

MWRA EMPLOYEES' RETIREMENT BOARD MEETING

AGENDA

Thursday, April 28, 2022 10:00 a.m.

MWRA, 2 Griffin Way

Via Remote Participation

Item 1 10:00 a.m. Meeting called to order

OLD BUSINESS

Item 2 Standing Committee Reports

i. By-Laws Committee: Member Kevin McKenna

ii. Human Resources Committee: Member Thomas J. Durkin, Member Frank Zecha – 1.5% signing bonus for the Retirement Coordinator and Member Services Coordinator consistent with recently approved CBAs

iii. Special Committee, Stipend: Chair James M. Fleming, Member Kevin McKenna

iv. Job Review Committee: Member James M. Fleming, Member Thomas J. Durkin

NEW BUSINESS

Item 3 Approval of Minutes – VOTE

a) March 31, 2022 Minutes

b) March 31, 2022 Executive Session Minutes

Item 4 Approval of Warrants – VOTE

a) Warrant 4-2022

b) Warrant 4-2022A – Payroll

Item 5 Approval of Monthly Transfers 4-2022 – VOTE

Item 6 Acknowledgement of retirement applications under G.L. c 32 §5 – VOTE

a) Susan McAree DOR 3/30/2022

b) Mark Jackson DOR 4/2/2022

c) Judith Whittier DOR 4/2/2022

d) Steven Dembro DOR 4/9/2022

e) Mary White DOR 4/9/2022

f) William Allen DOR 4/11/2022

Item 7 Approval of Brandon Parsons' buyback of 7 months MWRA contract employment (1/1/2021-7/22/2021) – VOTE

Item 8 Approval of William Hanley's buyback of 5 months MDC employment (5/6/1985-10/11/1985) – VOTE

Item 9 Approval of Bank Reconciliations – VOTE

a) January 2022

b) February 2022

c) March 2022

- Item 10 Chair’s ability to issue rebalance instructions, as a matter of necessity, in between Board meetings – VOTE

- Item 11 Manager Due Diligence Presentations
 - 10:30 a.m. a) JF Lehman
 - 10:50 a.m. b) Landmark
 - 11:30 a.m. c) PRIM
 - 11:50 a.m. d) RhumbLine

- Item 12 NEPC
 - a) Flash Report as of 3/31/2022
 - b) Rebalance Recommendation – VOTE
 - c) Board’s Consent re. RhumbLine’s Leadership Change – VOTE

- Item 13 Segal January 1, 2022 Preliminary Actuarial Valuation

- Item 14 Legal
 - John Burke Section 7 Medical Panel Clarification Requests

.....**FOR YOUR INFORMATION and REVIEW**

- Item 99-1 PERAC MEMO #10/2022 – Tobacco Company List
- Item 99-2 PERAC MEMO #11/2022 – Mandatory Retirement Board Member Training – 2nd Quarter 2022
- Item 99-3 PA Capital is now Apogem Capital

The Board reserves the right to consider items on the agenda out of order. The listing of items is those reasonably anticipated by the Chair to be discussed received at least forty-eight (48) hours prior to the meeting. Not all items listed may in fact be discussed and other items not listed may also be brought up for discussion to the extent permitted by law. Items identified for discussion in Executive Session may be conducted in open session, in addition to, or in lieu of discussion in Executive Session.

Date of next scheduled Retirement Board meeting is Thursday, May 26, 2022, 10:00 a.m., Chelsea

**MWRA EMPLOYEES' RETIREMENT BOARD MEETING
MARCH 31, 2022**

A meeting of the MWRA Employees' Retirement Board was conducted remotely on Thursday, March 31, 2022. Remote access was provided to the public via Zoom, with call-in information provided on the official Meeting Notice posted to mwraretirement.com and the MA Secretary of State's website. Participating in the remote meeting were Board members James M. Fleming, Kevin McKenna, Andrew Pappastergion, and Frank Zecha, and staff members Carolyn Russo, Julie McManus, and Danielle DiRuzza. Mr. Durkin was late due to a scheduling conflict with a financial presentation to the MWRA Advisory Board. Representatives from NEPC, Sebastian Grzejka and Kiley Fisher, as well as members of the public attended. Mr. Fleming called the meeting to order at 10:00 a.m.

- 1) Call the meeting to order-roll call of members: Mr. Fleming, Mr. McKenna, Mr. Pappastergion, and Mr. Zecha present via remote access.
- 2) Standing Committee Reports
 - i. By-Laws Committee: No report
 - ii. Human Resources Committee: No report
 - iii. Special Committee, Stipend: No report
 - iv. Job Review Committee: No report
- 3) Approval of Richard Dalton's buyback of prior Town of Winthrop employment (1/1/1980 – 8/31/1980), 8 months creditable service – VOTE

Mr. McKenna thanked the Executive Director for putting together the materials for the Board including the applicable statute, the PERAC presentation and the MACRS presentation by Board Counsel to clarify the provisions under which this purchase would be made. Mr. Fleming noted that the Board has a great staff, and asked the Executive Director about the amount of service to be purchased. The Executive Director stated that Mr. Dalton actually worked for Winthrop in a temporary capacity for several years, but the Town has payroll records only in regard to one of those years, representing eight months of service credit. Although Social Security has documentation of some of the member's other Winthrop service, the Executive Director does not expect that the member will need to purchase additional time because he is a very long-term employee.

On a motion made by Mr. Pappastergion and seconded by Mr. McKenna:

VOTED

to approve the request of Richard Dalton for the purchase of 8 months of service with the Town of Winthrop. 4-0, roll call with Mr. McKenna voting yes, Mr. Pappastergion voting yes, Mr. Zecha voting yes, and Mr. Fleming voting yes.

4) CY2022 Budget Amendments – VOTE

The Executive Director reported that she was presenting the CY 2022 budget amendments as requested by the Board due to the adjustments to the Salary account voted in February, and the lower than expected fiduciary premium for the year. The Salary account was increased by \$7,067, the Fiduciary Insurance account was decreased by \$16,149, resulting in a net budget decrease of \$9,082. Mr. McKenna thanked the Executive Director for making the changes and presenting the amendment for the Board's review.

On a motion made by Mr. Zecha and seconded by Mr. Pappastergion:

VOTED

to approve the CY2022 budget amendments as presented by the Executive Director. 4-0, roll call with Mr. McKenna voting yes, Mr. Pappastergion voting yes, Mr. Zecha voting yes, and Mr. Fleming voting yes.

5) Approval of Minutes of February 23, 2022 – the Executive Director stated that she noted a typographical error on a date in the discussion of the Retirement Coordinator's pay, and that the dates should read 7/1/2020 and 7/1/2021. She requested the Board's approval with the amendment to correct the date – VOTE

On a motion made by Mr. Pappastergion and seconded by Mr. Zecha:

VOTED

to approve the regular session minutes of the February 23, 2022 meeting as submitted by the Executive Director, with the requested amendment. 4-0, roll call with Mr. McKenna voting yes, Mr. Pappastergion voting yes, Mr. Zecha voting yes, and Mr. Fleming voting yes.

6) Approval of Warrants – VOTE

- a) Warrant 3-2022
- b) Warrant 3-2022A – Payroll

On a motion made by Mr. Zecha and seconded by Mr. McKenna:

VOTED

to approve Warrants 03-2022 and 03-2022A. 4-0, roll call with Mr. McKenna voting yes, Mr. Pappastergion voting yes, Mr. Zecha voting yes, and Mr. Fleming voting yes.

7) Approval of Monthly Transfers 3-2022 – VOTE

On a motion by Mr. Zecha and seconded by Mr. McKenna:

VOTED

to approve the monthly transfers as presented and as recommended by NEPC. 4-0, roll call with Mr. McKenna voting yes, Mr. Pappastergion voting yes, Mr. Zecha voting yes, and Mr. Fleming voting yes.

8) Acknowledgement of retirement applications under G.L. c 32 §5 – VOTE

- | | | |
|----|----------------|---------------|
| a) | Erik Jewett | DOR 2/5/2022 |
| b) | Teresa Houston | DOR 2/25/2022 |
| c) | Nadine Smoske | DOR 3/5/2022 |
| d) | Sharon Tamagna | DOR 3/12/2022 |

On an omnibus motion made by Mr. McKenna and seconded by Mr. Pappastergion:

VOTED

to acknowledge the §5 retirements as detailed above. 4-0, roll call with Mr. McKenna voting yes, Mr. Pappastergion voting yes, Mr. Zecha voting yes, and Mr. Fleming voting yes.

Since the Board had finished the preliminary items before the presenters were scheduled to join the meeting, the Chair requested that the Board take items out of order and address NEPC's items, beginning with agenda item 10d.

10) d) CarVal Sale – VOTE

NEPC stated that there has been some consolidation in this area, and that CarVal is seeking the consent of the LP's to the acquisition of CarVal by AllianceBernstein. Mr. Grzejka noted that the fund in which MWRAERS is invested is past its investment period, and that CarVal will remain a separate entity. Its principals have 3-5 year contracts with AllianceBernstein, and it is NEPC's recommendation that MWRAERS consent to the sale. Mr. McKenna asked whether the sale will have a greater impact on future funds and Mr. Grzejka responded that he would expect so. Mr. Fleming asked if Alliance Bernstein assumes the current contract, and Mr. Grzejka that this transaction is essentially a name change for the existing investment, and should not impact the agreement previously executed by the parties at the time of the selection.

On a motion made by Mr. Zecha and seconded by Mr. Pappastergion:

VOTED

to approve the purchase of CarVal by AllianceBernstein as recommended by NEPC. 4-0, roll call with Mr. McKenna voting yes, Mr. Pappastergion voting yes, Mr. Zecha voting yes, and Mr. Fleming voting yes.

b) Rebalance Recommendation – VOTE

Mr. Grzejka reported that since the Board has decided to phase TIPS out of the portfolio, another \$5m would be coming out of the account to be added to cash, which will be gradually brought back up over the next few months. The Executive Director added that as of close of business yesterday cash was at about \$4.8m after the warrant transfers for March were executed, the payroll and bills were in excess of \$3m for the month, and some of the funds have been sending out sizable calls. Mr. Grzejka noted that value has outperformed growth, so another \$1m would be going from Robeco to Loomis Sayles Small Cap, \$3m would be taken from S&P 500, and \$3m added to Polen.

On a motion made by Mr. Zecha and seconded by Mr. Pappastergion:

VOTED

to approve the rebalance recommendation as detailed below and as recommended by NEPC. 4-0, roll call with Mr. McKenna voting yes, Mr. Pappastergion voting yes, Mr. Zecha voting yes, and Mr. Fleming voting yes.

Rhumblin S&P 500	(\$3,000,000)
Polen	\$3,000,000
Robeco	(\$1,000,000)
Loomis Sayles Small Cap	\$1,000,000
Rhumblin US TIPS	(\$5,000,000)
Cash	\$5,000,000

Mr. Zecha asked that the Chair permit him to speak regarding communications denoted as 99-2 and 99-3 in the Board's materials regarding cybersecurity. He cautioned that several Boards had received fraudulent direct deposit change requests this week and that the Board needs to be on the lookout. The request received by Brookline was on their official change form and contained accurate information for the retiree. The attempt was thwarted by person-to-person contact. He asked the Executive Director to comment on procedures. The Executive Director informed the Board that the MWRAERS Direct Deposit change form is not provided on line. In order to get one sent to them, a retiree has to call and answer accurately random questions to verify their identity, and even then every change must be notarized. Mr. Fleming asked about the Quincy situation. Mr. Zecha stated that staff has addressed that. The Executive Director reported that she informs MWRA's IT Security staff of every fraud attempt on the Retirement Systems and the methodology used. In regard to Quincy, she sent updated authorizations to each investment vendor, put them on notice in regard to transaction protocols, and multiple sign-offs are required on the System's end, as well as the Custody end in order to move any funds.

a) Flash Report as of 2/28/2022

Macroeconomic factors such as higher than expected long-term inflation and the invasion of Ukraine have contributed to volatility. The fund was down 1.7% for

the month of February, but is to date slightly positive for the month of March. YTD the fund is (5.4%). Value outperformed growth by a wide margin in the large cap space, demonstrating the reasoning behind the Coho/Polen pairing. Small Cap outperformed Large Cap, with sanctions affecting large international corporations more frequently and to a greater degree. Non-US growth was down more than Non-US Value. Baillie Gifford's very long-term holdings contributed to poor performance, but their long-term thesis and concentrated active management should help them recover. ABS and Axiom are the only portfolios with exposure to Russia, with about one-third of 1% each. The exposures were lowered to the extent possible given trading restrictions. Emerging Markets have rebounded MTD in March. Fixed income was down .9% for the month of February, with Garcia Hamilton and Lord Abbett benefitting relative to the benchmark from sharp rate increases. UBS has trailed previously in up markets, but outperformed both PRIT's hedge funds and the benchmark for the month of February. Mr. McKenna asked about the remaining Peru investment with Entrust, because it keeps losing value. Mr. Grzejka stated that there is nothing we can do, the issue of valuation is tied up in Peru's court system. It may end up a mark to market situation, with the government trying to establish proper pricing, before we see any market value adjustments by Entrust. NEPC will obtain an update for the April meeting. Mr. McKenna asked if there is any possibility of a buyout. Mr. Grzejka expects that there may not be any interest on a secondary sale given the red tape involved.

Mr. Fleming inquired about the System's eliminating the TIPS exposure. Mr. Grzejka stated that real yields have been negative. With the Fed raising rates, future performance will likely continue to be negative, so it's better to try to profit from the other managers.

- 9) Real Estate Finalists' Presentations
 - a) TA Realty (& Due Diligence)
 - i. Core Property Fund
 - ii. Fund XIII
 - b) Invesco (& Due Diligence)
 - i. Partnership Fund IV & VI
 - ii. Mortgage Recovery Fund I & II
 - iii. Real Estate U.S. Fund VI
 - c) TerraCap Partners V
 - d) Alidade Capital Fund V

At 10:33 a.m. Devin Sullivan and Kendrick Leckband joined the call on behalf of TA Realty to perform a due diligence review of the Core and Fund X products, and to present Fund XIII to the Board as a Real Estate RFP finalist. Mr. Grzejka cautioned the presenters that there are members of the public and/or media on the call, and to avoid discussion of any materials which may be considered proprietary. Mr. Sullivan noted that Fund X just sold its last remaining

investment, with a gross IRR of 16.04% since inception. The Core Realty fund has been a consistent top performer in the NCREIF ODCE, with 2021 return of 29.47% net to the ODCE's 21.02%. Typical expectations for the Core fund would be in the 7-9% range. Mr. McKenna asked how the fund performed so well, whether it was attributable to timing, luck etc. Mr. Sullivan responded that it was due to sector specificity, with the TA Core product having higher multifamily and industrial exposure and lower retail exposure relative to the benchmark. The fund's limited retail exposure is largely grocery-anchored space. Further, the fund has heavy exposure in the south and west, in booming markets such as Tampa and Charlotte.

