be at risk from climate change

- Mercer report 2011; Maryland Pension Fund a sponsor – but not 2015 Update
- Unique in large holdings of long-term obligations ($100 trillion+)
- Public pensions among largest asset holders -- and are regulated
- Often outsource fund management and focus primarily on asset allocation



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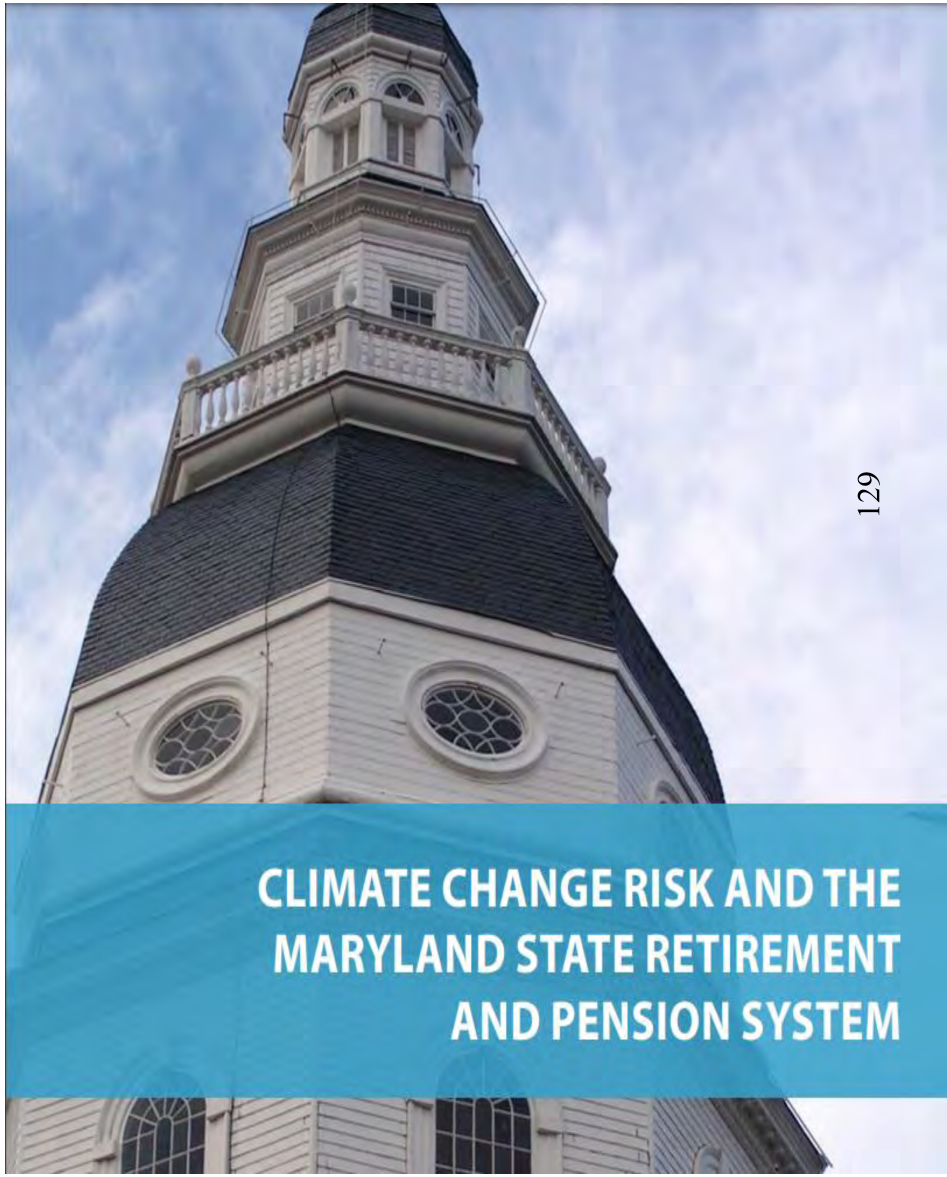
SPP Report (October 2017)

- School Author: Nathan Hultman
- Other Authors: **Matt Binsted; Wes Hanson; Alan Miller; Travis St. Clair**
- **SPP Dean Robert Orr a climate expert**

The Maryland SRPS currently manages over $47 billion in assets on behalf of over 380,000 members across numerous state and local government agencies. While some other state pension systems are beginning to systematically address their climate risk exposure, SRPS has implemented only some of the important policies and actions related to climate risk management.

While SRPS has a well-diversified portfolio with most of its funds invested outside of Maryland, the state's vulnerability to climate change creates an interest for the state to lead on all facets of climate policy, including management of climate risks for institutional investments.

We highlight that the State of Maryland could benefit from (1) clarifying its investment principles, (2) undertaking a comprehensive climate risk assessment, and (3) increasing its corporate engagement and transparency



Pension Risk Mitigation Act of 2018

1. Annual report - include climate risk
2. Identify and recommend best practice from other pension funds, financial institutions and experts
3. With respect to risk assessment and disclosure
4. For inclusion in the Investment Policy Manual
5. Consider multiple scenarios across industry sectors, asset classes and the total portfolio

(House Bill 993)

AN ACT concerning

Maryland Pension ~~Climate Change Risk~~ *Risk Mitigation* Act

FOR the purpose of requiring that, consistent with certain fiduciary duties, the investment policy manual adopted by the Board of Trustees for the State Retirement and Pension System include certain policies and address certain details regarding the management of ~~climate~~ *certain* risks in the investment of State Retirement and Pension System assets; requiring the Board of Trustees to ~~conduct or commission a climate~~ *submit a report on its* risk assessment of the investments of the several systems on or before a certain date and at certain intervals; specifying the information that must be included in a ~~climate~~ risk assessment; requiring the State Retirement Agency to post a certain report regarding a ~~climate~~ *certain* risk assessment to its website; requiring the Agency, to the extent practicable, to request certain information from certain entities necessary to carry out the policies of the Board of Trustees with respect to a ~~climate~~ *certain* risk assessment; providing that the Board of Trustees, or any other fiduciary of the several systems, may not be held liable for certain actions under certain circumstances; providing that nothing in this Act shall require the Board of Trustees to take certain actions unless certain circumstances exist; and generally relating to ~~climate change and~~ *risk assessments* the State Retirement and Pension System.

Reports published – 2019, 2020, 2021

- “Meketa [was employed] to evaluate the risk that an externality such as climate change could impact the results. [Their] analysis examines **the impact of a 2°C increase in global average temperature and a commensurate level of carbon dioxide emissions over the next ten years.”**
- Did not consider transition risk (climate policies such as carbon taxes), liability rik, climate shocks from tipping points, unexpected extreme events (e.g., extreme cold in Texas), longer term but identified risks, etc
- Outcome (2021): climate shocked portfolio underperforms about 0.5% per annum (6.3% v. 6.9%)
- Brief review of best practice in 2021 report: “The industry is still developing portfolio construction tools focused on asset classes or risk classes that incorporate ESG and climate change.”
- **2020 Conclusion: After reviewing the System’s risk management processes in comparison with the leading practices of peers and new research from academic literature, it appears the System engages in leading practices concerning the evaluation and management of risks associated with the investment of System assets.**

Best Practice: Activities of More Climate Sensitive Pension Funds

- UN Joint Staff Pension Fund
- Quebec Pension Fund
- CalPERS/CalSTERS
- NY City
- Mercer
- Axa SA

- Commitments to net zero on a portfolio basis
- Fossil fuel divestment, increase in low carbon investments
- Willingness to vote in support of climate resolutions
- Membership in climate change focused partnerships, e.g., Net Zero Asset Owners Alliance (Quebec and CalPERS are members); Maryland is a member of the Climate Action 100+
- TCFD Supporter (CalPERS, Ontario, many more)
- Advocacy, e.g., membership in *We Are Still In*
- Scenarios going out several decades and including higher temperatures
- Consider transition as well as physical risk and abrupt as well as gradual changes
- Consider opportunities as well as risks
- Size doesn’t matter!

Two Related But Distinct Issues

- **Risk analysis and disclosure** as per the Task Force on Climate Related Financial Disclosures (TCFD) created by the G20 FSB in 2016
- Dependent on corporate adoption of consistent analytical methods for evaluation and quantification of climate risk, a rapidly evolving field

- Climate policy-based commitments for portfolio management (e.g., net zero by 2050, Paris aligned); e.g., Net Zero Asset Managers initiative, 128 signatories, $43 trillion under management
- Divestment issue

Evolving Analytical Methods – e.g., Mercer Associates, *Investing in a Time of Climate Change – The Sequel 2019*

- Scenarios based on 2^{o}, 3^{o}, and 4^{o} warming for 2030, 2050 and 2100
- Two modeling approaches: Long-term return impact analyses and short-term stress testing
- Results: physical damages risk dominate; a below 2^{o}C scenario is most beneficial, and the 4^{o}C and 3^{o}C scenarios are to be avoided
- Transition opportunities emerge from a 2^{o}C scenario, with transition now expected to be a benefit from a macroeconomic perspective
- Expected annual return impacts remain most visible at an industry-sector level, with significant variations by scenario, particularly for energy, utilities, consumer staples and telecoms.
- Sudden changes in return impacts are more likely than neat, annual averages, so <u>stress testing</u> is an important tool

Government Pension Investment Fund of Japan ($1.7 trillion) Climate Report August 2020

- Carbon footprint/carbon intensity measurement and attribution analysis
- Corporate disclosure of greenhouse gas emissions
- Scenario analysis of climate change risks and opportunities using Climate Value-at-Risk (CVaR)
- Impact of technological opportunities on corporate value
- Sovereign bond climate change analysis
- Warming potential of GPIF portfolio

G-7 Calls for Making Climate Change Risk Reporting Compulsory

Final Communique, June 2021: "We support moving towards mandatory climate-related financial disclosures that provide consistent and decision-useful information for market participants…"

The International Financial Reporting Standards Foundation's programme works to develop a baseline standard under robust governance and public oversight, built from the TCFD framework and the work of sustainability standard-setters . . .The meeting encouraged further consultation on a final proposal leading to the establishment of an International Sustainability Standards Board ahead of the [26th UN Climate Change Conference of the Parties (COP26)] scheduled to take place in Glasgow (UK) in November 2021.

New Analytical Tools

- Index and fintech vendor MSCI launched an ***Implied Temperature Rise*** tool to help investors gauge how aligned their portfolio companies are with efforts to limit climate change with firm-level insights for over 10,000 publicly listed companies.
- The Implied Temperature Rise tool follows the launch of MSCI's Climate VaR tool in 2020, for measuring the climate-related risks and opportunities within the portfolios of financial institutions, and its Target Scorecard earlier this year, which facilitates comparisons between companies' climate plans and assesses their credibility.

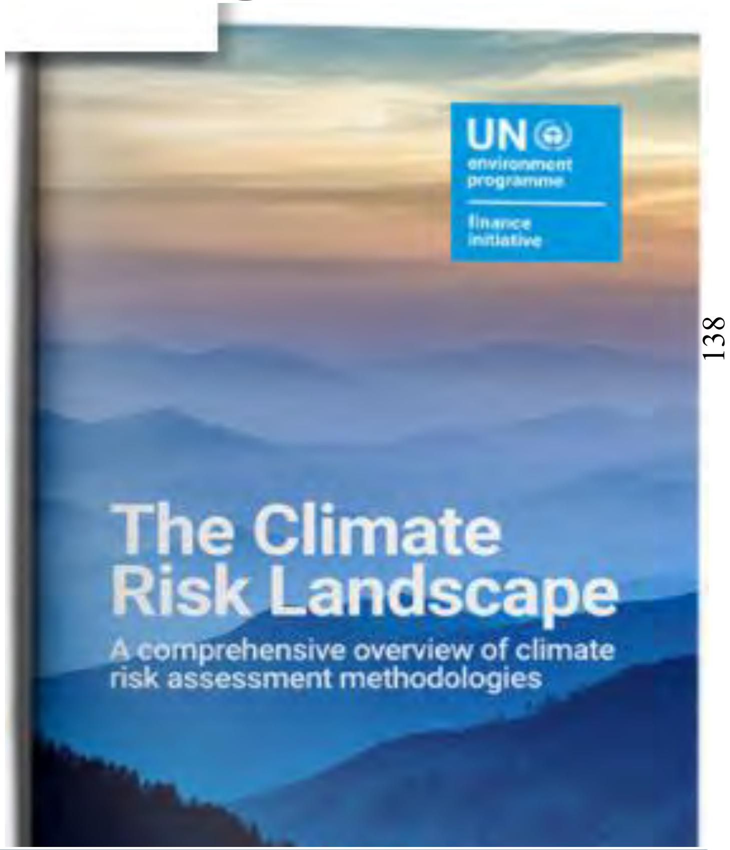
New UNEP FI Report: **The Climate Risk Landscape: Mapping Climate-related Financial Risk Assessment Methodologies**

- Summary of the key developments across third party climate risk assessment providers since May 2019,
- "Increased demand for standardisation" likely to push tool providers to use uniform reference scenarios
- Financial institutions will "increasingly want to integrate climate risk into their financial and economic decision-making tools" and thus leery of third-party 'black box' models.

A report co-authored by David Blood, who started sustainable investing firm Generation Investment Management with Al Gore, found at least 7 methods of measuring portfolio alignment

See also: T. Fiedler et al, "Business Risk and the Emergence of Climate Analytics," Nature Climate Change, Feb. 2021

And of note: The UK government has pledged £10 million to fund a new centre for climate finance and risk management, the UK Centre for Green Finance and Investment



https://www.unepfi.org/publications/climate-change-publications/tcfd-publications/the-climate-risk-landscape/

Accelerating focus on climate risk within the financial community

- **UK Becomes First Country in the World to Make TCFD-aligned Disclosure Mandatory,** Nov. 9, 2020
- **Federal Reserve warns of climate 'fire sale',** E&E News, November 10, 2020
- **CFTC Report Details Threats of Climate Change to the U.S. Financial System,** September 2020
- **This Changes Everything: Climate Shocks and Sovereign Bonds, IMF Working Paper,** June 5, 2020

Recent climate announcements by CalSTRS and multiple universities

- Trustees for the $310.9 billion California State Teachers' Retirement System (CalSTRS) voted in August to achieve a net-zero investment portfolio by 2050
- In May CalSTRS supported activist hedge fund Engine No.1's successful campaign to elect 3 climate ativists to Exxon's board
- September 2021: Harvard, U. Minnesota, Boston U join over 1300 schools and institutions that have divested or announced plans to divest at least in part from fossil fuels (an estimated $838 million of the Harvard endowment)

The Evolving Financial Landscape as seen by BlackRock CEO Larry Fink

BlackRock CEO Larry Fink January 2021 letter to CEOs:

From January through November 2020, investors in mutual funds and ETFs invested $288 billion globally in sustainable assets, a 96% increase over the whole of 2019. I believe that this is the beginning of a long but rapidly accelerating transition – one that will unfold over many years and reshape asset prices of every type. ***We know that climate risk is investment risk. But we also believe the climate transition presents a historic investment opportunity***

Closing Thought: An Opportunity for Collaboration with the University of Maryland?

Presentation to the Maryland State Hearing on Pension Funds

Heather Coleman
Environment Program Director, Wallace Global Fund

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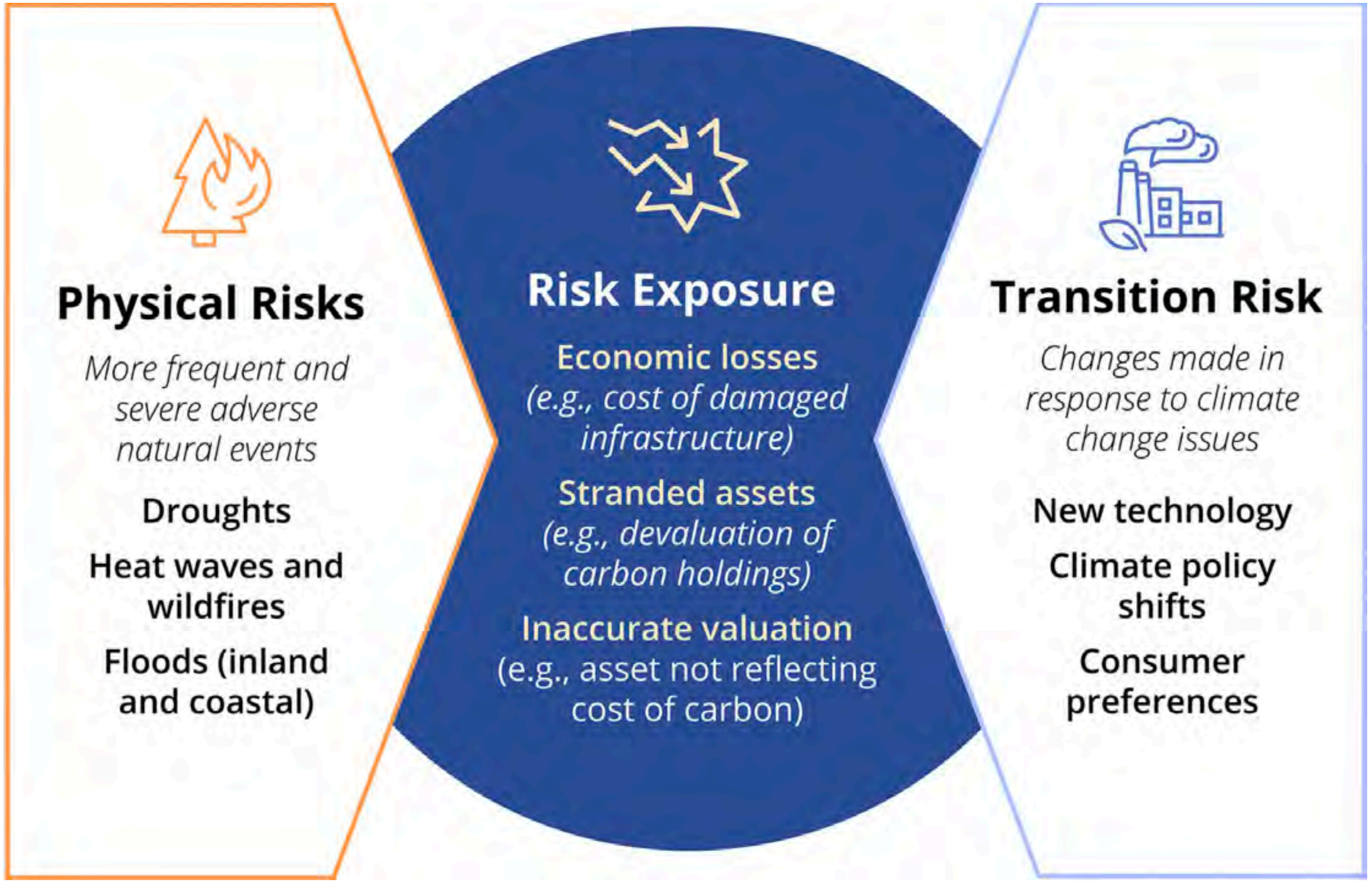
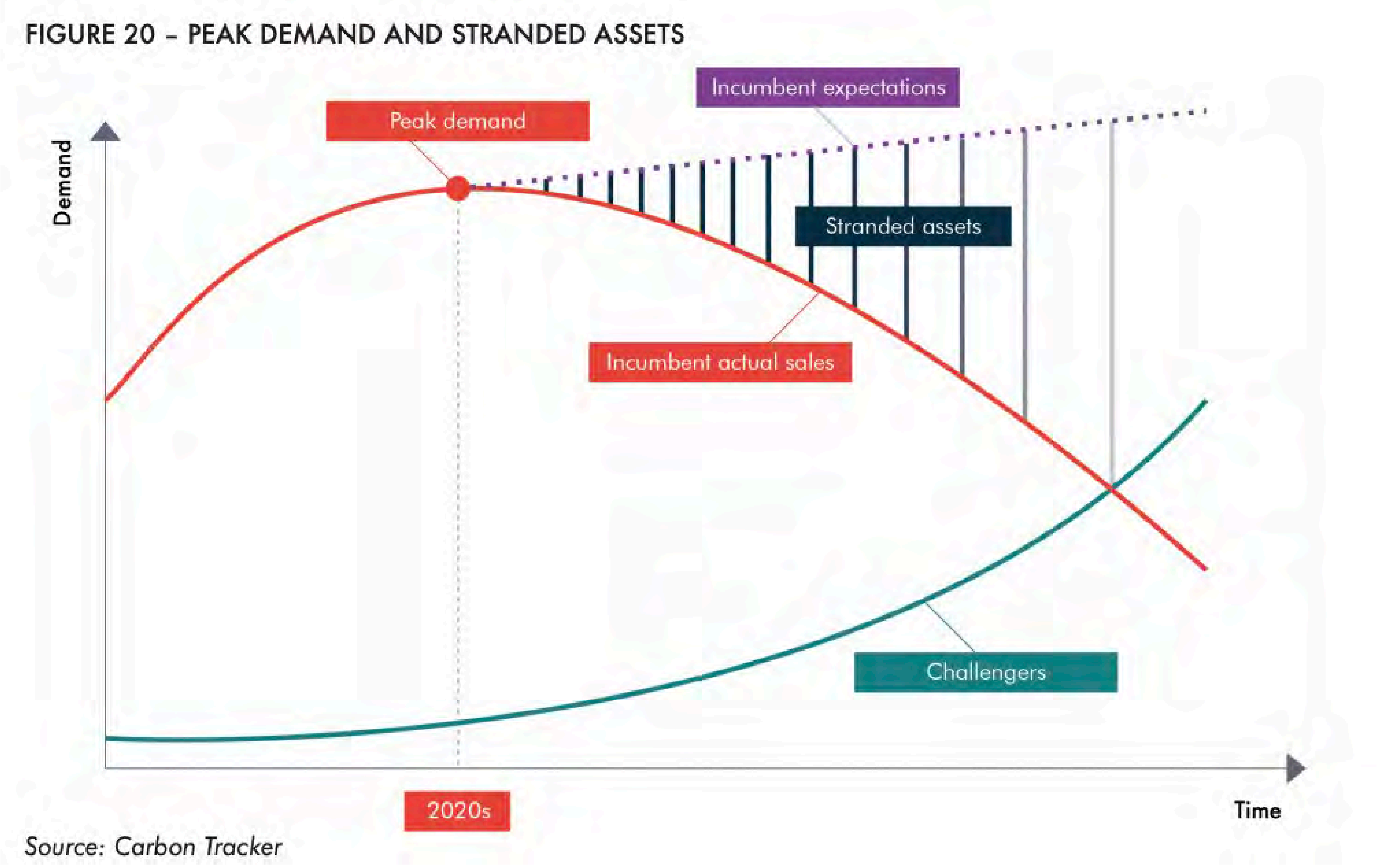
Pensions Are Highly Vulnerable To Climate Finance Risks

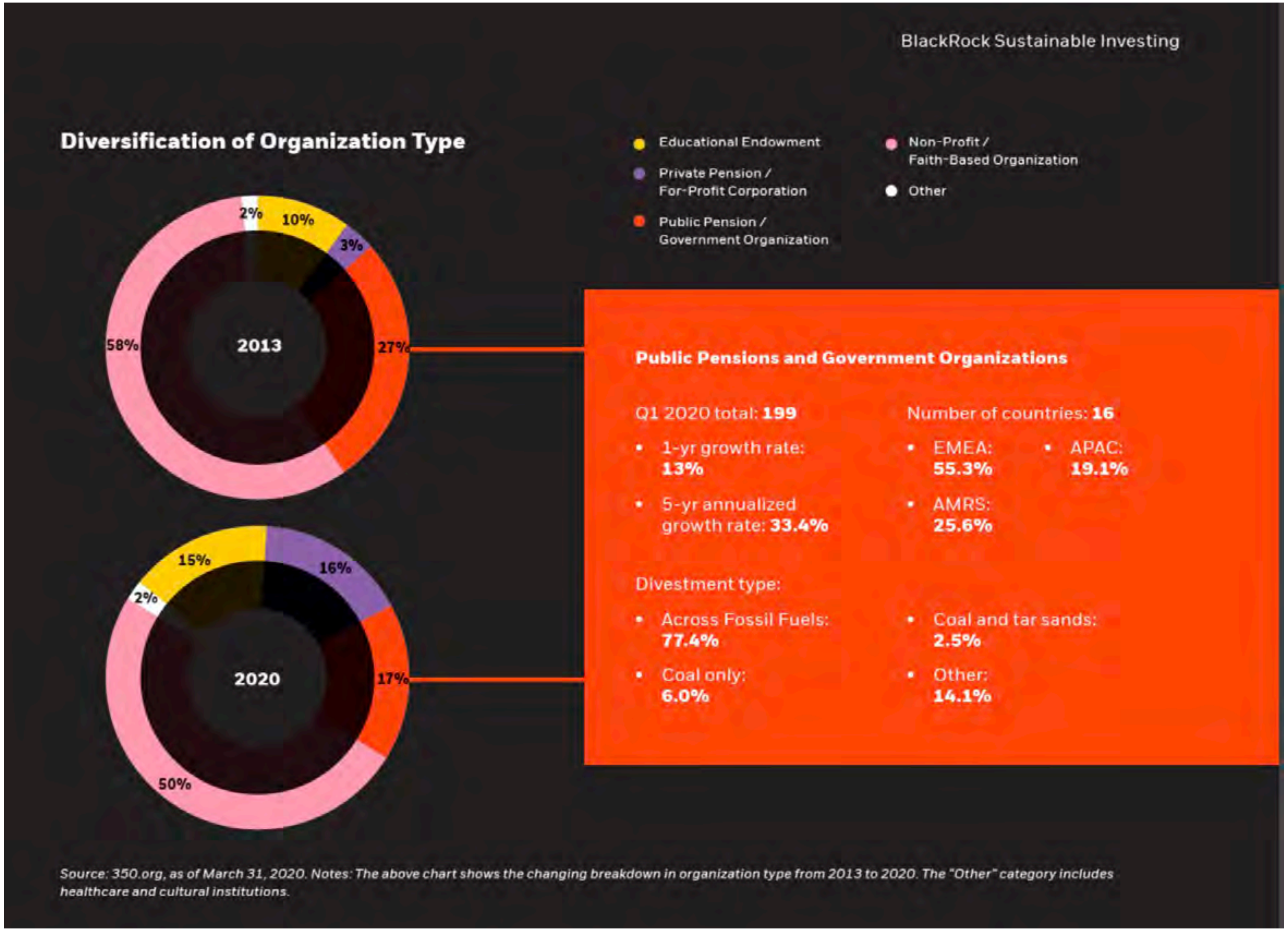


Source: GAO analysis of reports from Merce and TCFD: GAO-21-327

Fossil Fuel Investments Will Most Likely Become Stranded Assets



Pension Funds are Deciding to Divest from Fossil Fuels



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Joint Committee on Pensions
October 7, 2021

Alan Miller

Alan Miller is a lawyer and an internationally recognized authority on climate finance and policy. In January 2014, he retired from the International Finance Corporation after 16 years in the World Bank Group working on climate change issues, including 6 years in the Global Environment Facility Secretariat where he managed approval of over $1 billion in donor funding for clean energy projects in more than 70 developing countries. He previously created and directed the Center for Global Change at the University of Maryland (1989 through 1996) and served on the staff of several nongovernmental environmental organizations. Since his retirement, he continues to consult actively for several international organizations. He has taught courses at 10 universities in four disciplines and is currently an adjunct professor at both the University of Maryland School of Public Policy and the American University School of Business.

Heather Coleman

Heather Coleman serves as Environment Program Director at Wallace Global Fund, a private foundation supporting people-powered movements and campaigns to advance democracy and rights and to fight for a healthy planet. Prior to joining the Fund, she served as global climate and energy director at Oxfam America and previously served as climate policy analyst and advisor to Northeast and Mid-Atlantic States. She received a Master of Engineering Management in 2004 from the Yale School of Forestry and Environmental Studies where she was named a Switzer Environmental Fellow and was 2015 recipient of the ‘Prospect Street’ Leadership Award. Heather serves on the Advisory Group of InfluenceMap, a UK-based climate research organization. She lives with her family in Montgomery County, Maryland.

Prepared Testimony Maryland State Hearing on Pension Funds
October 7, 2021

Heather Coleman
Environment Program Director, Wallace Global Fund

I am honored to provide testimony for today's hearing on the Maryland State Pension Fund. I commend the work of the Committee in considering the pressing matter of divesting workers' retirement funds from financially risky and polluting industries that have put our very survival in peril. My testimony underscores the fiduciary and ethical case for why the Maryland State Retirement and Pension System should immediately divest from all fossil fuel assets and invest in just climate solutions.

The basic argument for divestment from fossil fuels and investment in climate solutions is a simple one. Climate change has been universally acknowledged as a threat to our people, our society, and our economy. The Maryland State Pension Fund, as a steward of state assets, has a responsibility to do what's best both for the retirees who are benefactors of the fund and for the people of Maryland overall. Therefore the pension fund should do what it can to reduce the impact of climate change and do what it can to protect the value of pension fund assets for the long term. A divest-invest invest strategy does both.

Let me start with the fiduciary side of the argument. Climate change represents a systemic economic threat that will adversely affect pension fund returns. President Biden's recent Executive Order on climate finance states that the "intensifying impacts of climate change present physical risk to assets, publicly traded securities, private investments, and companies — such as increased extreme weather risk leading to supply chain disruptions."[1] The World Bank predicts that all pension funds face material risks from climate change and will continue to face vulnerabilities and economic liabilities to climate well into the future.[2] The U.S. infrastructure failures that we all watched unfold this past year in the South and Northwest due to extreme weather conditions provide an important example of our economy's vulnerability to climate change. It is therefore fiscally sensible for funds to reduce their investments in companies which are contributing to this problem.

But there is an even stronger fiduciary argument for eliminating your investment in fossil fuel companies. With ten years of data, we can now say that the verdict is clear — divestment works. Divestment both increases financial returns and reduces long-term financial risk.