In regard to fund XIII, Ms. Leckband stated that the partners have an average of 17 years at the firm. The average deal size for the Fund will be in the \$35m range diversified by sector and region. TA actively avoids joint ventures because they add on another layer of fees. The firm has not missed a quarterly distribution in 40 years. Mr. Sullivan noted that TA also uses lower leverage. Ms. Leckband stated that Fund X generated a 10% IRR with lower risk. With the extensive industry experience, TA has access to off-market deals, which has become increasingly important in the highly competitive industrial and multi-family sectors. Fund XII has had a net IRR of 63%, with only 4% office exposure, with most properties in the south and west. Fund XIII has similar targets, with a goal of 35% multifamily and up to 60% industrial. Mr. Sullivan noted that each deal has its own thesis, and the portfolios are built with the idea that the properties could ultimately be sold to a larger name, such as a Blackstone. Mr. Zecha noted that this is a tough business environment and asked Ms. Leckband to speak about that. Ms. Leckband stated that vacancies present a problem, there is limited land available to develop industrial properties, regulation, e.g. rent control has hit multifamily, and low collection rates can present headwinds. TA targets properties in lower-regulation, high-demand markets with high collection rates and in which politics plays less of a role in profitability of the investments. It is likely that Fund XIII will not purchase any Office early on, but will keep the option open if there is a shift. Mr. Sullivan stated that each property needs full conviction. Ms. Leckband stated that corporations are leaving Southern California for markets such as Phoenix and Dallas/Fort Worth, which drives demand for housing. TA constantly challenges its own thesis, and believes demand for industrial will continue to outpace supply. Mr. McKenna commented that people are also moving out of California in large numbers and moving to less expensive markets. Ms. Leckband continued that student loan debt and low supply have been an impediment to home ownership, and that the supply shortage will likely continue for the next several years, leading to rental growth. The tenants tend to be professionals seeking amenities, tech, and more space. Mr. Sullivan thanked the Board for the opportunity and TA signed off the call at 11:00 a.m.

In regard to the annual investment manager review pursuant to 840 CMR 16.07, TA Realty presented performance and investment reports detailing the manager's activities which the Board reviewed.

The Board reviewed and compared TA Realty's performance with the Retirement System's investment goals and policies. The Board ensured that comprehensive written quarterly reports were filed with the Board and with PERAC and that these reports included a review of investment performance and relative performance, a review of the System's investments, and a report on each investment manager's current investment outlook or forecast as well as strategy for the future and key personnel staffing changes.

The Board determined TA Realty continues to operate in a manner represented when retained and outlined in the agreement between the Board and the manager.

At 11:03 a.m. representatives from Invesco Jake Passero, Jay Hurley, and De'Juan Collins joined the call to perform a due diligence review of PE Fund VI, Invesco Mortgage Recovery Fund (IMRF) and Mortgage Recovery II (IMRF II), and to present Invesco Real Estate US Fund VI as a Real Estate RFP finalist. Mr. Grzejka cautioned the presenters that there are members of the public and/or media on the call, and to avoid discussion of any materials which may be considered proprietary. Mr. Passero stated that there is one remaining asset in the Fund VI portfolio, with \$5 committed, \$10m distributed, a 3.56x multiple and a net IRR of 21.96%. In regard to IMRF, Mr. Hurley reported that the last investment in IMRF was sold in 2021, and the remaining balance is a holdback. Nine of the twelve investments in IMRF II have been realized, with a net IRR of 17% and a 1.5x multiple. Mr. Passero stated that Invesco expects that the remaining assets in IMRF II will be sold by the close of 2022.

Invesco Real Estate is a wholly owned subsidiary of Invesco with a stable team managing \$92bn AUM globally. Fund VI has a \$905m closing size, and is currently at 36% of target. Invesco has partnered with NEPC to provide a fee reduction for shared clients from 140bps to 130bps of invested rather than committed capital. Mr. Hurley stated that he expects a June close. The fund is securities oriented, focused on Industrials, Logistics, Residential and Life Sciences. The five predecessor funds have performed well, and the expectation for Fund VI is in the 13-16% range. Mr. Hurley will be leading the team, and additional staff have been taken on to scale to the possible opportunity set. About 75% of the deals are sourced on a preferential basis, contributing to roughly 400bps of outperformance. The funds have enjoyed tailwinds from tenants, pricing and leverage structure, with 60% debt, and transitional assets which are developed then sold back into the market. He expects the fund to be 40% Industrial, 35% residential, and 10% Life Sciences. Mr. Hurley directed the Board to p.14 of the presentation for geographical breakdown. Mr. McKenna asked about Median, the sole property in New York City. Mr. Hurley reported

that is an affordable housing investment in collaboration with the City in exchange for preferential tax treatment and favorable financing. Mr. McKenna stated that while the property may present lower risk, it also comes with earnings restrictions. Mr. Grzejka asked whether Invesco develops property from the ground up, and Mr. Hurley responded that they do build industrial space with a 25% cap. Mr. Grzejka asked if this is regional, and Mr. Hurley responded that the industrial space is over a wide geographical area, while life sciences and residential is more narrow. Mr. Collins directed the Board to page 15 of the presentation, which provides the terms and timelines for the Fund. The Fund will close June 30, 2022, with a \$2.5bn cap. Expected return is 9% with a 2.1 x expected multiple. Roughly 50% of the fund target will be invested by the close. The Invesco team thanked the Board for the opportunity and signed off the call at 11:25 a.m.

In regard to the annual investment manager review pursuant to 840 CMR 16.07, Invesco presented performance and investment reports detailing the manager's activities which the Board reviewed.

The Board reviewed and compared Invesco's performance with the Retirement System's investment goals and policies. The Board ensured that comprehensive written quarterly reports were filed with the Board and with PERAC and that these reports included a review of investment performance and relative performance, a review of the System's investments, and a report on each investment manager's current investment outlook or forecast as well as strategy for the future and key personnel staffing changes.

The Board determined Invesco continues to operate in a manner represented when retained and outlined in the agreement between the Board and the manager.

At 11:28 a.m. Joseph Connolly and Stephen Hagenbuckle joined the call on behalf of Terracap to present Fund V to the Board as a Real Estate RFP finalist. Mr. Grzejka cautioned the presenters that there are members of the public and/or media on the call, and to avoid discussion of any materials which may be considered proprietary. Mr. Connolly thanked the Board for their continued support of Terracap's thesis and geographical convictions and strong research team. Terracap currently has 12 MA public funds, plus two Taft Hartley plans. Mr. Hagenbuckle stated that V originated with a view of seeking affordability in areas of outpaced employment growth and outpaced inbound migration. Corporations are relocating to Terracap's markets in large numbers due to favorable tax and regulatory environments, and V is residential for the employees who need places to live. 16 or 17 properties have already been acquired since 2020, and a fund close will be upcoming in the near term, which translates to earlier expected distributions. Property values are rising quickly, lease rates are high, and the firm expects some 2022 property sales. Mr. McKenna asked whether there would be associated True-up costs assessed to the System and

Mr. Hagenbuckle responded that there would. Mr. Hagenbuckle directed the Board to page 3 of the presentation. MWRAERS contributed \$2.6m to Fund III, has received \$2.1 in distributions to date, and has a remaining value of \$1.6m. The System contributed \$4m to Fund IV, has received \$1.8m in distributions, and has a remaining value of \$3.7m. Pages 17 and 18 show a net IRR for Fund III as 13.2% realized, and for Fund IV as 21%.

Mr. Durkin joined the meeting at 11:45 a.m.

Fund V has raised \$552m to date, with 75% of Fund IV investors signing on to invest in V. The Fund is heavier in multifamily, workforce housing and flex industrial. Austin and Nashville are high growth areas. Dallas has added 850,000 jobs, the equivalent of the entire population of Boston. CA, IL and NY are all seeing outbound migration to Terracap's markets, with California losing 3.4m people and New York losing 4.1m.

Mr. Hagenbuckle expects that the Huntcrest Commerce Center from Fund III will be sold in the near future, as well as Breckinridge, Lake Point, Winward, Clairemont, and Cobb properties from the Fund IV portfolio. Fund V has already deployed \$361m and have already increased lease rates on the properties purchased. Some are already expected to be sold in 2022, others such as Orlando, Plano and Denver will be held. Lease rates in the Fund's workforce housing properties are already up 36%. Bonita Springs is seeing multifamily growth of much higher than the 3-6% norm. The Fund has zero exposure to CA, NY, NJ and Seattle. Mr. McKenna commented that he likes the business plan, and asked if the investments are predominantly workforce residential, and whether any are subsidized. Mr. Hagenbuckle said that the Fund has no exposure to subsidized housing, the tenants are professional, nurses, first responders, with household incomes in the \$60-\$100k range. Terracap avoids properties with restricted rent increases. Mr. McKenna stated that he understands the migration, but questioned whether eventually there will be a shift back, since everyone can't live in the same few markets, and the infrastructure may not bear much more growth. He asked if Terracap will be looking for a shift five to ten years out. Mr. Hagenbuckle responded that it remains to be seen whether the growth will slow, and that generally there needs to be a catalyst. As areas lose population, they lose their tax base and will see either a reduction in services or further increase in taxes. People will only come back when the markets offer affordability. Within the environment of increasing inflation, new construction costs are up, both in residential and commercial, and lenders are more hesitant, leading to further contraction to supply. Mr. Hagenbuckle expects it will be at least five years until meaningful numbers return. New York received \$22bn in federal money so they wouldn't have to further increase taxes, which would in turn worsen outward migration. CA is losing people due to the extremely unfriendly business environment. Mr. Hagenbuckle concluded that he expects V to outperform over the next 3-4 years, and the fund is already

progressing ahead of schedule. Mr. Hagenbuckle and Mr. Connolly thanked the Board and signed off the call at 11:57 a.m.

Mr. McKenna asked Mr. Grzejka how the true-up fees are determined. Mr. Grzejka responded that there are performance hurdles that have to be met before performance incentives are assessed. Mr. McKenna reminded the Board that in Fund III the true-up fees were questioned by Board staff as improperly calculated, resulting in an audit at Terracap and a reduction in the fees.

At 12:00 p.m., Geoffry Langdon, Steve Faliski and Michael O'Donoghue joined the call on behalf of Alidade to make a finalist presentation for the Real Estate RFP. Mr. Grzejka cautioned the presenters that there are members of the public and/or media on the call, and to avoid discussion of any materials which may be considered proprietary. Mr. Langdon began by explaining the Fund V "Buy it, Fix it, Sell it" strategy, with research revealing the why and where. The firm employs a full-time Chief Compliance Officer. Mr. McKenna asked if all four predecessor funds are value-add real estate, and Mr. Langdon responded in the affirmative, but stated that will be addressed further later in the presentation. The Fund reports Q/E IRR to value, that is, the properties are valued as if they had been sold at quarter end. Alidade sees ESG as beneficial to the tenant base, but still maximizes returns. The firm views its approach to risk, debt, leverage, capital management, underwriting, and downside protection as differentiators. The process is selective, defensive, cautious in fundraising and takes a long view. The Fund has been a top quartile performer, and does not just follow migratory trends. The target IRR is 13-15% with a 1.5X multiple. Better risk-adjusted returns are not simply geographical, there needs to be an innovation thesis. The fund has a \$250m target raise, and has to return \$350m to investors before Alidade takes their cut. Alidade looks at development, superior innovation, and what is driving the local economy. Cloud Tech, Gaming and Life Sciences are driving some markets, including Raleigh, so Alidade wants to make those their target tenants. Page 16 of the presentation shows the sectors and page 17 demonstrates the industries within those sectors. They must have an innovation ecosystem-research universities, funding sources for associated businesses, STEM talent in excess of national averages staying in that market, and infrastructure/special purpose buildings. STEM talent averages 6.3% in the US. In Boston, Kendall Square, Lexington, etc. there is higher than average STEM talent, but high wages and a high cost of living. Raleigh has the same STEM density, but a much lower cost of living. In Austin, Orlando, and Phoenix, all four pillars are present. Businesses can't do certain types of work remotely, e.g. life sciences, so Alidade looks for the right tenants in the right markets. Mr. McKenna noted that it is a good system, the markets' populations are not average, but are heavily university-focused. Mr. Langdon responded that not all of the investments are in innovation, they are looking for the right cluster, with the right tenants. For example, they lease 175,000 square feet of space to contract workers for large drug companies, and to medical device makers that are not grant-dependent. The average incomes are higher in high STEM residential

clusters, and tenants will spend their money where they live, driving further growth in the local economies. Mr. McKenna commented that smart kids need a place to work, live and eat, but if grants dry up entire projects can be shut down without notice. As an example, Mr. McKenna pointed to the massive Science One building project at Harvard that was abruptly suspended in 2009 following the 2008 global financial crisis. Mr. Langdon stated that some medical device, semiconductor and cloud vendor tenants have fifteen-year leases already in place. For example, Gateway Center in Raleigh-Durham has a cross section of healthcare, lab, and cloud tenants. With the migration to FL, UCF Center has a cluster of naval space, for training simulations. Straight multifamily is a crowded space right now driving up prices. Fund V has a \$250m target raise with a \$300m hard cap, and a smaller deal size of \$5m-\$50m. The investment period is three years from close, with an expected lifecycle of seven years total. A 1.5% fee was negotiated with NEPC. The next close is in April. The representatives from Alidade thanked the Board for the opportunity and signed off at 12:35 p.m.

Mr. Fleming asked if the Board members are ready to discuss the Real Estate finalists, and the members responded affirmatively. Mr. Durkin stated that whereas he was not present for some of the presentations he would recuse himself from voting, but would listen to the discussion. Mr. Grzejka stated that the Board is familiar with TA, Invesco and Terracap. TA has a more broad national exposure to multifamily and industrial. Invesco is similar but with ground-up development included as well. Terracap's investments are regional, mostly multifamily. Alidade offers a slightly different perspective and would complement Terracap well. All four seemed to have a SE, TX, AZ focus. Mr. McKenna asked Mr. Grzejka to break down the fees. Alidade was 1.3% of committed capital, Invesco was 1.5%, TA was 1% and Terracap was 1.5%. Mr. Zecha stated that he does not like the government subsidies exposure and ground-up development in Invesco, which could be subject to restrictive government regulation impacting returns, and which could be perceived as speculative given that they rely on who can make the best deal with the local government. Mr. Grzejka stated that given the recent market volatility, the target for the new value-add real estate investment is now \$14m rather than \$20m as first advertised. Mr. Zecha asked if we would look at \$18m with a view to the expected upcoming sales and consequent quick return of capital. Mr. Grzejka expects that large calls will come in quickly, and adjustments to pacing may be made next year. Mr. McKenna made a motion for an even split with TA as the Core piece and Terracap as a complement. Mr. Pappastergion seconded, then asked for NEPC's recommendations. Mr. Grzejka stated that all four are good firms, and suggested going no higher than \$16m with expected future adjustments to pacing.

Mr. Fleming asked if Mr. McKenna would accept the friendly amendment to reflect a \$16m commitment with an even split, and Mr. McKenna accepted. Mr. Zecha asked whether in NEPC's view Kendall Square as an example would be considered cyclical, or will growth continue. Mr. Grzejka does expect growth to

continue over the long term. Mr. McKenna commented that Alidade is interesting, but scares him because the economy can shift and even large research projects can be shut down without warning. Mr. Fleming stated that the Board is familiar with TA and Terracap, and that he likes the fund offerings.