The world's largest investment house, BlackRock, confirmed earlier this year in a critical research report for New York city's pension funds that "no investors found significant negative

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[1] https://www.whitehouse.gov/briefing-room/presidential-actions/2021/05/20/executive-order-on-climate-related-financial-risk/
[2] https://blogs.worldbank.org/psd/overheating-pension-pots-how-resilient-are-pension-systems-climate-change

performance from divestment but rather, have reported neutral to positive results."[3] Looking at possible divestment models, they said, it was clear that the "The broadest of all [divestment] options … outperforms all other options and the benchmark portfolio on both a standalone cumulative and standalone annualized return basis."[4]

This is just the most prominent of several studies that have emerged examining the results experienced by institutions which have divested. A 2019 survey by the Croatan Institute asked 60 philanthropic foundations who had divested about their experience and found that 94 percent had "experienced positive to neutral performance since committing to Divest Invest."[5]

The reasons for this are clear. Oil, goal and gas stocks have been consistently underperforming for years. The S&P 500's Fossil Fuel Free Total Return Index has consistently outperformed the S&P 500 overall since 2012.[6] And going forward, the picture for fossil fuel companies could get much worse. Back in 2012, Carbon Tracker, a research think tank, released an analysis called *Unburnable Carbon*, which introduced the idea that fossil fuel companies are grossly overvalued in the market because their value is based on "stranded assets" — those oil and gas reserves still buried in the ground that will become worthless in a clean, renewable energy future. The math is simple — if the world is to succeed at limiting climate change to 1.5 degrees Celsius as stated in the Paris Agreement, nearly all of that oil, coal and gas must remain in the ground and the value of these companies will inevitably collapse. Carbon Tracker now estimates that fossil fuel demand most likely peaked already, somewhere around 2019.[7] This analysis has now become widely endorsed in the financial community and was cited by BlackRock in their report. Pension funds happen to be of the most vulnerable sectors to stranded asset risk with nearly 30 percent of fossil fuel industry shares held by pension funds.[8]

Divestment also lowers your legal exposure, as managing climate risk is increasingly being seen as an essential part of an institution's legal fiduciary duty. Harvard University, the wealthiest university in the world, announced their decision to divest from fossil fuels only a few weeks ago. In that announcement, the University noted their fiduciary duty as one of the driving

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[3] BlackRock Sustainable Investing, "Investment and Fiduciary Analysis for Potential Fossil Fuel Divestment: Phase 1," BlackRock, published March 2021, accessed September 29, 2021, page 3, http://ieefa.org/wp-content/uploads/2021/03/BlackRock-Phase-One.pdf

[4] BlackRock Sustainable Investing, "Investment and Fiduciary Analysis for Potential Fossil Fuel Divestment: Phase 3," BlackRock, published March 2021, accessed September 29, 2021, page 12, http://ieefa.org/wp-content/uploads/2021/03/BlackRock-Phase-Three.pdf

[5] Christi Electris et al., "Divest Invest Philanthropy: Five Years After Launch," Croatan Institute and Divest Invest Philanthropy, published October 2019, accessed September, 29, 2021, https://croataninstitute.org/wp-content/uploads/2021/03/Divest_Invest_Philanthropy_October_2019.pdf page 18

[6] https://www.bloomberg.com/news/articles/2020-10-20/markets-are-divesting-you-from-fossil-fuels-nathaniel-bullard

[7] https://carbontracker.org/peak-fossil-fuels-new-grounds-for-hope/

[8] https://whoownsbigoil.com/

factors in making that decision, saying, "Climate risks are financially material risks to the investments that asset managers make on behalf of beneficiaries and therefore should be taken into account alongside any other risk with the potential to have a material impact."[9] There is an emerging trend of funds being challenged legally by their constituents with affected parties arguing that remaining in fossil fuels goes against institutions and systems' fiduciary duty.

The ethical case for investment is also straightforward. As an instrument of the state, you have a duty to act in the best interets of your citizens. That means helping end the stalemate around climate solutions. The primary culprit driving climate change is the fossil fuel industry itself. For decades, the industry understood the climate and health risks of spewing unlimited amounts of carbon pollution into the atmosphere, but they hid that information from the public and from governments to avoid regulatory repercussions and to delay shifts in their business model.[10] Divestment from these funds is an important public signal that such actions are unacceptable. It is your way to declare the state's political independence from the fossil fuel industry and to make clear that you will act in the best interests of the people, not the CEOs of Big Oil. It will help contribute to a global movement that has already been successful at reducing the power of these companies to block change.

Pension funds around the U.S. and the world are already ahead of the State of Maryland. Global commitments to divest fossil fuel assets now represent trillions of dollars in assets and growing, with more than 1300 institutions having made public commitments.[11] Canada's second largest pension fund, Caisse de dépôt et placement du Québec, divested from oil and gas just last week citing it was in the best interest of the depositors, portfolio managers, and communities they work with and serve.[12] Maine became the first U.S. state to divest their pension funds from fossil fuels through legislation this past summer. One of the largest and most influential U.S. pension funds, the $265 billion New York State Common Retirement Fund, took important steps towards divestment in 2020 and 2021. In December 2020, New York State Comptroller Tom DiNapoli announced that the fund would shed its riskiest investments in fossil fuels by 2024 and reach net zero emissions across its investment portfolio by 2040. In April 2021, it became the first state pension fund in North America to divest from oil sands companies.[13] The fund has committed to double investment in climate solutions to $20 billion.[14]

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[9] https://www.plansponsor.com/in-depth/climate-change-benchmarking-risk-retirement-plans/

[10] https://exxonknew.org/

[11] https://gofossilfree.org/divestment/commitments/

[12] https://www.reuters.com/business/sustainable-business/canadas-second-largest-pension-fund-caisse-reveals-new-climate-targets-2021-09-28/

[13] "New York State Pension Fund divests from seven oil sands companies," Stand.earth, published April 12, 2021, accessed September 29, 2021, https://www.stand.earth/latest/climate-finance/climate-safe-pensions/new-york-state-pension-fund-divests-seven-oil-sands

[14] "Sustainable Investments and Climate Solutions Program," Office of the NY State Comptroller, accessed September, 29, 2021, https://www.osc.state.ny.us/common-retirement-fund/sustainable-investments-and-climate-solutions-program

The issue at hand is not just about what *not* to invest in – the Maryland State Pension Fund should also focus on investing in climate solutions that positively impact the state and its communities. Building a climate-safe, fossil free economy has the potential to create millions of jobs for American workers. Driving investments towards renewable energy systems, retrofitting old buildings, sustainable infrastructure projects, and more will create more jobs than the present fossil fuel-based economy.[15] Pensions have the potential to drive economic growth and job creation as linked to the energy transition. President Joe Biden emphasized this possibility in his Executive Order on climate finance "private and public investments can play complementary roles in meeting these financing needs — while advancing economic opportunity, worker empowerment, and environmental mitigation, especially in disadvantaged communities and communities of color." [16]

Finally, let me assure you that we have direct positive experience with a divest-invest strategy. I serve as the Environment Program Director of the Wallace Global Fund, a non-partisan charitable foundation, working on issues of environmental sustainability, democracy, corporate accountability and women's rights and empowerment in the U.S. and globally. We came to recognize that we had an ethical responsibility as an institution to reduce the harmful emissions fueling the climate crisis. In short, *we accepted responsibility that if we were invested in fossil fuels, we owned climate change*. In 2009, we began divesting our assets from all oil, gas, and coal companies and investing in climate solutions. Additionally, we began investing directly in projects aimed to enable clean energy access and support a just economic transition.

While the motivation to divest at that time was grounded in our moral responsibility to lead, our foundation's portfolio has beat financial benchmarks consistently for the past decade. We experienced nearly 22 percent returns in 2017 alone, generating so much additional capital that we decided to take the unusual course of applying the funds to increased grantmaking instead of strengthening our endowment.

We urge the Maryland Pension System to immediately commit to divesting from fossil fuels and investing in climate solutions for the sake of the state's public workers and its citizens. Thank you for inviting me to speak. Our foundation and our many partners in the climate finance community stand poised to assist you further with data, case studies, and expert analysis. In short, divestment is the best strategy to use for managing your financial risks and fiduciary obligations. Alongside investing in the new energy economy, it is also the best choice for workers and your bottom line.

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[15] https://fortune.com/2017/01/27/solar-wind-renewable-jobs/

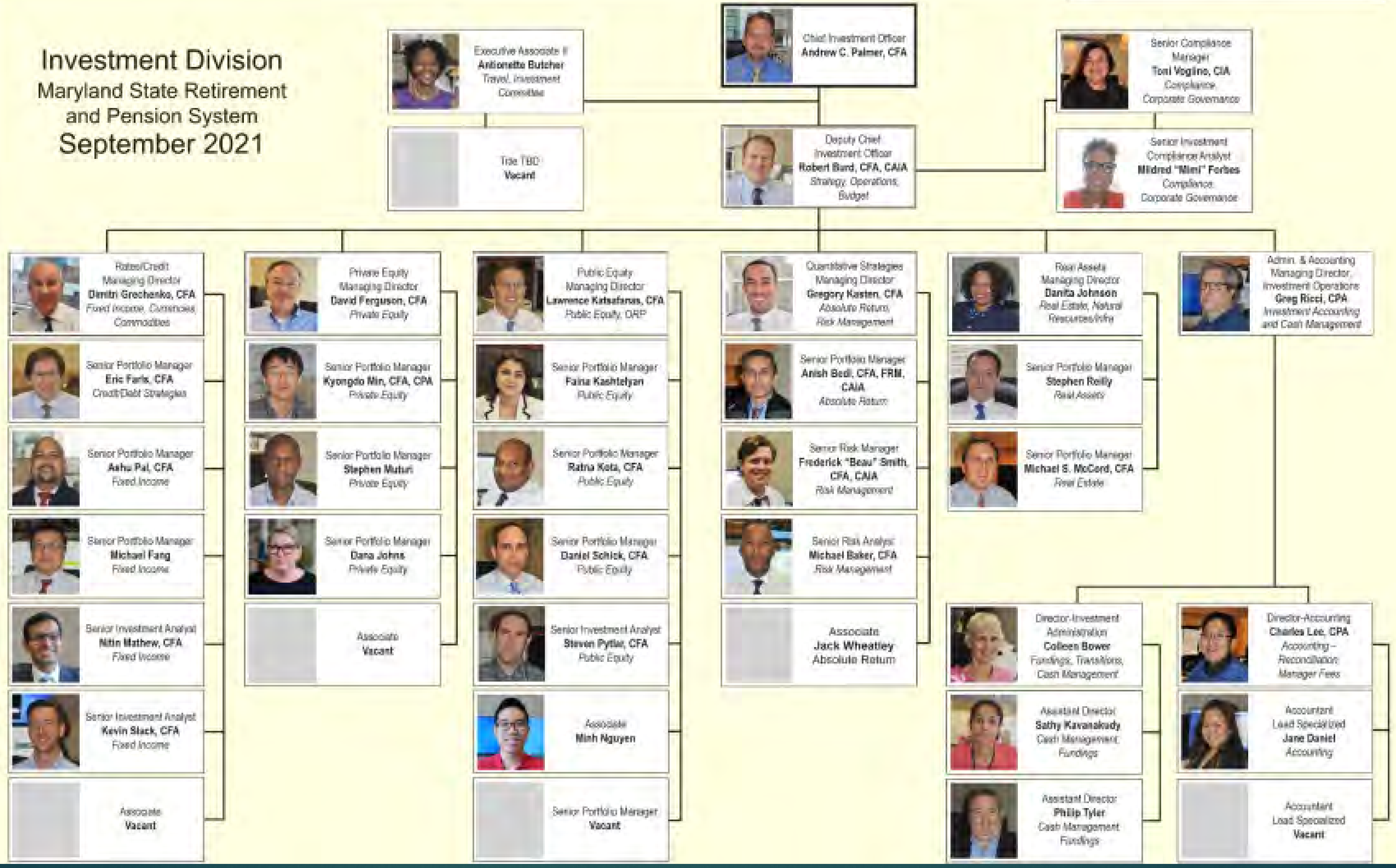
[16] https://www.whitehouse.gov/briefing-room/presidential-actions/2021/05/20/executive-order-on-climate-related-financial-risk/

Joint Committee on Pensions

MSRA INVESTMENT DIVISION

10/07/2021

Investment Division



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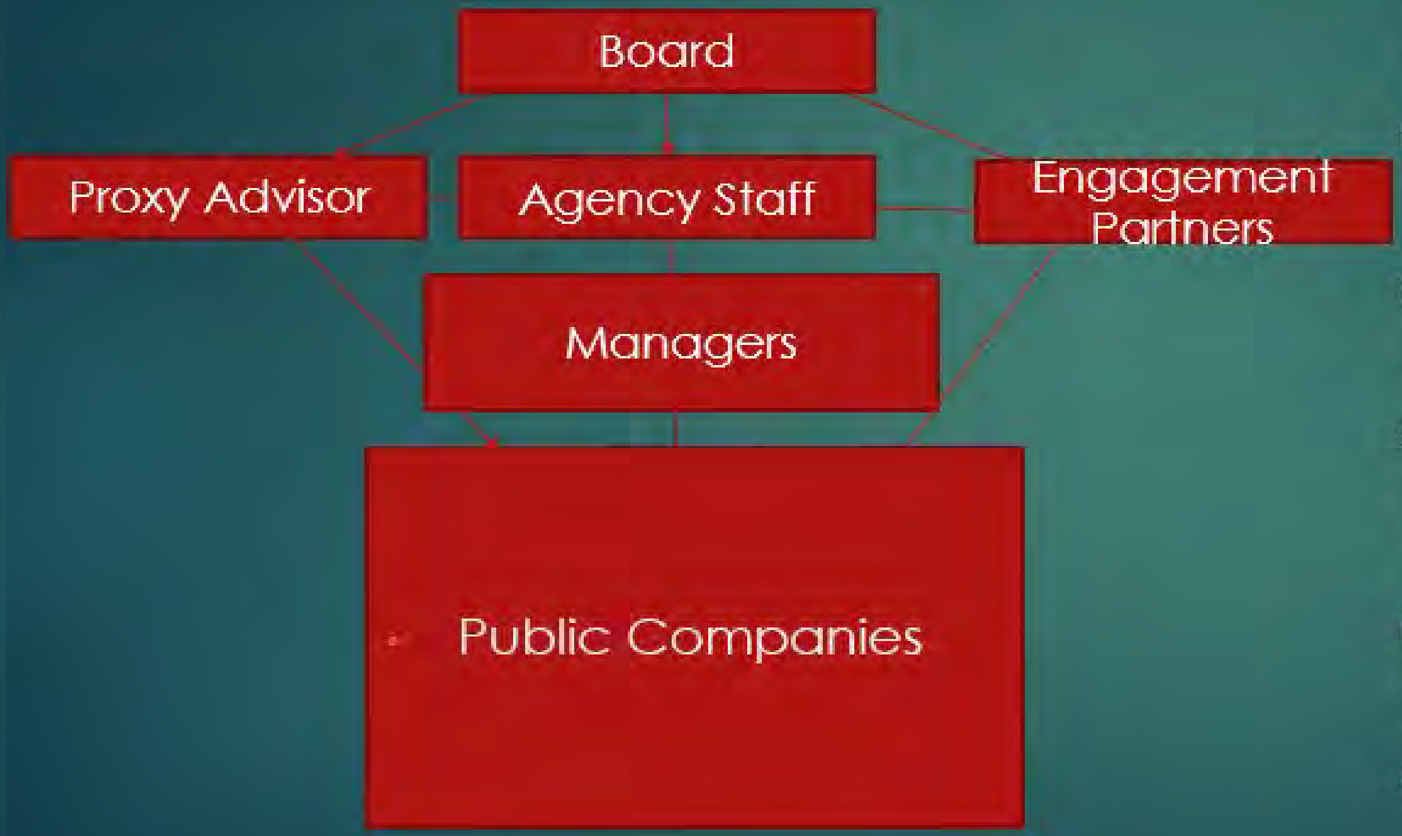
MSRA Follows a Subject Matter Expert, Delegated Approach



Board
- Sets Asset Allocation
- Establishes Policy
- Chooses Proxy Advisor and Engagement Partners

Proxy Advisor
- Consults on proxy policy, interprets proxies, engages with public companies and votes proxies

Engagement Partners
- Subject Matter Experts, educate on the issues, engage with public companies

Staff
- Evaluates managers' ESG processes and manages relationships with proxy advisor and engagement partners

Managers evaluate companies on financial and ESG issues and engage with companies to improve performance

Companies respond to proxy votes and engagement through managers and partners

Climate Change Risk To MSRPS

- What is the System's exposure to Fossil Fuel producers and Risk from Climate Change?
- What is the System Doing to Protect from the impacts of Climate Change?
- What Impact is the Strategy Having?
- What Role Does Divestment Have?
- Impact of HB833

Impact of Climate Change is not Restricted to the Energy Sector

MARYLAND STATE RETIREMENT and PENSION SYSTEM

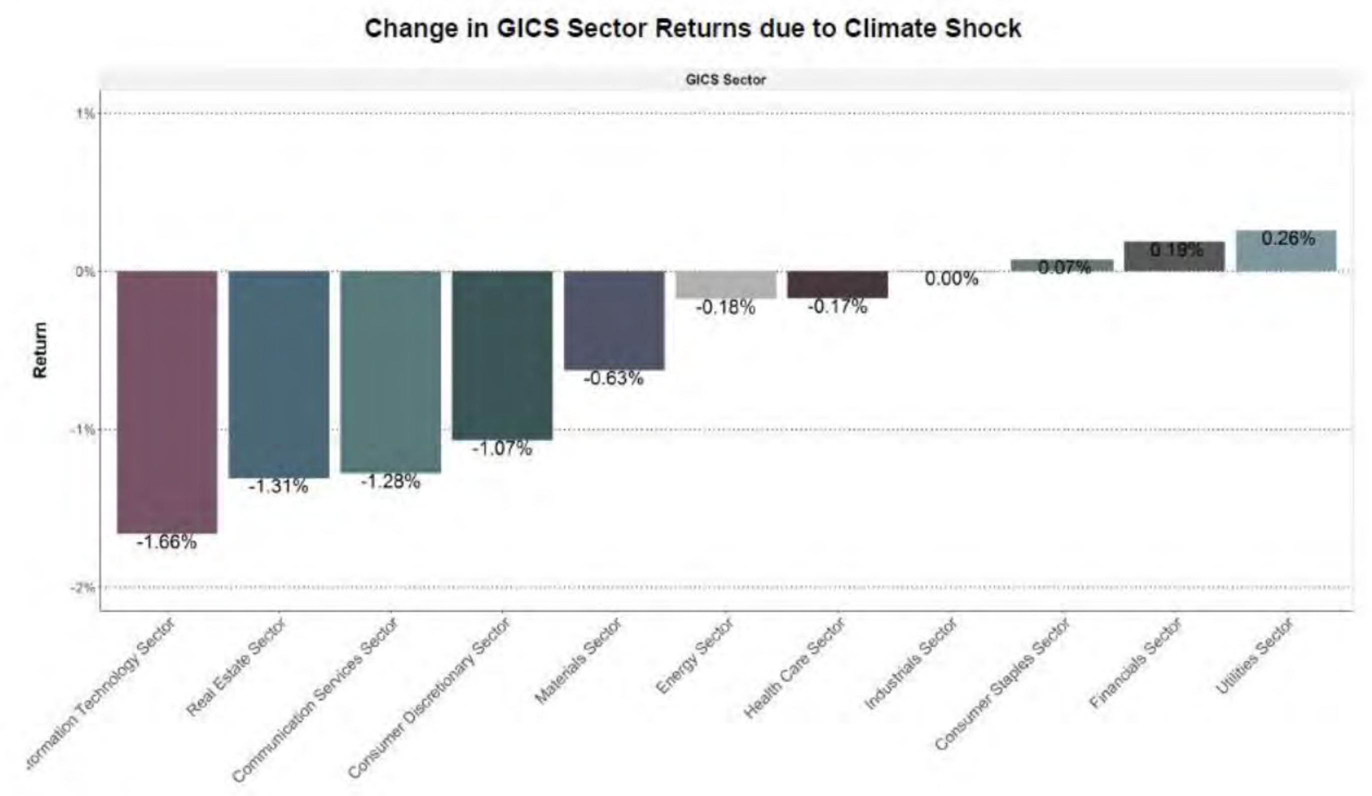
In 2020, Meketa Investment Group Modeled a surprise 1.5 degree increase in global average temperature over the next ten years. Surprisingly, Natural Resource and Commodity exposures are not the worst hit.

10-year Return Comparison by Asset Class

Asset Class	Base Case	Temp Rising	Difference
Private Equity	13.2%	9.5%	-3.7%
Emerging Market Equity	13.2%	9.8%	-3.4%
Natural Resources	9.9%	7.0%	-2.9%
International Developed Equity	9.3%	7.3%	-2.0%
Commodities	6.4%	4.5%	-1.9%
Infrastructure	9.2%	7.3%	-1.9%
US Equity	9.1%	7.4%	-1.7%
Emerging Market Bonds	7.0%	5.9%	-1.1%
High Yield Bonds	6.8%	6.0%	-0.8%
Long Gov't Bonds	4.6%	3.8%	-0.8%
Core Private Real Estate	6.5%	5.8%	-0.7%
Total System Portfolio	*7.2%*	*6.6%*	*-0.6%*
Hedge Funds	5.8%	5.3%	-0.5%
Bank Loans	6.0%	5.5%	-0.5%
Inv Grade Bonds	3.6%	3.5%	-0.1%
Cash	2.8%	2.8%	0.0%
TIPS	1.5%	3.5%	2.0%

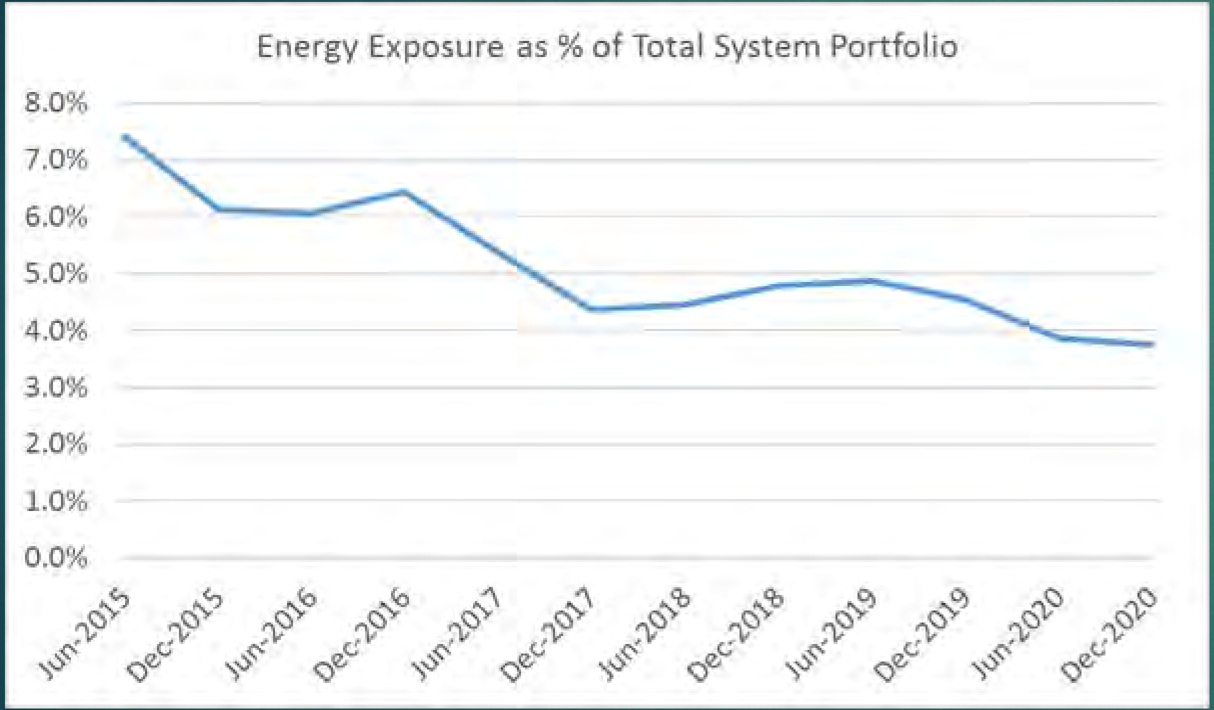
Source: Meketa Investment Group

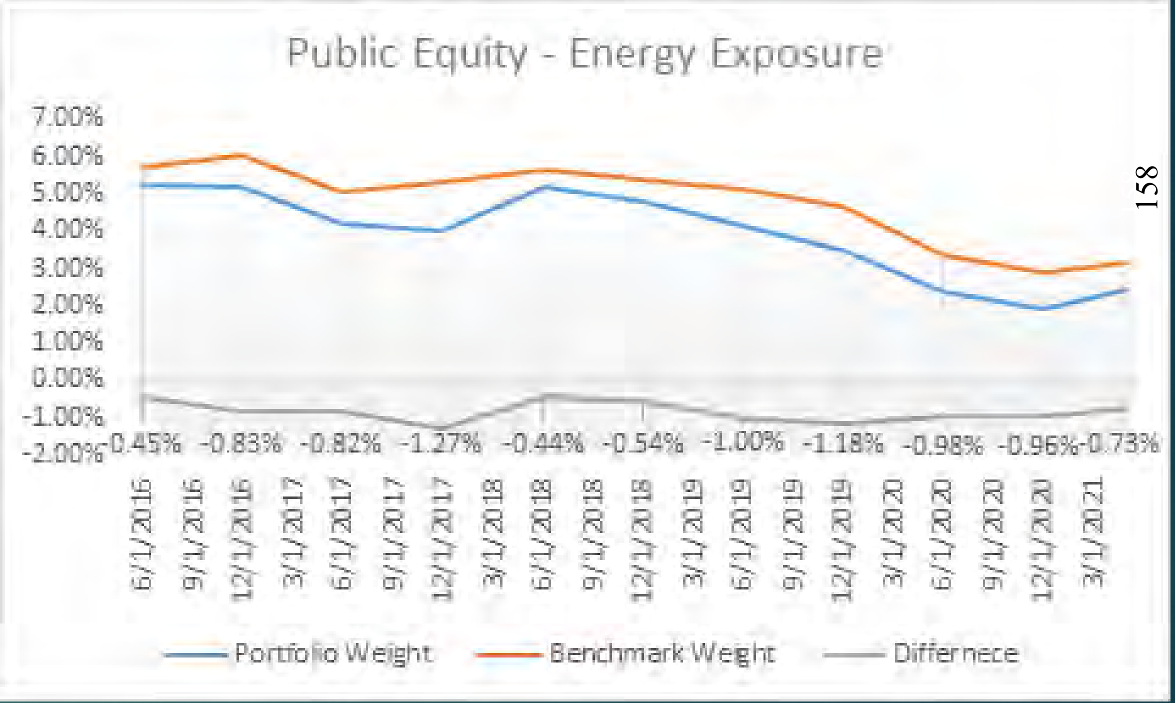
Impact of Climate Change is not Restricted to the Energy Sector



Source: Meketa Investment Group

Energy Exposure Fell as Energy Shrank in Public Markets and System Reduced Allocation to Commodities – Reducing the Risk from Regulation/Stranded Assets





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Active Managers have tended to underweight energy

How Does the Agency Respond to Risks of Climate Change?: UNPRI Framework – Manage Risks

MARYLAND STATE RETIREMENT and PENSION SYSTEM

Considering ESG issues when building a portfolio (known as: ESG incorporation)		
ESG issues can be incorporated into existing portfolio construction practices using a combination of three approaches: integration, screening and thematic.		
Integration	**Screening**	**Thematic**
Explicitly and systematically including ESG issues in investment analysis and decisions, to better manage risks and improve returns.	Applying filters to lists of potential investments to rule companies in or out of contention for investment, based on an investor's preferences, values or ethics.	Seeking to combine attractive risk-return profiles with an intention to contribute to a specific environmental or social outcome. Includes impact investing.

Climate Change and ESG Incorporation

- Integrate into the investment process –
  - Most of the System's Dollars are invested in individual investments through an ESG lens – exceptions are government bond portfolios, hedge funds with short horizons, index funds and Terra Maria (small) managers
  - At the asset class level, the board stress tests potential asset mixes with performance in a climate change scenario.
- Thematic Investing in the Transition- to date this has happened through traditional funds finding attractive transition investments. More specialized investment vehicles are approaching return and risk objectives.
- Screening based on values or ethics – Not consistent with fiduciary standards

How Does the Agency Respond to Risks of Climate Change?: UNPRI Framework – Affect Change

SRPS
MARYLAND
STATE RETIREMENT
and PENSION SYSTEM

Improving ESG practices, outcomes and disclosure (known as: active ownership or stewardship)	
Investors can exert influence through tools including: engagement and voting – two of the most widely used tools – resolutions/proposals, board roles, supplier monitoring/negotiation, contributing to research and public discourse, litigation.	
Engagement	**Voting**
Interactions between an investor and current or potential investees/issuers, in order to: improve practice on an ESG issue, change a sustainability outcome in the real world or improve public disclosure. Engagement can also be with non-issuers, such as policy makers or standard setters.	Exercising voting rights on management/ shareholder resolutions (and submitting resolutions), to formally express approval (or disapproval) on relevant matters.

Improving Practices, Outcomes and Disclosures: Proxy Voting

- The System has hired Institutional Shareholder Services (ISS), a proxy advisor firm, to obtain research and analytics about the companies we invest in and the proxy proposals, provide advice on crafting proxy policies, recommend how to vote proxies based on best practices for corporate governance and the latest research, and process the System's vote based on our proxy policies
- ISS provides research on over 45,000 meetings and 12.2 million proxies a year
- In 2020, the System cast votes at almost 8,000 meetings and over 86,000 proposals
- The System's proxy voting policies generally support proxies that promote disclosure of relevant metrics such as environmental practices, risks, reports, liabilities, and Net Zero goals and plans unless the company already has sufficient measures or commitments in place

Improving Practices, Outcomes and Disclosures: Proxy Voting

- Proxy voting results past three years: 65.6% against, 34.4% in favor of climate related proposals
- Comparison: State Street Global Advisors has a record of supporting about 33% of climate related goal proposals and 50% of climate related report proposals
- Engagement, through our partners, often results in agreements between the shareholders and the company to enact practices and goals that are acceptable to us as shareholders and allows the System to vote against shareholder proposals as we no longer need to force the company to take action through a proxy vote
- Example: BP- Through the engagement process with our partner Climate Action 100+, BP agreed to a binding agreement to develop its climate strategy in line with the goals of the Paris agreement, along with greater disclosure of metrics and targets. This agreement allowed the System to vote against the shareholder proposal in 2021
- The System's proxy voting policies evaluate Directors on their effectiveness, including with respect to ESG/Climate matters
- Example: Exxon- The System voted in favor of replacing board members due to their lack consideration related to energy transition and operational performance. As a result, three new board members were voted in.