On a motion made by Mr. McKenna and seconded by Mr. Pappastergion:

VOTED:

to allocate \$16m to a value-add real estate mandate, with \$8 commitments each to Terracap V and TA XIII. 4-0, roll call with Mr. McKenna voting yes, Mr. Pappastergion voting yes, Mr. Zecha voting yes, and Mr. Fleming voting yes. Mr. Durkin is recorded as having voted present.

11) Legal John Burke section 7 PERAC Remand

On a motion made by Mr. McKenna and seconded by Mr. Pappastergion:

VOTED:

to go into Executive Session under purpose 7 to discuss the accidental disability application of Mr. John Burke. 5-0, roll call with Mr. Durkin voting yes, Mr. McKenna voting yes, Mr. Pappastergion voting yes, Mr. Zecha voting yes, and Mr. Fleming voting yes.

The Board convened in Executive Session at 12:55 p.m.

On a motion made by Mr. Zecha and seconded by Mr. Durkin:

VOTED:

to return to open session. 5-0, roll call with Mr. Durkin voting yes, Mr. McKenna voting yes, Mr. Pappastergion voting yes, Mr. Zecha voting yes, and Mr. Fleming voting yes.

The Board reconvened in open session at 1:33 p.m.

The Retirement Coordinator reminded the Board that they should ratify in open session the vote taken in Executive Session. Board Counsel stated that the record shall reflect that a unanimous vote was taken via roll call to seek clarification from the medical panel relative to the accidental disability application of Mr. John Burke.

On a motion by Mr. Pappastergion and seconded by Mr. McKenna:

VOTED

to adjourn the March 31, 2022 meeting of the MWRA Employees' Retirement Board. 5-0, roll call with Mr. Durkin voting yes, Mr. McKenna voting yes, Mr. Pappastergion voting yes, Mr. Zecha voting yes, and Mr. Fleming voting yes. The meeting was adjourned at 1:36 p.m.

The following communications were distributed to the Board for their review:

PERAC MEMO #9/2022 – Extension of Open Meeting Law Waivers
Cybersecurity and Privacy Awareness and Internal Control Retirement Boards
PTG Cybersecurity
PERAC Pension News
Pensions & Investments Idaho Prudent Investor Bill
HarbourVest Staff Promotions
Baillie Gifford International Growth Webinar

The Board reserves the right to consider items on the agenda out of order. The listing of items is those reasonably anticipated by the Chair to be discussed received at least forty-eight (48) hours prior to the meeting. Not all items listed may in fact be discussed and other items not listed may also be brought up for discussion to the extent permitted by law. Items identified for discussion in Executive Session may be conducted in open session, in addition to, or in lieu of discussion in Executive Session.

Date of next scheduled Retirement Board meeting is Thursday, April 28, 2022, 10:00 a.m., Chelsea

James M. Fleming, Elected member

Thomas Durkin, Appointed Member

Kevin McKenna, Elected Member

Andrew Pappastergion, Ex-Officio Member

Frank Zecha, Fifth Member



NEPC, LLC

Firm: J.F. Lehman & Company (“JFLCO”, the “Firm”)
Strategy/Product: JFL Equity Investors V, L.P. (“Fund V”) &
JFL Equity Investors IV, L.P. (“Fund IV”)
Client: MWRA Employees’ Retirement System

NEPC Manager Due Diligence Questionnaire - Update

Instructions

In support of our upcoming meeting we ask that you please complete this due diligence questionnaire. Please provide your responses in the form of brief descriptions, lists or tables added directly to this Word document.

Thank you for taking the time to complete this questionnaire. Please note that all materials submitted in relation to MWRA Retirement System may be subject to disclosure consistent with Massachusetts Public Record laws.

Firm/Organization

1. Have there been any changes in ownership or management in the past year?

Not applicable.

2. List firm AUM, net flows and accounts gained/lost for the past 5 years.

As of December 31, 2021, the aggregate AUM for JFL-NG Continuation Fund, L.P. (the “Continuation Fund”), JFL Equity Investors V, L.P. (“Fund V”), JFL Equity Investors IV, L.P. (“Fund IV”), and JFL Equity Investors III, L.P. (“Fund III”), including related Parallel Funds, Executive Funds and Alternative Investment Vehicles (if any), was over \$2.9 billion. Cash flow spread sheet files available upon request.

3. Have there been any new or discontinued products in the past year?

The Continuation Fund. On October 29, 2021, affiliates of Fund IV completed the sale of NorthStar Group to investors led by the “Continuation Fund” for \$1.2 billion via a single asset secondary transaction pursuant to a process approved by the Fund IV and Fund V Limited Partner Advisory Committees. Additional detail available upon request.

4. Are any products capacity constrained?

Not applicable. We believe JFLCO is well-positioned given the firm’s (i) demonstrated pace of investment activity over much of the last decade, (ii) strong and active pipeline, (iii) the large



and dynamic markets targeted by JFLCO, (iv) Investment Team capabilities and organizational infrastructure as well as the continued augmentation of in-house talent.

From 2017 through 2021, JFLCO deployed approximately \$1.5 billion of fund capital across 15 platform investments and 19 add-ons – averaging nearly seven acquisitions per annum and approximately \$300 million of fund capital per year. The robust deployment pacing of Fund V – notwithstanding the backdrop of the global COVID-19 pandemic – also illustrates the strength of the firm’s opportunity pipeline.

Concurrent with this strong deployment activity, the firm has also demonstrated its ability to oversee and drive meaningful value creation across an active portfolio that typically includes 12-15 companies at any given time. The firm’s strong exit activity in 2021 (together with additional exits in process) is expected to leave JFLCO with sufficient capacity to manage the companies that will be acquired in the future.

Perhaps most importantly, increased operational tempo in recent years has coincided with both very strong investment performance and substantial distributions to investors. The firm has produced top quartile performance with Fund IV (2016-vintage)¹, which has generated a Net MOIC of 2.6x and a Net IRR of 36.7% as of December 31, 2021. These returns are largely realized as Fund IV has fully exited seven of its 11 original platform investments and generated top-decile Net DPI of 2.2x as of December 2021. Net distributions to Fund IV aggregated nearly \$1.7 billion in 2020 and 2021, and the firm distributed an additional ~\$250 million in other JFLCO-sponsored funds over the same period.

JFLCO’s current momentum also reflects the firm’s significant investments in human capital, contemporary IT solutions, enhanced business processes and other infrastructure improvement to support and deploy funds of this scale. The firm’s current, 29-person Investment Team is supported by an eight-person operations and administration group (accounting/finance, human capital and administration); taken together, the current organization reflects approximately a 50% growth in headcount over the last five years.

5. Describe any current or pending regulatory, compliance or litigation issues and the expected business impact.

There are no current legal proceedings against any of JFLCO’s funds, the firm or any of its Partners. The portfolio companies are parties to litigation in their ordinary course. The firm does not believe any such litigation is material.

¹ Past performance is not a guarantee or indicator of future results and individual investment results are not representative of all investments made by JFLCO. A complete list of investments is available upon request. See Notes to Investment Performance and the defined terms therein.



6. Describe your diversity, equity and inclusion efforts with regard to the firm and its employees.

The following are select examples of D&I initiatives planned for the upcoming year:

- Augmentation of direct-from-undergrad Analyst program and summer Analyst Program to identify and develop diverse talent at early stages
- Increasing panel participation and establishing ongoing sessions through leading diversity organizations
- Focusing on providing opportunities in finance to underrepresented students and expanding learning / development by offering networking opportunities and fostering connectivity
- Partnering with a comprehensive provider of diversity, equity and inclusion (DEI) services to stay ahead of best practices and insights for workplace diversity (including firmwide training, policy review, etc.)

The firm's D&I strategy is available upon request.

Portfolio Management Team

1. Have there been any changes in the portfolio management team in the past year?

As of December 31, 2021, the firm announced the following senior Investment Professional promotions: David F. Thomas to Managing Director, R. Benjamin Hatcher and Kevin Vallès to Principal.

Bios:

David F. Thomas, Managing Director. Mr. Thomas joined JFLCO in 2010 and is actively involved in the acquisition, oversight and disposition of portfolio investments and currently serving as a director of TMS Group, NorthStar Group, Inland Pipe Rehabilitation and Lone Star Disposal. Prior to joining the firm, Mr. Thomas began his career as an Investment Banking Analyst in Credit Suisse's M&A Group. He graduated from Yale University, where he earned a B.A. in economics.

R. Benjamin Hatcher, Principal. Prior to joining the firm in 2013 as an Associate, Mr. Hatcher began his career as an Investment Banking Analyst in Jefferies LLC's Aerospace & Defense Group. He graduated from the University of Virginia, where he earned a B.A. in economics and foreign affairs. Mr. Hatcher is currently serving as a director of TMS Group, CodeMettle, CTS Engines and Narda-MITEQ.

Kevin Vallès, Principal. Prior to joining the firm in 2017 as a Senior Associate, Mr. Vallès was a Senior Associate at JLL Partners, where he focused on private equity investments in Aerospace and Healthcare. Mr. Vallès began his career as an Investment Banking Analyst in Lazard's Capital Markets Group. He graduated magna cum laude



from the Wharton School at the University of Pennsylvania, where he earned a B.S. in economics with concentrations in finance and operations. Mr. Vallès is currently serving as a director of Inland Pipe Rehabilitation, Integrated Global Services, ENTACT and NorthStar Group.

Additionally, Nandit Gandhi, MD – Portfolio Operations, departed the firm in September 2021 to return to the Infrastructure Sector.

2. Are there any expected changes to the team in the future (planned additions or departures)?

Currently, the firm is not aware of any upcoming departures and has the following open recs:

- VP in Portfolio Operations (*offer pending*)
- Senior professional in Portfolio Operations
- Junior Attorney for Legal/Compliance

Process

1. Have there been significant changes in any of the areas below in the past year?

- Identification of investment ideas
- Process for exploring and vetting ideas
- Portfolio trading practices including buy/sell rules
- Approach to portfolio monitoring and risk management

The firm is continuing the investment strategy employed and refined since its founding in 1992. In 2021, the firm engaged Business For Social Responsibility (BSR) to assist in the formalization of its ESG considerations and practices throughout the organization and its portfolio companies.

The following key initiatives were completed YTD 2022:

- Established internal ESG working group, including members from Leadership, the Investment Team, IR and Legal/Compliance/Administrative
- Updated Responsible Investment Policy
- Developed/implemented comprehensive ESG-specific due diligence tools for the investment process (focusing on ESG risks/opportunities from initial screen to IC committee)
- Engaged dedicated ESG due diligence advisors
- Hosted firmwide training on strategy and integration

The following are targeted for the remainder of 2022:



- Evaluating and exploring industry data convergence to stay ahead of best practices and industry benchmarks.
- Incorporate ESG findings into IC materials
- Identify ESG areas of focus and inaugural KPIs for tracking

Philosophy

1. Describe recent changes in investment philosophy, if any.

Not applicable.

Portfolio

1. If not included in your meeting presentation, provide portfolio holdings, sector exposure, geographic exposure and common characteristics (yield, duration, market cap, P/E, etc.).

JFLCO's established strategy seeks to primarily acquire control positions in high-quality companies in the target industries headquartered in the United States ("U.S."), Canada and the United Kingdom ("U.K.") and consider select investments in other allied countries. Consistent with the firm's investment program for recent funds, Fund VI will make equity investments, typically between \$50 million and \$350 million, in middle market companies with enterprise values generally ranging from \$100 million to \$1 billion, with larger transactions expected to be financed with equity co-investments.²

2. List strategy AUM, net flows and accounts gained/lost for the past 5 years.

Please refer to question 2 under Firm / Organization.

3. Describe investor concentration for the strategy and note the percent of AUM attributable to the top five investors.

The investor composition is a diversified institutional base, with many advisors/consultants, public and private pensions, insurance companies, endowments/foundations, financial institutions and fund of funds. In Fund V, the five largest investors account for ~40% of NAV. In Fund IV, the five largest investors account for over 30% of NAV.

² There can be no assurance co-investment opportunities will be identified.



Performance / Market Outlook

1. If not included in your meeting presentation, provide trailing returns as of the most recent quarter-end and calendar year returns for the past 10 years, both relative to benchmark.

The enclosed presentation includes performance metrics for MWRA's applicable funds.

2. Briefly discuss recent performance trends and identify environments in which the strategy is likely to be in or out of favor.

The firm's investment strategy is designed to be attractive and relevant across a wide variety of market, economic and geopolitical environments. The foundation of this strategy is a value-oriented, engineering-centric and operationally focused bias to investment selection – in comparison to short-term “momentum plays” based on a segment “du jour” or broader economic cycles.

The strategy also prioritizes highly visible, recurring demand drivers for the products and services sold by target companies. This is most typically evidenced by either (i) established positions on “long life cycle” equipment like aircraft, ships and other complex systems and facilities with operational lives of 20-50+ years, or (ii) largely non-discretionary (and often regulatory mandated) demand drivers. Typical risks associated with broader economic cycles are often mitigated at these market participants by the (i) criticality of the underlying equipment, (ii) length of the equipment's service lives (both absolute and relative to JFLCO's investment horizon), (iii) minimal switching risk faced by incumbent suppliers, and (iv) products and services in the form of maintenance and compliance requirements. Taken together, the unique technical capabilities, recurring demand drivers, value orientation and disciplined/flexible capital structures that comprise JFLCO's strategy are designed to support the execution of the firm's value-creation initiatives across a wide variety of macroeconomic cycles and geopolitical events.

The strategy's resiliency has been tested and proven over three decades, including the Global Financial Crisis (2008-09) and the ongoing COVID-19 global pandemic (2020-present). During these periods of significant market disruption and macroeconomic headwinds, JFLCO has been successful both deploying capital and driving meaningful value creation. Fund II, a 2005 vintage fund deployed partially during the Global Financial Crisis, generated a Gross MOIC of 2.0x (Net MOIC of 1.5x) and a Gross IRR of 35.3% (Net IRR of 19.6%), exceeding the upper quartile benchmark for 2005-vintage funds. Fund IV, a 2016 vintage partnership largely deployed prior to COVID-19, has weathered the impacts of the pandemic and



continued to exhibit strong value creation. Net returns of 2.6x MOIC and 36.7% IRR as of December 31, 2021 place the partnership in the upper quartile for 2016-vintage funds.³

As a result, the Partners believe the market opportunity remains attractive and unlikely to require substantive changes in strategy relative to the firm's prior funds. Deal flow is expected to continue to be generated as (i) prime contractors and other large industry participants reshape and rationalize their portfolios (as the constant cycle of aggregation and disaggregation continues), (ii) entrepreneurs seek retirement and a smooth ownership transition for the businesses they built, and (iii) entrepreneurs with growing companies look for partners with the specialized knowledge, relationships and resources to take full advantage of opportunities offered by an ever-evolving marketplace and regulatory environment. The Partners also believe the firm's brand equity developed over decades of demonstrated performance as sector-focused specialists further enhances the likelihood of attractive deal flow going forward.