Improving Practices, Outcomes and Disclosures: Engagement/Oversight

- Engagement – Generally through partners
  - Sustainable Accounting Standards Board: Affiliate member promoting consistent reporting standards on sustainability and an industry risk framework
  - CERES: Member supporting education, advocacy and engagement
  - Climate Action 100+: Signatory, engage with large carbon companies. BP Example
  - PRI (Principles for Responsible Investment): supports signatories in incorporating ESG factors into investment and ownership decisions. Signatory since 2008.
- Manager Discussions and Questionnaires
  - Annually the System engages with managers on ESG incorporation into their investment analytics, their process, and their engagement practices to ensure our managers are taking ESG into consideration when selecting investments

How Does MSRA Demonstrate Progress?

Improving Implementation of ESG Integration

Since the formation of the ESG Committee, staff has worked on improving data capture and communication to external constituents. Staff's efforts have been successful, which can be seen in the ratings given to MSRPS by UN PRI following review of the System's responses to their annual survey in the table below. The "C" rating in 2019 under "Direct and Active Ownership" can be attributed to the System's outsourced model and is expected to improve as more assets are managed internally.

Assessment Major Categories	2016	2017	2018	2019
Strategy and Governance	C	C	B	A
Indirect - Manager Selection/Monitoring	D	C	C	B
Direct and Active Ownership	D	D	C	C

Maryland has Improved along with the Global Industry

2017

Summary Scorecard

AUM	Module Name	Your Score	Median Score
	01.Strategy & Governance	C	A
Indirect - Manager Sel., App. & Mon			
10-50%	02. Listed Equity	C	B
10-50%	03. Fixed Income - SSA	C	C
<10%	04. Fixed Income - Corporate Financial	C	C
<10%	05. Fixed Income - Corporate Non-Financial	C	C
<10%	06. Fixed Income - Securitised	C	E
<10%	07. Private Equity	Not reported	
<10%	08. Property	Not reported	
<10%	09. Infrastructure	Not reported	
Direct & Active Ownership Modules			
0	11. Listed Equity - Active Ownership	D	B

2018

Summary Scorecard

AUM	Module Name	Your Score	Median Score
	01.Strategy & Governance	B	A
Indirect - Manager Sel., App. & Mon			
10-50%	02. Listed Equity	C	B
10-50%	03. Fixed Income - SSA	C	B
<10%	04. Fixed Income - Corporate Financial	Not reported	
<10%	05. Fixed Income - Corporate Non-Financial	Not reported	
<10%	06. Fixed Income - Securitised	Not reported	
10-50%	07. Private Equity	C	B
<10%	08. Property	Not reported	
<10%	09. Infrastructure	Not reported	
Direct & Active Ownership Modules			
0	11. Listed Equity - Active Ownership	C	B

2019

Summary Scorecard

AUM	Module Name	Your Score	Median Score
	01.Strategy & Governance	A	A
Indirect - Manager Sel., App. & Mon			
10-50%	02. Listed Equity	B	A
10-50%	03. Fixed Income - SSA	B	B
<10%	04. Fixed Income - Corporate Financial	B	B
<10%	05. Fixed Income - Corporate Non-Financial	B	B
<10%	06. Fixed Income - Securitised	B	B
10-50%	07. Private Equity	B	A
<10%	08. Property	B	B
<10%	09. Infrastructure	B	A
Direct & Active Ownership Modules			
0	11. Listed Equity - Active Ownership	C	B

2020

Summary Scorecard

AUM	Module Name	Your Score	Median Score
	01.Strategy & Governance	A	A
Indirect - Manager Sel., App. & Mon			
10-50%	02. Listed Equity	B	A
10-50%	03. Fixed Income - SSA	B	B
<10%	04. Fixed Income - Corporate Financial	B	A
<10%	05. Fixed Income - Corporate Non-Financial	B	A
<10%	06. Fixed Income - Securitised	B	A
10-50%	07. Private Equity	B	A
<10%	08. Property	B	A
<10%	09. Infrastructure	B	A
Direct & Active Ownership Modules			
0	11. Listed Equity - Active Ownership	C	B

Relative to State Pension Plans, Maryland is one of the leaders in addressing Climate Change

- Scores are relative to Global Peers, some of whom have fiduciary rules that require addressing climate change.
- Few U.S. plans are UNPRI Signatories – Maryland is one of seven U.S. State Plans

Signatory Name
California Public Employees' Retirement System CalPERS
Connecticut Retirement Plans and Trust Funds (CRPTF)
Employees' Retirement System of the State of Hawaii
Maryland State Retirement and Pension System
Minnesota State Board of Investment - Combined Funds
New York State Common Retirement Fund
Vermont Pension Investment Committee (VPIC)

Sample Considered (2020 Reporting)	Strategy and Governance	Listed Equity	Fixed Income - SSA	Fixed Income - Corporate Financial	Fixed Income - Corporate Non-Financial	Fixed Income - Securitized	Private Equity	Property	Infrastructure	Listed Equity - Active Ownership
New York State Common Retirement Fund										
Minnesota State Board of Investment - Combined Funds										
Teachers' Retirement System of the City of New York										
Los Angeles County Employees Retirement Association (LACERA)										
Maryland State Retirement and Pension System	1.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	3.0
Connecticut Retirement Plans and Trust Funds (CRPTF)										
San Francisco Employees Retirement System										
Los Angeles City Employees' Retirement System (LACERS)										
Employees' Retirement System of the State of Hawaii										
Vermont Pension Investment Committee (VPIC)										
Seattle City Employees' Retirement System (SCERS)										
Median	**1.0**	**2.0**	**2.0**	**2.0**	**2.0**	**2.0**	**2.0**	**2.0**	**2.0**	**2.0**
Average	**1.2**	**2.0**	**2.2**	**2.3**	**2.1**	**2.1**	**2.4**	**2.1**	**1.9**	**2.2**
Maryland differential vs. Median	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-1.0
Maryland differential vs. Average	0.2	0.0	0.2	0.3	0.1	0.1	0.4	0.1	-0.1	-0.8

Takeaways

1-On an individual basis, per the PRI Summary Scorecard Data (see second tab), MSRPS has improved significantly across all assessed categories since 2017 (over the past 4 assesment periods). Notably, in the strategy and governance module, Maryland has improved from a C to an A rating, since 2017.

2-When comparing the MSRPS vs. a group of peers comprised of 10 other state, county and city retirement funds, based on 2020 PRI reporting data, Maryland scores better than average in all but three categories: Listed Equity (at average), Infrastructure and Listed Equity Active Ownership (below average).

3-When looking at the sample Median, Maryland tracks the overall median assesment of the group, lagging behind in Listed Equity-Active Ownership

Notes:

* Note that there is somewhat low asset class representation within the sample group across fixed income and infrastructure for the 2020 sample, with only 6/11 sample data points for these categories.

**AUM range fo sample ($bn): 3-200. Funds beyond this range were excluded due to differentials in resources devoted to RI.

***low number equals higher rating

MARYLAND STATE RETIREMENT and PENSION SYSTEM

Incorporating ESG into Portfolio Management Shows Up in Stock and Bond Portfolios

- Implement a strong **governance** framework which clearly articulates the board's accountability and oversight of climate change risk;
- Take action to **reduce greenhouse gas emissions** across the value chain, consistent with the Paris Agreement's goal of limiting global average temperature increase to well below two degrees Celsius above pre-industrial levels, aiming for 1.5 degrees. Notably, this implies the need to move towards net-zero emissions by 2050 or sooner; and
- Provide enhanced **corporate disclosure**

- Green – Yes, meets all criteria
- Yellow - Partial, meets some criteria
- Red - No, does not meet any criteria

Incorporating ESG into Portfolio Management Shows Up in Stock and Bond Portfolios

MARYLAND STATE RETIREMENT and PENSION SYSTEM

Maryland Pension - Public Equity Exposure to Climate 100+ (without Passive)
6/30/2021

Sector	MD Port $ Exposure wo passive	MD Portfolio % Exposure	MD BM % Exposure	Difference
Electric Utilities	$ 97,370,066	0.43	0.99	-0.56
Oil and Gas	$ 298,237,787	1.32	2.50	-1.18
Oil and Gas Distribution	$ 19,662,242	0.09	0.23	-0.14
Coal Mining	$ 5,494,810	0.02	0.04	-0.01
Total	**$ 420,764,904**	**1.86**	**3.75**	**-1.90**

Maryland Pension - Fixed Income Exposure to Climate 100+
6/30/2021

Sector	MD Port $ Exposure	MD Portfolio % Exposure	MD BM % Exposure	Difference
Electricity Utilities	$ 37,044,812	0.21%	1.38%	-1.17%
Oil & Gas	$ 82,370,073	0.47%	1.47%	-1.00%
Oil & Gas Distribution	$ 5,822,601	0.03%	0.29%	-0.26%
Coal Mining		--	--	--
Total	**$ 125,237,486**			**-2.42%**

The System owns fewer dollars of bonds and stocks of large carbon producers

Incorporating ESG into Portfolio Management Shows Up in Stock and Bond Portfolios

MARYLAND STATE RETIREMENT and PENSION SYSTEM

Maryland Pension - Public Equity Exposure to Climate 100+ (without Passive)
6/30/2021
Over/under portfolio weight % by Indicator Response

		Electric Utilities	Oil and Gas	Oil and Gas Distribution	Coal Mining	Total	% of Difference
Net-zero GHG Emissions by 2050 (or sooner) Ambition	*Y*	-0.05	-0.05	0.00	--	-0.09	5%
	N	-0.24	-0.65	-0.06	-0.01	-0.96	51%
	Partial	-0.28	-0.43	-0.09	--	-0.80	42%
Long-term (2036-2050) GHG reduction target(s)	*Y*	-0.06	-0.03	0.00	--	-0.08	4%
	N	-0.17	-0.60	-0.06	-0.01	-0.84	44%
	Partial	-0.33	-0.51	-0.09	--	-0.93	49%
Medium-term (2026-2035) GHG reduction target(s)	*Y*	-0.11	--	0.00	--	-0.11	6%
	N	-0.02	-0.61	-0.06	-0.01	-0.70	37%
	Partial	-0.43	-0.52	-0.09	--	-1.04	55%

Incorporating Climate Change into Asset Allocation

MEKETA

Maryland State Retirement and Pension System

Climate Risk Analysis

Climate Risk: Scenario Descriptions

- 3 & 1.5 Degree Temperature Rise Scenarios: These scenarios evaluate cases consistent with global temperatures rising to the indicated temperatures by 2100 (we are at ~1.1 degree rise currently).
  - The 1.5 degree scenario represents a fairly aggressive mitigation of climate change while 3 degrees is generally consistent with current emissions trends continuing with minimal mitigation.
- Policy Scenario: This scenario evaluates cases with rises in oil and natural gas prices consistent with a \$100/tCO2 carbon tax implemented over the next decade while removing cases where fossil fuel reserve owners had increasing profits.
- Technology Scenario: This scenario evaluates cases with a 3% improvement (i.e., reduction) in carbon intensity of electricity generation over the next decade.

Incorporating Climate Change into Asset Allocation

MARYLAND STATE RETIREMENT and PENSION SYSTEM

MEKETA

Maryland State Retirement and Pension System

Climate Risk Analysis

Climate Risk:
Expected Return in Climate Stressed Scenarios

Scenario	Current Policy (%)	Recommended (%)	Liability Efficient (%)	Leverage (%)	Climate Sensitive (%)	Peer Average (%)
3 Degrees Celsius	6.54%	6.61%	6.62%	6.69%	6.78%	6.41%
1.5 Degrees Celsius	6.15%	6.21%	6.20%	6.30%	6.14%	6.09%
Policy	5.94%	5.96%	5.96%	5.98%	5.99%	5.84%
Tech	6.50%	6.53%	6.47%	6.50%	6.56%	6.39%

- The Climate Sensitive portfolio has the highest expected return in three of the four scenarios.
- The Current Policy, and each alternative, are more attractive than the peer average.

Incorporating Climate Change into Asset Allocation

MARYLAND STATE RETIREMENT and PENSION SYSTEM

MEKETA

Maryland State Retirement and Pension System

Climate Risk Analysis

Climate Risk:
Difference in Expected Return from Base Scenario

Scenario	Current Policy (%)	Recommended (%)	Liability Efficient (%)	Leverage (%)	Climate Sensitive (%)	Peer Average (%)
3 Degrees Celsius	-0.49%	-0.50%	-0.47%	-0.48%	-0.29%	-0.39%
1.5 Degrees Celsius	-0.88%	-0.90%	-0.89%	-0.87%	-0.93%	-0.71%
Policy	-1.09%	-1.15%	-1.13%	-1.19%	-1.08%	-0.96%
Tech	-0.53%	-0.58%	-0.62%	-0.67%	-0.51%	-0.41%

- Each of the policy options has a lower expected return in the climate scenarios modeled here.
- The actions that would need to be taken to limit a rise in temperature to 1.5 degrees (and the consequent hit to economic growth), cause it to have a larger negative impact on expected returns than the 3 degree scenario.
- Similarly, severe policy actions that are harmful to economic growth are likely to have a substantially negative impact on expected returns.

Incorporating Climate Change into Asset Allocation

MARYLAND STATE RETIREMENT and PENSION SYSTEM

MEKETA

Maryland State Retirement and Pension System

Climate Risk Analysis

Climate Risk:
Difference in Expected Return from Current Policy

Scenario	Recommended (%)	Liability Efficient (%)	Leverage (%)	Climate Sensitive (%)	Peer Average (%)
3 Degrees Celsius	0.07%	0.08%	0.15%	0.24%	-0.13%
1.5 Degrees Celsius	0.06%	0.05%	0.15%	-0.01%	-0.06%
Policy	0.02%	0.02%	0.04%	0.05%	-0.10%
Tech	0.02%	-0.03%	0.00%	0.06%	-0.11%

- The Recommended Policy represents an improvement over the Current Policy in each scenario.
- The other alternative policies likewise offer an improvement in most or all scenarios modeled.

MARYLAND STATE RETIREMENT and PENSION SYSTEM

MEKETA

Maryland State Retirement and Pension System

Proposed Policy Options

Asset Allocation Policy Options[1]

	Current Policy (%)	Recommended (%)	Liability Efficient (%)	Leverage (%)	Climate Sensitive (%)	Peer Average (%)
Growth/Equity	**50**	**50**	**46**	**48**	**46**	**55.5**
US Equity	16	15	15	15	12	26
Developed non-US Equity	10	9	8	9	9	12.5
Emerging Market Equity	11	10	9	9	8	6.5
Private Equity	13	16	14	15	17	10.5
Credit	**9**	**8**	**7**	**7**	**8**	**7.5**
High Yield, Bank Loans & EM Debt	5	4	3	3	8	4.5
Private Debt	4	4	4	4	0	3
Rate Sensitive	**19**	**21**	**18**	**23**	**18**	**17.5**
Cash & US Investment Grade Bonds	5	6	4	7	6	14
Long-term Government Bonds	10	10	10	10	8	2.5
TIPS	4	5	4	6	4	1
Real Assets	**14**	**15**	**21**	**20**	**20**	**14**
Real Estate	10	10	10	10	16	10
Natural Resources and Infrastructure	4	5	7	5	4	3
Commodities and Gold	0	0	4	5	0	1
Absolute Return	**8**	**6**	**8**	**8**	**8**	**5.5**
Expected Return (20 years)	*7.03*	*7.11*	*7.09*	*7.17*	*7.07*	*6.80*
Standard Deviation	*12.9*	*13.0*	*12.6*	*12.9*	*12.7*	*13.3*
Probability of 6.8% over 20 Years	*52.7*	*53.8*	*53.6*	*54.6*	*53.3*	*49.5*

Engagement Works!

MARYLAND STATE RETIREMENT and PENSION SYSTEM

HIGHLIGHTS: 2020 COMPANY COMMITMENTS

These highlights are a small selection of company commitments from 2020

FOCUS COMPANIES BY SECTOR[1]

- 39 OIL AND GAS COMPANIES
- 23 MINING AND METALS COMPANIES
- 31 UTILITIES COMPANIES
- 26 INDUSTRIALS COMPANIES
- 26 TRANSPORTATION COMPANIES
- 14 CONSUMER PRODUCTS COMPANIES

1 The focus list includes one company that is classified as 'other' which is not included in this list.

OIL AND GAS

BP

BP has set a new ambition to become a net-zero emissions company by 2050 for scope 1, 2 and 3 with a 50% cut in the carbon intensity of products it sells by 2050 or sooner. It also became the first oil major to announce that it will cut production 40% by 2030.

ENEOS HOLDINGS INC

ENEOS updated management plans and company vision for carbon neutrality by 2040 through its updated 'vision for 2040', including aspirations to link social and environmental goals to executive remuneration and investing 14 billion into its business transition plan.

OCCIDENTAL PETROLEUM CORPORATION

Occidental Petroleum announced an operational net-zero by 2040 target and ambition for net-zero associated with the use of its products by 2050.

PETROCHINA CO. LTD

PetroChina announced a near-zero emissions target by 2050, and plans to use some of the $38 billion received from gas pipeline sales to focus on wind and solar power.

RELIANCE INDUSTRIES

Reliance Industries announced a target to become net carbon zero by 2035.

REPSOL

Repsol announced an ambition to achieve net-zero emissions by 2050 for scope 1, 2 and 3 emissions becoming the first global oil and gas company to assume this goal.

ROYAL DUTCH SHELL

Shell has set a new long-term ambition to reduce the net carbon footprint of its energy products by 65% by 2050, and by around 30% by 2035. To reach overall net-zero emissions, Shell will pivot towards serving customers that are aligned with its net-zero ambitions.

SK INNOVATION CO LTD

SK Innovation reconfirmed its commitment to achieving Green Balance 2030 by 2030, ultimately aiming to achieve net zero emissions in all material scope 1, 2 and 3 emissions by 2050.

MARYLAND STATE RETIREMENT and PENSION SYSTEM

Change is Happening Through Engagement by Responsible Owners

OIL AND GAS SECTOR

In 2020, several companies have made progress toward meeting Climate Action 100+ requests:

- **Repsol** made a commitment to achieve net-zero emissions by 2050 covering scope 1 and 2, and part of its scope 3 emissions. The company was the first oil and gas company to commit to scope 3 targets.[1]
- **BP**, **Shell**, **OMV AG** and **Total**[2] made commitments to achieve net-zero emissions by 2050 including scope 1 and 2 emissions, and some coverage of scope 3 emissions.[3]
- **ENEOS** became the first oil and gas company in Asia to set net-zero emissions goals by 2040.
- **PetroChina** developed a climate change strategy signalling the company's intention to align its climate policy with the goals of the Paris Agreement, and pledged a 'near-zero' emissions target by 2050.
- **Woodside Energy**, **ConocoPhillips** and **Enbridge** made commitments to achieve net-zero operational emissions by 2050.
- **Occidental Petroleum** set an operational net-zero by 2040 target and expressed ambition for net-zero associated with the use of its products by 2050.

OIL AND GAS FOCUS COMPANIES

BP
Canadian Natural Resources Limited
Chevron Corporation
China National Offshore Oil Corporation (CNOOC) Limited
China Petroleum & Chemical Corporation (Sinopec)
ConocoPhillips
Devon Energy Corporation
Ecopetrol Sa
Enbridge Inc.
ENEOS Holdings Inc
Eni SpA
Equinor
Exxon Mobil Corporation
Formosa Petrochemical
Gazprom
Imperial Oil
Kinder Morgan, Inc.
Lukoil OAO
Marathon Petroleum
Occidental Petroleum Corporation
Oil & Natural Gas
OMV AG
Origin Energy
PetroChina Co. Ltd
Petróleo Brasileiro SA - Petrobras
Phillips 66
PTT
Reliance Industries
Repsol
Rosneft Oil Company
Royal Dutch Shell
Santos Limited
Sasol Limited
SK Innovation Co Ltd
Suncor Energy Inc.
TC Energy
Total
Valero Energy Corporation
Woodside Energy

1 The coverage of emissions reduction and net-zero targets for oil and gas varies considerably. There is the need for greater standardisation of targets which will be a priority for the initiative moving forward.
2 Total committed to net-zero emissions by 2050, including scopes 1 and 2 worldwide, net-zero emissions by 2050 including scopes 1, 2, and 3 in Europe; and 60% reduction by 2050 for scope 3 emissions worldwide with intermediate targets of 15% by 2030 and 35% by 2040.
3 These targets are varied in coverage and do not cover the full scope of the company's emissions in all cases.

SASB Has Helped Improve Reporting and Analysis

Climate Risk Impacts More Industries Along Three Vectors

SASB Framework and Shareholder Initiatives are Continuing to Improve Reporting

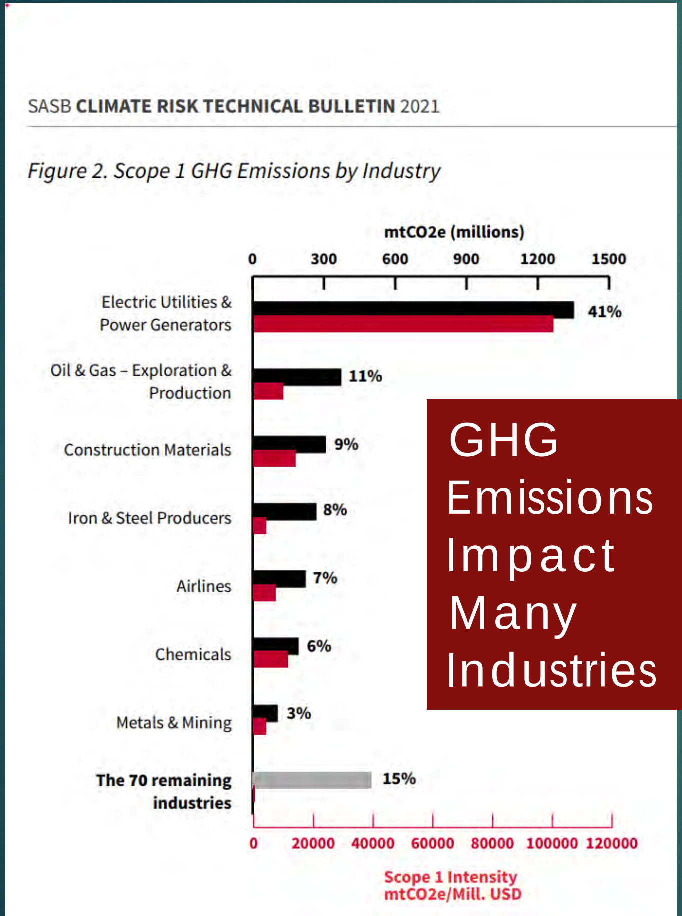

Figure 2. Scope 1 GHG Emissions by Industry

GHG Emissions Impact Many Industries

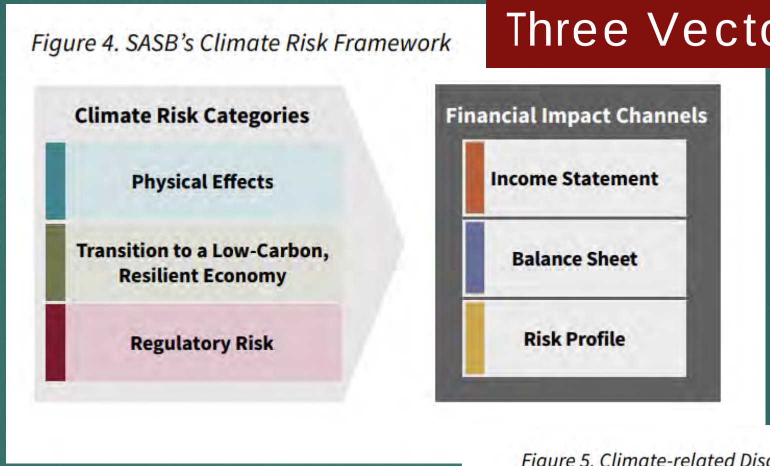

Figure 4. SASB's Climate Risk Framework

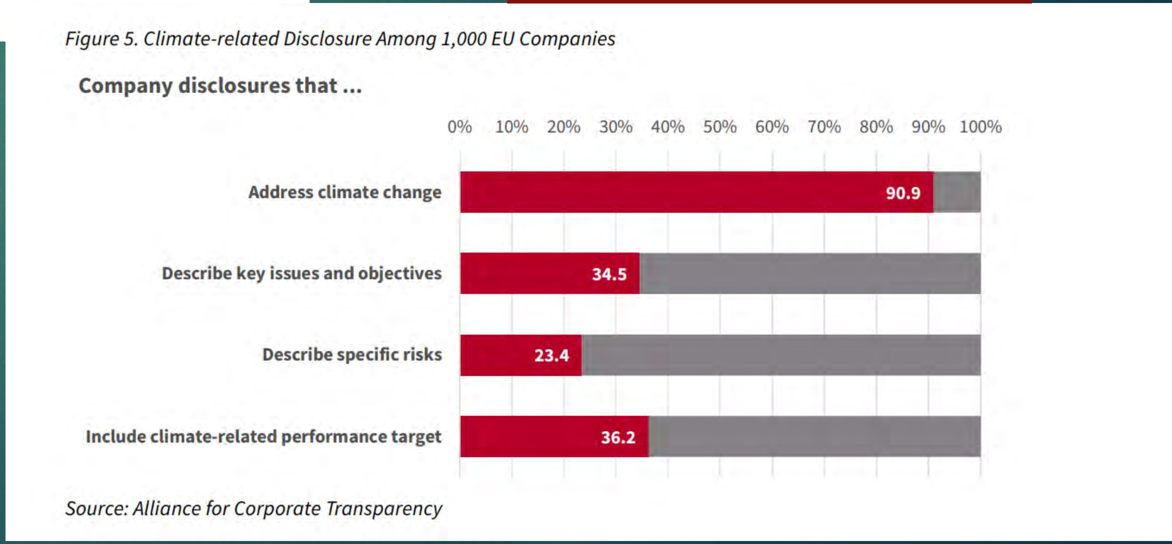

Figure 5. Climate-related Disclosure Among 1,000 EU Companies

Source: Alliance for Corporate Transparency

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Portfolio Companies Supporting Transition

ESG IN ACTION

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CarVal

CarVal is the System's largest private credit partnership. This GP is a UNPRI Signatory and a member of the SASB Alliance.

CARVAL HAS INVESTED OVER $2 BILLION IN CLEAN ENERGY

"Clean energy is a fast-growing source of new energy, yet the market is nascent and fragmented, making it an attractive investment opportunity. In the U.S. alone, renewable energy investment required to meet targeted clean energy goals needs to be $1.5 trillion over the

Renewable Energy and Sustainability Projects

Secured Debt	Solar ABS	C-PACE / Efficiency	C&I Solar & Storage	Residential Solar Loans
Project finance bonds or loans secured on renewables assets	Asset-backed securities where underlying assets are residential solar loans or other renewables	Financing energy efficiency improvements, including Commercial Property Assessed Clean Energy loans	Acquisition of mid-scale solar facilities with long term contractual cashflows	Newly originated loans to homeowners installing residential solar

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CarVal – Investment Examples

Project Bluebird – an 18.1MW, $28 million enterprise value, 6-project utility and C&I solar portfolio. Sets the foundation for a diversified renewable portfolio of small-scale solar assets.

Project Maple – a 5.0MW/15.9MWh, $7.4 million enterprise value, single battery storage project. CarVal's first energy battery storage project provides an entry point into a market that is expected to grow 10x in capital and more than 14x in MW deployments by 2025.

Intersect Power – development loan to one of North America's largest developers of utility scale renewable energy power assets. Intersect is currently developing 2.4GW of solar and storage projects across the Southwest U.S. with an expectation to start delivering power in 2022.

Cypress Creek Renewables – warehouse facility for the largest solar developer in the U.S.

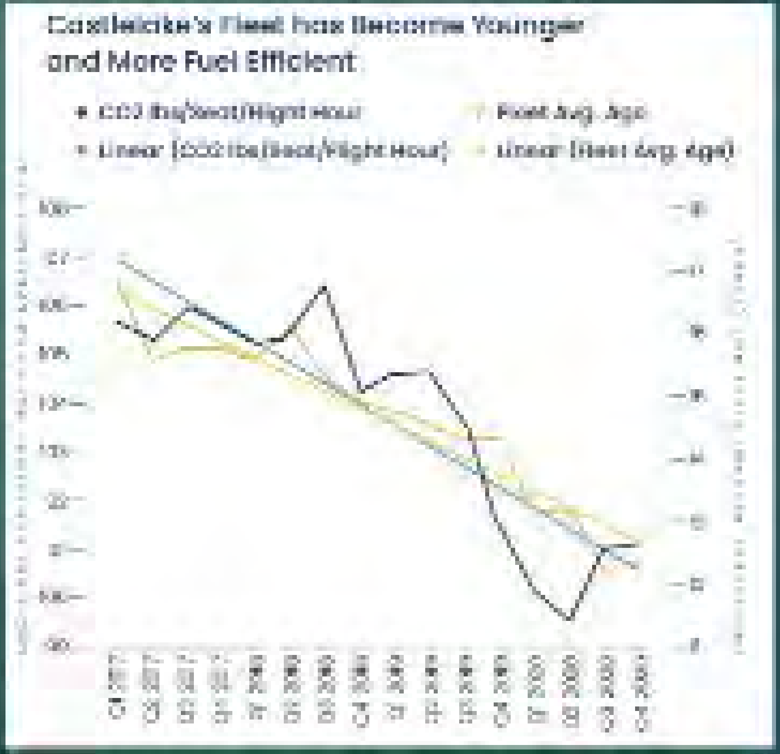
Project URI – financing to three wind farms (450MW) in Texas which suffered liquidity issues as a result of winter storm Uri.

Castlelake

Castlelake is one of the System's largest private credit partnerships and is an aviation specialist. This GP will formally apply to be a UNPRI signatory in 2021 and is committing resources to enhance their ESG underwriting, due diligence and decision-making framework and processes for new investments.

"In 2019, the civil aviation sector emitted around 915 million tons of CO_2, which is a little more than 2 percent of carbon emissions created by humans."

"We expect to engage with industry partners to work toward IATA's (International Air Transport Association) goal of net reduction in aviation CO_2 emissions of 50 percent by 2050, relative to 2005 levels."



Hg Capital

- *Transporeon by Hg Capital*

What does Transporeon do?

- Transporeon is a leading cloud-based logistics network and transport management software for road freight in Europe.
- The platform enables thousands of trucks to be booked and tracked as they haul freight in trailers across the continent.
- As a sector leader, the business benefits from favorable industry dynamics, connecting 100,000 users across 120,000 carriers and 1,300 shippers using a modern SaaS platform able to serve100 countries and available in 24 languages.
- It serves these customers with a mission-critical cloud software platform which enables more efficient tendering, dispatching, scheduling, and better communication between the hundreds of enterprises looking to move freight by road (shippers) and the thousands of SME operators (carriers) that provide the trucks.

Initiatives

- Introducing trucks with lower emissions but infrastructural hurdles are a challenge.
- Route optimization and load building tools
- Use of real time visibility to optimize transport execution, reduce demurrage and empty loads
- Setting lower speed limits for freight operators
- Operational programs to optimize driver behavior
- Collaboration such as co-loading and co-tendering

CDR

- *Motor Fuel Group by CDR*

What does Motor Fuel Group do?

Motor Fuel Group (MFG) is the largest independent forecourt operator in the UK. It has over 900 stations operating under the BP, Shell, Texaco and JET fuel initiatives

Initiatives

In March 2021 Motor Fuel Group announced announce plans to invest £ 400 million in electrical chargers across 500 sites in the U.K. over the next 10 years.

This initiative helps the U.K government towards its net zero goal by 2030

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Audax

- *ICP Group by Audax*

What does Audax do?

- ICP is a leading formulator and manufacturer of specialty coatings, adhesives, and sealants serving construction and industrial markets.
- ICP is headquartered in Andover, MA and has manufacturing and distribution facilities in North America, Latin America and Asia Pacific Region.

Initiatives (Client - Texas A&M)

- ICP Partnered with Texas A&M to conduct a facility energy audit in Texas. The study identified the following areas where energy reductions and modifications to the current infrastructure would yield the benefits below.

38%	40%	41%	40%
[illegible]	[illegible]	[illegible]	[illegible]

Initiatives (New Products)

- In 2020, ICP introduced a new and improved formulation of their spray foam insulation solution (Handifoam 84). The product uses low global warming potential (GWP) blowing agents that help reduce spray foam impact on the environment

CDR

Solenis by CDR

What does Solenis do?

Solenis, is a manufacturer of specialty chemicals for the pulp, paper, oil and gas, chemical processing, mining, bio-refining, power and municipal markets.

Initiatives (Energy Savings)

Description	Energy Savings (kWh)
Dryer Equipment Improvement	2,151,864
Heat Exchanger Cleaning Program	210,000

Initiatives (Water Consumption)

Description	Water Consumption Reduction (Gallons/Year)
Cooling Systems Upgrades	11,200,000
Filter Press Efficiency	1,925,384

Initiatives (CO2 Emission)

Description	CO2 Emissions Reduction (Tons/Year)
Bulk Shipping	1,000
[illegible] Chemistry	67

Due to the initiatives above Solenis achieved Gold Status when assessed by EcoVadis Susta[illegible]

platform for [illegible]

MARYLAND STATE RETIREMENT and PENSION SYSTEM

TDR

Awareness Raising / Best Practice Sharing

- We have delivered climate change webinars covering current and future risks/opportunities relating to climate change. This has been facilitated by an external climate change consultancy with presentations also from portfolio companies outlining their own approaches. This has covered setting net zero and science-based targets plus the importance of data collection. Participation from all TDR portfolio companies.

Climate Change Analytics Project

- We have recently concluded a project with a climate change consultancy call Pollination. This completed climate change risk and opportunity (transitional and physical) analysis across all our portfolio companies. The output has been a set of recommendations, covering risk mitigation/opportunity identification, which we will now be working through with companies to review and where feasible implement.

1:1 Engagement

We have worked on a range of company specific initiatives:

- Company 1: Developed an energy reduction strategy and delivered a range of initiatives (£8million investment): LED replacement lighting, voltage optimization, voltage optimization and renewable energy trails.
- Company 2: Set a net zero commitment (by 2040) supported by science-based targets and a decarbonization pathway.
- Leaseplan is a founding member of EV100, taking a leadership position on low-carbon mobility. Have a look at their website: [illegible]
- Hurtigruten has also initiated a number of impressive initiatives: [illegible] They have recently added a third battery-hybrid powered ship to their fleet.

For the past three years TDR has also worked to reduce and where unavoidable offset our carbon emissions (buildings and travel), to become a carbon neutral company. From mid-2020 we now also source renewable energy for our buildings' electricity consumption.

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PIMCO

PEMEX – STATE-OWNED PETROLEUM COMPANY
Topic: Climate strategy and target setting

- Background: The oil industry continues to face persistent stakeholder pressure on ESG, while progress from stateowned companies has traditionally been limited. Being absent from the equity market, Pemex's material role in the debt market offers PIMCO an opportunity to engage with the issuer.
- While our engagement aims to steer for ESG improvement, the issuer (Pemex is Mexico's state-owned oil company) is lagging behind peers on various topics.
- Engagement: PIMCO continued our engagement with Pemex on
  - Increasing the share of health and safety certification in operations and responses to oil spills and controversies.
  - We deepened our discussion on climate in terms of setting targets on methane reduction, Scope 3 emission disclosure, enhancing scenario analysis, etc., and shared our views and references for areas of improvements across these topics.
  - In addition, PIMCO is also part of the CA100+ investor group to collectively engage Pemex on climate change.
- Progress to date: Pemex acknowledged the growing importance of climate change consideration in their business and has responsively engaged in multiple exchanges with PIMCO on ESG. They plan to align climate change disclosure closer to industry standards and are reviewing options to increase health and safety certifications over time. We will continue to monitor the issuer's progress and carry out constructive dialogue on their improvement toward best practices.

MSRA Moving to Hybrid Model

With the advent of internal management and the creation of a new Senior Governance Officer position, Agency Staff will collaborate with other stakeholders to directly evaluate ESG performance of individual companies and engage with companies directly

Impact of HB933: Provisions of the Bill

1. Include in the IPM, policies regarding the management of risk including climate change
2. Publish proxy voting and sample DDQ's on agencies website
3. Annual Report on risk assessment of the System including Climate Risk
   a) Identify recent studies or actions of other public funds, financial institutions or risk experts related to disclosure, risk assessment, investment principles or other related issues or activities
   b) Identify best practices and evaluate whether to incorporate into IPM
   c) Examine the potential magnitude of long-term risks and opportunities of multiple scenarios and related regulatory developments across industry sectors, asset classes and the total portfolio

Impact of HB933

- Risk policy adopted as part of the Board's Investment Policy Manual including an explicit section on ESG and climate change
- Proxy voting and DDQ's added to the website including enhancements to DDQs related to ESG issues
- 3 annual reports produced: 2018 and 2019 and 2020
  - Risk assessment for climate change provided by Meketa Investment Group
    - 1.5 degree surprise increase in temperatures lowers the System return by 0.6% annually for ten years
  - Carbon Footprint of the System – in line with Benchmark but less coming from energy companies
- Literature review
- Policy review and recommendations

Where Does Divestment Fit

MARYLAND STATE RETIREMENT and PENSION SYSTEM

- Not a Feature of Responsible Investment
  - Leading Organizations providing guidance for institutional investors focus on engagement over divestment
    - UN PRI -
    - Just Transition
    - IIGCC – Institutional Investor Group on Climate Change
- May not achieve social objectives as well as engagement
  - Academic Studies such as
    - "Exit vs Voice" 2020, Broccardo, Hart, Singales, show that engagement is more effective in pushing firms to act in a a socially responsible manner.
    - "Environmental Externalities of Hedge Fund Activism", Pat Akey, U. of Toronto & Ian Appel, Boston College – working paper
    - "Real Effects of Environmental Activist Investing ",S. Lakshmi Naaraayanan, Varun Sharma, London Business School, & Kunal Sachdeva, Rice U. – working paper
  - Transfers voice of ownership to another investor for whom climate change may not be a priority
  - May have onlly limited impact on capital availability
  - For oil and gas, if divestment were to be successful it would drive production to private firms or state actors such as Russia, Saudi Arabia, Iran and Venezuela

Where Does Divestment Fit

MARYLAND STATE RETIREMENT and PENSION SYSTEM

- Can be costly: CalSTRS estimated the opportunity costs of its divestment activities at $8 billion
- Most institutional investors who have divested have different fiduciary standards than U.S. pension plans
- New York Common's is a hybrid approach, focused on engagement with divestment as a lost resort for companies that do not establish a credible net zero plan.
- Climate Change is a complicated social problem that will only be solved in an equitable way with everyone at the table. Divestment removes MSRA from an important part of the dialogue with deep pocketed companies who can help finance the transition.

MARYLAND STATE RETIREMENT and PENSION SYSTEM

NOVEL INVESTOR

HOME ABOUT LIBRARY TOOLS

over that period.

S&P 500 Sector Performance

2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	YTD
ENRS 34.4%	CONS -15.4%	INFT 61.7%	REAL 32.3%	UTIL 19.9%	FINL 28.8%	COND 43.1%	REAL 30.2%	COND 10.1%	ENRS 27.4%	INFT 38.8%	HLTH 6.5%	INFT 50.3%	INFT 43.9%	ENRS 45.6%
MATR 22.5%	HLTH -22.8%	MATR 48.6%	COND 27.7%	CONS 14.0%	COND 23.9%	HLTH 41.5%	UTIL 29.0%	HLTH 6.9%	TELS 23.5%	MATR 23.8%	UTIL 4.1%	TELS 32.7%	COND 33.3%	FINL 25.7%
UTIL 19.4%	UTIL -29.0%	COND 41.3%	INDU 26.7%	HLTH 12.7%	REAL 19.7%	INDU 40.7%	HLTH 25.3%	CONS 6.6%	FINL 22.8%	COND 23.0%	COND 0.8%	FINL 32.1%	TELS 23.6%	REAL 23.3%
INFT 16.3%	TELS -30.5%	REAL 27.1%	MATR 22.2%	REAL 11.4%	TELS 18.3%	FINL 35.6%	INFT 20.1%	INFT 5.9%	INDU 18.9%	FINL 22.2%	INFT -0.3%	S&P 31.5%	MATR 20.7%	TELS 19.7%
CONS 14.2%	COND -33.5%	S&P 26.5%	ENRS 20.5%	TELS 6.3%	HLTH 17.9%	S&P 32.4%	CONS 16.0%	REAL 4.7%	MATR 16.7%	HLTH 22.1%	REAL -2.2%	INDU 29.4%	S&P 18.4%	INDU 16.4%
INDU 12.0%	ENRS -34.9%	INDU 20.9%	TELS 19.0%	COND 6.1%	S&P 16.0%	INFT 28.4%	FINL 15.2%	TELS 3.4%	UTIL 16.3%	S&P 21.8%	S&P -4.4%	REAL 29.0%	HLTH 13.5%	S&P 15.3%
TELS 11.9%	S&P -37.0%	HLTH 19.7%	S&P 15.1%	ENRS 4.7%	INDU 15.4%	CONS 26.1%	S&P 13.7%	S&P 1.4%	INFT 13.9%	INDU 21.0%	CONS -8.4%	COND 27.9%	INDU 11.1%	MATR 14.5%
HLTH 7.2%	INDU -39.9%	FINL 17.2%	CONS 14.1%	INFT 2.4%	MATR 15.0%	MATR 25.6%	INDU 9.8%	FINL -1.5%	S&P 12.0%	CONS 13.5%	TELS -12.5%	CONS 27.6%	CONS 10.8%	INFT 13.8%
S&P 5.5%	REAL -42.3%	CONS 14.9%	FINL 12.1%	S&P 2.1%	INFT 14.8%	ENRS 25.1%	COND 9.7%	INDU -2.5%	COND 6.0%	UTIL 12.1%	FINL -13.0%	UTIL 26.4%	UTIL 0.5%	HLTH 11.9%
COND -13.2%	INFT -43.1%	ENRS 13.8%	INFT 10.2%	INDU -0.6%	CONS 10.8%	UTIL 13.2%	MATR 6.9%	UTIL -4.8%	CONS 5.4%	REAL 10.9%	INDU -13.3%	MATR 24.6%	FINL -1.7%	COND 10.3%
REAL -17.9%	MATR -45.7%	UTIL 11.9%	UTIL 5.5%	MATR -9.6%	ENRS 4.6%	TELS 11.5%	TELS 3.0%	MATR -8.4%	REAL 3.4%	ENRS -1.0%	MATR -14.7%	HLTH 20.8%	REAL -2.2%	CONS 5.0%
FINL -18.6%	FINL -55.3%	TELS 8.9%	HLTH 2.9%	FINL -17.1%	UTIL 1.3%	REAL 1.6%	ENRS -7.8%	ENRS -21.1%	HLTH -2.7%	TELS -1.3%	ENRS -18.1%	ENRS 11.8%	ENRS -33.7%	UTIL 2.4%

NOVEL INVESTOR

Abbr.	Sector Index	Annual	Best	Worst
COND	S&P 500 Consumer Discretionary Index	13.05%	43.1%	-33.5%
CONS	S&P 500 Consumer Staples Index	10.40%	27.6%	-15.4%
ENRS	S&P 500 Energy Index	0.86%	34.4%	-34.9%
FINL	S&P 500 Financials Index	3.13%	35.6%	-55.3%
HLTH	S&P 500 Health Care Index	11.00%	41.5%	-22.8%
INDU	S&P 500 Industrials Index	8.95%	40.7%	-39.9%
INFT	S&P 500 Information Technology Index	15.21%	61.7%	-43.1%
MATR	S&P 500 Materials Index	8.49%	48.6%	-45.7%
REAL	S&P 500 Real Estate Index	5.38%	32.3%	-42.3%
TELS	S&P 500 Communication Services Index	8.92%	32.7%	-30.5%
UTIL	S&P 500 Utilities Index	8.75%	29.0%	-29.0%
S&P	S&P 500 Index	9.88%	32.4%	-37.0%

Appendix 7

Joint Committee on Pensions Special Meetings 2021 Interim

MSRPS INVESTMENT DIVISION

OCTOBER 21, 2021

SRPS

MARYLAND
STATE RETIREMENT
and PENSION SYSTEM

MSRPS Investing in Maryland

- MSRPS is open to investing in Maryland
- Maryland (the state) is a relatively small portion of the MSRPS' investment Universe
- MSRPS has above market weight of investments in Maryland
- Venture Capital's role and objective in MSRPS Portfolio
- Maryland in MSRPS Venture Capital Portfolio
- MSRPS in the Maryland Venture Ecosystem

MSRPS has Strong Ties to the Maryland Investment Community

Maryland Based Managers	AUM (millions)	Market	Inception Date	Life to Date Returns (annualized%)	Life to Date Benchmark Returns (annualized %)	Excess Returns (annualized %)
T. Rowe Price	$ 1,655	Large Cap U.S. Equity	5/1/2006	11.1	10.29	0.81
Durable Capital Partners	$ 805	Small Cap U.S. Growth	1/1/2020	49.93	27	22.94
Brown Capital Management	$ 776	International Developed Stock	12/1/2008	12.48	9.12	3.36
Profit (Terra Maria)	$ 118	Small Cap U.S.	4/1/2017	22.93	14.04	8.89
New Century (Terra Maria)	$ 102	U.S. Intermediate Bonds	7/1/2009	4.43	3.54	0.9
Subtotal Public Market	**$ 3,456**					
MD Public Managers as % of Public Assets	8.1%					
DB Universe share of Public Managers in Maryland	1.3%					

6 Times More Assets with Maryland Managers

Source: MSRA, Meketa Investment Group

What is MSRPS's Exposure to Asset Managers in Maryland: Private

MARYLAND STATE RETIREMENT and PENSION SYSTEM

Maryland Based Managers	AUM (millions)	Market	Inception Date	Life to Date Returns (annualized%)	Life to Date Benchmark Returns (annualized %)	Excess Returns (annualized %)
Fort Investment Management	$ 211	CTA/Hedge Fund	3/1/2018	4.9	3.7	1.2
FCP Realty Funds II and III ($40 and $75 mln)	$ 53	Real Estate Funds	2012 ,2015	23.50%	NA	1st quartile
TEDCO	$ 14	Maryland Venture	2017	9.5	24.9	-15.4
Subtotal Private Market	**$ 278**					
MD Private Managers as % of Private Assets	**1.1%**					
MD Private Managers as % of U.S. Private Assets Managers	**0.7%**					

1.5 Times More Assets with Maryland Managers

Source: MSRA, Meketa Investment Group

MSRPS has Strong Ties to the Maryland Investment Community

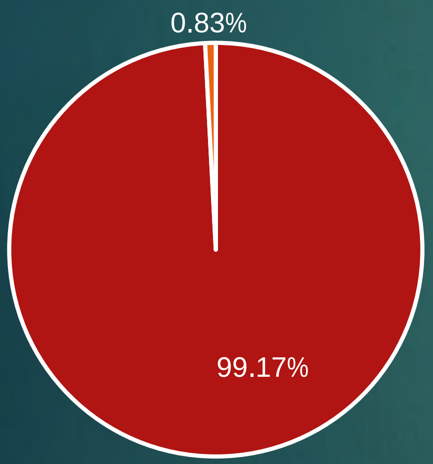
Maryland Based Managers	AUM (millions)	Market	Inception Date	Life to Date Returns (annualized%)	Life to Date Benchmark Returns (annualized %)	Excess Returns (annualized %)
Maryland State Pension Fund - Russell 1000 Equity	$ 3,057	**Passive U.S. Stock**	10/1/2020	27.49	27.5	-0.01
Maryland U.S. Inflation Linked Bond	$ 2,544	**Passive Inflation Bonds**	7/1/2019	7.52	7.57	-0.05
MD LONG GOVERNMENT BONDS	$ 1,035	**Passive Government Bonds**	3/1/2020	4.83	4.52	0.33
MD IG CORPORATE BONDS* (funded 6/30)	$ 535	**Passive Corporate Bonds**	7/1/2021			
Subtotal Public Internal Management	**$ 7,171**					
% Public Internal Management	**10.7%**					

MSRA Staff Members Manage 10% of Assets Directly

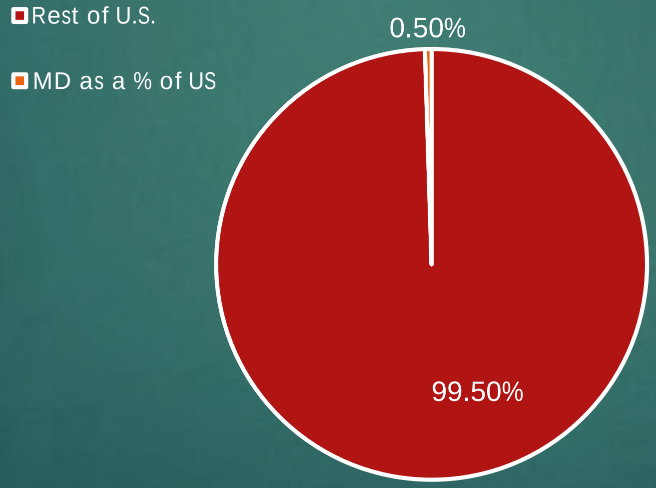
MARYLAND IS A RELATIVELY SMALL PORTION OF THE *MSRPS'* INVESTMENT UNIVERSE

Maryland Investments Relative to Opportunity Set

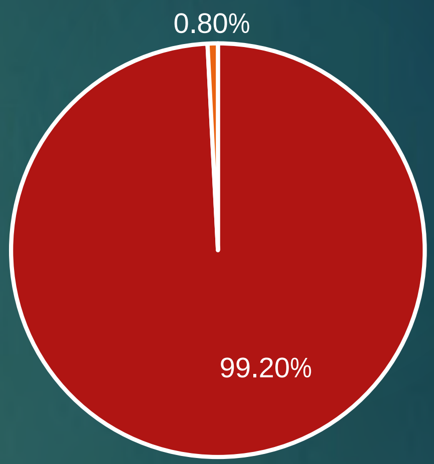
Russell 3000 Composition 6/30/2021



US Venture Activity 2016-2021H1



US PE Activity 2016-2021H1



Source: Pitchbook, Russell

MSRPS Investments in Maryland Companies 6/30/16 to 6/30/21

	Total Invested ($)	Current Market Value ($)	Proceeds($)	Total Value($)	Investment Multiple	Total Value Invested by General Partner($)
Private Equity	66,111,761	69,396,647	65,150,706	134,547,353	2.04x	1,677,227,031
TEDCO	14,048,236	6,736,705	9,091,888	15,828,593	1.13x	14,048,236
Real Estate*	72,634,876	72,634,876			N/A	1,019,216,857
Private Credit	19,530,669	15,667,208	4,409,105	20,076,313	1.11x	211,693,569
Total	**172,325,542**	**164,435,436**	**74,242,594**	**150,375,946**	**1.88x**	**2,922,185,693**

* 6/30/21 gross asset value

VENTURE CAPITAL'S ROLE AND OBJECTIVE IN THE MSRPS PORTFOLIO

MSRPS Venture Capital / Private Equity Performance Objectives

- Private Equity investing is expected to exceed the return of public market stocks by 200 basis points (2%) or more over time
  - Buyout / Growth Private Equity managers with median or above performance have historically achieved this
  - Venture Capital managers must have top quartile performance to achieve this
- MSRPS invests with top quartile private equity and venture capital fund managers
  - Top quartile private equity is a nice to have value add
  - Top quartile venture is necessary to achieve MSRPS performance objectives

MSRPS - Private Equity Allocation

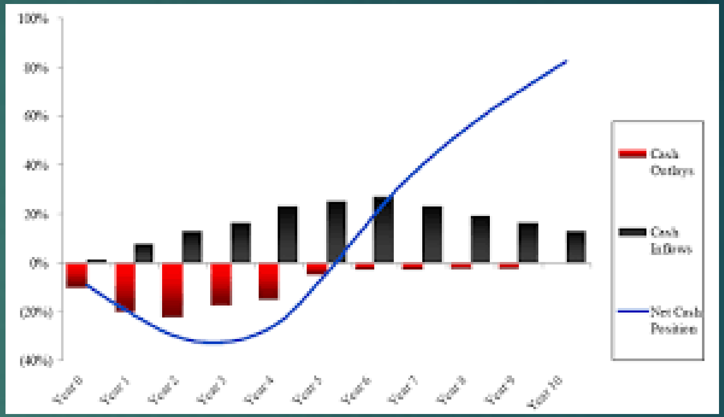
Total System
$65 billion

Private Equity (16%)
$10.4 billion

Buyout/Growth (87%)
$9 bln

Venture (13%)
$1.4 bln

Private Equity Fund Cash Flows



- ➢ The System is expected to commit $1.5 billion per year to Private Equity to achieve the target allocation
- ➢ Of that commitment, $150 -200 million per year will be committed to Venture Funds
- ➢ $.75 – $1 million per year would be proportional to Maryland's share of Venture investment

- ➢ Private Equity and Venture call capital and distribute capital over time
- ➢ Requires annual commitment to maintain exposure through time
- ➢ Total commitments need to exceed the target because each fund has less than the commitment invested on average over the life of the investment.

MARYLAND STATE RETIREMENT and PENSION SYSTEM

MSRPS has developed great partnerships with Venture Capital Firms

Lightspeed

IVP

GGV CAPITAL

FRAZIER HEALTHCARE PARTNERS

.406 Ventures

Longitude CAPITAL

SPARK CAPITAL

EMERGENCE

Battery

LERER HIPPEAU

SCALE

DEFINE VENTURES

GENERAL CATALYST

Slow Ventures

Amplify PARTNERS

khosla ventures

Uncork Capital

Venture Rounds

TEDCO

MSRPS

Angel/Seed Rounds
GP A
$0-$3 million
10,000 companies

- Highest Risk of loss of capital
- Technology and product market fit
- Building team
- Duration to exit is very long (several to many years to scale)

Series A/B Rounds
GP A, 1 or more GP Bs
$3-$25 million
5,000 Companies

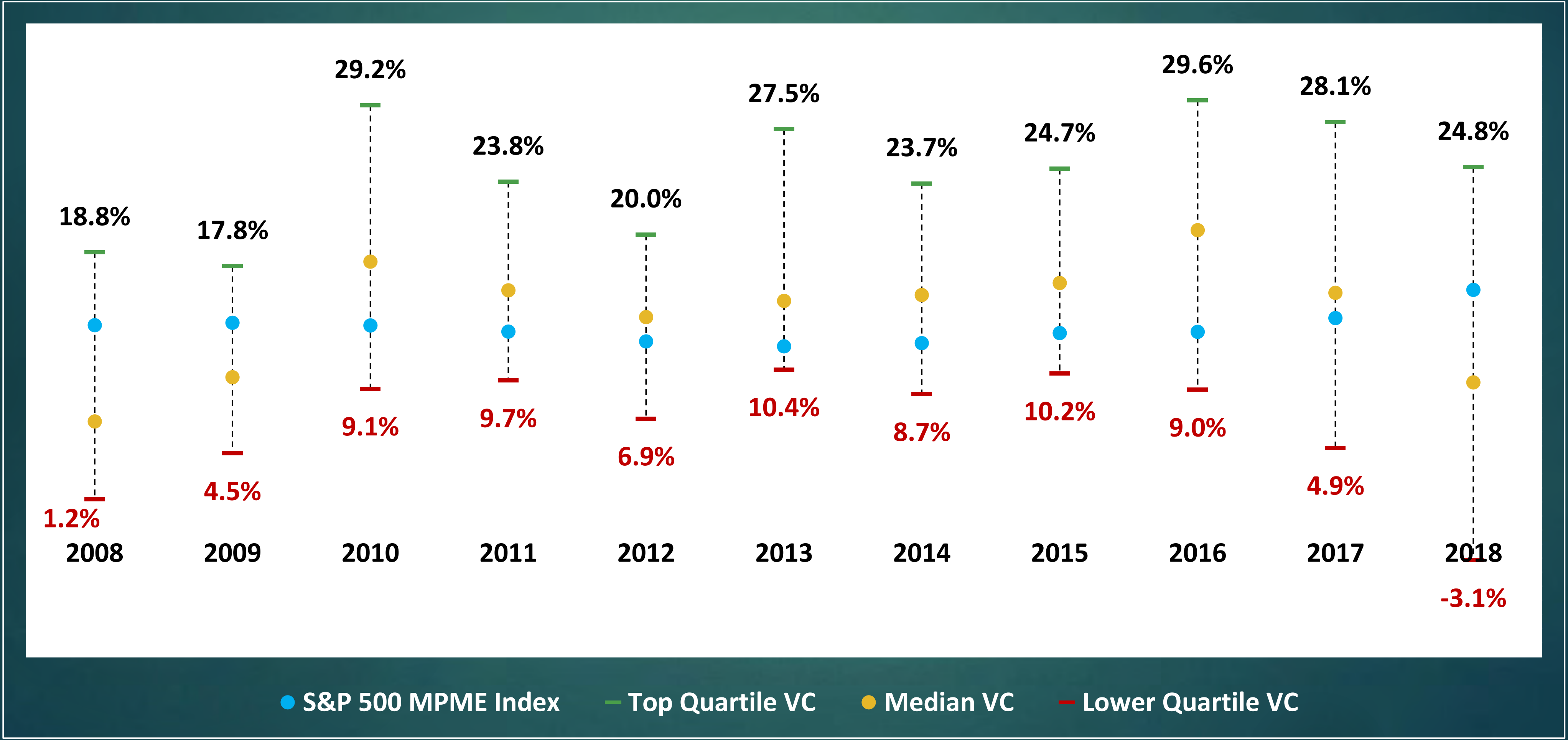
- Risk still high of loss of capital
- Market traction acceleration
- Building team
- Bring strategic investors to invest

Series C-F Rounds
1 or more GP B +2 or more new GPs
To maintain equity position, may bring additional investors as co-invest
$10-$100 million +
50 Companies

- De-risked and high growth
- New products/geographies
- Prepare for Public listing or acquisition
- Larger financing rounds
- Duration to exit shorter

MARYLAND STATE RETIREMENT and PENSION SYSTEM

Top Quartile VC Returns Out-Shine other asset classes



Source: Cambridge Associates US Venture Capital Benchmarks as of September 30, 2020

Venture offers Potential High Payoff

Need to be here!

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Source: Cambridge Associates LLC. Copyright © 2020 by Cambridge Associates LLC. All rights reserved.
See "Notes Page" for additional detail.

MARYLAND STATE RETIREMENT and PENSION SYSTEM

Uniquely VC: The Persistence of Returns

Ranking at Fund End	Subsequent Fund Quartile[1]					Average Return for Subsequent Fund		
	First	Second	Third	Fourth	*N*	IRR (%)	MoIC	PME[1]
First	**44.7%**	**24.2%**	18.7%	12.3%	*219*	**32.5%**	**3.44x**	**2.06x**
Second	22.9%	27.3%	31.2%	18.5%	*205*	18.2%	2.15x	1.24x
Third	16.8%	33.7%	29.3%	20.1%	*187*	10.8%	1.76x	1.03x
Fourth	9.3%	18.6%	26.3%	45.8%	*118*	0.8%	1.16x	0.67x

Source: National Bureau of Economic Research, November 2020. *"Has Persistence Persisted in Private Equity? Evidence from Buyout and Venture Capital Funds"*
1 – NBER's quartile designation is based on relative performance to PME (Public Market Equivalent), which, similar to Cambridge Associates' methodology, compares the equivalent return for a public market index assuming an equivalent investment had been made in the S&P 500 over the same period of time and according to the same cash flows.