Of course, valuation levels continue to be a source of concern for all active buyers in the current market environment. Purchase multiples for U.S. middle market companies have increased significantly over the last decade, from an average of 8.2x EBITDA in 2011⁴ to over 12.0x in recent years⁵, driven in part by (i) financial buyers with significant "dry powder" and readily available debt financing at attractive terms, and (ii) strategic buyers, many with strong cash positions. Notwithstanding this backdrop, JFLCO has demonstrated its ability to acquire companies at below-market valuations throughout multiple economic cycles. JFLCO believes this value discipline provides meaningful downside protection across its portfolio during weak macroeconomic backdrops and the potential to benefit from multiple expansion at exit after successfully executing the firm's investment strategy.

3. Describe your market outlook and how strategy positioning is impacted by your views.

Please refer to the response above.

JFLCO's target industries are large, complex and heavily regulated markets that have consistently expanded over time. The firm maintains macro views of these markets based on the experience of the Investment Team and the Operating Executive Board, primary research, direct feedback from portfolio company management and continuous dialogue with senior government officials, customers and industry executives.

³ Benchmark: Cambridge Associates Global Buyout September 30, 2021 (latest available). Past performance is not a guarantee or indicator of future results. See Notes to Investment Performance and the defined terms therein.

⁴ S&P Leveraged Commentary & Data Leveraged Buyout Review 4Q 2021

⁵ Industry figures represent rolling three-year median PE middle-market buyout multiples from the Pitchbook 2021 Annual US PE Middle Market Report, the latest available. Pitchbook defines Middle Market as US-based companies acquired through buyout transactions between \$25 million and \$1 billion.



The government and defense markets represent a significant portion of \$1.4 trillion in annual U.S. federal “discretionary” spending, which excludes Social Security, Medicare and Medicaid, interest on the federal debt and other “mandatory” outlays.⁶ This is further augmented by meaningful spending at state and local levels as well as in Canada, the U.K and other allied countries including members of the North Atlantic Treaty Organization (“NATO”).

Global defense spending rose to nearly \$2.0 trillion in 2020, with further growth expected as major world powers strengthen their militaries in response to current geopolitical tensions.⁷ The U.S. and U.K. defense markets, which are joined by long-standing strategic and cultural alliances, together represent more than \$800 billion⁸ in current annual spending across thousands of companies.⁹

These large government “customers” are represented by a maze of entities, each with a distinct culture, budget and operational requirement; this customer base also extends to other allied nations, many of whom purchase U.S. and U.K. equipment and services for their own requirements. Together, these government customers fund a multitude of programs, ranging from leading-edge research and development initiatives to the production of proven systems that, once fielded, have typical service lives of 20 to 50+ years. The essential nature of these customers and programs allowed for operations to continue largely uninterrupted throughout the pandemic, and recently published budget requests by the U.S. DoD and U.K. Ministry of Defence indicate an uplift in spend in 2022 compared to 2021.¹⁰ Beyond defense, U.S. federal, state and local governments purchase a wide variety of technical services from the private sector that are critical to the operations of virtually every government agency.

The adjacent commercial aviation and maritime markets are roughly equivalent in scale and are expected to continue to benefit from established secular growth trends over the long-term (and remain subject to increasing levels of regulation). The commercial aerospace supply chain of more than 12,000 companies¹¹ represents an estimated \$328 billion market and is expected to grow to \$430 billion in 2025.¹² Despite the deep disruption experienced during COVID-19, long-term demand drivers for air transportation remain unchanged, with average traffic projected to grow 4% annually from 2019 to 2040.¹³

⁶ Fairmont Consulting Group. U.S. Government Federal Agency Budgets (March 2022).

⁷ Deloitte. 2022 Aerospace and Defense Industry Outlook.

⁸ UK Government. Finance and Economics Annual Statistical Bulletin: International Defence 2021 (November 2021).

⁹ Boeing. Diverse Suppliers Bring Big Value to Boeing and Their Communities (July 2020).

¹⁰ Roland Berger. A Year on COVID-19 in the Aviation and Aerospace Industries (June 2021).

¹¹ McKinsey & Company. Why Now is the Time to Stress-Test your Industrial Supply Chain (July 2020).

¹² Global Market Report 2021: COVID-19 Impact and Recovery to 2030 (January 2021).

¹³ Boeing. Commercial Market Outlook 2021 – 2040 (September 2021).



Continued growth is also expected in world seaborne trade and in turn the global commercial maritime market, where more than 50,000¹⁴ vessels are responsible for transporting an estimated 90%¹⁵ of international goods (as measured by tonnage) over the world's waterways.¹⁶ Interconnection and global dependency was made even more evident during the recent pandemic, when the aerospace and maritime industries proved to be central to the global economy notwithstanding initial slowdowns and disruptions.

The related environmental and infrastructure (“E&I”) markets are also sizable, with the environmental market alone representing approximately \$420 billion per annum of government and commercial spending across thousands of companies.¹⁷ In recent years, these markets have experienced strong growth that JFLCO expects will continue in light of increasingly stringent environmental and safety regulations, expanding industrial output and aging government and commercial infrastructure.

A wide variety of products and services are required to support each of these industries, ranging from everyday essentials (e.g., uniforms, airplane seatbelts, fire extinguishers, IT support) to highly technical service providers and sophisticated, high-value platforms such as commercial jets, aircraft carriers, reconnaissance satellites and power plants.

The supply chain responsible for developing, constructing and supporting these products and services is comprised of thousands of companies in a constant cycle of aggregation and disaggregation – ranging from well-known market leaders (e.g., The Boeing Company, Lockheed Martin Corporation and A.P. Moller – Maersk Group) to countless suppliers with revenues of less than \$10 million.

The Partners believe specific segments of the firm's target markets are particularly well-suited for successful private equity investing – especially in instances where risk-averse and highly regulated customers support predictable revenue and attractive free cash flow conversion for suppliers with unique technical competencies. The Partners further believe these market niches share strong barriers to successful investing that JFLCO is well-suited to address given the breadth and depth of the firm's experience, including:

- Stringent customer and program qualifications and/or contracting and operating requirements;
- Extensive regulatory, government and certification standards and approvals;
- High levels of specialized engineering and technical capabilities; and
- Complex interaction between government and commercial markets.

¹⁴ United Nations Conference on Trade and Development. Fact Sheet 14: Merchant Fleet.

¹⁵ NOAA. Fast Facts: Ports (March 2022).

¹⁶ Clarkson Research (January 2019); International Maritime Organization (<https://business.un.org/en/entities/13>).

¹⁷ EBJ. 2021 Environmental Industry Snapshot Survey (May 2021).



The firm's strong investment returns have been achieved by coupling this extensive industry knowledge with a value-oriented investment philosophy that utilizes the operational and financial expertise of the Investment Team. This demonstrated strategy centers on maximizing returns and effectively managing risk in each investment by:

- Investing exclusively in products and services serving the aerospace, defense, maritime, government and environmental markets that share key market and business attributes;
 - Focusing on businesses with meaningful, specialized engineering and technical content that are not realizing their full potential but have well-established product and service offerings and market-leading positions;
 - Investing at disciplined valuations with appropriate capital structures; and
 - Leveraging JFLCO's industry knowledge and operating expertise to develop and execute strategies that can translate into value for the firm's investors.
4. Could you please include a slide in your presentation that shows the MWRA's account history, initial contribution, cumulative subsequent contributions, cumulative subsequent distributions, gain/loss and current value.

Please see the separately enclosed presentation.



Notes to Investment Performance

GENERAL NOTES AND TERMINOLOGY

Fund VI is a newly organized entity and has no prior operating history or track record for a prospective investor to consider. For JFLCOs active partnerships, the performance information contained herein is as of December 31, 2021, unless otherwise stated.

Funds II, III, IV and V performance includes all related Parallel Funds and Alternative Investment Funds (if any).

References to “Holding Period” mean the length of time the relevant fund has held a portfolio company based on the initial investment date; fund-level Holding Period is calculated using a weighted average based on each platform investment’s Holding Period and the amount of Fund Capital per investment.

References to “Fund Capital” mean the aggregate amount of capital invested in a portfolio company by the relevant funds (or, in the case of Pre-Fund Investments (as defined below), investors). Fund Capital excludes Bridge Investments and co-investments by selling shareholders, management, limited partners in JFLCO-sponsored funds, financing sources and other third-party investors.

References to “Fully/Substantially Realized” Investments mean investments that have been completely or partially exited to third parties.

References to “Active Investments” mean partially realized and unrealized investments, which as of December 31, 2021 consist of the following Fund III, Fund IV and Fund V investments: Trident Maritime (incorporating the merger of Fund III platform investments in US Joiner and IMECO), AGI, Lake Shore Systems, Inland Pipe Rehabilitation, Lone Star Disposal, CodeMettle, Integrated Global Services, Global Marine Group, Entact, CTS, Trillium, NorthStar Group and Narda-MITEQ.

Reference to quartile performance is measured against Cambridge Associates Global Buyout Net IRR Benchmark as of September 30, 2021. The Cambridge Associates LLC Global Buyout and Growth Equity Index® is a horizon calculation based on data compiled from buyout and growth equity funds, including fully liquidated partnerships, formed between 1996 and 2019. Partnership financial statements and narratives are the primary source of information concerning cash flows and ending residual/net asset values (NAV) for both partnerships and portfolio company investments. This benchmark is a broad-based index which is used for comparative purposes only and has been selected as it is well known and easily recognizable by investors. Comparisons to benchmarks have limitations because benchmarks have material characteristics that may differ from a JFLCO-managed fund. For



example, investments made for a JFLCO-managed fund may differ significantly in terms of security holdings, industry weightings and asset allocation from those of the benchmark. Accordingly, investment results of a JFLCO-managed fund may differ from those of the benchmark. Investors should carefully consider these limitations and differences when evaluating the comparative benchmark data performance.

Reference to Pitchbook and S&P middle-market industry figures is used for comparative purposes only. Comparisons have limitations as industry transactions may materially differ from a JFLCO transaction. Investors should carefully consider these limitations and differences when evaluating the comparative data.

References to “Fund I & Predecessor Investments” includes the nine investments completed by members of the Investment Team and Operating Executive Board prior to the raising of Fund II in 2005-06. These include (i) the firm’s initial investments as a “fundless sponsor” in Accudyne & Kilgore and Sperry Marine through special purpose entities formed specifically for each transaction (the “Pre-Fund Investments”), (ii) six investments in Fund I, a 1997 vintage partnership with \$130.1 million in capital commitments, and (iii) J.F. Lehman Equity Investors I-A, L.P. (“Fund I-A”), a 2004 “annex” fund which raised \$16.7 million in capital commitments from investors in Fund I in connection with the investment in Racal Acoustics.

References to “Non-Representative Investments” relate to five transactions since the firm’s inception that the Partners believe are no longer consistent with JFLCO’s core investment strategy including (i) three Fund I investments (Burke, Elgar and Special Devices) purchased in 1997 and 1998 where JFLCO employed aggressive leverage to purchase companies through highly competitive auctions for premium multiples during peaks in their respective market cycles, and (ii) two Fund II early stage investments (Hawaii Superferry and Defense Venture Group) that had limited or no operating history. “Representative Investments” refer to all other investments. Detailed case studies of each JFLCO investment are available upon request.

References to “NM” IRRs represent returns where fewer dollars have been returned than dollars invested. The loss of capital has been reflected in Gross MOIC less than 1.0x and the IRR is shown as “NM” or “Not Meaningful” to reflect the view that the velocity of the return is not meaningful because a negative IRR yields counterintuitive results.

References to “Realized Value” represent cash distributions from portfolio companies and proceeds paid upon sale or other exit transactions (including cash dividends, interest, ordinary income, capital gains and return of capital).

References to “Total Value” represent the sum of Realized Value and Unrealized Value, which is the remaining value of a fund’s interest in an investment. Unrealized Value is based on JFLCO’s estimate of the fair market value of such interest in accordance with its valuation



policy. In determining Unrealized Value, consideration is given to the financial condition and operating results of the portfolio company, the value of comparable companies and other relevant factors pursuant to JFLCO's valuation policy. There can be no assurance that any Unrealized Value will be realized at the valuations shown, as actual realized returns will depend on, among other factors, future operating results, the value of the assets and market conditions at the time of disposition, any related transaction costs and the time and manner of sale, all of which may differ from the assumptions on which the valuations contained herein are based. Accordingly, the actual realized returns may differ materially from the returns indicated herein. Additional information regarding JFLCO's valuation policy and current investment valuations is available upon request.

References to "Gross MOIC" represent Total Value expressed as a multiple of the Fund Capital invested. All Gross MOIC amounts exclude the allocation of any fund-level fees and expenses, carried interest or taxes, which in the aggregate may be substantial. The calculation of Gross MOIC with respect to Active Investments is inclusive of Unrealized Value, which is based on JFLCO's estimate of the fair market value of such investment in accordance with its valuation policy. Gross MOIC reflects a de minimis reinvestment of proceeds where applicable. Realized Gross MOIC represent the Gross MOIC for Fully/Substantially Realized Investments.

References to "Gross IRR" represent annual, compounded gross internal rates of return calculated based on capital inflows and outflows for each portfolio company. As it relates to capital calls for acquisitions and follow-on investments and distributions related to dividend recapitalizations or exits, Gross IRR reflects such capital inflows and outflows as if they occurred on the dates of such transaction. As it relates to other capital calls and distributions, Gross IRR generally reflects such inflows and outflows according to the actual dates of such inflows from and outflows to fund investors. All Gross IRR amounts exclude the allocation of any fund-level fees and expenses, carried interest or taxes, which in the aggregate may be substantial. The calculation of Gross IRR is inclusive of Unrealized Value, which is based on JFLCO's estimate of the fair market value of such investment in accordance with its valuation policy. Gross IRR reflects a de minimis reinvestment of proceeds where applicable. Realized Gross IRR represent the Gross IRR for Fully/Substantially Realized Investments.

Gross IRR for Fund I & Predecessor Investments assumes all investments were made as of a common start date; Gross IRR based on capital inflows and outflows for these investments is 127.9% for Fund I & Predecessor Representative Investments and 116.5% for all Fund I & Predecessor Investments. These metrics are not considered meaningful nor accurately representative of performance.

Total Gross IRR when aggregating JFLCO performance since inception also assumes all investments were made as of a common start date. Actual Gross IRR since inception based on capital inflows and outflows for each portfolio company is 127.9% for all Fully/Substantially



Realized Representative Investments, 16.5% for Active Representative Investments and 116.5% for all JFLCO Investments. These metrics are not considered meaningful nor accurately representative of performance.

References to “Net Performance” (Net MOIC and Net IRR) for both realized and unrealized amounts represent the deduction of any fund-level fees and expenses incurred, carried interest (whether accrued or paid) and taxes incurred that may be allocable to limited partners in such funds. Net IRR and Net MOIC reflect a de minimis reinvestment of proceeds where applicable.

Prior to Fund IV, JFLCO did not use subscription or capital call lines of credit. Fund IV and Fund V have a subscription line to allow for enhanced cash management and to provide short-term financing prior to the receipt of capital contributions. Fund VI expects to have a subscription line for similar uses. Net IRR in Fund IV and V include the benefits that result from utilizing subscription lines, including higher reported Net IRR figures than if a subscription line (or other leverage) had not been utilized.