MARYLAND IN MSRPS VENTURE CAPITAL PORTFOLIO

Maryland Investing In-State – Economic/Job Engine

1994-1995

Maryland Venture Fund

Formed within the Department of Business and Economic Development – Investment Financing Group

1998

Maryland Science, Engineering and Technology Development Corporation

Renamed Maryland Technology Development Corporation (TEDCO) in 2000

2003 - 2012

Maryland Venture Fund

Technology Strategy and Business Development

Deputy Secretary of Business and Economic Development

Office of Finance Programs

Office of Secretary of Business and Economic Development

2006 - 2012

Maryland TEDCO

Maryland Stem Cell Research Fund

Maryland Innovation Initiative

2011

Maryland Venture Fund Authority

Department of Business and Economic Development

$134 million

2015

Maryland TEDCO

Maryland Venture Fund

Challenge Investment

Enterprise Investment

Enterprise Venture Capital LP

2017-2019

Maryland Innovation Fund

$25 million partnership between MSRPS and TEDCO

MSRPS In-state Investing

MSRPS Public Managers

- In-state investment performance has been successful

MSRPS Private Equity Managers

- In-state investment performance has been more successful with ex-Maryland managers

Academic studies* report mixed success with public pension in-state investment programs

- ➢ Public pension plans investing a higher percentage in local managers and assets
  - ➢ Experience lower quartile performance than other investments in the asset class
  - ➢ Managers from outside have more success investing in the state
- ➢ Ancillary benefits for the state and pension plan that offset the underperformance
- ➢ Studies are focused on governance issues driving these outcomes

* Microsoft Word - HR 20110527 4pm QJEformat (nber.org)

MSRPS In-State– Performance Engine

Identify partnerships with program managers / consultants / general partners

- Implement a successful investment program without sacrificing returns
  - Balance extra expenses with generating performance on par with the PE and Venture program
    - Access best Maryland companies

- Establish appropriate investment pacing
  - What is the appropriate proportion of annual investment
  - Understand the local market environment and capital needs

- Create the appropriate incentives and governance

MSRPS in the Maryland Venture Ecosystem

Cultivate relationships with Maryland private investment community to support the growing entrepreneurial ecosystem and identify potential investment opportunities

- General partners: Grotech, Momentum Fund, Rarebreed.vc, Construct Capital, Greenspring Associates, Early Charm Ventures, Conscious Ventures Fund, New Markets Venture Partners, Datatribe

- Networking and ecosystem partners: JHU Technology Ventures, UpSurge, Techstars, TEDCO, Loyola University, University of Maryland, Brown Advisory

APPENDIX

Case for Venture Capital

MARYLAND STATE RETIREMENT and PENSION SYSTEM

- Venture Capital can Drive Alpha
  - Out-performs various asset-classes over multiple periods and market cycles

- Venture is less risky than in previous years, with strong persistence of returns
  - Industry has matured significantly; far less risk capital is allocated before determining if a start-up will succeed
  - Persistence of returns enables institutional investors to access top-tier venture funds further mitigating risk

- Venture can offer Significant Diversification in a Well-Balanced Portfolio
  - Low correlation with other asset classes
  - Private companies are staying private longer, and new investable public positions have dwindled

- Exposure to Innovation
  - VC funds the future economy; pandemic has accelerated these trends as digital transformation sky-rocketed over the past twelve months

MSRPS Investing in Venture Capital - Challenges

- Persistence of Venture Capital Returns
  - Concentration in the best 30 Venture Fund Managers
    - Relationships and network attract the best start-up opportunities
  - Fund Sizes limit how many investors can access these managers
  - New entrants have a very difficult time accessing best funds
    - MSRPS has been building a VC portfolio over the past 5 years
  - Commitment sizes small – too small for PE AVG commitment

MSRPS Direct Investing Challenges

MARYLAND STATE RETIREMENT and PENSION SYSTEM

- Challenges with direct investment in early stage companies
  - MSRPS team resource constraints
  - Sourcing the best companies
  - Competitive financing rounds
  - Capital vs Value Add
  - Check sizes

MSRPS – Venture Capital Program

Opportunity Cost Analysis - MIOF Investment versus MSRA Venture Investments														
Investment	Vintage	Age	Commitment	Cumulative Contributions	Cumulative Distributions	Valuation	IRR	TVPI	DPI	RVPI	Direct Alpha	KSPME	MIOF I at alternative Fund TVPI	Opportunity Cost to System by investing in MIOF I
Institutional Venture Partners XV	2015	6.1	40,000,000	40,000,000	50,746,821	79,038,369	33.8%	3.24x	1.26x	1.98x	17.7%	1.92	45,516,285	(29,687,692)
Institutional Venture Partners XVI	2018	3.4	65,000,000	61,750,000	15,212,759	131,797,284	58.0%	2.38x	0.25x	2.13x	33.6%	1.72	33,434,802	(17,606,209)
.406 Venture Partners III	2015	5.7	40,000,000	31,334,780	-	68,068,677	29.0%	2.17x	0.00x	2.17x	11.5%	1.39	30,484,672	(14,656,079)
Frazier Life Sciences VIII	2016	5.4	25,000,000	24,400,000	18,871,350	33,595,608	30.6%	2.15x	0.77x	1.38x	14.2%	1.46	30,203,707	(14,375,114)
.406 Venture Opportunity Fund	2016	5.2	40,000,000	37,177,476	17,617,928	58,003,825	27.1%	2.03x	0.47x	1.56x	11.6%	1.38	28,517,919	(12,689,326)
Tiger Iron Old Line Fund	2016	4.5	300,000,000	246,466,918	16,524,847	426,470,331	31.6%	1.80x	0.07x	1.73x	11.5%	1.26	25,286,825	(9,458,232)
Frazier Life Sciences IX	2018	3.3	40,000,000	33,240,000	2,159,575	56,029,080	33.6%	1.75x	0.06x	1.69x	11.1%	1.23	24,584,413	(8,755,820)
Longitude Capital Partners III	2016	4.5	45,000,000	42,523,293	23,425,243	41,601,644	22.6%	1.53x	0.55x	0.98x	7.3%	1.16	21,493,801	(5,665,208)
GGV Capital VII	2018	2.4	24,000,000	20,760,000	-	29,288,807	32.9%	1.41x	0.00x	1.41x	7.0%	1.09	19,808,013	(3,979,420)
Maryland Innovation Fund I	2017	3.6	26,499,984	14,048,236	9,091,888	6,736,705	6.2%	1.13x	0.65x	0.48x	-6.5%	0.88	15,828,593	-
Total			645,499,984	551,700,703	153,650,411	930,630,330	32.5%	1.96x	0.28x	1.69x	14.0%	1.37		

- MSRPS has invested in top quartile venture capital funds
- High Bar for In-State Program

MSRPS – Maryland Investment Exposure

MARYLAND STATE RETIREMENT and PENSION SYSTEM

Maryland Headquartered Private Equity and Venture Investments Since 2016										
#	Source	Investment Date	Total Invested	Current Market Value	Proceeds	Total Value	Investment Multiple	Total invested in Company by Manager	City	GICS Sector
1	Other	3/31/2016	1,534,808	0	0	0	0.00x	8,299,474	Baltimore	Information Technology
2	Other	5/2/2016	3,196,254	1,578,947	12,228,095	13,807,042	4.32x	40,485,885	Baltimore	Consumer Discretionary
3	Other	8/1/2016	2,293,610	6,015,757	108,213	6,123,970	2.67x	53,899,829	Owings Mills	Health Care
4	Other	8/31/2016	2,453,587	2,274,890	221,053	2,495,942	1.02x	31,078,771	Hanover	Industrials
5	Other	9/1/2016	8,652,914	6,149,191	0	6,149,191	0.71x	257,449,488	Germantown	Health Care
6	Other	11/9/2016	1,580,000	0	7,647,200	7,647,200	4.84x	20,000,000	Baltimore	Software
7	Other	11/9/2016	1,578,945	39,474	7,602,632	7,642,105	4.84x	19,999,976	Baltimore	Information Technology
8	TEDCO	4/11/2017	1,499,984	1,362,208	0	1,362,208	0.91x	1,499,984	Washington DC	Logistics
9	TEDCO	4/11/2017	1,530,763	133,816	0	133,816	0.09x	1,530,763	Baltimore	Cancer Diagnostics
10	TEDCO	6/12/2017	1,100,000	0	2,331,858	2,331,858	2.12x	1,100,000	Bethesda	Software
11	Other	6/30/2017	17,386,172	10,007,698	30,198,773	40,206,471	2.31x	204,552,218	Bethesda	Health Care
12	TEDCO	6/30/2017	1,028,572	625,797	0	625,797	0.61x	1,028,572	Baltimore	Ocular Therapeutics
13	TEDCO	12/11/2017	1,488,996	0	2,444,264	2,444,264	1.64x	1,488,996	Bethesda	Health Care
14	TEDCO	1/12/2018	499,934	780,485	0	780,485	1.56x	499,934	Bel Air	Health Care
15	Other	1/31/2018	6,053,689	7,538,256	0	7,538,256	1.25x	344,887,320	Baltimore	Consumer Discretionary
16	TEDCO	5/14/2018	600,000	600,000	0	600,000	1.00x	600,000	Baltimore	Life Sciences
17	TEDCO	6/29/2018	2,649,989	0	3,153,355	3,153,355	1.19x	2,649,989	Bethesda	Manufacturing
18	Other	9/21/2018	7,137,922	19,197,889	912,403	20,110,292	2.82x	332,916,565	Columbia	Consumer Discretionary
19	TEDCO	10/10/2018	1,250,000	1,898,914	0	1,898,914	1.52x	1,250,000	Baltimore	Software
20	Other	12/4/2018	3,007,029	4,360,000	0	4,360,000	1.45x	45,105,437	Rockville	Health Care
21	TEDCO	12/20/2018	1,000,000	0	1,162,411	1,162,411	1.16x	1,000,000	Bethesda	Software
22	Other	12/20/2018	860,209	1,943,271	0	1,943,271	2.26x	7,000,000	Baltimore	Health Care
23	TEDCO	2/26/2019	1,399,998	1,335,485	0	1,335,485	0.95x	1,399,998	Fulton	Data Storage
24	Other	10/31/2019	1,569,385	747,608	105,492	853,100	0.54x	20,205,838	Rockville	Industrials
25	Other	12/31/2019	3,685,739	5,780,256	0	5,780,256	1.57x	219,939,575	Fulton	Information Technology
26	Other	9/30/2020	817,353	972,234	0	972,234	1.19x	10,092,680	Rockville	Health Care
27	Other	9/30/2020	2,057,143	544,176	6,126,846	6,671,022	3.24x	26,742,856	Baltimore	Healthcare
28	Other	1/31/2021	1,983,799	1,983,799	0	1,983,799	1.00x	31,321,116	Bethesda	Health Care
29	Other	1/31/2021	263,201	263,201	0	263,201	1.00x	3,250,003	Germantown	Health Care
	Total		80,159,997	76,133,352	74,242,594	150,375,946	1.88x	1,691,275,267		

TEDCO	14,048,236	6,736,705	9,091,888	15,828,593	1.13x	14,048,236
Other	66,111,761	69,396,647	65,150,706	134,547,353	2.04x	1,677,227,031
Total	80,159,997	76,133,352	74,242,594	150,375,946	1.88x	1,691,275,267

- Since 2016 MSRPS has investment exposure in Maryland companies
- Invested $80M in 29 companies
- The total amount invested by MSRPS PE and VC fund managers is almost $1.7B

MSRPS – Maryland Investment Exposure

MARYLAND STATE RETIREMENT and PENSION SYSTEM

Total MSRPS PE capital invested in the US since 2016	5,878,000,000
Total MSRPS PE/VC Capital Invested in Maryland	80,159,997
Maryland Capital Invested as a % of Total	1.4%

Maryland Venture Activity Vs. U.S Venture Activity

Year	US VC Deal Activity	Maryland VC Deal Activity	MD as a % of US	# of US Deals	# of Maryland Deals	MD as a % of US
2016	$48.25B	$320.81M	0.66%	9,595	131	1.37%
2017	$70.71B	$512.80M	0.73%	11,860	178	1.50%
2018	$121.85B	$721.16M	0.59%	13,546	179	1.32%
2019	$142.75B	$646.14M	0.45%	14,885	171	1.15%
2020	$176.77B	$1.08B	0.61%	18,671	227	1.22%
2021	$403.21B	$1.49B	0.37%	13,968	132	0.95%
Total	**$963.55B**	**$4.77B**	**0.5%**	**82,525**	**1,018**	**1.23%**

Maryland PE Activity Vs. U.S. PE Activity

Year	US PE Deal Activity	Maryland PE Deal Activity	MD as a % of US	# of US Deals	# of Maryland Deals	MD as a % of US
2016	$306.56B	$732.49M	0.24%	3,593	50	1.39%
2017	$379.60B	$1.97B	0.52%	4,039	61	1.51%
2018	$448.98B	$2.95B	0.66%	4,824	88	1.82%
2019	$533.83B	$4.43B	0.83%	4,694	66	1.41%
2020	$505.59B	$6.13B	1.21%	7,176	102	1.42%
2021	$566.03B	$5.79B	1.02%	4,005	74	1.85%
Total	**$2.74Tn**	**$22.01B**	**0.8%**	**28,331**	**441**	**1.56%**

- MSRPS invested $80M in Maryland companies
- Represents 1.4% of MSRPS PE and VC capital committed since 2016
- Almost double the market rate for PE/VC investments in Maryland

MSRPS –Private Equity Quartile Performance

MARYLAND STATE RETIREMENT and PENSION SYSTEM

1 Year % Return MSRPS vs Index by Asset Class						
Asset Class	Top Quartile	Median	Bottom Quartile	Total MSRPS	Total MSRPS Quartile	MSRPS vs Median
Buyout	55.62	27.59	4.75	57.56	1st	29.97
Venture Capital	81.36	36.61	2.33	57.64	2nd	21.03
Growth	52.62	22.61	4.72	51.74	2nd	29.13
Total	**66.33**	**30.43**	**3.77**	55.49	2nd	25.06

- In private market investing there is a wide dispersion of returns between the bottom quartile and the top quartile managers

- MSRPS has significantly outperformed the average fund performance by selecting the best available managers

Consultant Study of Other States with Explicit In State Private Equity/Venture Programs

MARYLAND STATE RETIREMENT and PENSION SYSTEM

- Callan produced the study for North Dakota Investment Board
- Found 17 States with In-State Investment Programs
- Mix of Pension Plans and Sovereign Wealth Funds
- Analyzed performance of a subset that had at least 5 years of return history and were in moderately sized states.
  - Found Programs average performance was similar to Private Equity and Venture Benchmarks – approximately 10.75% for five years ending 2020
  - Found wide dispersion of returns (- 17.39% to 26.90%)

MSRPS - Preliminary Study of In-State Investment Programs

MARYLAND STATE RETIREMENT and PENSION SYSTEM

- Evaluated five programs
  - Only one of which was associated with a pension plan
- Characteristics
  - Broad definition of in-state investing
    - Companies with operations in the state
    - Companies with more than 20 employees in the state
    - Fund Manager investments that may invest in the state but generally don't
  - Insufficient performance reporting to assess effectiveness

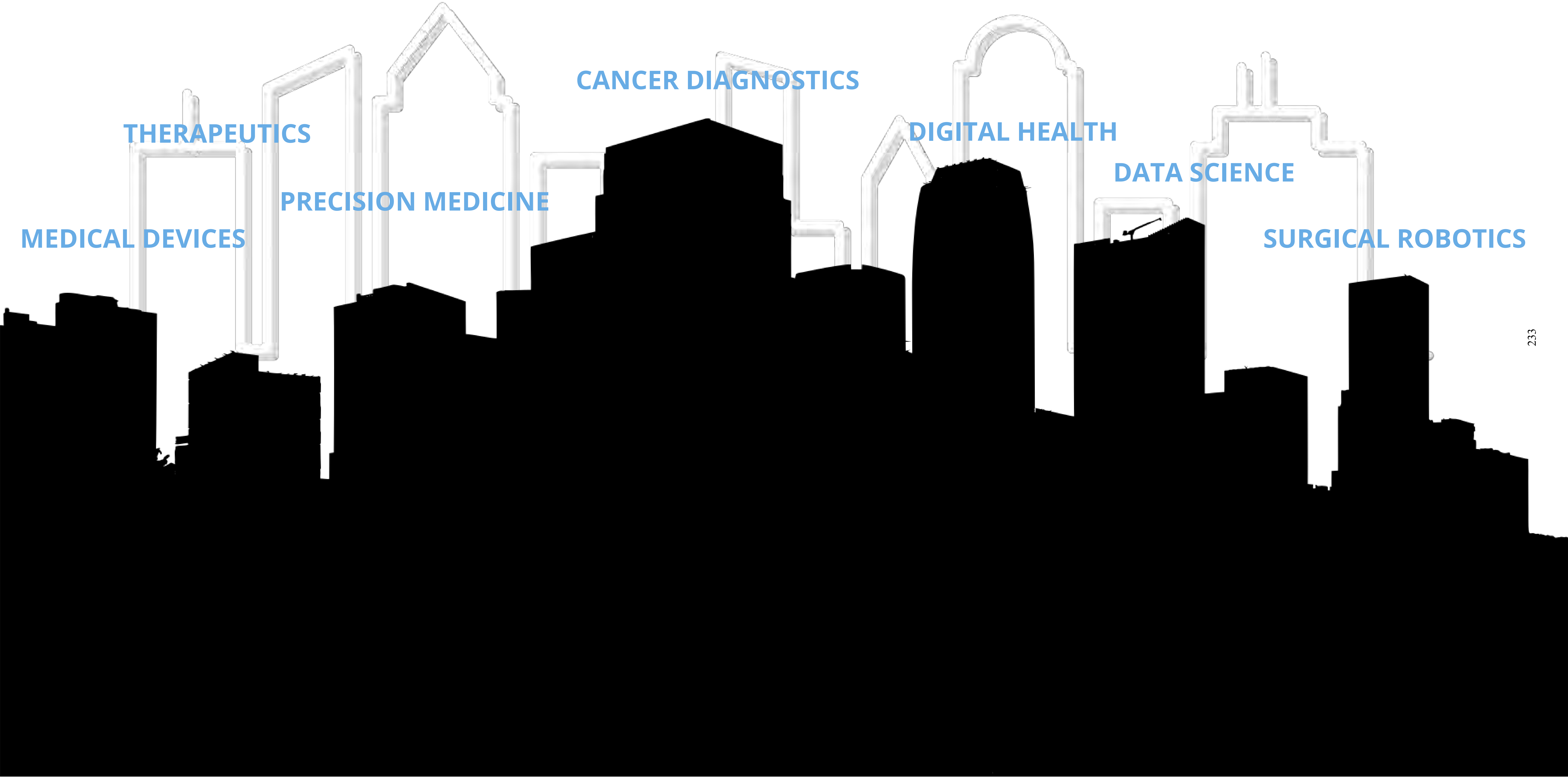
JOHNS HOPKINS UNIVERSITY

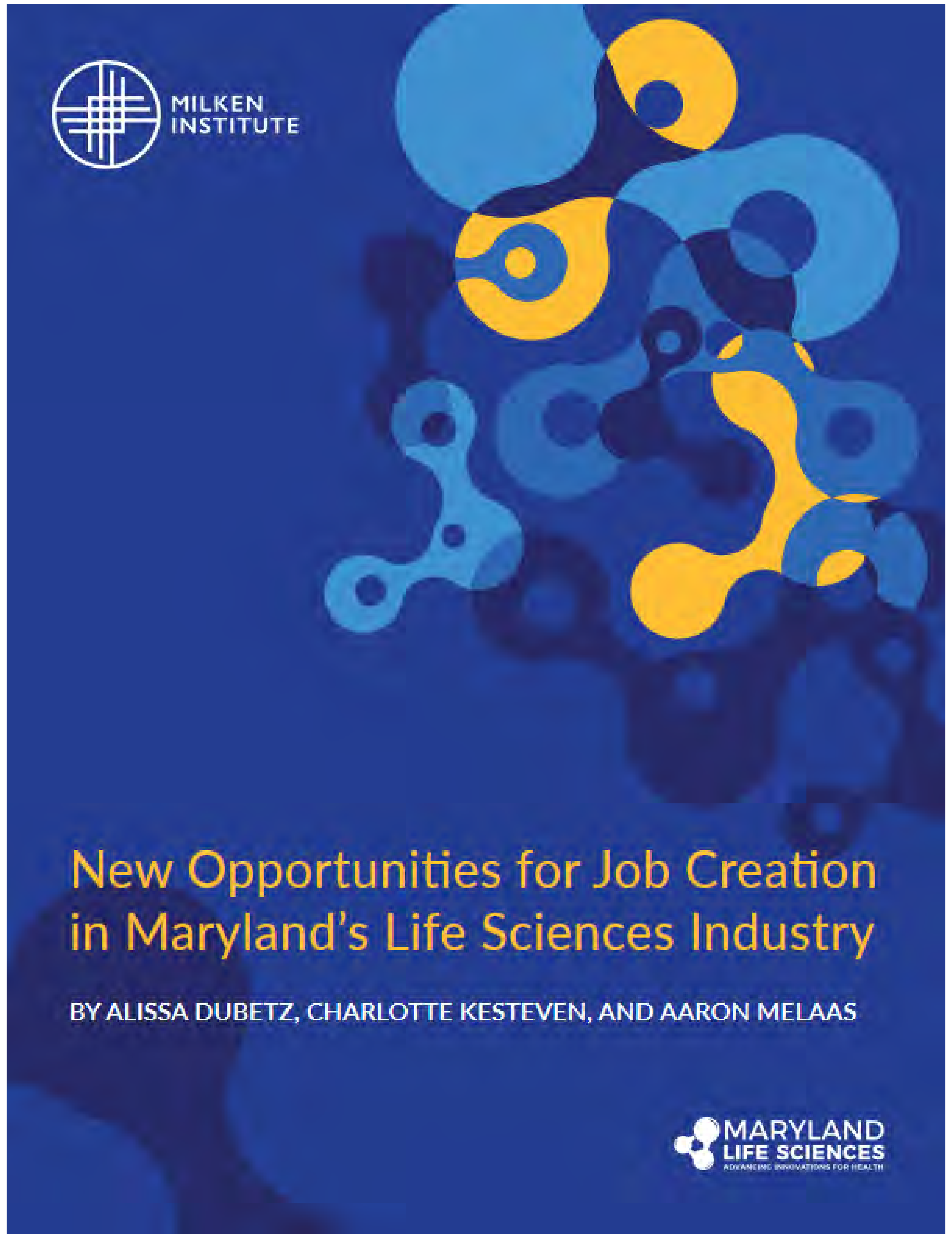
THE JOHNS HOPKINS STARTUP ECOSYSTEM

A RICH SOURCE OF INVESTMENT OPPORTUNITIES & DRIVER OF ECONOMIC VITALITY FOR THE STATE

Liz Burger
Senior Director, Strategic Initiatives
Johns Hopkins Technology Ventures

Johns Hopkins University





"Maryland has one of the nation's strongest life sciences industries"

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#4

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#5

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Johns Hopkins again No. 1 in university research spending

x41

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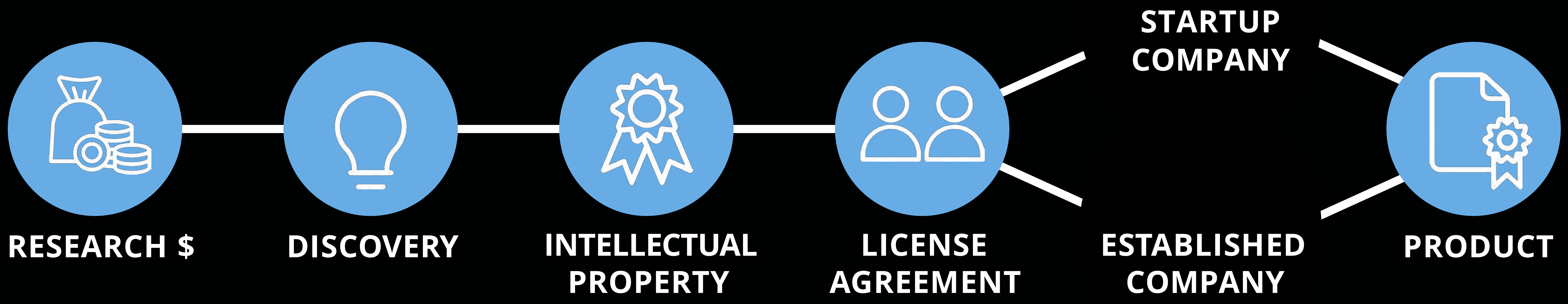
JOHNS HOPKINS TECHNOLOGY VENTURES



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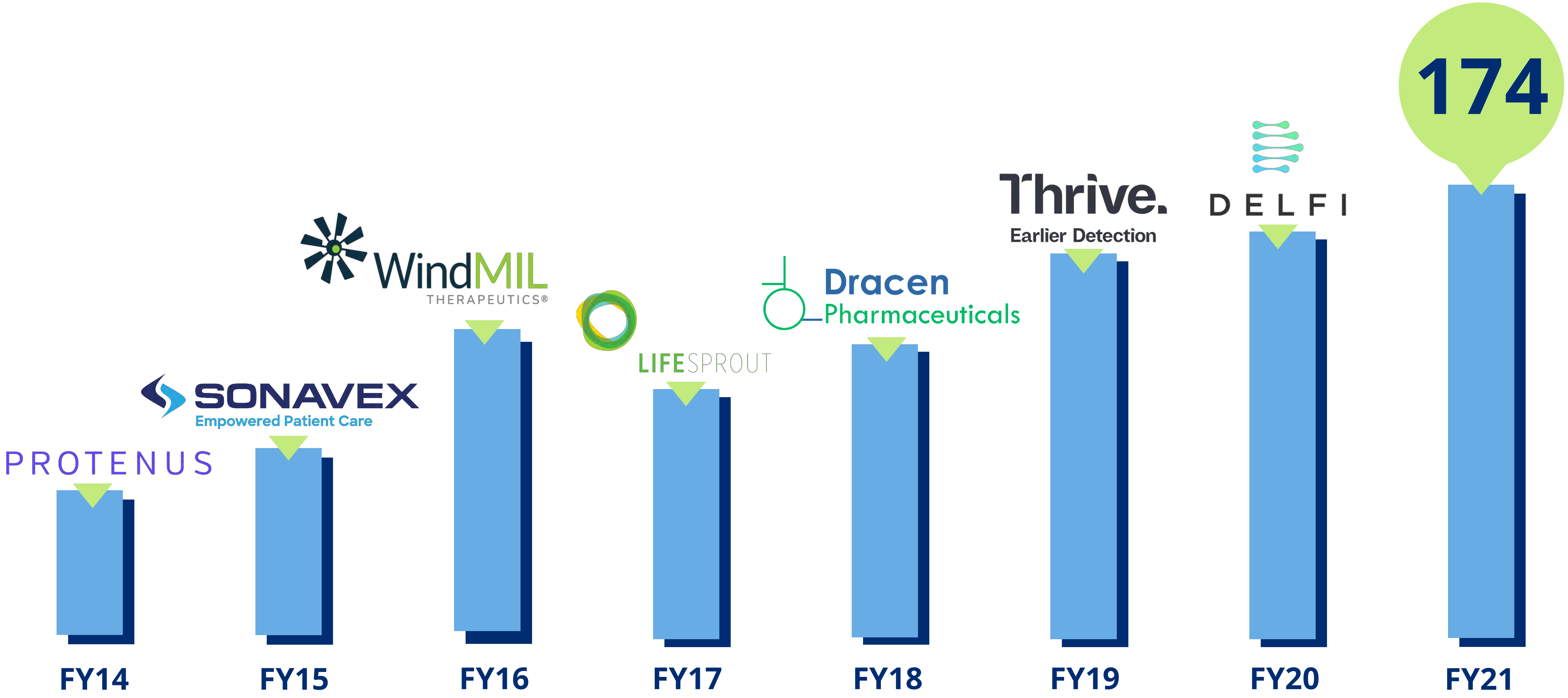
SOURCE: *Research to Revenue: A Practical Guide to University Start-Ups*, Don Rose and Cam Patterson

Johns Hopkins University



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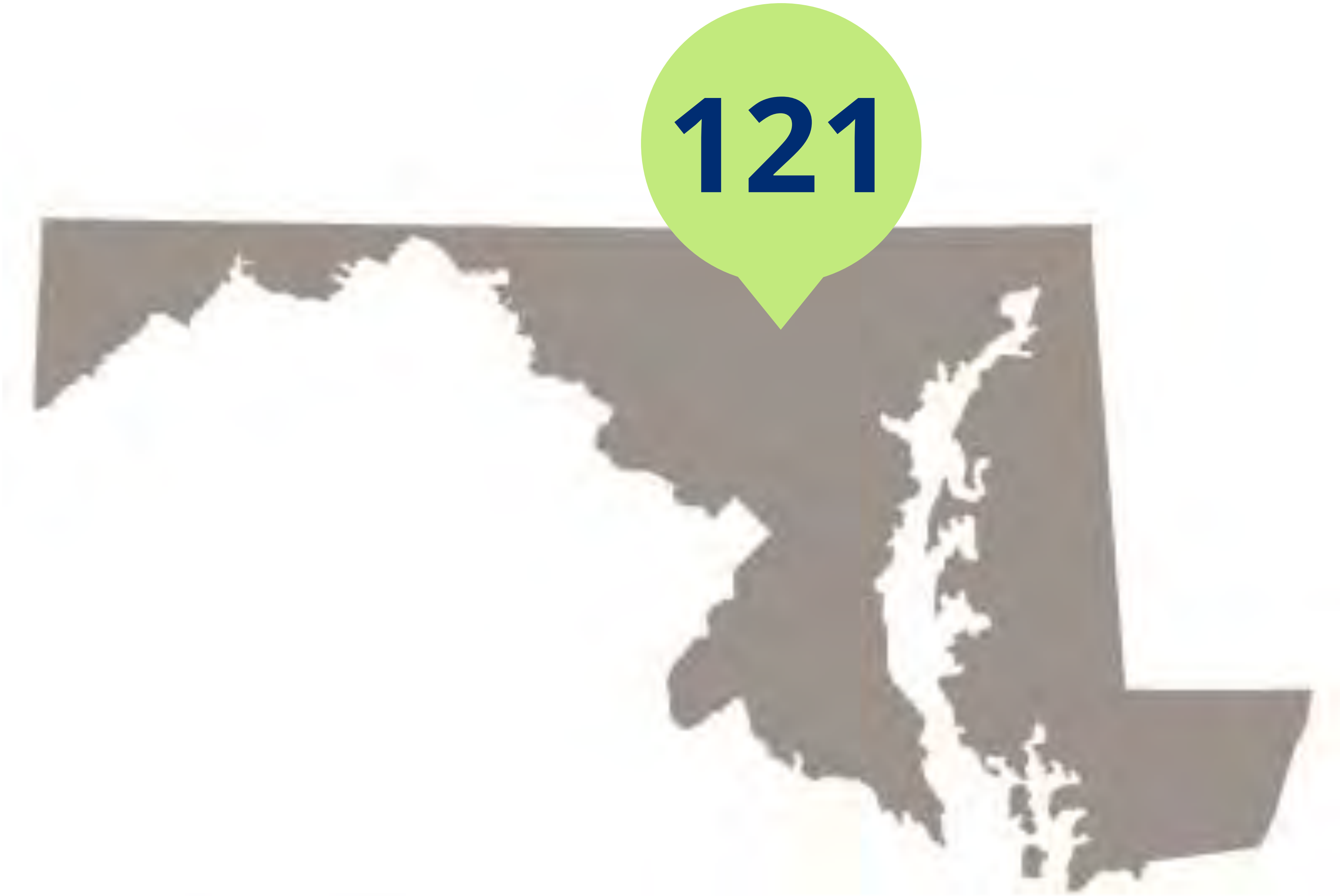
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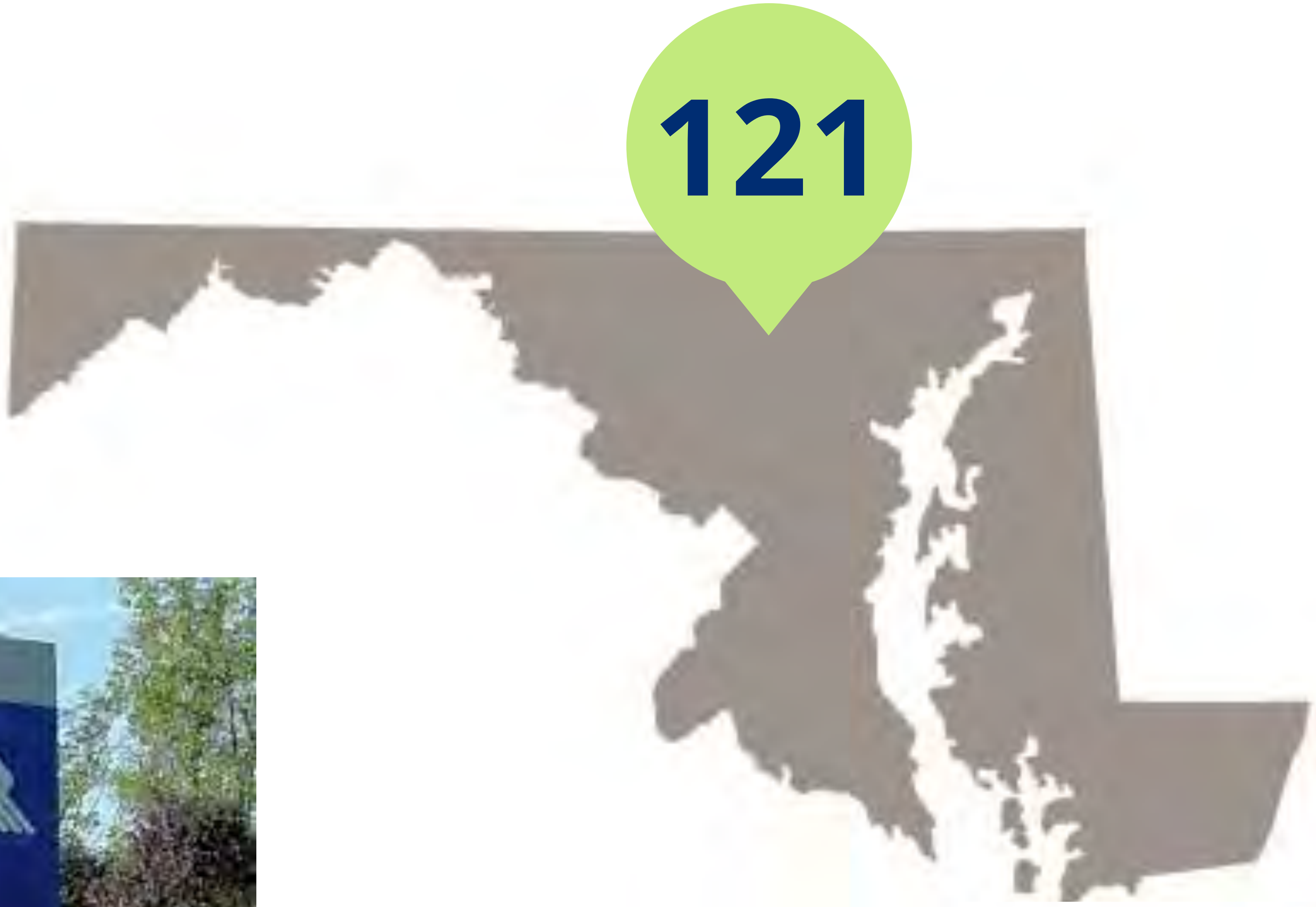
JOHNS HOPKINS
UNIVERSITY

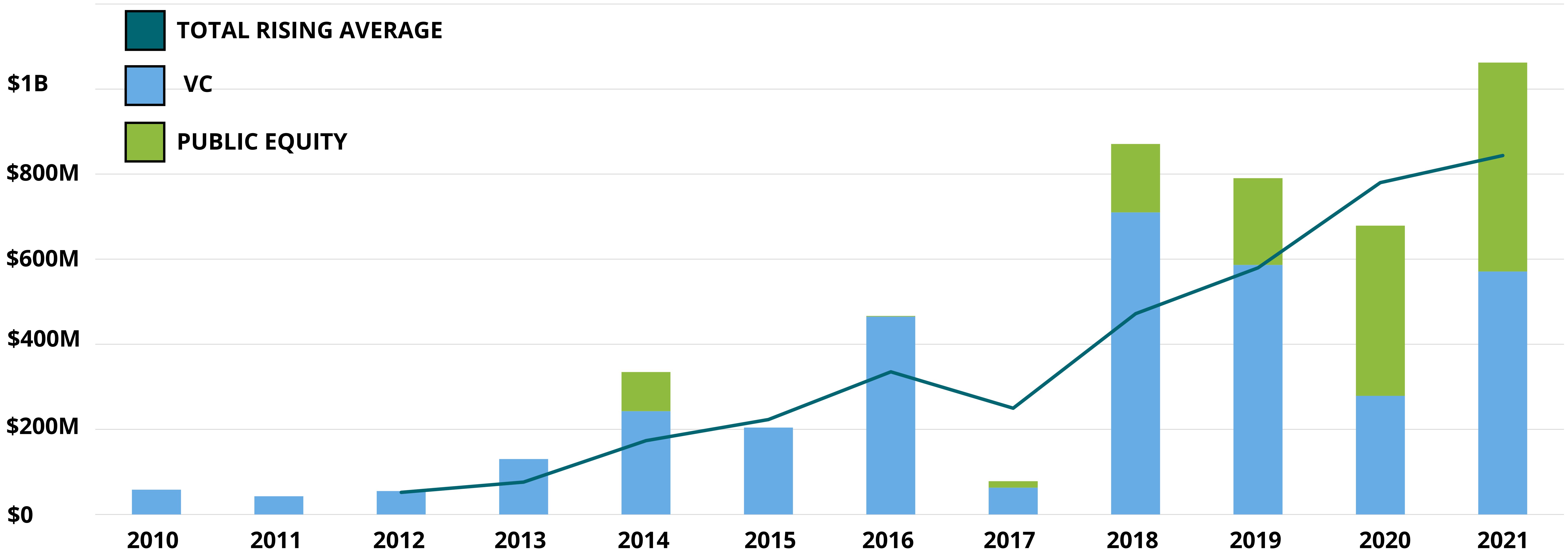
UNIVERSITY OF MARYLAND
1856



MORGAN
STATE UNIVERSITY

NIH
National Institutes
of Health

EQUITY FINANCING INTO JHU PORTFOLIO



242

15%

STAYED IN MARYLAND FY12 - FY16

58%

STAYED IN MARYLAND FY17 – FY21

243

Johns Hopkins University

VENTURE INVESTORS

- 5am
- Andreesen
- ARCH
- Blackstone Life Sciences
- Brown Advisory
- Camden / Catalio
- Cowen Healthcare Investments
- Deerfield
- Domain
- Flagship
- Foresite Capital
- F-Prime
- Frazier
- Illumina Ventures
- IP Group
- Kairos
- Lux
- MPM
- NEA
- Northpond Ventures
- Orbimed
- Pfizer Venture Investments
- RA Capital
- Roche Venture Fund
- Rock Springs Capital
- Samsara Biocapital
- SR One
- Third Rock

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MARYLAND INVESTORS

Rock Springs Capital

Brown Advisory

Camden / Catalio

Northpond Ventures

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STARTUP SUCCESSES
FY21 RESULTS

JOHNS HOPKINS UNIVERSITY

$496M PUBLIC EQUITY OFFERINGS

- $270M Allakos
- $110M NexImmune
- $90M graybug

$768M VENTURE FUNDING RAISED

- $103M PGDx Personal Genome Diagnostics
- $100M DELFI
- $53M ASCLEPIX THERAPEUTICS

246

STARTUP SUCCESSES
FY21 RESULTS

$496M PUBLIC EQUITY OFFERINGS

$110M NexImmune

$768M VENTURE FUNDING RAISED

$103M PGDx Personal Genome Diagnostics

$100M DELFI

$53M AsclepiX Therapeutics

247

circulomics

NexImmune

Amplimmune

Thrive.
AN EXACT SCIENCES COMPANY

AvhanaHealth 248

DiPole
MATERIALS

nanodirect

CERECOR

RECENT NEWS HEADLINES

JOHNS HOPKINS UNIVERSITY

PGDx receives FDA clearance for comprehensive genomic profiling diagnostic kit for oncology

Galen Robotics Makes Itself at Home in Baltimore with New Offices, Internship Program

Exact Sciences To Acquire Thrive Earlier Detection, Becoming A Leader In Blood-Based, Multi-Cancer Screening

Net Health Acquires Wound Care Platform Tissue Analytics

249

Expanding emocha Mobile Health Relocates to New Baltimore Offices

Hunt Valley-based Longeviti Neuro Solutions is adding a presence in Port Covington's medical manufacturing space

Delfi Diagnostics reels in $100M for blood-based cancer test

AsclepiX Therapeutics Announces $35 Million Series A Financing

ClearMask sold over 12.5 million transparent surgical face masks

Regenerative medicine company LifeSprout closes $28.5M Series A round

RECENT NEWS HEADLINES

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UNIVERSITY

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250

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1,400 JOBS IN MARYLAND

251

1,200 JOBS IN BALTIMORE CITY

TEDCO

LEADING INNOVATION TO MARKET

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Maryland Innovation Initiative

Johns Hopkins University

Asclepix Therapeutics $200,000	$44 million	13 jobs
Galen Robotics $150,000	$12 million	25 jobs
LifeSprout $100,000	$29 million	17 jobs

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SBIR·STTR
America's Seed Fund
Powered by SBA

JOHNS HOPKINS
UNIVERSITY

$134M
SBIR/STTR AWARDED

→

$2.5B
FOLLOW-ON FUNDING

+ **1,237**
JOBS

254

ASCLEPIX THERAPEUTICS

emocha Health®

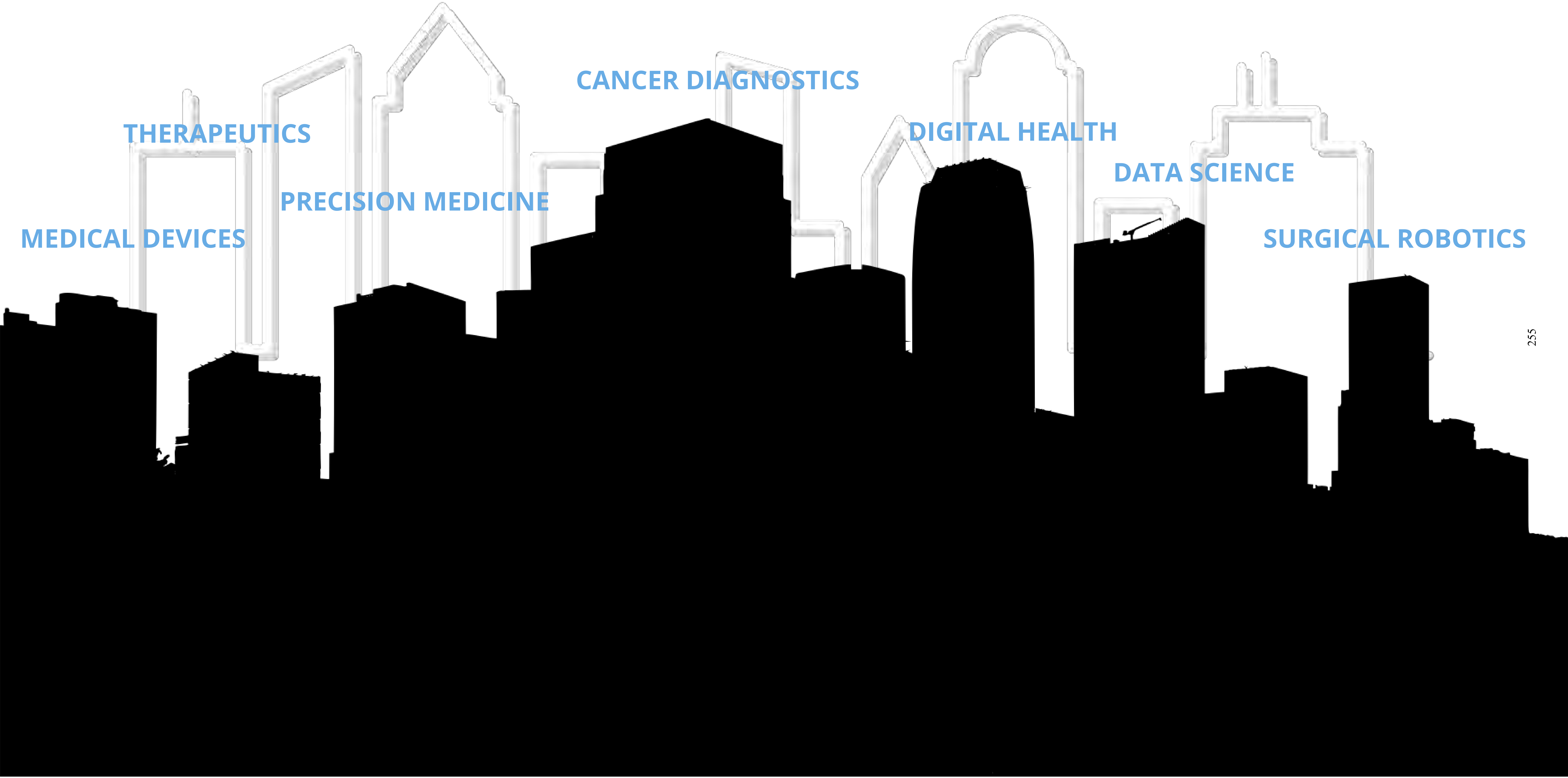
ONCOSPACE

circulomics

PGDx
Personal Genome Diagnostics

SONAVEX
Empowered Patient Care

JOHNS HOPKINS UNIVERSITY



TEDCO

LEADING INNOVATION TO MARKET

WWW.TEDCOMD.COM

Joint Committee on Pensions

October 21, 2021

(RE) INTRODUCING TEDCO

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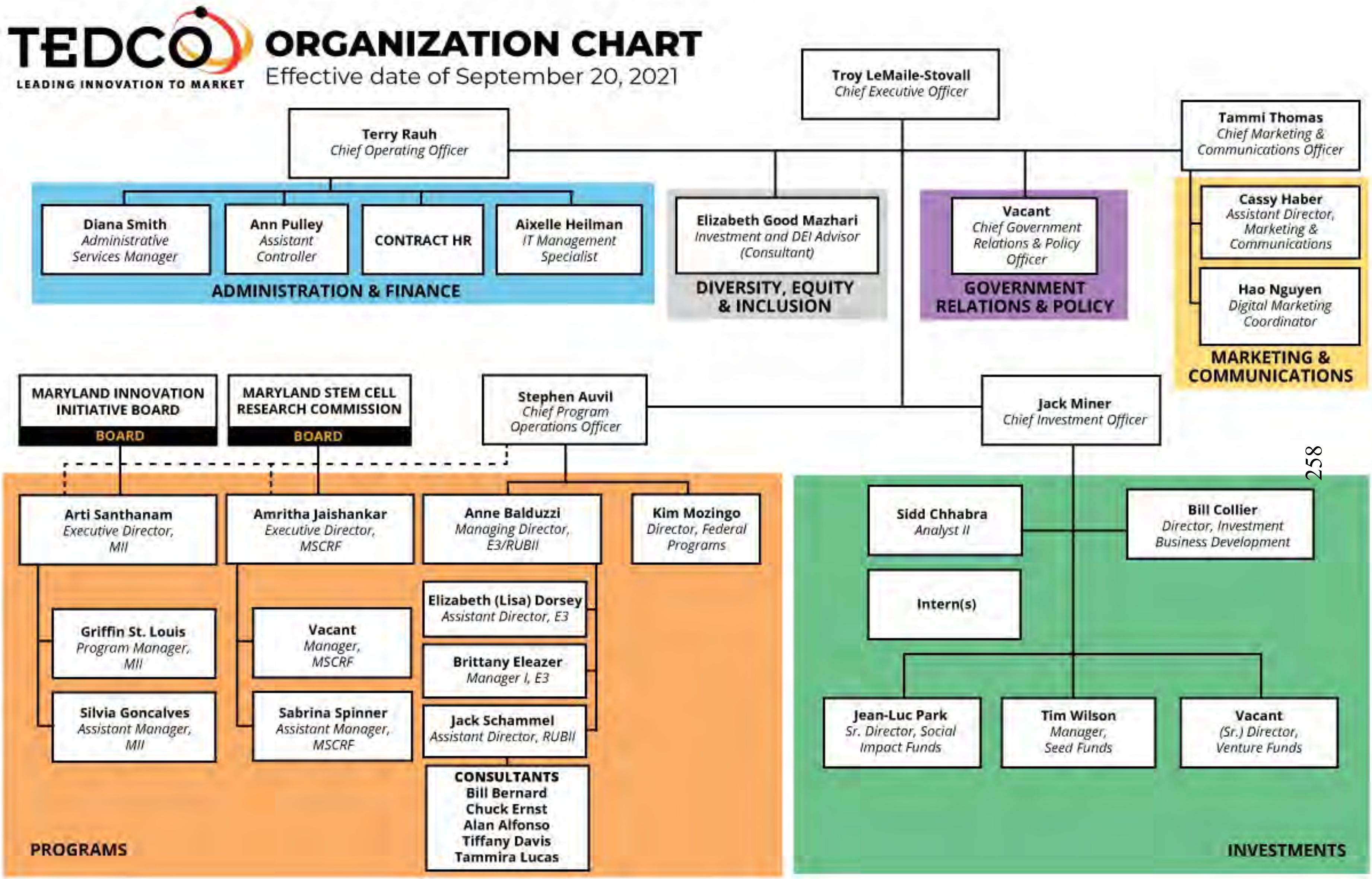
New Staff

- New CIO: March 2021
- New DEI Officer: June 2021
- New Social Impact Sr. Director: September 2021



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Core Values

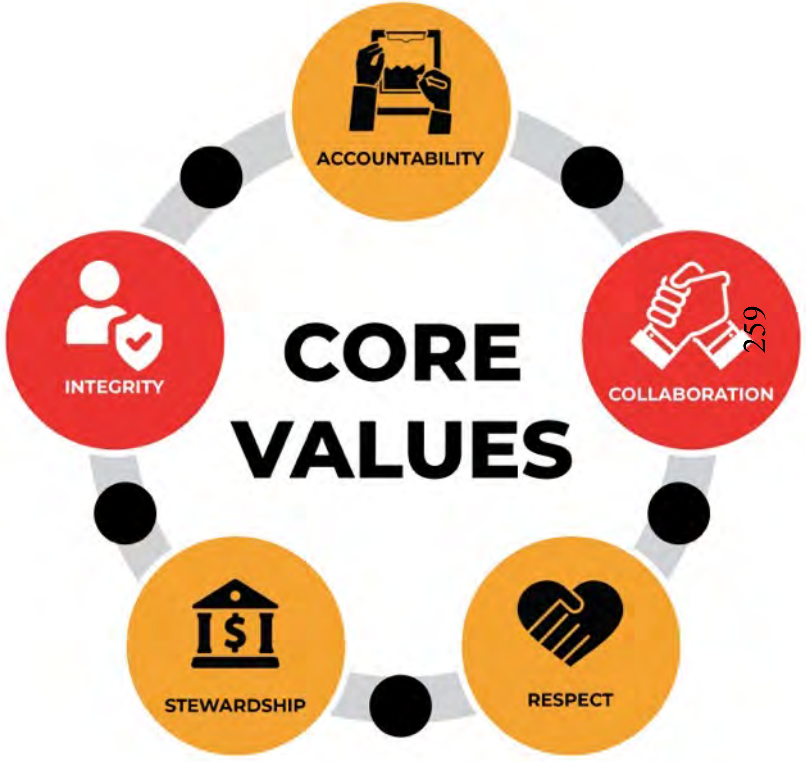
! **Accountability:** We will do the right thing and have internal and external measures demonstrating that commitment;

! **Collaboration:** We are a collection of talented individuals that meet our own and Maryland's goals by doing it together internally and externally;

! **Integrity:** We will pursue innovation and entrepreneurial success with the highest regard for moral, ethical and inclusion standards;

! **Respect:** We embrace diversity, equity and inclusion while also valuing our employees for their individuality and the unique perspectives; and

! **Stewardship:** We value our ability to create a sense of belonging and to serve our customers in an efficient and fiscally responsible manner.



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THE IMPACT OF TEDCO

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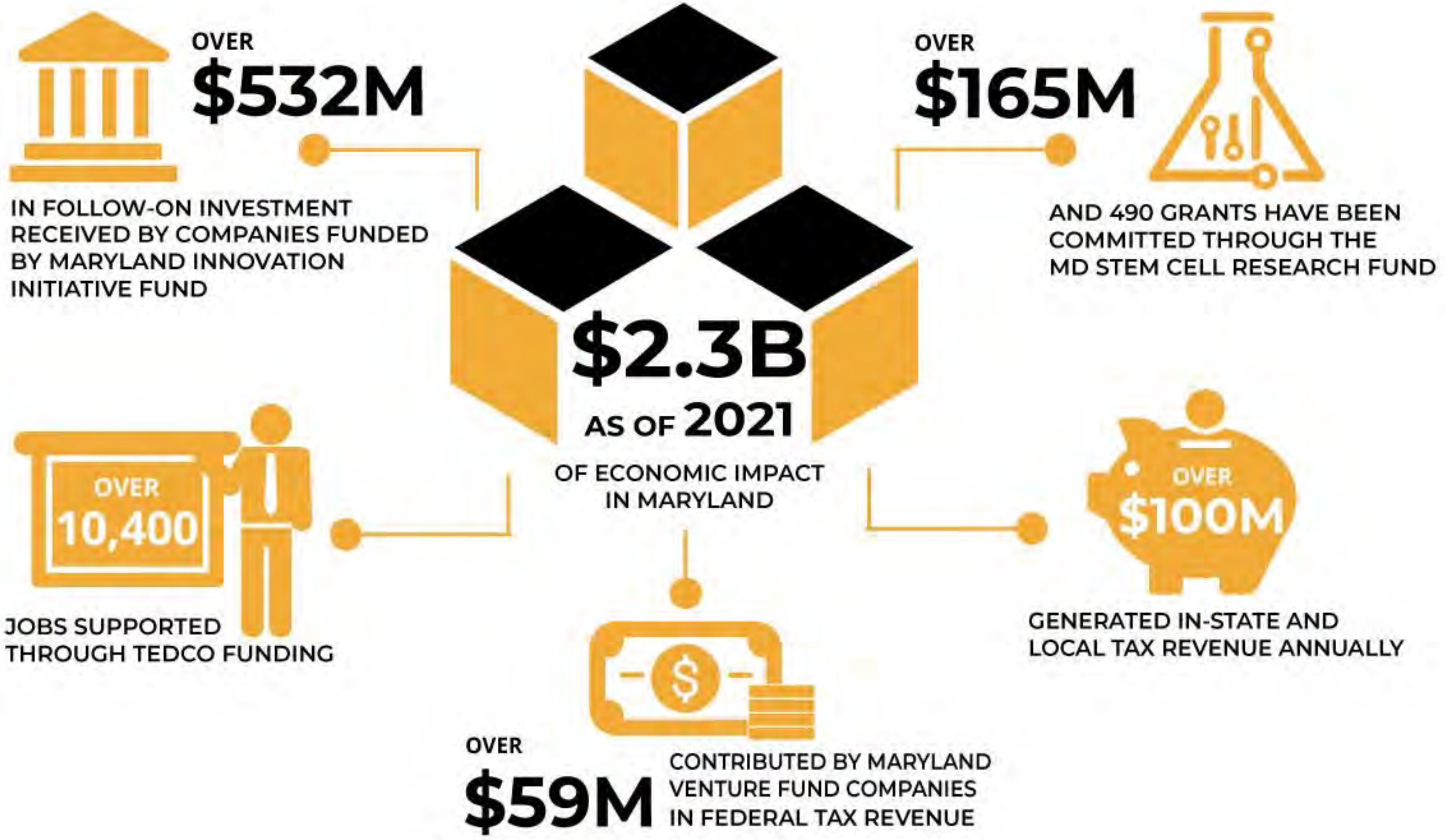
Economic Impact

LEADING INNOVATION TO MARKET



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TEDCO
LEADING INNOVATION TO MARKET

TOOLS DRIVING THE IMPACT

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Leading Innovation to Market for 23 years

TEDCO's Mission

Enhance **economic empowerment** by fostering an **inclusive and entrepreneurial innovation ecosystem.** *Identify, invest in, and help grow* **technology and life science-based companies in Maryland.**

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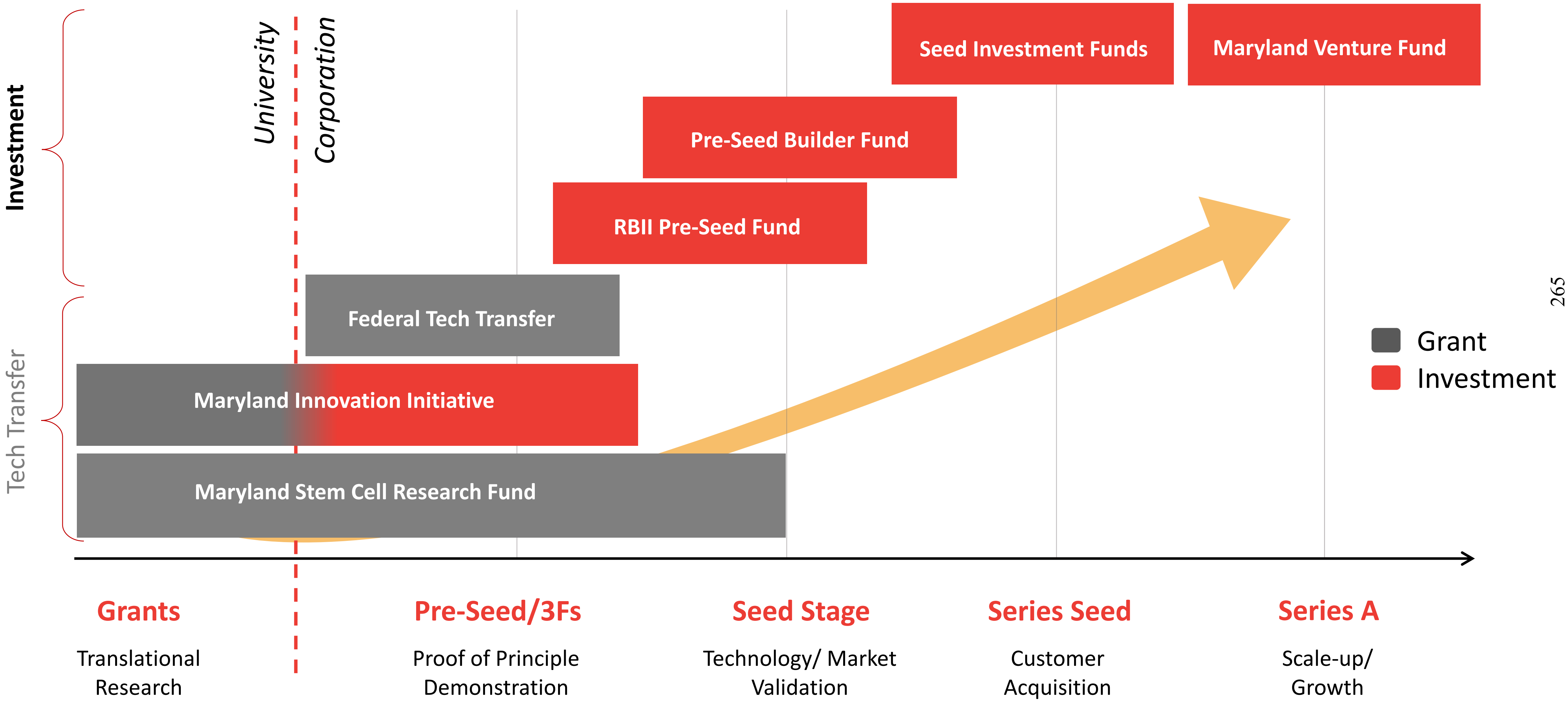
FUND THESIS
Maryland's Double Bottom Line

TEDCO provides access to early-stage deal flow which gives the Investment Team an advantage to sourcing companies having an outsized social impact. Our investment professionals ensure that our portfolio has high conviction sustainable companies with fundamentally strong venture returns. Through this double bottom line, we expect …

264

Financial	Social
Deal Flow	Purposeful investing
Return on Investment (portable Alpha)	Diversity, Equality, and Inclusion benchmark
Emerging technologies in multiple sectors	Geographic diversity in entrepreneurial leadership

Overview of TEDCO's Funding Programs by Stage



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Supporting Entrepreneurs & Ecosystem

- Prelude Pitch
- Marketing Toolkit
- SBIR Proposal Lab
- Network Advisors
- Entrepreneur Expo
- Business Roundtables
- Market Search Databases
- Start-up Orientation Forum
- Maryland Entrepreneur Hub
- Rural Business Innovation Initiative
- Urban Business Innovation Initiative

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TEDCO
LEADING INNOVATION TO MARKET

Entrepreneurial Support via:

- Pre-company Formation Grants
- Entrepreneurial Support Services
- Direct Investments

In the last 23 years, TEDCO has directly invested in more than **400** technology-based start-up companies. These companies have generated more than **7,800** jobs in Maryland and attracted more than **$1B in follow-on funding**.

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Urban Business Innovation Initiative

Designed to provide technical and business assistance to underserved early-stage companies in key urban regions through TEDCO's Venture Growth Advisors, who work in concert with our ***collaborative partners*** to assure a high level of support for these companies.