Net Performance Since Inception is an estimate and does not represent actual returns to any investor. Net IRR Since Inception is calculated utilizing the common start date methodology for each of the two Pre-Fund Investments, Fund I, Fund I-A, Fund II, Fund III, Fund IV and Fund V. Net IRR Since Inception based on actual dates of capital inflows and outflows for these funds is 84.8%, and not considered meaningful nor accurately representative of performance. Net Performance for All Representative Investments is regarded as not meaningful.

Net IRR for Fund II, Fund III, Fund IV and Fund V represents the annual, compounded net internal rates of return calculated based on the actual dates and amounts of cash contributions from, and distributions or expected distributions to, the limited partners of such fund after the allocation of any fund-level fees and expenses incurred, carried interest (whether accrued or paid) and taxes incurred that may be allocable to limited partners.

Adjusted Net Performance for Fund III reflects illustrative cash flows assuming a 100% management fee offset for transaction and monitoring fees in lieu of the “budget based” offset provisions set forth in the limited partnership agreement governing Fund III. Add-back adjustments were made at mid-year points to approximate cash flows that would have occurred throughout the calendar year. Pro-forma net returns shown do not represent actual returns to any investor.

Net IRR for Fund I & Predecessor Investments is calculated utilizing the Gross IRR methodology (i.e., common start date methodology) for each of the two Pre-Fund Investments, Fund I and Fund I-A. Net IRR based on capital inflows and outflows for these investments is 85.0%, and not considered meaningful nor accurately representative of performance. Net IRR



and Net MOIC for Fund I & Predecessor Investments include a pro forma management fee of 2% on Fund Capital and 20% carried interest for Pre-Fund Investments and Fund I-A. Net IRR for Fund I & Predecessor Investments also includes a \$2.0 million investment in Redleaf Group (“Redleaf”) completed by Fund I in 2000. Redleaf was a company that invests in venture capital opportunities and was not representative of JFLCO’s investment strategy. The investment in Redleaf has been written down to zero and accounted for as a fund expense in the net return data for Fund I.

Net Distributions to paid-in capital (“Net DPI”) is equal to total net distributions to limited partners divided by total paid-in capital (including fees and expenses and carried interest). Residual value to paid-in capital (“RVPI”) is equal to the total Unrealized Value divided by total paid-in capital.

Gross Distributions to paid-in capital (“Gross DPI”) is equal to total cash distributions from portfolio companies and proceeds paid upon sale or other exit transactions (including cash dividends, interest, ordinary income, capital gains and return of capital) divided by total fund capital.

FOOTNOTES TO PERFORMANCE TABLES

- (1) Platform investments NorthStar and Waste Control Specialists (“WCS”) were combined into NorthStar Group in November 2020. In accordance with procedures approved by Fund IV’s Advisory Committee, NorthStar shareholders received 80% of the economic interests in NorthStar Group and WCS shareholders received the remaining 20%. The valuation of NorthStar Group beginning in December 2020 has been allocated to the original platform investments accordingly.

In October 2021, affiliates of Fund IV completed the sale of NorthStar Group via a single asset secondary transaction pursuant to a process approved by the Limited Partner Advisory Committees of both Fund IV and Fund V and affiliated investment vehicles. The transaction resulted in a full monetization of NorthStar Group for Fund IV investors; simultaneously, investment affiliates of JFLCO continued to control the company through investments by (i) a continuation vehicle backed by longstanding and new institutional partners, (ii) Fund V, and (iii) the rollover of significant interests from NorthStar Group’s senior management, electing investors in Fund IV and the Fund IV General Partner. Importantly, the transaction is expected to provide the resources required to support the company’s next phase of growth and drive incremental value creation.

- (2) Platform investments National Response Corporation (“NRC”) and Sprint Energy Services (“Sprint”) were combined into NRC Group Holdings, LLC (“NRCG”) in June 2018. In accordance with procedures approved by Fund III’s Advisory Committee, NRC shareholders received 65% of the economic interests in NRCG and Sprint shareholders received the remaining 35%. NRCG became publicly listed in October 2018 in connection



with its sale to Hennessey Capital Acquisition Corp., a special purpose acquisition corporation. At that time, Fund IV acquired a modest structured equity position in the company in conjunction with the public listing. On November 1, 2019, NRCG closed its previously announced merger with US Ecology, Inc. (“US Ecology”) (NASDAQ: ECOL). ECOL common stock was the basis for the valuations. On May 4, 2020, JFLCO completed the final in-kind distribution of shares of US Ecology common stock to investors.

- (3) Platform investments American Scaffold (“ASI”) and IMIA were combined into IMIA Group in April 2021. In accordance with procedures approved by Fund IV’s Advisory Committee, ASI shareholders received 20% of the economic interests in IMIA Group and IMIA shareholders received the remaining 80%. The valuation of IMIA Group beginning in June 2021 has been allocated to the original platform investments accordingly.
- (4) Fund III platform investment Trident Maritime Systems (“Trident”) and Fund IV platform investment Lake Shore Systems (“Lake Shore”) were combined into TMS Group in February 2021. In accordance with procedures approved by Fund III’s and Fund IV’s Advisory Committees, Trident shareholders received 85% of the economic interests in TMS Group and Lake Shore shareholders received the remaining 15%. The valuation of TMS Group beginning in March 2021 has been allocated to the original platform investments accordingly.



J.F. Lehman & Company

MWRA EMPLOYEES' RETIREMENT SYSTEM

April 2022



This Presentation is being furnished on a confidential basis for the purpose of providing information about J.F. Lehman & Company, LLC ("JFLCO") and its affiliated private equity investment vehicles (collectively the "Funds") and does not constitute an offer to buy or sell interests in any of the Funds or any other securities. A private offering of interests in JFL Equity Investors VI, L.P. (referred to herein as the "Fund" or "Fund VI") will only be made pursuant to Fund VI's confidential private placement memorandum (the "Memorandum"), subscription documents (the "Subscription Agreement") and limited partnership agreement (the "Partnership Agreement", and collectively with the Memorandum and Subscription Agreement, the "Offering Materials"), which will be furnished to qualified investors on a confidential basis at their request for their consideration in connection with such offering. The information contained herein will be qualified in its entirety by reference to the Offering Materials, which contain additional information about the investment objectives, terms and conditions of an investment in Fund VI and also contain tax information and risk disclosures that are important to any investment decision regarding Fund VI. No person has been authorized to make any statement concerning Fund VI other than as set forth in the Offering Materials and any such statements, if made, may not be relied upon. The information contained herein must be kept strictly confidential and may not be reproduced or redistributed in any format without the approval of JFLCO, whether within or outside of the United States of America. Notwithstanding the foregoing, each investor and prospective investor (and each employee, representative, or other agent thereof) may disclose to any and all persons, without limitation of any kind, the tax treatment and tax structure of Fund VI and its investments and all materials of any kind (including opinions or other tax analyses) that are provided to such investor or prospective investor relating to such tax treatment and tax structure; provided, however, that such disclosure shall not include the name (or other identifying information not relevant to the tax structure or tax treatment) of any person and shall not include information for which nondisclosure is reasonably necessary in order to comply with applicable securities laws. Please refer to the documents in the virtual data room, including but not limited to the Memorandum, for more detailed information on JFLCO and the Funds, including Fund VI.

By accepting delivery of this Presentation the recipient agrees to the foregoing. If you are requested or required by law (for example, pursuant to a Freedom of Information Act request) to disclose any of the information contained in this Presentation, please contact JFLCO as soon as possible after you receive notice of such request or requirement.

An investment in Fund VI will involve significant risks, including loss of the entire investment. The interests in Fund VI will be illiquid, as there is no secondary market for interests in Fund VI and none is expected to develop. There will be restrictions on transferring interests in Fund VI, investments may be leveraged and the investment performance may be volatile. Before deciding to invest in Fund VI, prospective investors should read the Offering Materials and pay particular attention to the risk factors contained herein. The fees and expenses charged in connection with an investment in Fund VI may be higher than the fees and expenses of other investment alternatives and may offset profits. Investors should have the financial ability and willingness to accept the risk characteristics of Fund VI's investments. Potential conflicts of interest may arise from the relationship between Credit Suisse Securities (USA) LLC and its affiliates ("Credit Suisse"), which is acting as Fund VI's placement agent. Credit Suisse is not acting and will not act as a municipal advisor within the meaning of Section 975 of the Dodd-Frank Wall Street Reform and Consumer Protection Act and the rules and regulations promulgated thereunder ("Municipal Advisor Rule"). Any services, material or information that Credit Suisse provides to a municipal entity or obligated person as defined by the Municipal Advisor Rule ("Covered Party") are provided on an arm's length basis and not as an advisor or fiduciary to the Covered Party. Covered Parties should consult with their own internal and external advisors before taking action with respect to any services, material or information provided to them by Credit Suisse. Credit Suisse also will not solicit a Covered Party for direct or indirect compensation on behalf of an unaffiliated investment adviser for the purpose of obtaining or retaining an engagement for that investment adviser by the Covered Party to provide investment advisory services to or on behalf of the Covered Party.

This Presentation includes select investment profiles of portfolio companies held by the Funds. All examples used in this Presentation are presented for illustrative purposes only and should not be relied upon as an indication of how JFLCO and its Funds have performed in the past or will perform in the future. Investment results for all Funds can be found in the Appendix of this Presentation.

In considering any performance data contained herein, prospective investors should bear in mind that past or targeted performance is not indicative of future results, and there can be no assurance that Fund VI will achieve comparable results or that target returns will be met. Prospective investors should also bear in mind that past or targeted portfolio characteristics are not indicative of future portfolio characteristics and there can be no assurance that a Fund will have comparable portfolio characteristics or that target portfolio characteristics will be achieved. In addition, there can be no assurance that unrealized investments will be realized at the valuations shown as actual realized returns will depend on, among other factors, future operating results, the value of the assets and market conditions at the time of disposition, any related transaction costs and the timing and manner of sale, all of which may differ from the assumptions on which the valuations contained herein are based. The IRRs and MOIC presented on a "Gross" basis do not reflect any management fees, carried interest, taxes and allocable expenses borne by investors, which in the aggregate may be substantial. Nothing contained herein should be deemed to be a prediction or projection of future performance of Fund VI. Prospective investors should make their own investigations and evaluations of the information contained herein. Each prospective investor should consult its own attorney, business adviser and tax adviser as to legal, business, tax and related matters concerning the information contained herein and such offering. Tax treatment depends on the individual circumstances of each client and may be subject to change in the future.

Except where otherwise indicated herein, the information provided herein is based on matters as they exist as of the date of preparation and not as of any future date, and will not be updated or otherwise revised to reflect information that subsequently becomes available, or circumstances existing or changes occurring after the date hereof. For JFLCO's currently active Funds, the performance information contained in this Presentation is as of December 31, 2021 unless otherwise noted.

See Notes to Investment Performance and the defined terms therein.

Certain information contained in this Presentation constitutes "forward-looking statements," which can be identified by the use of forward-looking terminology such as "may," "will," "should," "expect," "anticipate," "target," "project," "estimate," "intend," "continue" or "believe," or the negatives thereof or other variations thereon or comparable terminology. Due to various risks and uncertainties, actual events or results or the actual performance of Fund VI may differ materially from those reflected or contemplated in such forward-looking statements. Prospective investors in Fund VI should not rely on these forward-looking statements in deciding whether to invest in such Fund. The information contained in this Presentation has been obtained from sources outside of Credit Suisse. While such information is believed to be reliable for the purposes used herein, neither Credit Suisse, nor any of its affiliates or partners, members or employees, assume any responsibility for the accuracy of such information. Additionally, certain of the information and data in this Presentation is based on or derived from information provided by independent third-party sources. Although JFLCO believes that such information is accurate and that the sources from which it has been obtained are reliable, JFLCO cannot guarantee the accuracy of such information and has not independently verified the assumptions on which such information is based.



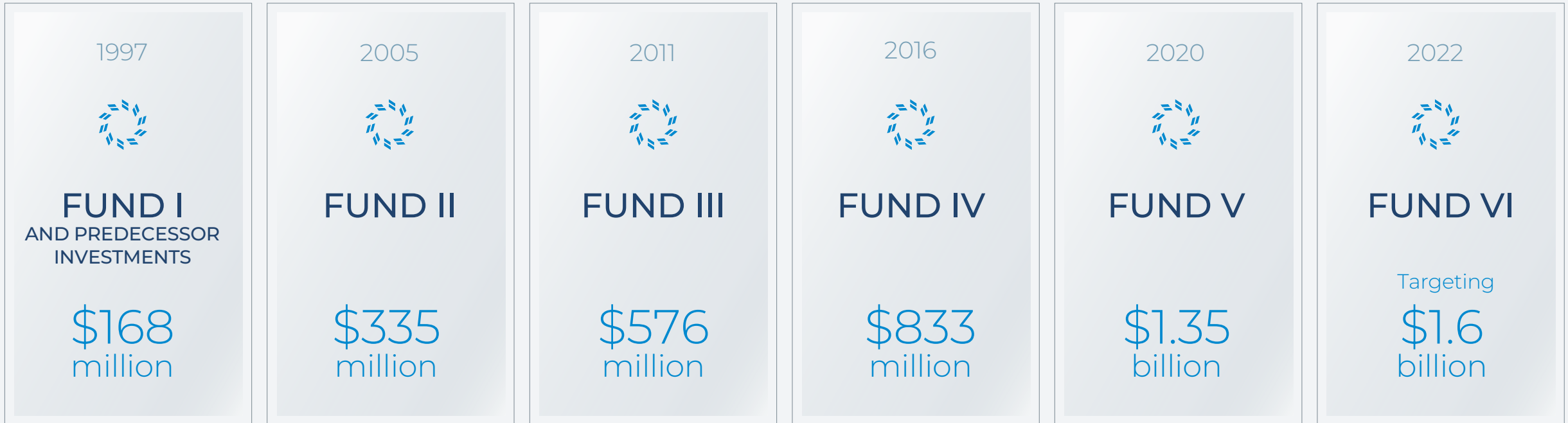
Proven Sector-Focused Investors

Founded 30 years ago, J.F. Lehman and Company is an established private equity firm that exclusively focuses on investing in the aerospace, defense, maritime, government and environmental industries and companies possessing the unique technical capabilities that originate from operating in these sectors. Led by an accomplished senior team with an average tenure of 20+ years, the firm's investment strategy and demonstrated track record reflect its deep experience in, and commitment to, these targeted sectors.

THREE DECADES OF DISCIPLINE, FOCUS AND REFINEMENT



MWRA Interest



Since Inception

30.0% Gross IRR

22.5% Net IRR



Aerospace



Defense



Maritime



Environmental & Infrastructure

ESTABLISHED INVESTMENT CRITERIA



Target Company Attributes

Middle-market companies, typically \$100 million to \$1 billion EV

Demonstrated, market-leading engineering/technical capabilities involving specialized, performance-critical products/services

Strict qualification and certification requirements for products and services:

- High-value, long-life-cycle assets (e.g., aircraft, vessels, satellites, power plants, etc.)
- Government and commercial regulatory requirements

Established positions on long-life-cycle priority programs:

- Recurring and predictable customer demand
- Sole (or dual) source customer supply arrangements
- Balanced contract portfolios across the full program life cycle (development, production, aftermarket support)

Increasingly complex, stringent domestic and international regulatory frameworks creating non-discretionary, consistent demand

Multiple-use technologies/capabilities with government and commercial applications



Navigating Complexity Through Deep Sector, Financial and Operational Experience

Owner-Founder Dynamics

- Complex owner-founder transitions
- Insufficient depth of management talent

Corporate Carve-Outs

- Multiple operating units loosely packaged for sale
- Limited historical financial information/cash flow visibility
- Often more reliant on existing parent infrastructure than seller appreciates

Market Dynamics

- Unique technologies, programs, customers and regulatory environments
- News headlines and historical trends often misleading

Partial C-Level Suites

- Missing critical members of the executive team
- Divestitures often a graceful exit ramp for under-performers

Complex Trajectories

- Dynamic contract profiles and other company-specific complexities
- Requires conviction beyond near-term contraction in financial performance
- Broken balance sheet/overleveraged

Lack of Business-Development Engines

- Selling ownership often more focused on existing contract execution over growth
- Limited appetite for risk (even with attractive risk-adjusted returns)
- Often yields unexciting (or unbelievable) projections

Insufficient Systems & Processes

- Lack of clear organizational and reporting structure
- Poor data fidelity hinders due diligence
- Creates complex and expensive new system requirements for buyer



Operational Expertise and Tested Growth Strategies Tailored to Company Needs

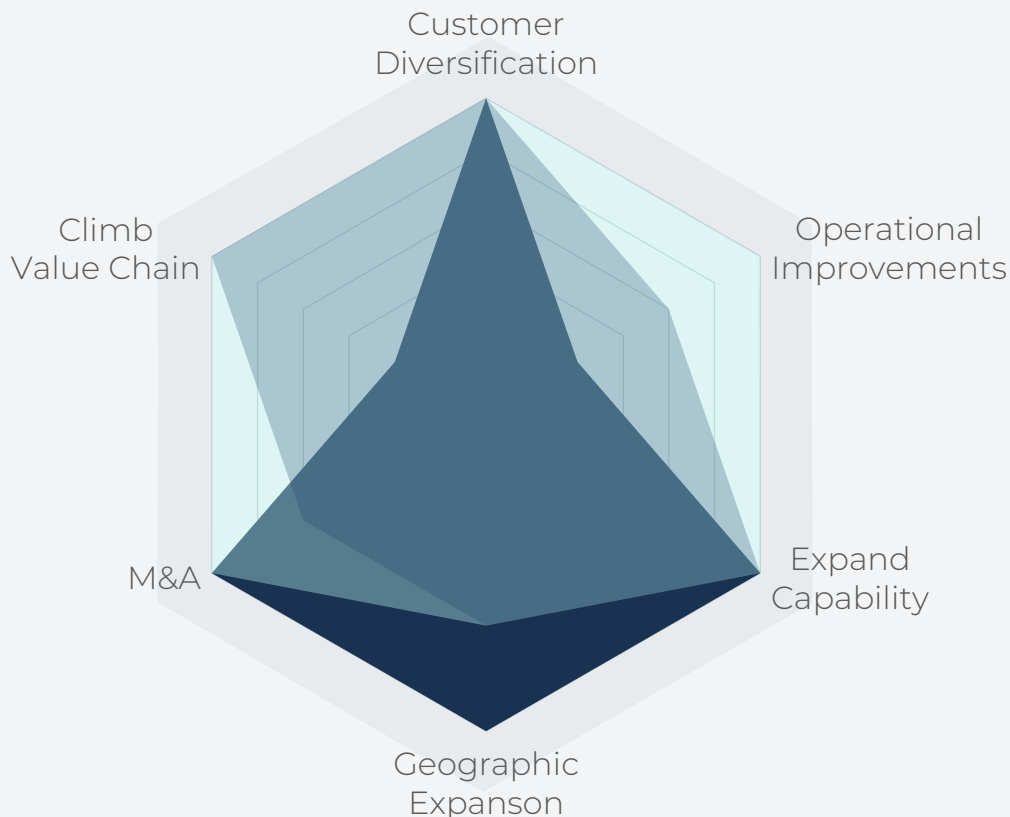
Play an active role in realization efforts, achieving success through various means of exit

“Polished diamonds” provide multiple expansions – not typically driven by timing/market cycle

Improve performance re-leveraging to support acquisitions and de-risk equity

Value Creation Playbook

Recent Fund IV Exits (as of 12/31/21)



Holding Period

3.0 yrs.



Gross MOIC | IRR

4.0x | 67.3%

4.3 yrs.



4.1x | 45.9%

4.4 yrs.



11.4x | 88.1%

Past performance is not a guarantee nor an indicator of future results. Please see Notes to Investment Performance for additional detail.

DEEP, COHESIVE TEAM WITH STRONG CONTINUITY



Partners and Senior Investment Professionals

Louis N. Mintz
Partner | 25

Stephen L. Brooks
Partner | 24

C. Alexander Harman
Partner | 22

Glenn M. Shor
Partner | 12

William J. Hanenberg
Managing Director | 14

Michael S. Friedman
Managing Director | 15

David F. Thomas
Managing Director | 12

R. Benjamin Hatcher
Principal | 9

Kevin Vallès
Principal | 5

Supported by 12 Investment Professionals

Portfolio Operations (3 members + 2 pending)

Larry Phillips
Managing Director | 4

Founding Partners & Operating Executive Board (15 members)

Senior-level Executives and High-ranking Officers

Legal, Administration & Compliance

David L. Rattner
Managing Director | 10

Fund Finance & Operations

Lisa M. Steffens
Managing Director | 16

Finance & Accounting

Michael P. Leber
Director | 4

Marketing & IR

Karina Perelmuter
Director | 3

Human Capital

Megan E. Kanefsky
Vice President | 1

Other essential support teams, made up of 6 professionals







Deep Operational Insights Drive Value Creation

Portfolio Operations	<p>Larry J. Phillips Managing Director</p> <p> </p>	<p>Michael J. Greenspan Vice President</p> <p></p>	<p>Jason S. Reeves Vice President</p> <p> </p>	
	Founders & Operating Executive Board	<p>John F. Lehman 30</p> <p>Chairman, Founding Partner, JFLCO Secretary of the U.S. Navy</p>	<p>Donald Glickman 30</p> <p>Founding Partner, JFLCO Principal, Peter J. Solomon Company</p>	<p>George A. Sawyer 30</p> <p>Founding Partner, JFLCO EVP, General Dynamics</p>
		<p>James R. Baumgardner 4</p> <p>Vice Chairman, IPR Executive at US Ecology, Peak Utility</p>	<p>Michael Bayer 11</p> <p>Chairman, Defense Business Board Chairman, Secretary, Air Force Advisory Group</p>	<p>Carol Bibb 9</p> <p>MD Portfolio Operations, JFLCO Senior Vice President, General Manager, Honeywell</p>
<p>Allan Cook 12</p> <p>Chief Executive, Cobham PLC Senior Exec., GEC-Marconi, BAE Systems</p>		<p>Gen. John D. W. Corley 11</p> <p>Vice Chief of Staff, U.S. Air Force Commander, Air Combat Command</p>	<p>Michael V. Cuff 12</p> <p>MD Portfolio Operations, JFLCO VP, Helicopter, Surface Systems, Honeywell</p>	<p>T. Michael Dyer 8</p> <p>Co-Chairman, Blank Rome Leader in maritime law, government contracting</p>
<p>Adm. Thomas B. Fargo 14</p> <p>Chairman, Huntington Ingalls Commander-in-Chief, U.S. Pacific Fleet</p>		<p>Frederick J. Harris 5</p> <p>President of General Dynamics Bath Iron Works and NASSCO</p>	<p>Adm. Paul D. Miller 17</p> <p>CEO, Alliant Techsystems Commander-in-Chief, U.S. Atlantic Command</p>	<p>John William Shirley 17</p> <p>Program Manager, Seawolf and Virginia Class Nuclear Submarines</p>



2021 Liquidity Highlights

(As of 12/31/2021, \$ in millions)

	Monetization Activity	Prior Distributions	2021 Distributions	Unrealized Value	Gross MOIC IRR
	Dividend Recap	\$119.2	\$43.0	\$302.6	5.0x 24.2%
		-	15.2	71.5	2.0x 14.2%
	Sale to Strategic	-	312.3	-	4.1x 45.9%
	Single Asset Secondary	227.9	490.3	-	11.4x 88.1%
		1.4	130.8	-	7.3x 71.0%
	Sale to Financial	36.0	50.1	-	2.4x 22.1%
		65.0	366.8	-	4.0x 67.3%

\$1.4 Billion in 2021 Net Distributions



JFL Equity Investors IV, L.P. (\$833.0 million, 2016 vintage)

(As of 12/31/2021, \$ in millions)

Investment Type	Entry Date	Exit Date	# Add-Ons	Fund Capital	Realized Value	Total Value	Gross MOIC	Gross IRR
Fully/Substantially Realized								
API Technologies	Apr-16	May-19	–	\$100.0	\$262.9	\$262.9	2.6x	41.0%
NRCG ⁽²⁾	Oct-18	May-20	–	45.2	38.8	38.8	0.9x	NM
BEI	Apr-17	Aug-21	2	75.5	312.3	312.3	4.1x	45.9%
Northstar ⁽¹⁾	Jun-17	Oct-21	1	63.1	718.2	718.2	11.4x	88.1%
WCS ⁽¹⁾	Jan-18	Oct-21	–	18.1	132.1	132.1	7.3x	71.0%
American Scaffold ⁽³⁾	Mar-16	Oct-21	1	37.2	86.1	88.1	2.4x	22.1%
IMIA ⁽³⁾	Oct-18	Oct-21	1	110.0	431.8	443.2	4.0x	67.3%
Fully/Substantially Realized			5	\$449.0	\$1,982.2	\$1,995.6	4.4x	53.6%
Active								
Lake Shore Systems ⁽⁴⁾	Sep-16	–	–	\$44.0	\$15.2	\$86.8	2.0x	14.2%
IPR	Dec-18	–	1	139.5	–	139.5	1.0x	0.0%
Lone Star Disposal	Aug-19	–	–	47.5	–	118.8	2.5x	46.7%
CodeMettle	Dec-20	–	–	38.0	–	38.0	1.0x	0.0%
Total Active			1	\$269.0	\$15.2	\$383.0	1.4x	13.0%
Total Fund IV			6	\$718.0	\$1,997.4	\$2,378.6	3.3x	45.6%

Net Performance

2.6x

36.7%



JFL Equity Investors V, L.P. (\$1.35 billion, 2020 vintage)

(As of 12/31/2021, \$ in millions)

Investment Type	Entry Date	Exit Date	# Add-Ons	Fund Capital	Realized Value	Total Value	Gross MOIC	Gross IRR
Active								
Integrated Global Services	Feb-20	–	1	\$102.5	–	\$128.0	1.2x	12.6%
Global Marine Group	Feb-20	–	–	179.0	–	179.0	1.0x	0.0%
Entact	Dec-20	–	–	168.5	–	202.2	1.2x	19.1%
CTS	Dec-20	–	–	150.3	–	150.3	1.0x	0.0%
Trillium	Mar-21	–	–	123.3	–	123.3	1.0x	0.0%
NorthStar Group ⁽¹⁾	Oct-21	–	–	136.5	–	136.5	1.0x	0.0%
Narda-MITEQ	Dec-21	–	1	79.5	–	79.5	1.0x	0.0%
Total Active Investments			2	\$939.4	–	\$998.6	1.1x	6.3%

Total Fund V			2	\$939.4	–	\$998.6	1.1x	6.3%
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Net Performance **1.0x** **1.0%**



Appendix



JFL Equity Investors IV, L.P. (2016 vintage)

(in US\$)

Commitment Summary (as of 28-April-22)	Amount	% of Original Commitment
Original Committed Capital	\$6,000,000	
Net Contributed Capital	5,787,350	
Remaining Available Capital ⁽¹⁾	\$212,650	3.5%
Distribution Summary (as of 28-April-22)		
Cumulative Distributions	\$12,659,622	
Capital Account Balance (as of 31-Dec-21)		
	\$2,263,850	
Inception-to-Date Performance (as of 31-Dec-21)	Gross	Net
IRR	45.6%	36.7%
TVPI	3.3x	2.6x
DPI	2.8x	2.2x

Past performance is not a guarantee nor an indicator of future results. Please see Notes to Investment Performance for additional detail.

(1) Excludes recyclable amounts



JFL Equity Investors V, L.P. (2020 vintage)

(in US\$)

Commitment Summary (as of 28-April-22)	Amount	% of Original Commitment
Original Committed Capital	\$9,000,000	
Net Contributed Capital	6,723,015	
Remaining Capital	2,276,985	
Less MWRA's Share of JFL V LOC ⁽¹⁾	(260,000)	
Pro forma Est. Remaining Available Capital ⁽²⁾	\$2,016,985	22.4%
Distribution Summary (as of 28-April-22)		
Cumulative Distributions	-	
Capital Account Balance (as of 31-Dec-21)		
	\$4,985,061	
Inception-to-Date Performance (as of 31-Dec-21)		
	Gross	Net
IRR	6.3%	1.0%
TVPI	1.1x	1.0x
DPI	-	-

Past performance is not a guarantee nor an indicator of future results. Please see Notes to Investment Performance for additional detail.

(1) Represents MWRA's pro rata share of the \$39 million estimated principal balance on JFL Fund V's capital call line of credit as of 4/28/22. Capital call will occur in Q3 2022.

(2) Excludes recyclable amounts



GENERAL NOTES AND TERMINOLOGY

Fund VI is a newly organized entity and has no prior operating history or track record for a prospective investor to consider. For JFLCOs active partnerships, the performance information contained herein is as of December 31, 2021, unless otherwise stated.

Funds II, III, IV and V performance includes all related Parallel Funds and Alternative Investment Funds (if any).

References to “Active Funds” mean collectively Funds III, IV and V.

References to “Holding Period” mean the length of time the relevant fund has held a portfolio company based on the initial investment date; fund-level Holding Period is calculated using a weighted average based on each platform investment’s Holding Period and the amount of Fund Capital per investment.

References to “Fund Capital” mean the aggregate amount of capital invested in a portfolio company by the relevant funds (or, in the case of Pre-Fund Investments (as defined below), investors). Fund Capital excludes Bridge Investments and co-investments by selling shareholders, management, limited partners in JFLCO-sponsored funds, financing sources and other third-party investors.

References to “Fully/Substantially Realized” Investments mean investments that have been completely or partially exited to third parties.

References to “Active Investments” mean partially realized and unrealized investments, which as of December 31, 2021 consist of the following Fund III, Fund IV and Fund V investments: Trident Maritime (incorporating the merger of Fund III platform investments in US Joiner and IMECO), AGI, Lake Shore Systems, Inland Pipe Rehabilitation, Lone Star Disposal, CodeMettle, Integrated Global Services, Global Marine Group, Entact, CTS, Trillium, NorthStar Group and Narda-MITEQ.