How UBII supports innovation:

- Connection to support by collaborative partners
- Guidance for technology development
- Providing grant and business support
- Identifying funding opportunities for early-stage companies

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Two Venture Growth Advisors in Maryland's Urban Regions

Baltimore City

Prince George's County

Urban Business Innovation Initiative

Collaborative Partners

Baltimore City

- Abell Foundation
- America's SBDC Maryland
- Innovation Works
- City of Baltimore
- Robert L. Wallace — Speaker, Author, Consultant
- Goldman Sachs 10,000 small businesses
- Baltimore Tracks
- Baltimore Together — Platform for Inclusive Prosperity
- Open Works
- Baltimore Development Corporation
- Upsurge Baltimore
- Conscious Venture Lab
- EAGB — Economic Alliance of Greater Baltimore
- TEDCO
- Baltimore Community Lending
- Coppin State University
- Maryland Entrepreneur Hub
- University of Baltimore
- Hutch — A Fearless Program
- Morgan State University

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Prince George's County

- Prince George's County Economic Development Corporation
- Prince George's Community College
- Bowie State University 1865
- TEDCO
- Employ Prince George's
- America's SBDC Maryland
- Bowie BIC — Business Innovation Center
- Maryland Entrepreneur Hub
- University of Maryland
- Maryland Energy Innovation Accelerator

The Goal

Rural and Underserved Business Recovery from Impact of COVID-19 (RUBRIC)

- Supported by $5M allocated from the Governor.
- Up to $100K initial award
- Awardees may apply for more funding after 6 months
- Applicants must be qualified Maryland Business that is socially or economically disadvantaged OR be headquartered in a rural area of the State

270

Companies in 12 Maryland counties received funding

Applications
72
(Portal Closed)
16 counties

Review →

Approved
45
(Total Budgeted)
12 counties

Contract →

Closed
45
Funds Committed
$ 4,500,000

Wire →

Funded 1st Tr.
45
Funds Deployed
$ 2,250,000

Mid. Report →

271

Funded 2nd Tr.
18
Funds Deployed
$900,000

Final Report →

Completed
0
Total Funds Deployed
$3,150,00

AWARDS (Approved)	Percentage
Rural	36%
S/E Disadvantaged	80%
African American Founder	29%
Women Founder	29%
TEDCO Portfolio Company	58%

MEDA Award WINNER

The Goal

The **Agriculture and Rural Rebuild (ARR) Challenge** was created for applicants across the state to collaborate with either a research institution, industry and/or rural agricultural entity to help develop lasting and sustainable, technology-enabled improvements in Agtech and other rural industries.

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Rewards

7 Companies were chosen to receive up to $200K in grants per project.

CATOCTIN MTN GROWERS

AthenaES Athena Enzyme Systems™

Kick Robotics, LLC
Autonomous Environmental Robots for Good

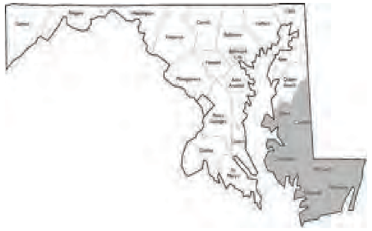
SweetGnome.Love @ Cropper's Farm

powered by Eagle Eye Imaging, LLC™ Imaging Solutions for You

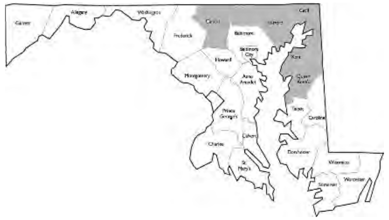
Grateful Gardeners

Pre-Seed Rural Business Innovation Initiative Fund

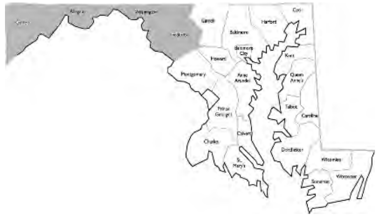
Four Mentors in Maryland's Rural Regions



Lower Shore Region



Upper Shore Region



Western Region

South Central Region

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Select Investments:

PLUM DRAGON

NanoBioFAB

PAVER GUIDE ADVANCING PERMEABLE

datakwip

COUNTER INTUITIVE COOKING Inc.

hop flyt

CIDE KIC

FOCUS ON FUNDING VEHICLES

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TEDCO has more than $150 AUM via VC Limited Partnerships and Maryland Venture Fund (MVF), Maryland Investment and Opportunities Fund (MIOF), and Seed and Builder Funds.

MVF, Seed Fund and Builder Fund annual investment budgets total close to $9M. From 2018-2020, these Funds made $14M of direct investments.

Since July 1, 2020, these funds provided $19M in returns with an average multiple of 2.07x.

275

TEDCO LEADING INNOVATION TO MARKET

TEDCO provides Maryland entrepreneurs the funding, resources, and connections that early-stage technology companies need to thrive. TEDCO's investment team launches, scales, sources, diligences, and funds Maryland startup companies while maximizing returns per each unique fund-objective and supporting the overall TEDCO Mission.

TEDCO focuses on three 'asset classes':

1 **SOCIAL IMPACT**
- Builder Fund
- Inclusion Fund

2 **SEED**
- Life Sciences
- Cybersecurity
- Technology Commercialization
- Gap

3 **VENTURE**
- MVF
- MIOF

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- **$4M** annual fund
- **$100K - $500K** initial investments

- **Types of Seed Funds**
  - Technology Commercialization Investment Fund
  - Cybersecurity Investment Fund
  - Life Science Investment Fund
  - Gap Fund

Seed Fund Investment Highlights

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CMT COVERMYTEST Powering Prior Authorization for Precision Medicine
LIFESPROUT
arbit
MaxSalePrice.com Fix Now, Pay When You Sell
NOBLE LIFE SCIENCES
whitebox
blackpoint
LEGENDS OF LEARNING
mindoula
EVERYWHERE COMMUNICATIONS ALWAYS CONNECTED
ConverGene
Pin4
VoiceVibes
VIXIAR
CEREBRO CAPITAL
Q^x Branch
SYNCURITY
.Theraly
BRICATA
BANDURA SYSTEMS
Orpheris
InsightIn Health
vizual.ai
PROTENUS
MFFIRE
RACKTOP

Pre-Seed Builder Fund

Invests in pre-seed technology-based businesses owned and managed by economically disadvantaged entrepreneurs:

- Pre-seed stage
- Executive support
- Peer-to-peer education and collaboration
- Up to $200K convertible note investments

Program to Date

17	$900K	3K +	6
Companies	Invested	Executive Coaching Hours	Companies raising capital or exploring exits

278

Social Impact Funding 3rd Year

TEDCO
LEADING INNOVATION TO MARKET

- 1 cash flow positive – $50M+ valuation expected
  - Founder friendly note was paid back in 12 months
- 5 successfully raising VC notes and equity (2+/- year hold)
  - All notes are uncapped and first money in
  - Valuations $10M+, but no markups
- 6 successfully raising convertible notes (1 year held)
  - All notes are uncapped and first money in
  - Valuations range – but all have raised in past 6 months and have positive trajectory
- 8 investments in Spring 2021

20 COMPANIES

4K+ EXECUTIVE COACHING HOURS

$1.1M INVESTED

49 JOBS CREATED

Maryland Venture Fund

- **$110M** evergreen fund
- **Up to $750K** initial investment

Maryland Venture Fund Investment Highlights

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Maryland Innovation Opportunity Fund I (Vintage 2017)

TEDCO
LEADING INNOVATION TO MARKET

- **$25M** traditional 10-year fund
- **$500K - $1.5M** initial investment
- **2-3x** for follow-on

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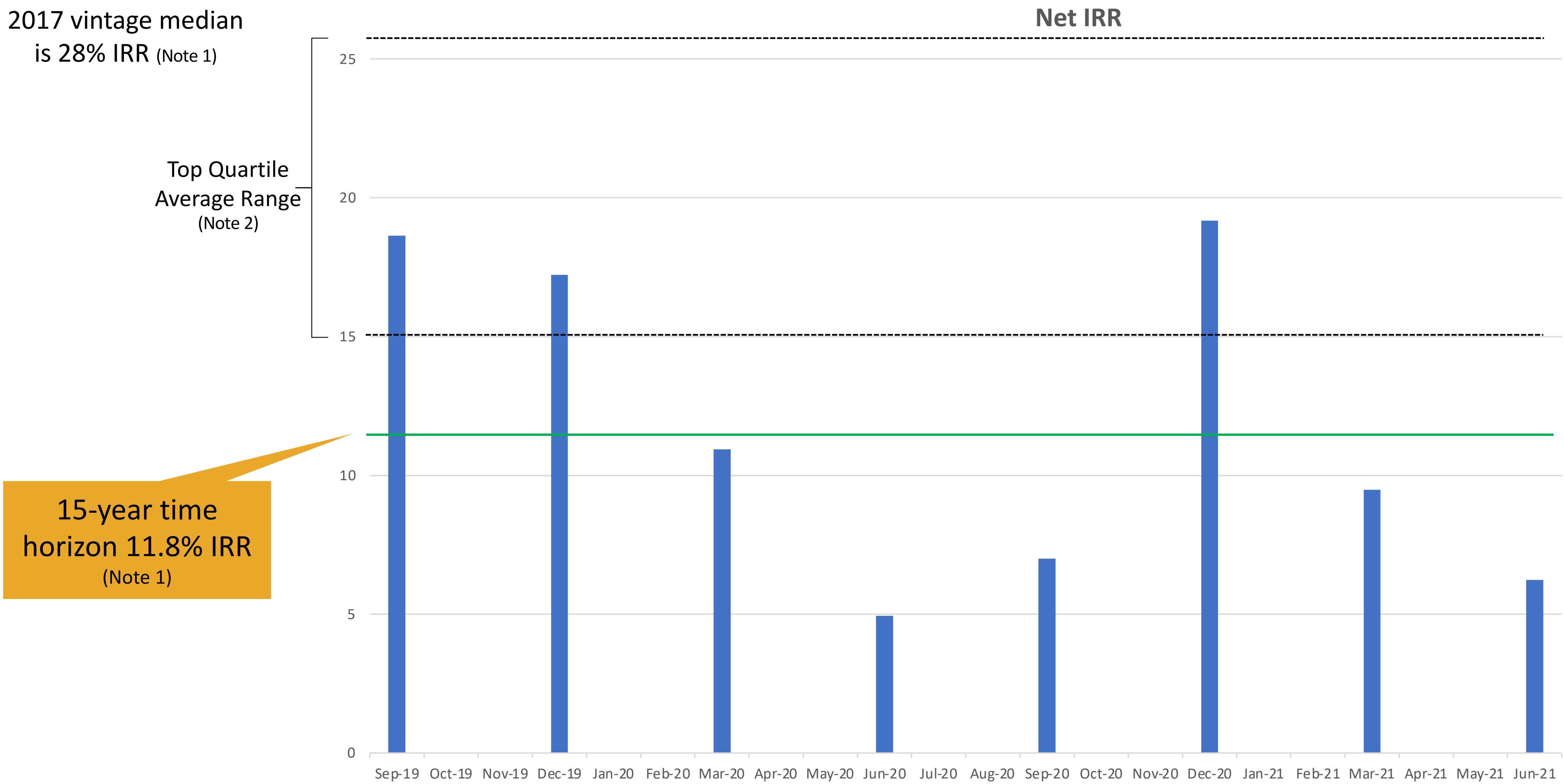
MIOF ONLY

TEDCO
LEADING INNOVATION TO MARKET



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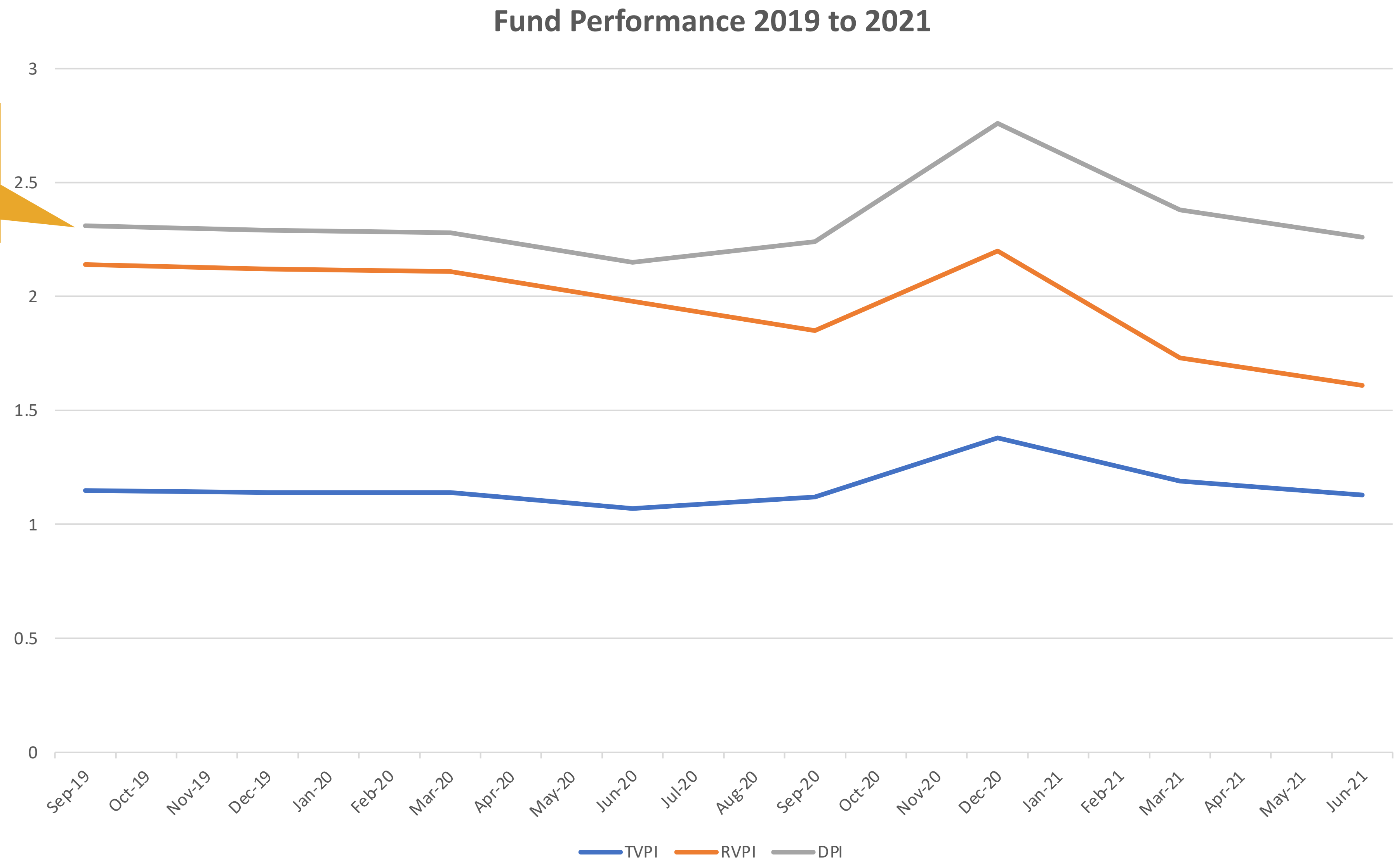
Note 1—*Pitchbook (both references)* ***Note 2***—*Cambridge Associates 2021*

MIOF ONLY

Top Quartile for DPI for Vintage 2017 (Note 3)

Over 10,400 jobs supported through TEDCO funding



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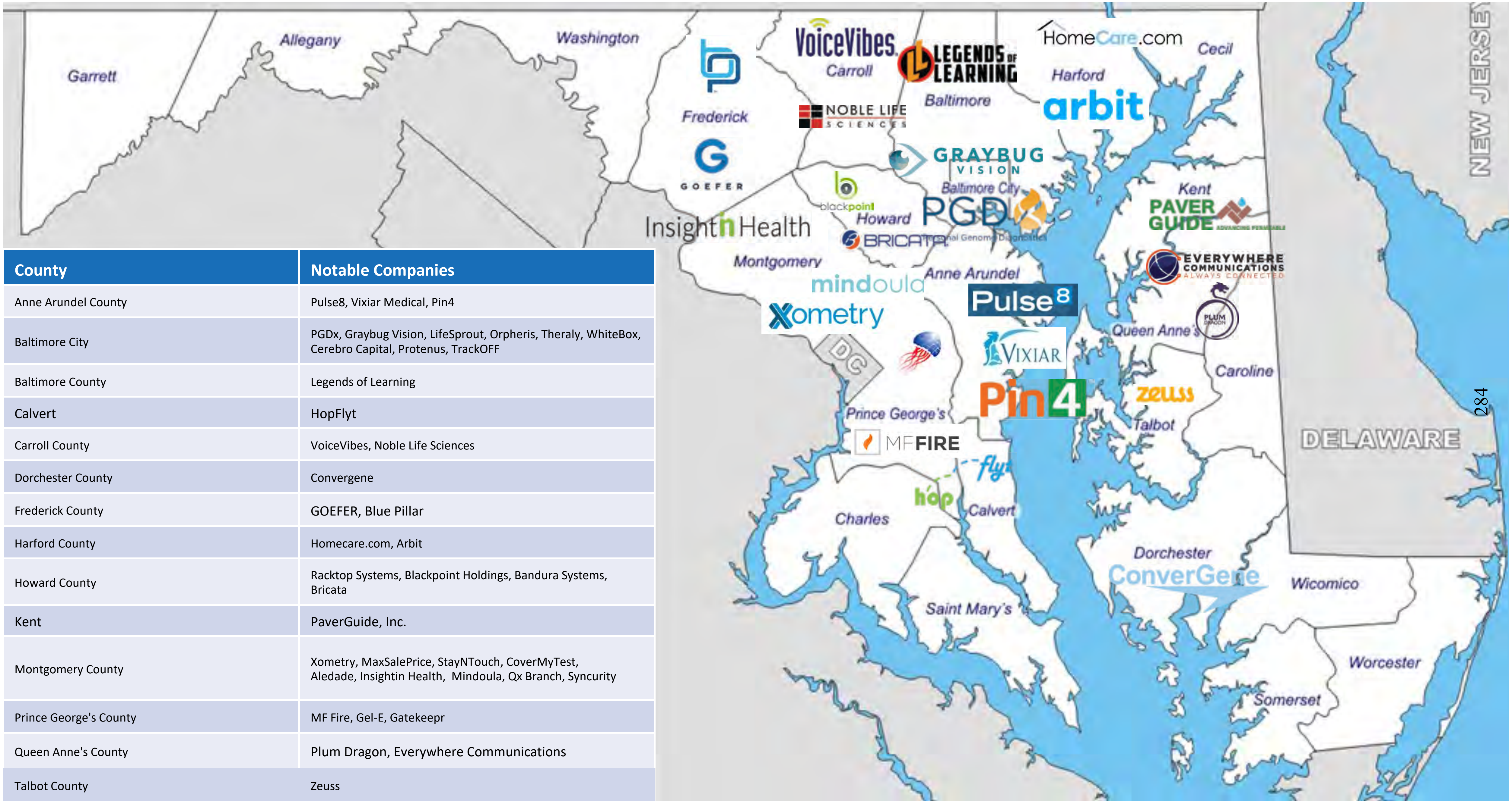
***Note 3**—Pitchbook*



County	Notable Companies
Anne Arundel County	Pulse8, Vixiar Medical, Pin4
Baltimore City	PGDx, Graybug Vision, LifeSprout, Orpheris, Theraly, WhiteBox, Cerebro Capital, Protenus, TrackOFF
Baltimore County	Legends of Learning
Calvert	HopFlyt
Carroll County	VoiceVibes, Noble Life Sciences
Dorchester County	Convergene
Frederick County	GOEFER, Blue Pillar
Harford County	Homecare.com, Arbit
Howard County	Racktop Systems, Blackpoint Holdings, Bandura Systems, Bricata
Kent	PaverGuide, Inc.
Montgomery County	Xometry, MaxSalePrice, StayNTouch, CoverMyTest, Aledade, Insightin Health, Mindoula, Qx Branch, Syncurity
Prince George's County	MF Fire, Gel-E, Gatekeepr
Queen Anne's County	Plum Dragon, Everywhere Communications
Talbot County	Zeuss

Investment Team

TEDCO
LEADING INNOVATION TO MARKET

Fund Managers:

The Investment Team has been involved in deploying over $300M in capital in nearly $3B in funds raised by portfolio companies. These investments have been everything from early-stage convertible notes to bridge financing for IPOs and mergers. Team currently holds rights as board observers on 26 board portfolio companies, 28 years of entrepreneurial experience, and a dozen local volunteer organizations.

Senior Director,
Venture Funds

OPEN

- Early-Stage Venture experience required
- Strategic operating and startup roles

Manager,
Seed Funds

Tim Wilson

- Real estate and financial strengths
- M&A and investor relations
- MBA in Finance

Senior Director,
Social Impact Funds

Jean-Luc Park

- Technology enabled services, food products, life sciences experience
- Early-stage domain expert
- MBA

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Investment Team

TEDCO LEADING INNOVATION TO MARKET

Engaged and Involved:
Our team practices the generalist model and the team's backgrounds are complementary which is leveraged in each of our investment decisions. Business development and back-office support is critical to ensuring we perform using best practices.

Director, Investment
Business Development
Bill Collier

- Sourcing and business development
- Marketing, account management, customer success
- GE accelerated leadership program, MBA

Investment Analyst
Sidd Chhabra

- Fellow Venture for America with finance, technology, and entrepreneurship experience
- Sourcing, diligence, internal controls
- Process management and data management

Venture Fellows
Open
Open

- Open positions for two aspiring venture professionals
- Support operations and execution of Social Impact, Seed, and Venture Funds

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Investment Leadership Team

TEDCO
LEADING INNOVATION TO MARKET

Chief Investment Officer

Jack Miner

- As TEDCO's Chief Investment Officer, Jack stewards TEDCO's diligence and investment processes, leads the Builder, Seed and Maryland Venture Funds and investment portfolios to maximize the financial return, and ensures a lasting impact for the State of Maryland.
- Jack's most recent leadership position was at Cleveland Clinic Ventures as Managing Director where he spearheaded the development of a new corporate venture team for investing in internal startups and external early-stage companies while managing these companies with appropriate governance and oversight. Jack also deployed an investment process to co-invest in companies that were strategic to the Clinic.
- Before joining Cleveland Clinic Ventures, Jack worked for the University of Michigan as Director of the Venture Center where he championed the Mentor-in-Residence Program, the Business Formation Team, and the Venture Accelerator under the Office of Technology Transfer to accelerate new startup ventures to the marketplace with over 300 portfolio companies.

Investment and DEI Advisor

Elizabeth Good Mazhari

- Elizabeth brings more than 25 years of academic, government, and private sector experience in product development, technology commercialization and venture management experience to the team. Prior to joining TEDCO, she served as President of Transition Health Ventures, a consulting firm specializing in serving the needs of the innovation community and the healthcare and life science startup companies within it.
- Elizabeth also spent more than 8 years in academic venturing roles at JHU and UMB. Additionally, Elizabeth previously served as Managing Director of the MVF (2004-2006) in addition to progressively senior roles with the Fund between 2000-2004.
- She started her career in San Diego in venture-backed medtech startups in product development roles after completing her Masters in Bioengineering from UC San Diego, and BSE from Duke University and Biomedical and Electrical Engineering.

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CEO

Troy LeMaile-Stovall

- As the CEO of TEDCO, Troy leads the organization’s mission to support economic development through the cultivation of an inclusive entrepreneurial innovation ecosystem.
- Troy’s professional experience over the last two decades includes leadership positions in investment management, telecommunications, information/communication technology, management consulting, and higher education, most recently serving as the Chief Operating Officer of the University of the District of Columbia (UDC). He also founded several entrepreneurial ventures, including the management consulting firms LeMaile-Stovall LLC and GTMS Partners, LLC, and was a co-founder of family office/investment firm GulfSouth Capital.
- With expertise in entrepreneurship, venture capital, higher education administration, and economic development, Troy is a frequent speaker and author on these topics. He earned his undergraduate degree in electrical engineering from Southern Methodist University *cum laude*, as well as a master’s in computer science from Stanford University and an MBA from Harvard University.

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NEW TEDCO INITIATIVES 289

Troy LeMaile-Stovall

CEO

410-999-5283
troy@tedco.md

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TEDCO

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SUPPORT SLIDES

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TEDCO Portfolio Company

JuneBrain

Founded in 2017, JuneBrain, LLC is an early start-up company based in the Washington, DC area. Partnering with Johns Hopkins University and Stanford University, our mission is to develop a wearable and non-invasive imaging device that enables multiple sclerosis patients to monitor their disease activity at home, leading to earlier detection of MS attacks and improved monitoring of treatment efficacy.

Major Funding success recently – all but the NSF I-Corp and Phase 1, have been since our investment – doing a lot to de-risk

Funding:

GRANTS = $1.275M

- NSF I-Corps: $25k
- NSF SBIR Phase I = $225k
- NSF STTR Phase II = $1M
- Baltimore Fund = $25k

COMPETITIONS (Grand Prize Winner) = $53k

- 2020 AlphaLab Gear Hardware Cup (local) = $3k
- 2020 AlphaLab Gear Hardware Cup (International Finals) = $50k

INVESTMENTS = $220k

- Angels + family and friends = $70k
- TEDCO's Builder Fund = $50k
- AlphaLab Health Accelerator = $100k

JuneBrain

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TEDCO Portfolio Company

TargetDocs

Construction tech company which sells platform for project managers to manage the inflow, outflow, security and timing of various documentation. Currently used exclusively in the construction management industry as regulation and workflow impose large documentation burden – but relevant to various industries.

Since Builder Fund Investment they have:

- Gone to pre-rev to $100k+ in ARR with strong pipeline and expectation to continue growing strongly 294
- Brought on new investment from:
  - Maryland Momentum Fund
  - Gaingels
  - Lightspeed Capital
  - Hustle Fund
  - Debut Capital
  - Other angels, and F&F
  - Most recently, follow-on investment from TEDCO Seed Fund (CIF)

topbox

TEDCO

LEADING INNOVATION TO MARKET

TEDCO Portfolio Company

TopBox

- $1.4M invested through MVF 2014-2018
- Acquired January 2021
- $4.58M returned
- Seed Investment via the MVF in 2017; follow-on investment in 2018. $7M total VC raised
- Co-investors: Telescope Partners, Flyover Capital

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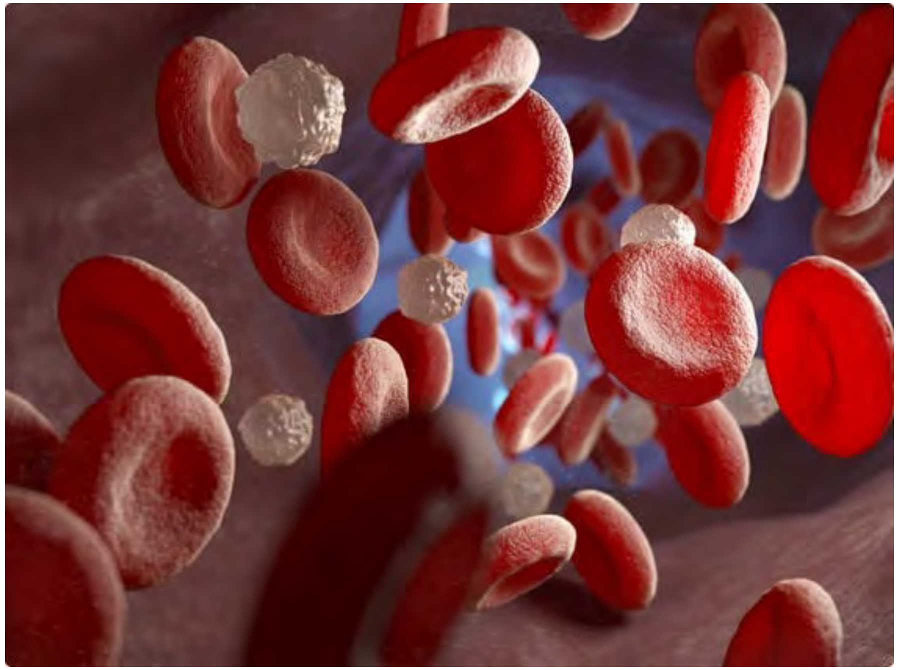
TEDCO Portfolio Company

Veralox Therapeutics

- $25K investment via RBII + Loaned Executive + Seed Funds ($200K) in May 2019
- Veralox Therapeutics Raises $5.4M in Seed Funding Co-Led by JDRF T1D Fund and Sanofi Ventures | Veralox Therapeutics
- December 2020 bridge round investment; co-invested with Sanofi Ventures, JDRF T1D
- Expecting Series A round in H12020 with institutional investors



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FREDERICK
MARYLAND
ECONOMIC DEVELOPMENT

2021 MARYLAND JOINT PENSION FUND COMMITTEE Presentation

Richard Griffin, AICP, CEcD
Director of Economic Development

BLENDING HISTORY AND TECHNOLOGY

CELEBRATING 275 YEARS OF HISTORY

1745 ★ ★ 2020

CITY OF FREDERICK

Join the story

Mayor Michael O'Connor

NATIONAL ATTENTION

THE GREAT AMERICAN MAIN STREET AWARD

- **Top 10 Best Places to Live (#4) - 2021**
  Livability.com
- **Coolest Towns in America to Visit in 2021**
  Matador Network
- **Best Small Metro Business Climate**
  Business Facilities
- **Best Run Cities in the U.S.**
  Stacker
- **Top Cities for Recent Grads**
  GoodCall.com
- **Top American Downtowns**
  Livability.com
- **Best Cities in the World for Craft Beer**
  Matador Network
- **Most Vibrant Art Cities in America**
  National Center for Arts Research
- **Top Areas for Growth Potential**
  Business Facilities

FACTS

- 75,000 Residents (2021)
- 2nd largest city in Maryland
- 3,700+/- businesses (43% of County)
- 56,000 +/- jobs (49% of County)
- 2 million Visitors Annually (pre-COVID) 300
- AA+, AA+, Aa1 Bond Ratings
- Home to:
  - Fort Detrick
  - Frederick National Laboratory for Cancer Research
  - Frederick Municipal Airport
  - Hood College & Frederick Community College
  - 75+ City Parks
  - Frederick Keys Baseball

I-270 TECH CORRIDOR

Major Federal Agencies on I-270

- Food and Drug Administration
- Nat'l Institute of Standards & Technology
- National Institutes of Health
- Department of Energy
- Walter Reed Army Medical Center
- Fort Detrick
- National Interagency Biodefense Campus
- Frederick National Laboratory for Cancer Research/ NCI-F

TOP WORKFORCE & JOBS

Local World-class Talent

- City Labor Force of 39,481
- Labor Participation Rate of 89.2% (22-54)
- 92% have High School Diploma
- 41% have a Bachelors Degree (32% nationally)
- Businesses have access to a regional labor force of approx. 1.15 million

Jobs

- 56,000 jobs in the City
- ~2 jobs per household
- 3,274 net new jobs past 5 years
- Strong growth in healthcare, professional, scientific, technology, and manufacturing

Source: Frederick DED / Jobs EQ

KEY CITY INDUSTRIES

BIOTECH/LIFE SCIENCE

- AstraZeneca
- Fort Detrick
- National Biodefense Campus
- Frederick National Laboratory for Cancer Research
- BioFactura
- Akonni Biosystems

MANUFACTURING

- Stulz Air Technolgy Systems
- Wilcoxon Sensing Inc
- EDCO
- McCutcheons Apple Products

KEY CITY INDUSTRIES

techFrederick

HEALTH CARE AND EDUCATION

- Frederick Health System
- Frederick Health Hospital
- Stockman Cancer Treatment Center
- Hood College
- Frederick Community College

TECHNOLOGY

- Yakabod
- Fugue
- Welocalize
- Patriot Tech
- En-Net
- datakwip

KEY CITY INDUSTRIES

CRAFT BEVERAGE INDUSTRY

- Monocacy Brewery
- Attaboy Beer
- Idiom Brewery
- Steinhart Brewery
- Smoketown Creekside Brewery
- Rockwell Brewing
- Olde Mother Brewing
- Midnight Run Brewery
- McClintock Distilling Co.
- Tenth Ward Distillery
- Dragon Distillery
- Puerto Rico Rum Distillery

SIZE OF BUSINESSES FREDERICK CITY/COUNTY

Frederick County Business By Employment #			
Info USA Data (2020)			
# of Emp	# of Businesses*	%	of Businesses
<10	7,621	77.92%	7,621
10 to <25	1,367	13.98%	8,988
25 to <50	387	3.96%	9,375
50 to <100	250	2.56%	9,625
100 to <250	123	1.26%	9,748
250 to <500	18	0.18%	9,766
500 to 4,000	14	0.14%	9,780
Totals	**9,780**	**100.00%**	**9,780**

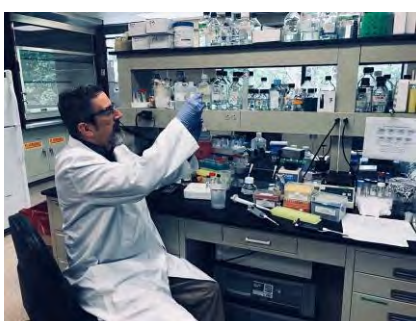
Definitions of Small Business

SBA (<500 contracting)
SBA (<250 financial assistance)
US Chamber (<100)
City (<50)

Approximately 96% of businesses in Frederick County have fewer than 50 employees. A number of the larger employers are in the city and a growing number are minority, disadvantaged, or woman owned.

BUSINESS INCUBATION & ACCELERATION

BUSINESS INCUBATION & ACCELERATION



Frederick Innovative Technology Center, Inc.

- Two Facilities with 20,000 SF Offices/Labs
  - Monocacy – Biotech - 15,000 SF, 25 offices, 10 wet labs
  - Root – Infotech - 5,000 SF, 20 offices, Tech Lab
- 70 Clients with 70-80 employees at any one time
- Economic Impact Over Time (2004 – 2020)
  - 125 Companies
  - 800 jobs created
  - $26.3 million in Annual Revenue
  - 68,000 SF in Frederick community
  - Recent Grants totaling nearly $500,000
- Initial Capital Investment By City/County/State (2003)
  - TEDCO & DEPT OF COMMERCE (~$500K each)
- Recapitalization of Lab Space is Critical

KEY PROGRAMS

What are the FITCI Programs?

They are a combination of classes, advisors, events & programs to address three fundamental needs for emerging companies:

Coaching

When you are selected to join FITCI you are placed into an appropriate CEO Roundtable (SGAB) led by a group of proven CEO's where you can draw from decades of experience to give you some distinct insight into evolving you and your business.

Connections

Not only do our advisors and mentors give excellent advice, they (along with our connections & FITCI teams) are looking to connect you with those individuals who can help grow your business.

Capital

After becoming a member, you gain access to the secret sauce of the FITCI investments team, training and preparation, before connections to key funding sources. Your finely tuned pitch & investment summary will be well vetted by experts in their fields. We can create the opportunities; it's up to you to build the relationships.

START UP FUNDING NEEDS

Locally most small income producing startups rely initially on:

- Personal Equity including savings, property (house) and income from a full-time job
- Line of Credit
- Friends and Family
- Traditional Bank Financing including SBA backed loans
- Other Loan programs like
  - o MD VLT Loans for veterans/minority/women owned businesses
  - o DHCD NBW Loan –

o Access to Capital is very difficult for start-ups – particularly for minority, disadvantaged, and women owned businesses.

Higher risk tech startups don't produce revenue for the first year or in the case of biotech for 3-5 years.

Funding becomes readily available just about the time the business no longer needs it.

That "Valley of Death" is covered by

- Personal equity & F&F
- SBIR (Small Business Innovation Research Grants)
- STTR (Small Business Tech Transfer)
- TEDCO Programs
- MD Stem Cell Research Fund
- MD Venture Fund
- MD Innovation Initiative – Hopkins
- Pitch Competitions
- Incubator/Accelerator Programs
- Rural MD Council

POSSIBLE OPPORTUNITIES FOR PENSION FUND INVESTMENT

- CAPITAL ASSISTANCE TO MARYLAND INCUBATORS/ACCERATORS
  - New Facilities
  - Upgraded Facilities
  - Meeting New Startup Industry Demands (Innovation/ReInvention)

- CAPITAL AND/OR OPERATING ASSISTANCE TO START UP COMPANIES ENROLLED IN MARYLAND INCUBATOR/ACCELERATOR PROGRAMS

- CAPITAL FOR MINORITY, DISADVANTAGED, WOMEN OWNED COMPANIES

- REVOLVING LOAN CAPITALIZATION FOR SPECIFIC INDUSTRIES

- PROGRAMS TO STRENGTHEN MARYLAND COMPETITIVENESS WITH ANGEL AND VENTURE FUNDS

MAYOR MICHAEL O'CONNOR

RICHARD GRIFFIN, AICP, CECD
Director of Economic Development
rgriffin@cityoffrederickmd.gov
301.600.6361

MARY FORD-NAILL
Manager DED
mnaill@cityoffrederickmd.gov
301.600.6362

FREDERICK

www.businessinfrederick.com
www.businessinfrederickblog.com

ECONOMIC DEVELOPMENT

JOIN THE STORY

Appendix 8

STATE RETIREMENT AGENCY
120 East Baltimore Street
Baltimore, MD 21202-6700

MARYLAND
STATE RETIREMENT
and PENSION SYSTEM

410-625-5555 • 1-800-492-5909
TTY Users: call via Maryland Relay
sra.maryland.gov

December 16, 2021

The Honorable Sarah K. Elfreth
Senate Chair, Joint Committee on Pensions
103 James Senate Office Building
11 Bladen Street
Annapolis, Maryland 21401

The Honorable Brooke E. Lierman
House Chair, Joint Committee on Pensions
House Office Building, Room 311
6 Bladen Street
Annapolis, Maryland 21401

Dear Senator Elfreth and Delegate Lierman:

You have requested an update from the State Retirement Agency regarding whether more members of the State Retirement and Pension System retired during the State of Emergency for the COVID-19 pandemic than normally retire. The table on the following page provides the number of normal service retirements by month for calendar years 2019 and 2020, and calendar year 2021. Additionally, the table also includes the percentage changes in monthly normal service retirements for calendar years 2019 and 2020, calendar years 2020 and 2021, and calendar years 2019 and 2020.

You will note that normal service retirements decreased for the majority of the months in calendar year 2020 when compared to calendar year 2019. Overall, the System experienced a 12.73% decline in service retirements in calendar year 2020 from calendar year 2019. Calendar year 2021 began the year with a decline in normal service retirements over calendar year 2020, but then increased (in some cases, significantly) for the months February through October. November and December 2021 saw declines when compared to the same months in calendar year 2020. Total normal service retirements for calendar year 2021 increased by 8.43% over calendar year 2020. Normal service retirements for calendar year 2021 declined by 5.37% over normal service retirements in calendar year 2019.

Appendix A provides a break down in normal service retirements, by employer, for calendar years 2019 – 2021. A review of this information indicates that Cecil County and Howard County Boards of Education have experienced the greatest increase in retirements over the last three calendar years. Moreover, when looking at the 24 Boards of Education in the State, you will note that 17 have experienced increases in normal service retirements in calendar year 2021 over calendar year 2020 and calendar year 2019.

Should you require additional information please call me at 410-625-5600.

Sincerely,

Martin Noven
Executive Director

BOARD OF TRUSTEES

Nancy K. Kopp, *Chairman*
Peter Franchot, *Vice Chairman*
Linda Vaughn Allen
Thomas M. Brandt
David R. Brinkley
Eric D. Brotman
Jamaal R. A. Craddock
James P. Daly, Jr.
Kenneth B. Haines
David B. Hamilton
Linda A. Herman
Sheila Hill
Richard E. Norman
Douglas Prouty
Michael J. Stafford, Jr.

Martin Noven, *Secretary to the Board*

Appendix A
State Retirement and Pension System – Normal Service Retirement Allowances
January 1, 2019 – December 31, 2021

Month	CY 2019	CY 2020	CY '19 – CY '20 % Change	CY 2021	CY '20 – CY '21 % Change	CY '19 – CY '21 % Change
January	718	756	5.29%	636	(16.01%)	(11.66%)
February	339	330	(2.65%)	335	1.52%	(1.18%)
March	244	221	(9.43%)	273	23.53%	11.89%
April	269	242	(10.04%)	291	20.25%	8.18%
May	275	187	(32.00%)	272	45.45%	(1.09%)
June	342	205	(40.06%)	297	44.88%	(13.16%)
July	2,384	1,951	(18.16%)	2,226	14.10%	(6.63%)
August	358	335	(6.42%)	431	28.66%	20.39%
September	336	390	16.07%	432	10.77%	28.57%
October	315	357	13.33%	386	8.12%	22.54%
November	341	326	(4.40%)	289	(11.35%)	(15.25%)
December	480	286	(40.42%)	190	(33.57%)	(60.42%)
Total:	6,401	5,586	(12.73%)	6,057	8.43%	(5.37%)

Appendix 9

Overview of Immediate Vesting in the State Retirement and Pension System for Heads of Units of State Government

Chapters 397 and 398 of the Acts of 2021 charged the State Retirement Agency (Agency) with studying two issues: (1) identify those positions as a Secretary of a principal department or a head of a department, office, or other unit of the State government allow for immediate vesting in the State Retirement and Pension System (System) and those which do not; and (2) the reasons for such discrepancies. In addition, the Agency also reviewed positions for staff to the Governor. The Agency concludes this report with options the Legislature may want to consider regarding these classes of employees and their vesting status in the System.

Governing Statute

Section 29-304 of the State Personnel and Pensions Article provides that "[a]n individual who is a Secretary of a principal department or a head of a department, office, or other unit of the State government serving at the Governor's pleasure has immediate vesting rights on taking office in the State system in which the individual is a member." Based on the wording of this statute, to determine if an individual is eligible for immediate vesting, it must first be determined if the individual is the head of a "unit of State government." Article II, Section 24 of the Maryland Constitution provides that a "unit of State government" must be created by the Maryland Constitution, statute or executive order. Article II, Section 24 further provides that while the Governor can establish new State government units such as departments, offices, and agencies, they must be set forth in executive orders and submitted to the General Assembly. An executive order that has been submitted to the General Assembly shall become effective and have the force of law unless specifically disapproved by the Legislature. Because all units of State government must be created by the Maryland Constitution, statute, or executive order, an individual can only be a head of a State unit if the unit was created, accordingly.

In addition to determining whether the individual was the head of a unit of State government, the individual must also serve at the pleasure of the Governor, in order to be eligible for immediate vesting. An analysis by the Agency's legal counsel revealed that most enabling statutes or executive orders creating units of State government, specifically state whether an official serves at the Governor's pleasure. However, a few statutes do not specify how or when an appointed official can be removed. The advice provided by the Agency's legal counsel went on to provide that for those instances where individuals who are appointed for a specific term, they do not serve at the Governor's pleasure. Article II, Section 15 of the Maryland Constitution provides that the Governor may only remove such officers "for incompetency or misconduct." Legal counsel concluded that unless otherwise specified by statute, if an individual is appointed by the Governor for a specified term, the appointed official does not serve at the Governor's pleasure. However, if the term of the appointment is indefinite and provisions on removal are not specified in law, that appointed official does serve at the pleasure of the Governor.

Based on this analysis of § 29-304, a review of 67 positions covering Secretaries of a principal department or department heads for units of State government was conducted in 2017 by the Agency. At that time, it was concluded that 33 of these 67 positions qualified for immediate vesting while 34 did not. Today, those numbers have changed, only slightly, with 34 qualifying for immediate vesting and 33 not qualifying.

Legislative Intent Behind Immediate Vesting

Section 29-304 was enacted under Chapter 156 of the Acts of 1969. While a review of the bill file for Chapter 156 only included a copy of the enacted legislation, it would be reasonable to conclude that the driving force behind the passage of § 29-304 was the general vesting provision in place at that time for members of the System. In 1969, vesting in the System was 20 years. It was reduced to 15 years in 1970.

Prior to the passage of Chapter 156, all Secretaries and department heads were required to accrue 20 years of service credit in order to receive a benefit from the System. In light of the Governor being term limited to two terms, individuals appointed to Secretary or department head positions and serving at the pleasure of the Governor prior to 1969, would likely never vest in the System as it would be expected that a new Governor, upon taking office, would make new appointments to these positions. Accordingly, for Secretaries and department heads serving at the pleasure of the Governor, these individuals would have had to accrue service credit in State positions either prior to being appointed or following their appointments, in order to accrue 20 years of service to be eligible for a normal retirement allowance from the System. It is likely that it was this uncertainty of job security associated with the political nature of Secretaries and department heads serving at the pleasure of the Governor, coupled with the 20-year vesting requirement, that motivated the legislature to enact § 29-304 in 1969.

Because there was little information included in the bill file for Chapter 156, the Agency is unable to report if the legislature contemplated including those individuals functioning as department heads but not serving at the pleasure of the Governor. While it is possible that department heads who were not eligible for immediate vesting, were able to accrue the 20 years (15 years after 1970) necessary to vest for a normal service retirement allowance from the System; the Agency is unable to confirm this. In 1980, vesting was reduced to five years, for State employees who were not serving as judges, legislators, and those who enjoyed immediate vesting. With this change, department heads who were not eligible for immediate vesting were now in a position where vesting in their particular State system was more easily attainable. However, in 2011, legislation was enacted to establish the Reformed Contributory Pension Benefit (RCPB) tier of the Employees' Pension System (EPS). Prior to 2011, the majority of EPS members were in the Alternate Contributory Pension Selection (ACPS) tier of the EPS, enjoying 5-year vesting. The new RCPB tier of the EPS increased vesting to 10 years for State employees who were not serving as judges, legislators, and those with immediate vesting. This increase in vesting for most State employees has once again initiated the conversation of immediate vesting for department heads of units of State government who are not serving at the pleasure of the Governor.

Current Pool of Secretaries and Department Heads

Chapters 397 and 398 of 2021 amended § 29-304 for the first time since its enactment in 1969. The amendment to this statute provided that "an individual who commences employment as the Executive Director of the State Retirement Agency on or after January 1, 2021, shall have immediate vesting rights in the Employees' Pension System." Prior to the enactment of Chapters 397 and 398, the Executive Director of the Agency did not enjoy immediate vesting in the EPS; yet, with the retirement of the long serving Executive Director of the Agency (14 years serving as Executive Director), it became clear that if the next Executive Director was not an existing State employee participating in the ACPS, this individual would be enrolled in the RCPB and subject to 10-year vesting. The search committee appointed to find a new Executive Director for the Agency soon found that 10-year vesting was serving as a deterrent when trying to attract qualified candidates for the position. Consequently, legislation was requested to provide immediate vesting for the next Executive Director of the Agency.

As previously mentioned, of the 67 Secretaries and department heads of units of State government researched by the Agency, 34 individuals qualify for immediate vesting and 33 do not. From this group of 67, **Table 1** provides the total number from each group who are members of ACPS tier of the EPS or the RCPB tier of the EPS. Any State employee who is hired on or after July 1, 2011 that requires the individual to become a member of the EPS, is enrolled in the RCPB. **Table 1** indicates that there are considerably more RCPB members who have immediate vesting compared to those RCPB members that do not have immediate vesting (23 vs. 15, respectively).

Table 1
Overview of Membership
for Secretaries and Department Heads of Units of State Government
(as of November 1, 2021)

	ACPS/EPS (5-year vesting)	RCPB/EPS (10-year vesting)	Other/ Retired	Average Years of Service in Position	Average Years of Total Service in SRPS
Immediate Vesting	9	23	2	4.9	8.2
No Immediate Vesting	15	15	3	5.1	15.1

One could assume that the 50% increase of RCPB individuals with immediate vesting over those without immediate vesting, supports the premise that the lack of job security serving in positions at the pleasure of the Governor will result in shorter tenure with the State than for those that do not serve at the pleasure of the Governor. However, **Table 1** also indicates that the average length of service in the position as a Secretary or department head with immediate vesting is virtually the same as the average length of service in the position of a department head without immediate vesting. This indicates that those not serving at the pleasure of the Governor are not experiencing the long tenure that was anticipated by the 1969 legislation when this group was not granted immediate vesting.

A more detailed review of each individual account of these 67 individuals revealed that within the group of 33 that do not have immediate vesting, 12 individuals have 16 or more years of total service compared to four individuals in the group of 34 who do have immediate vesting. However, the Agency discovered that within this group of 12 that had 16 or more years of total State service, only two have vested as a result of their positions as a department head; the remaining 10 have an average tenure in their current position as a department head of three years. Moreover, **Table 2** indicates that comparing just the RCPB members in each group (immediate vesting vs. no immediate vesting) reveals that those with immediate vesting have more service in both their current position and total service with the State. This may signify that the original 1969 premise that department heads not serving at the pleasure of the Governor would likely remain in those positions to the point of vesting, was erroneous.

Table 2
Service Credit
for Secretaries and Department Heads of Units of State Government
Participating in the Reformed Contributory Pension Benefit
(as of November 1, 2021)

	RCPB/EPS (10-year vesting)	Average Service in Position	Average Total Service in EPS
Immediate Vesting	23	4.6	5.4
No Immediate Vesting	15	3.4	4.6

Governor's Staff

While Chapters 397 and 398 only charged the Agency with studying the vesting issue for Secretaries and department heads of units of State government, in the course of its research for this report, the Agency also researched the tenure status of the Governor's staff. The Agency included this additional group in this study as it was recognized that individuals serving in these positions also experience job security issues associated with the political nature of their positions since they serve at the pleasure of an individual who is term limited and will only serve, at most, eight years.

When looking at the Governor's staff, the Agency reviewed 17 additional positions. A list of these positions is included in **Appendix A**. In its research, the Agency discovered that 13 of the individuals currently serving in these positions are members of the RCPB tier of the EPS and subject to 10-year vesting, two are members of the ACPS tier of the EPS and two are either retired or in a different State system. The average service of the 15 individuals who are either RCPB or ACPS members, serving in their current positions, is 4.6 years, while the average of their total State service is 5.6 years. Of the 13 RCPB members, none will vest before the end of the term of the current Governor. Moreover, the two ACPS members who are vested, are only vested due to the State service they accrued prior to accepting employment in their current positions. This analysis would suggest that this group of employees is similarly situated to the group of individuals employed as Secretaries and department heads who serve at the pleasure of the Governor.

Options

The options the legislature may want to consider regarding immediate vesting for certain State employees may include choosing to maintain the status quo and continue to only offer immediate vesting to Secretaries and department heads of units of State government who serve at the pleasure of the Governor. However, with the passage of Chapters 397 and 398 of 2021 that expanded this benefit to the Executive Director of the Agency, it is possible other State agencies will begin to seek a similar benefit for their department heads. As noted above, of the 33 individuals serving as department heads without immediate vesting, 12 currently have 16 or more years of State service; in fact, eight have 20 or more years Stat service. It is likely that many of these 12 will be retiring in the coming years. As the Agency recently discovered when searching for its new Executive Director, when the time comes that these 12 individuals decide to retire from State service, their agencies will likely find 10-year vesting also to be a deterrent to attracting qualified candidates who may otherwise be interested in serving in these positions. Additionally, maintaining the status quo also would likely deprive individuals serving on the Governor's staff from ever vesting in the EPS.

Alternatively, the legislature may want to consider expanding immediate vesting to all department heads of units of State government, regardless of whether the individuals in these positions serve at the pleasure of the Governor, and to those individuals who serve in positions of authority on the Governor's staff. The Agency consulted with its actuary regarding the added cost the System would incur by adding the 33 department head positions and the 17 positions for individuals employed in positions of authority on the Governor's staff that do not have immediate vesting. **Appendix B** includes a list of all current Secretary and department head positions in the State, whether these positions serve at the pleasure of the Governor, the enabling statute creating these positions, and whether each position enjoys immediate vesting.

The Agency consulted the System's actuary regarding the cost to expanding immediate vesting to both department heads who do not serve at the pleasure of the Governor and individuals who are on the Governor's staff and are direct reports to the Governor. The actuary estimated that because this additional group of individuals is so small, the cost to the System would be negligible. They noted that even with immediate vesting, a number of individuals who would enjoy immediate vesting would likely withdraw their contributions upon leaving State service because any benefit they accrued in these positions would be minimal. By doing this, these individuals would forfeit any future right to a benefit based on this service. Conversely, some serving in these positions will leave their member contributions in the System, and based on current law, these contributions will continue to accrue 5% interest, compounded annually. Once these individuals reach normal retirement age, they will have the option to apply for a normal service retirement, or if their accumulated contributions have grown to an amount greater than the value of their annuity, they may choose to withdraw their contributions with interest at that point.

Appendix A

Positions in the Governor's Office Included in this Report

Chief of Staff
Deputy Chiefs of Staff
Director, External Affairs and Interagency Initiatives
Secretary, Appointments Office
Director, Executive Services
Director Financial Administration
Residence Manager, Government House
Director, Office Intergovernmental Affairs
Chief Legal Counsel, Office of Legal Counsel
Chief Legislative Officer, Legislative Office
Director of Communications, Press Office
Director, Office of Transformation and Renewal
Director of Federal Relations, Washington Office
First Lady's Chief of Staff

December 16, 2021

The Honorable Sarah K. Elfreth
Senate Chair, Joint Committee on Pensions
103 James Senate Office Building
11 Bladen Street
Annapolis, Maryland 21401

The Honorable Brooke E. Lierman
House Chair, Joint Committee of Pensions
House Office Building, Room 311
6 Bladen Street
Annapolis, Maryland 21401

Re: Report required by Chapters 421 and 422 of 2021 (MSAR #13342, #13343, and #13344)

Dear Senator Elfreth and Delegate Lierman:

In accordance with the provisions of Chapter 421 and 422 of the Acts of 2021, on behalf of the Board of Trustees for the State Retirement and Pension System, I would like to submit the following report to the members of the Joint Committee on Pensions, that is intended to identify:

(1) the number of special death benefits that have been awarded for deaths occurring on or after March 5, 2020, but before June 1, 2021, for deaths caused by or contributed to by COVID–19, (MSAR # 13342);
(2) the number of applications for special death benefits for deaths caused by or contributed to by COVID–19 that have been denied and an aggregate summary of the reasons for denial of these applications (MSRA #13344);
(3) the number of special death benefits that have been provided for deaths caused by or contributed to by COVID–19 for any benefits awarded on or after June 1, 2021 through November 1, 2021, including the unit of State government or the participating employer that employed the deceased employee (MSAR # 13343); and
(4) the unit of State government or the participating employer that employed the deceased member (MSAR #13342, #13343, #13344).

The State Retirement Agency received 33 claims for consideration for special death benefits for deaths caused by or contributed to by COVID-19, occurring on or after March 5, 2020 and before June 1, 2021. The Board of Trustees has approved 20 of these claims and denied six. Of the six claims that were denied, four were denied because the number of days between the last day at the employee’s workspace and the COVID-19 positive result was more than 14 days. The remaining two claims were denied because the State Retirement Agency did not receive proof of when the deceased employee’s positive diagnosis occurred. We have reached out to the families of these two denials to advise them that they may still submit the proper paperwork and receive a special death benefit, but to date staff has not received the necessary documents. The remaining seven claims are pending with the Agency. In each of these cases, the families of the seven deceased members have notified the Agency of their intent to submit the necessary paperwork.

For the period of time from June 1, 2021 through August 31, 2021, the State Retirement Agency received one claim for consideration for special death benefits for deaths caused by or contributed to by COVID-19. The Board of Trustees has approved that claim.

For the period of time from September 1 through October 31, 2021, the Agency received 10 claims for consideration for special death benefits for deaths caused by or contributed to by COVID-19. The Board of Trustees has approved seven of these claims. The remaining three claims are pending with the Agency. In each of these cases, the families of the seven deceased members have notified the Agency of their intent to submit the necessary paperwork.

In total, from March 5, 2020 through October 31, 2021, the Board of Trustees has received 44 claims for special death benefits for deaths caused by or contributed to by COVID-19 - 28 claims were approved, six claims were denied, and has 10 claims are pending, while the Agency awaits additional documentation. The Agency was also able to determine the deceased members were employed by the following employers:

Judiciary (2)
Washington County Circuit Court (1)
Department of General Services (1)
Transportation (5)
Spring Grove (1)
Clifton T Perkins (1)
Department of Health (1)
Human Services (2)
Wicomico County Social Services (1)
Department of Public Safety and Correctional Services (5)
University of Maryland – Baltimore (1)
University of Maryland – College Park (3)
Morgan State (1)
Department of Juvenile Services (1)
City of Cumberland (1)
Baltimore City Public Schools (2)
Baltimore City Sheriff's Office (1)
Carroll County Public Schools (2)
Howard County Public Schools (1)
Howard Community College (1)
Montgomery County Public Schools (2)
Prince George's County Public Schools (4)
Prince George's County Government (1)
City of New Carrollton (1)
St Mary's County Public Schools (1)
Shore Up! (1)

Should you require additional information please call me at (410) 625-5600.

Sincerely,

Martin Noven
Secretary to the Board of Trustees

cc: The Honorable William C. Ferguson IV
The Honorable Adrienne A. Jones
The Honorable Guy J. Guzzone
The Honorable Maggie McIntosh
The Honorable Susie Proctor
The Honorable D. Antonio Bridges
Victoria L. Gruber
Sarah Albert
Board of Trustees

Appendix 10

Joint Committee on Pensions   November 18, 2021

AFSCME Council 3

Lance Kilpatrick, Legislative & Political Director

Ongoing COVID-19 Concerns

- Post-Acute Sequelae of SARS-CoV-2 infection (PASC) – “Long COVID”
  - Symptoms include fatigue, shortness of breath, "brain fog", sleep disorders, intermittent fevers, gastrointestinal symptoms, anxiety, and depression
  - Symptoms can persist for months and range from mild to incapacitating, with new symptoms arising well after the time of infection
  - The CDC term Post-Covid Conditions qualifies long Covid as symptoms 4 or more weeks after first infection
- In the last General Assembly legislative session, “line of duty” death benefits were created for those state employees who contracted COVID-19 while on the job. However, there are no disability benefits for those who suffer from “long COVID”
- AFSCME looks forward to working with the General Assembly and the State Retirement and Pension System to address and enact fair and equitable disability benefits for those who suffer from this new, strange and debilitating disease
- Line-of-Duty death benefits should be extended beyond the July 1, 2022 expiration

Parole & Probation Reemployment Provision

- Add similar exemption to CORS
- High vacancy rates in P&P create incentives

Responsible Contractor Policy

- RCP requires private equity to employ responsible labor practices in their investments
  - Fair Wages and Benefits
  - Advance Project Notification
  - Excludes Debarred Contractors
  - Labor Neutrality
  - Asset owners enforce RCP standards as limited partners in co-mingled funds
- THANK YOU to the SRPS Board of Trustees for adopting this important policy

AFSCME Council 3

- Lance Kilpatrick
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Presentation to the Joint Pensions Committee

November 18, 2021

Samantha Zwerling

MARYLAND STATE EDUCATION ASSOCIATION

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Helping educators stay in the profession and shoring up the system

COVID Response

Partial Retirement Option

Surplus Funds

Additional Payments

Local Relief

ESG Investing Options

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AFT Healthcare-Maryland

Labor Union Representing Healthcare Professional Classifications assigned to Bargaining Unit E in Maryland State Government

Presenter – Rosemary Wertz, Field Coordinator

Karen

- Registered Nurse working in a state hospital for 28 years.
- In October 2019 Karen had a heart attack. She went on sick leave.
- She was in her 50’s, so she did not qualify for a service retirement.

Leave Issues

- Once earned leave is exhausted, the State Employees' Leave Bank or Leave Donation Programs are available. Karen applied and was approved for leave from the leave bank. These programs require a return to work date for approval.
- FMLA protects job for 12 weeks. FMLA also requires a return to work date.
- On December 31, 2019 management starts the process to have Karen evaluated by the State Medical Director.
- On February 25, 2020 Karen went back to the state doctor and was told that she was unable to safety return to work and had likely reached maximum improvement in her medical condition. Recommend resignation/retirement.

State Medical Director determines employee is not able to work due to a medical condition.

State agency cannot allow an employee to work after receipt of state medical director's report.

Options for reassignment are explored. Karen could not perform other jobs.

Facility sent employee an options letter on May 12, 2020.

1. resign
2. retire
3. termination from state position

Application for disability retirement

- Karen submitted her application for disability retirement on May 29, 2020.
- Leave bank granted 30 days of leave for employees waiting for a decision from retirement system.
- Facility terminated Karen's employment on July 10, 2020.
- Disability retirement was approved. She received her first retirement allowance deposit in April 2021 almost a year from the date of her initial application.
- Karen received back pay from August 2020. She had no income for 9 months.
- Karen's health insurance was cut off in August, due to her termination. She went under COBRA, which is 100% of the premium. Active and retired employees pay between 15% to 20% of premiums. Her COBRA payments were reimbursed in August 2021.

Application process for disability retirement

- Application is on paper and cannot be submitted electronically.
- Karen’s application was hand-carried to the facility human resources personnel.
- The medical documentation required is extensive. Karen had medical documents over 3 inches thick.
- Karen was notified by the Retirement system that the task analysis sheet was not included with her application. Caused delay in processing.
- Retirement Board asked for updated medical documentation in September 2020.
- Karen submitted additional medical documentation for the October meeting of the Board.
- Karen received notification of her approval in December 2020.
- Karen resubmitted her electronic fund transfer request form in March 2021. First retirement allowance payment in April 2021.

Resolution

- Electronic application process
- Begin processing applications received electronically and wait for paper notarized copies before final approval given.
- Increase leave bank approval to match the average length of time to process disability retirement applications
- Approve benefits while retirement application is pending, medical leave of absence

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Thank you

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