Reference to quartile performance is measured against Cambridge Associates Global Buyout Net IRR Benchmark as of September 30, 2021. The Cambridge Associates LLC Global Buyout and Growth Equity Index® is a horizon calculation based on data compiled from buyout and growth equity funds, including fully liquidated partnerships, formed between 1996 and 2019. Partnership financial statements and narratives are the primary source of information concerning cash flows and ending residual/net asset values (NAV) for both partnerships and portfolio company investments. This benchmark is a broad-based index which is used for comparative purposes only and has been selected as it is well known and easily recognizable by investors. Comparisons to benchmarks have limitations because benchmarks have material characteristics that may differ from a JFLCO-managed fund. For example, investments made for a JFLCO-managed fund may differ significantly in terms of security holdings, industry weightings and asset allocation from those of the benchmark. Accordingly, investment results of a JFLCO-managed fund may differ from those of the benchmark. Investors should carefully consider these limitations and differences when evaluating the comparative benchmark data performance.

Reference to Pitchbook and S&P middle-market industry figures is used for comparative purposes only. Comparisons have limitations as industry transactions may materially differ from a JFLCO transaction. Investors should carefully consider these limitations and differences when evaluating the comparative data.

References to “Fund I & Predecessor Investments” includes the nine investments completed by members of the Investment Team and Operating Executive Board prior to the raising of Fund II in 2005-06. These include (i) the firm’s initial investments as a “fundless sponsor” in Accudyne & Kilgore and Sperry Marine through special purpose entities formed specifically for each transaction (the “Pre-Fund Investments”), (ii) six investments in Fund I, a 1997 vintage partnership with \$130.1 million in capital commitments, and (iii) J.F. Lehman Equity Investors I-A, L.P. (“Fund I-A”), a 2004 “annex” fund which raised \$16.7 million in capital commitments from investors in Fund I in connection with the investment in Racial Acoustics.



GENERAL NOTES AND TERMINOLOGY (cont'd)

References to “Non-Representative Investments” relate to five transactions since the firm’s inception that the Partners believe are no longer consistent with JFLCO’s core investment strategy including (i) three Fund I investments (Burke, Elgar and Special Devices) purchased in 1997 and 1998 where JFLCO employed aggressive leverage to purchase companies through highly competitive auctions for premium multiples during peaks in their respective market cycles, and (ii) two Fund II early stage investments (Hawaii Superferry and Defense Venture Group) that had limited or no operating history. “Representative Investments” refer to all other investments. Detailed case studies of each JFLCO investment are available upon request.

References to “NM” IRRs represent returns where fewer dollars have been returned than dollars invested. The loss of capital has been reflected in Gross MOIC less than 1.0x and the IRR is shown as “NM” or “Not Meaningful” to reflect the view that the velocity of the return is not meaningful because a negative IRR yields counterintuitive results.

References to “Realized Value” represent cash distributions from portfolio companies and proceeds paid upon sale or other exit transactions (including cash dividends, interest, ordinary income, capital gains and return of capital).

References to “Total Value” represent the sum of Realized Value and Unrealized Value, which is the remaining value of a fund’s interest in an investment. Unrealized Value is based on JFLCO’s estimate of the fair market value of such interest in accordance with its valuation policy. In determining Unrealized Value, consideration is given to the financial condition and operating results of the portfolio company, the value of comparable companies and other relevant factors pursuant to JFLCO’s valuation policy. There can be no assurance that any Unrealized Value will be realized at the valuations shown, as actual realized returns will depend on, among other factors, future operating results, the value of the assets and market conditions at the time of disposition, any related transaction costs and the time and manner of sale, all of which may differ from the assumptions on which the valuations contained herein are based. Accordingly, the actual realized returns may differ materially from the returns indicated herein. Additional information regarding JFLCO’s valuation policy and current investment valuations is available upon request.

References to “Gross MOIC” represent Total Value expressed as a multiple of the Fund Capital invested. All Gross MOIC amounts exclude the allocation of any fund-level fees and expenses, carried interest or taxes, which in the aggregate may be substantial. The calculation of Gross MOIC with respect to Active Investments is inclusive of Unrealized Value, which is based on JFLCO’s estimate of the fair market value of such investment in accordance with its valuation policy. Gross MOIC reflects a de minimis reinvestment of proceeds where applicable. Realized Gross MOIC represent the Gross MOIC for Fully/Substantially Realized Investments.

References to “Gross IRR” represent annual, compounded gross internal rates of return calculated based on capital inflows and outflows for each portfolio company. As it relates to capital calls for acquisitions and follow-on investments and distributions related to dividend recapitalizations or exits, Gross IRR reflects such capital inflows and outflows as if they occurred on the dates of such transaction. As it relates to other capital calls and distributions, Gross IRR generally reflects such inflows and outflows according to the actual dates of such inflows from and outflows to fund investors. All Gross IRR amounts exclude the allocation of any fund-level fees and expenses, carried interest or taxes, which in the aggregate may be substantial. The calculation of Gross IRR is inclusive of Unrealized Value, which is based on JFLCO’s estimate of the fair market value of such investment in accordance with its valuation policy. Gross IRR reflects a de minimis reinvestment of proceeds where applicable. Realized Gross IRR represent the Gross IRR for Fully/Substantially Realized Investments.

Gross IRR for Fund I & Predecessor Investments assumes all investments were made as of a common start date; Gross IRR based on capital inflows and outflows for these investments is 127.9% for Fund I & Predecessor Representative Investments and 116.5% for all Fund I & Predecessor Investments. These metrics are not considered meaningful nor accurately representative of performance.



GENERAL NOTES AND TERMINOLOGY (cont'd)

Total Gross IRR when aggregating JFLCO performance since inception also assumes all investments were made as of a common start date. Actual Gross IRR since inception based on capital inflows and outflows for each portfolio company is 127.9% for all Fully/Substantially Realized Representative Investments, 16.5% for Active Representative Investments and 116.5% for all JFLCO Investments. These metrics are not considered meaningful nor accurately representative of performance.

References to “Net Performance” (Net MOIC and Net IRR) for both realized and unrealized amounts represent the deduction of any fund-level fees and expenses incurred, carried interest (whether accrued or paid) and taxes incurred that may be allocable to limited partners in such funds. Net IRR and Net MOIC reflect a de minimis reinvestment of proceeds where applicable.

Prior to Fund IV, JFLCO did not use subscription or capital call lines of credit. Fund IV and Fund V have a subscription line to allow for enhanced cash management and to provide short-term financing prior to the receipt of capital contributions. Fund VI expects to have a subscription line for similar uses. Net IRR in Fund IV and V include the benefits that result from utilizing subscription lines, including higher reported Net IRR figures than if a subscription line (or other leverage) had not been utilized.

Net Performance Since Inception is an estimate and does not represent actual returns to any investor. Net IRR Since Inception is calculated utilizing the common start date methodology for each of the two Pre-Fund Investments, Fund I, Fund I-A, Fund II, Fund III, Fund IV and Fund V. Net IRR Since Inception based on actual dates of capital inflows and outflows for these funds is 84.8%, and not considered meaningful nor accurately representative of performance. Net Performance for All Representative Investments is regarded as not meaningful.

Net IRR for Fund II, Fund III, Fund IV and Fund V represents the annual, compounded net internal rates of return calculated based on the actual dates and amounts of cash contributions from, and distributions or expected distributions to, the limited partners of such fund after the allocation of any fund-level fees and expenses incurred, carried interest (whether accrued or paid) and taxes incurred that may be allocable to limited partners.

Adjusted Net Performance for Fund III reflects illustrative cash flows assuming a 100% management fee offset for transaction and monitoring fees in lieu of the “budget based” offset provisions set forth in the limited partnership agreement governing Fund III. Add-back adjustments were made at mid-year points to approximate cash flows that would have occurred throughout the calendar year. Pro-forma net returns shown do not represent actual returns to any investor.

Net IRR for Fund I & Predecessor Investments is calculated utilizing the Gross IRR methodology (i.e., common start date methodology) for each of the two Pre-Fund Investments, Fund I and Fund I-A. Net IRR based on capital inflows and outflows for these investments is 85.0%, and not considered meaningful nor accurately representative of performance. Net IRR and Net MOIC for Fund I & Predecessor Investments include a pro forma management fee of 2% on Fund Capital and 20% carried interest for Pre-Fund Investments and Fund I-A. Net IRR for Fund I & Predecessor Investments also includes a \$2.0 million investment in Redleaf Group (“Redleaf”) completed by Fund I in 2000. Redleaf was a company that invests in venture capital opportunities and was not representative of JFLCO’s investment strategy. The investment in Redleaf has been written down to zero and accounted for as a fund expense in the net return data for Fund I.

Net Distributions to paid-in capital (“Net DPI”) is equal to total net distributions to limited partners divided by total paid-in capital (including fees and expenses and carried interest). Residual value to paid-in capital (“RVPI”) is equal to the total Unrealized Value divided by total paid-in capital.

Gross Distributions to paid-in capital (“Gross DPI”) is equal to total cash distributions from portfolio companies and proceeds paid upon sale or other exit transactions (including cash dividends, interest, ordinary income, capital gains and return of capital) divided by total fund capital.



FOOTNOTES TO PERFORMANCE TABLES

- 1) Platform investments NorthStar and Waste Control Specialists (“WCS”) were combined into NorthStar Group in November 2020. In accordance with procedures approved by Fund IV’s Advisory Committee, NorthStar shareholders received 80% of the economic interests in NorthStar Group and WCS shareholders received the remaining 20%. The valuation of NorthStar Group beginning in December 2020 has been allocated to the original platform investments accordingly.

In October 2021, affiliates of Fund IV completed the sale of NorthStar Group via a single asset secondary transaction pursuant to a process approved by the Limited Partner Advisory Committees of both Fund IV and Fund V and affiliated investment vehicles. The transaction resulted in a full monetization of NorthStar Group for Fund IV investors; simultaneously, investment affiliates of JFLCO continued to control the company through investments by (i) a continuation vehicle backed by longstanding and new institutional partners, (ii) Fund V, and (iii) the rollover of significant interests from NorthStar Group’s senior management, electing investors in Fund IV and the Fund IV General Partner. Importantly, the transaction is expected to provide the resources required to support the company’s next phase of growth and drive incremental value creation.

- 2) Platform investments National Response Corporation (“NRC”) and Sprint Energy Services (“Sprint”) were combined into NRC Group Holdings, LLC (“NRCG”) in June 2018. In accordance with procedures approved by Fund III’s Advisory Committee, NRC shareholders received 65% of the economic interests in NRCG and Sprint shareholders received the remaining 35%. NRCG became publicly listed in October 2018 in connection with its sale to Hennessey Capital Acquisition Corp., a special purpose acquisition corporation. At that time, Fund IV acquired a modest structured equity position in the company in conjunction with the public listing. On November 1, 2019, NRCG closed its previously announced merger with US Ecology, Inc. (“US Ecology”) (NASDAQ: ECOL). ECOL common stock was the basis for the valuations. On May 4, 2020, JFLCO completed the final in-kind distribution of shares of US Ecology common stock to investors.
- 3) Platform investments American Scaffold (“ASI”) and IMIA were combined into IMIA Group in April 2021. In accordance with procedures approved by Fund IV’s Advisory Committee, ASI shareholders received 20% of the economic interests in IMIA Group and IMIA shareholders received the remaining 80%. The valuation of IMIA Group beginning in June 2021 has been allocated to the original platform investments accordingly.
- 4) Fund III platform investment Trident Maritime Systems (“Trident”) and Fund IV platform investment Lake Shore Systems (“Lake Shore”) were combined into TMS Group in February 2021. In accordance with procedures approved by Fund III’s and Fund IV’s Advisory Committees, Trident shareholders received 85% of the economic interests in TMS Group and Lake Shore shareholders received the remaining 15%. The valuation of TMS Group beginning in March 2021 has been allocated to the original platform investments accordingly.



I would have thought that Dutch = Netherlands, Belgium, Denmark, Finland if not a few more.

Firm: Landmark Partners, an Ares company

Strategy/Product: Private Equity / Real Estate Secondaries (LEP XV, LREP VI, LREP VIII)

Client: MWRA Employees' Retirement System

NEPC Manager Due Diligence Questionnaire - Update

Instructions

In support of our upcoming meeting, we ask that you please complete this due diligence questionnaire. Please provide your responses in the form of brief descriptions, lists or tables added directly to this Word document.

Thank you for taking the time to complete this questionnaire. Please note that all materials submitted in relation to MWRA Retirement System may be subject to disclosure consistent with Massachusetts Public Record laws.

Firm/Organization

1. Have there been any changes in ownership or management in the past year?

Yes, on March 30, 2021, Landmark Partners, LLC (“Landmark”) entered into a definitive agreement (the “Transaction”) with Ares Management Corporation (NYSE: ARES) (“Ares”). The Transaction closed on June 2, 2021, and, pursuant to the terms of this agreement, Landmark has become a wholly owned indirect subsidiary of Ares. The investment process and investment decision authority, along with responsibility for the day-to-day operations of the firm remain with the partners of Landmark. Investment decisions remain the responsibility of the respective Investment Committee.

2. List firm AUM, net flows and accounts gained/lost for the past 5 years.

Year end	Landmark AUM (millions)
December 2021:	\$31,156.5
December 2020:	\$28,677.9
December 2019:	\$27,984.9
December 2018:	\$26,946.3
December 2017:	\$21,961.6

AUM is measured by total committed capital across all products.

3. Have there been any new or discontinued products in the past year?

Landmark held the first closing for Landmark Real Estate Fund IX in December 2021. We are also currently in the market for Landmark Equity Partners XVII.



4. Are any products capacity constrained?

No.

5. Describe any current or pending regulatory, compliance or litigation issues and the expected business impact.

Other than the following, there are no pending regulatory, compliance or litigation issues to report.

On March 23, 2022, Ares Management LLC received a notification of an examination from the Division of Examinations of the SEC, which Ares believes were initiated in the ordinary course of business. The examination appears to be routine in nature.

6. Describe your diversity, equity and inclusion efforts with regard to the firm and its employees.

Ares Management has made a formal commitment to DEI. DEI is a strategic priority for Ares Management from both a top-down and grassroots perspective. We are deeply proud of what we have achieved so far, though we are also humble in acknowledging that there are significant opportunities to drive further progress.

Why We Believe DEI Is Important

It's the right thing to do. We believe that we should be part of the solution in promoting equity, equality, and social justice within the communities in which we operate.

It's good business. By fully leveraging diverse experiences, backgrounds, and perspectives, we believe we can create better outcomes for our investors, our portfolio companies and our employees. Our performance and long-term success are directly attributable to the talent we can attract and retain.

Our Goals

- We seek to generate quality returns for our investors by building high-quality teams and cultivating a culture where people can be their authentic selves. This culture provides a range of welcomed perspectives and ways of thinking, ultimately resulting in benefits to our investment process and support infrastructure.
- We aim for our team's diversity profile to reflect the underlying diversity levels in the communities where we operate.
- We recognize that this representation and equity do not currently exist broadly in our industry. We seek to be a leader in enacting programs, policies and partnerships that advance representation, and also educate our existing team



and support and empower our underrepresented employees to rise within the firm.

Portfolio Management Team

1. Have there been any changes in the portfolio management team in the past year?

The following Landmark Investment Team additions have taken place over the course of the past year:

Name	Title	Investment Team	Addition Date
Brad Shepherd	Managing Director	Real Estate	Feb-22
Stefano Rubini	Vice President	Real Estate	Jan-22
Clement Beaudin	Principal	Private Equity	Jan-22
Luca Salvato	Partner	Private Equity	Jan-22
Sebastien Burdel	Partner	Private Equity	Jan-22
Colin Pagnam	Principal	Real Estate	Oct-21
David Galuski	Vice President	Real Estate	Jul-21
Evan O'Keeffe	Vice President	Private Equity	May-21

Vice President and above March 2021 - March 2022

The following Landmark Investment Team departures have taken place over the course of the past year:

Name	Title	Investment Team	Departure Date
Gregory Lombardi	Managing Director	Real Estate	Feb-22
Gina Spiegel	Managing Director	Real Estate	May-21
John Stott	Partner	Private Equity	Aug-21

Vice President and above March 2021 - March 2022

2. Are there any expected changes to the team in the future (planned additions or departures)?

We expect to welcome at least two private equity professionals (Managing Director and Principal) and one real estate professional (Managing Director) to the Landmark team before the end of 2Q 2022.

Private Equity Partner Charlie Tingue is departing April 2022 to pursue other opportunities.



Process

1. Have there been significant changes in any of the areas below in the past year?
 - Identification of investment ideas
 - Process for exploring and vetting ideas
 - Portfolio trading practices including buy/sell rules
 - Approach to portfolio monitoring and risk management

There have been no meaningful changes to our investment process over the past year.

Philosophy

1. Describe recent changes in investment philosophy, if any.

There have been no recent changes to Landmark's investment philosophy.

Portfolio

1. If not included in your meeting presentation, provide portfolio holdings, sector exposure, geographic exposure and common characteristics (yield, duration, market cap, P/E, etc.).

Please refer to the meeting presentation.

2. List strategy AUM, net flows and accounts gained/lost for the past 5 years.

Year end	Private Equity	Real Estate	Infrastructure	Total AUM
December 2021:	\$20,473.6	\$9,113.2	\$1,569.7	\$31,156.5
December 2020:	\$18,902.9	\$8,353.2	\$1,421.8	\$28,677.9
December 2019:	\$18,535.0	\$8,605.5	\$844.4	\$27,984.9
December 2018:	\$18,034.3	\$8,205.0	\$707.0	\$26,946.3
December 2017:	\$14,525.3	\$6,981.8	\$454.5	\$21,961.6

AUM is measured by total committed capital across all products.



3. Describe investor concentration for the strategy and note the percent of AUM attributable to the top five investors.

Please see below for a breakdown of investor type in LEP XV, LREP VI and LREP VIII.

LEP XV	
Investor Type	%
Public Pension Fund	50%
Insurance Company	12%
Private Investment Firm	9%
Corporation	6%
Union/Taft Hartley	6%
Government Investor	5%
Individual/Family Office	4%
Corporate Pension Plan	4%
Private Pension	1%
Endowment	1%
Foundation	1%
GP	1%

LREP VIII	
Investor Type	%
Public Pension Fund	43%
Insurance Company	14%
Endowment / Foundation	9%
Private Pension Plan	7%
Private Investment Firm	6%
Individual / Family Office	6%
Government Investor	6%
Union / Taft Hartley	3%
Corporate Pension Plan	3%
Other	2%
General Partner	1%

LREP VIII	
Investor Type	%
Public Pension Fund	46%
Union / Taft Hartley	36%
Insurance Company	9%
Corporation	3%
Private Investment Firm	3%
Other	2%
General Partner	1%

Past diversification may not be indicative of the degree of future diversification. Diversification does not assure profit or protect against market loss.

The top five investors for LEP XV, LREP VI and LREP VIII account for 33%, 60% and 24% of total commitments in each fund, respectively.

Performance / Market Outlook

1. If not included in your meeting presentation, provide trailing returns as of the most recent quarter-end and calendar year returns for the past 10 years, both relative to benchmark.

Please refer to the meeting presentation. We are happy to discuss during the update call.

2. Briefly discuss recent performance trends and identify environments in which the strategy is likely to be in or out of favor.

Please refer to the meeting presentation. We are happy to discuss during the update call.



3. Describe your market outlook and how strategy positioning is impacted by your views.

Please refer to the meeting presentation. We are happy to discuss during the update call.

4. Could you please include a slide in your presentation that shows the MWRA's account history, initial contribution, cumulative subsequent contributions, cumulative subsequent distributions, gain/loss and current value.

Please see attached Capital Account Statement and MWRA Historical NAV and Cash Flows.

LANDMARK PARTNERS
an ARES company

Landmark Investor Update

Massachusetts Water Resource Authority

April 2022

Disclaimer

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Some funds managed by Ares or its affiliates may be unregistered private investment partnerships, funds or pools that may invest and trade in many different markets, strategies and instruments and are not subject to the same regulatory requirements as mutual funds, including mutual fund requirements to provide certain periodic and standardized pricing and valuation information to investors. Fees vary and may potentially be high.

Disclaimer

These materials also contain information about Ares and certain of its personnel and affiliates whose portfolios are managed by Ares or its affiliates. This information has been supplied by Ares to provide prospective investors with information as to its general portfolio management experience. Information of a particular fund or investment strategy is not and should not be interpreted as a guaranty of future performance. Moreover, no assurance can be given that unrealized, targeted or projected valuations or returns will be achieved. Future results are subject to any number of risks and factors, many of which are beyond the control of Ares. In addition, an investment in one Ares Fund will be discrete from an investment in any other Ares Fund and will not be an investment in Ares Corp. As such, neither the realized returns nor the unrealized values attributable to one Ares Fund are directly applicable to an investment in any other Ares Fund. An investment in an Ares Fund (other than in publicly traded securities) is illiquid and its value is volatile and can suffer from adverse or unexpected market moves or other adverse events. Funds may engage in speculative investment practices such as leverage, short-selling, arbitrage, hedging, derivatives, and other strategies that may increase investment loss. Investors may suffer the loss of their entire investment. In addition, in light of the various investment strategies of such other investment partnerships, funds and/or pools, it is noted that such other investment programs may have portfolio investments inconsistent with those of the strategy or investment vehicle proposed herein.

Benchmark (index) performance does not reflect the deduction of transaction costs, management fees, or other costs which would reduce returns. References to market or composite indexes, benchmarks or other measures of relative performance are for comparison purposes only. An investor cannot invest directly in an index.

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The outbreak of a novel and highly contagious form of coronavirus ("COVID-19"), which the World Health Organization has declared to constitute a pandemic, has resulted in numerous deaths, adversely impacted global commercial activity and contributed to significant volatility in certain equity and debt markets. The global impact of the outbreak is rapidly evolving, and many countries have reacted by instituting quarantines, prohibitions on travel and the closure of offices, businesses, schools, retail stores and other public venues. Businesses are also implementing similar precautionary measures. Such measures, as well as the general uncertainty surrounding the dangers and impact of COVID-19, are creating significant disruption in supply chains and economic activity and are having a particularly adverse impact on energy, transportation, hospitality, tourism, entertainment and other industries. The impact of COVID-19 has led to significant volatility and declines in the global financial markets and oil prices and it is uncertain how long this volatility will continue. As COVID-19 continues to spread, the potential impacts, including a global, regional or other economic recession, are increasingly uncertain and difficult to assess. Any public health emergency, including any outbreak of COVID-19 or other existing or new epidemic diseases, or the threat thereof, and the resulting financial and economic market uncertainty could have a significant adverse impact on the Landmark funds, the value of their investments and their portfolio companies. The performance and portfolio company information herein is preliminary and unaudited as of the respective dates stated herein and not all of the effects, directly or indirectly, resulting from COVID-19 and/or the current market environment may be reflected herein. The full impact of COVID-19 and its ultimate potential effects on portfolio company performance and valuations is particularly uncertain and difficult to predict.

REF: LM-00516

Discussion Outline

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Firm Overview

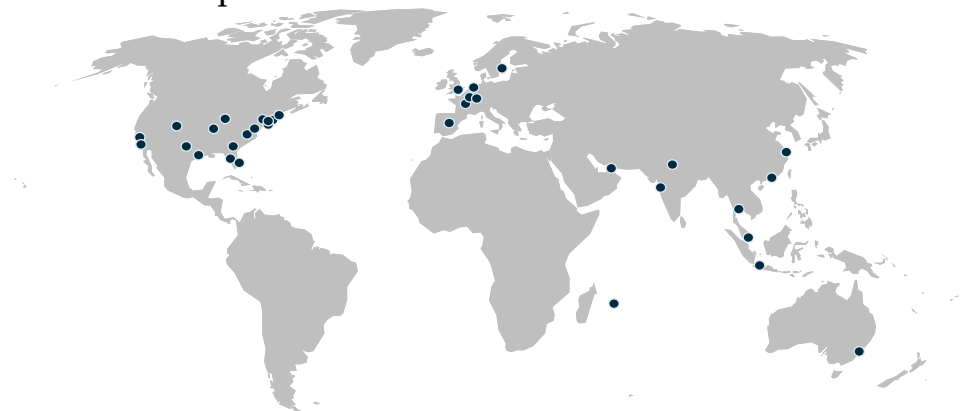
Ares Management

» With approximately \$314 billion in assets under management, Ares Management Corporation is a global alternative investment manager operating an integrated platform across five business groups

Profile

Founded	1997
AUM	\$314bn ¹
Employees	~2,110
Investment Professionals	~760
Global Offices	30+
Direct Institutional Relationships	~1,810
Listing: NYSE – Market Capitalization	\$24bn ²

Global Footprint³



The Ares Edge

Power of a broad and scaled platform enhancing investment capabilities

Deep management team with integrated and collaborative approach

20+ year track record of compelling risk adjusted returns through market cycles

Pioneer and a leader in leveraged finance, private credit and secondaries

	Credit	Private Equity	Real Assets	Secondary Solutions	Strategic Initiatives
AUM	\$192.7bn	\$33.4bn	\$53.9bn	\$22.1bn	\$11.6bn
Strategies	Direct Lending	Corporate Private Equity	Real Estate Equity	Private Equity & Credit Secondaries	Ares SSG
	Liquid Credit	Special Opportunities	Real Estate Debt	Real Estate Secondaries	Ares Insurance Solutions ⁴
	Alternative Credit		Infrastructure Opportunities	Infrastructure Secondaries	Ares Acquisition Corporation
			Infrastructure Debt		

Note: As of December 31, 2021. AUM amounts include funds managed by Ivy Hill Asset Management, LP, a wholly owned portfolio company of Ares Capital Corporation and registered investment adviser. Past performance is not indicative of future results.

1. Please refer to endnote 1 on Slide 27 for additional important information

2. As of March 29, 2022

3. Jakarta, Mumbai and New Delhi offices are operated by third parties with whom Ares SSG maintains an ongoing relationship relating to the sourcing, acquisition and/or management of investments.

4. AUM managed by Ares Insurance Solutions excludes assets which are sub-advised by other Ares' investment groups or invested in Ares funds and investment vehicles.

Landmark Partners: A Well-Established Industry Pioneer

» For over 30 years, Landmark Partners has been a market leader in secondary solutions delivering attractive risk-adjusted returns

Strong, Cycle-Tested Performance			
	Private Equity & Credit Secondaries	Real Estate Secondaries	Infrastructure Secondaries
Strategy Inception	1990	1996	2015
Committed Capital	\$20.5bn	\$9.1bn	\$1.6bn
Transaction Count	515+	190+	30+
Sponsors / Interests ¹	620+ / 1,715+	190+ / 730	25+ / 40+

- Founded in 1989, the firm includes dedicated investment and quantitative research teams with local presence in six offices across the United States, Europe and Asia
- Led by a 17-member Partner group with average tenure of 16 years

Landmark's scale, experience and depth of investment resources create significant benefits

As of December 31, 2021, with the exception of Partner count and tenure which is as of January 2022.

1. Amount of sponsors does not sum as some sponsors are involved in multiple asset classes that Landmark invests in.

Strategic Business Combination

- » Strategic combination of Landmark and Ares enhances the platform's position as a trusted advisor to the sponsor community



Complementary Approach & Processes

Culturally similar investment philosophy and processes focused on downside protection¹ and tailored solutions



Deep Relationship Network

Complimentary relationship networks expected to further augment sourcing advantages



Differentiated Market Intelligence

Enhanced marketplace knowledge to provide due diligence, relative value and structuring benefits



Enhanced Product Offering

Ability to provide additional solutions to sponsors, strengthening the platform's value proposition

LANDMARK PARTNERS
an ARES company

Deep market insights and significant resources across our platform can enhance investment capabilities and capitalize on multiple pillars of growth

1. Such downside protection is not a guarantee against loss of investment capital or value.

Landmark Real Estate Update

Experienced Team with Ability to Leverage the Wider Platform

» A leading investment team with 17 years' average experience¹ and local presence in six offices

LREF IX Investment Committee – 29 Years Average Experience

Francisco L. Borges Partner, Co-Head of Secondaries 36 years of experience	Timothy L. Haviland Partner, Co-Head of Secondaries 36 years of experience	Chad S. Alfeld Partner 26 years of experience	Michelle L. Creed Partner 19 years of experience	R. Paul Mehlman Partner 33 years of experience	Paul Parker Partner 27 years of experience	James Sunday Partner 26 years of experience
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LREF IX Investment Team

Michelle L. Creed Partner 19 years of experience	R. Paul Mehlman Partner 33 years of experience	Paul Parker Partner 27 years of experience	James Sunday Partner 26 years of experience	Quentin Kruel Managing Director 16 years of experience	Brad Shepherd Managing Director 21 years of experience
Colin Pagnam Principal 14 years of experience	Batih van Leer Principal 8 years of experience	Min Zhou Principal 17 years of experience	David Galuski Vice President 10 years of experience	Robert Norberg Vice President 10 years of experience	Stefano Rubini Vice President 6 years of experience
Kaitlin Stenson Vice President 9 years of experience	Isabel Agnew Senior Associate 4 years of experience	Travis Crocker Senior Associate 5 years of experience	Katherine Mathewson Senior Associate 6 years of experience	Bharath Raghunath Senior Associate 6 years of experience	Alan Conlon Associate 4 years of experience
Anne Boyd Associate 3 years of experience	Bailey Busscher Analyst <1 year of experience	Benedict Chung Analyst 1 year of experience			

Quantitative Research Group

Barry Griffiths, Ph.D. Partner 26 years
Avi Turetsky, Ph.D. Partner 18 years
Dr. Ralph Eissler Principal 15 years
Rob Hershfield Principal 16 years
William Kieser, Ph.D. Vice President 4 years
Matthew Pyrz Vice President 7 years
Jiaping Zhang, Ph.D. Vice President 25 years
Transaction Support
Tina E. St. Pierre Partner, Chief Administrative Officer 26 years of experience

Additional Sourcing, Due Diligence and Support

Quantitative Research Group



24
Professionals

Private Equity Secondaries



26
Professionals

Infrastructure Secondaries



6
Professionals

Strategy and Support Functions²



86
Professionals

Key Attributes

Tenure

Tested experience working through multiple market cycles

Depth and Breadth

Depth of resources provide competitive advantage

Sector Expertise

Investment experience across market sectors, strategies and geographies

Information Edge

Advantaged diligence and differentiated investor conversations

Organizational overview effective as of April 4, 2022.

1. Average experience at Vice President level or above.

2. Includes investor relations, finance, operations, legal, HR, compliance and administration.

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Strong Cycle-Tested Track Record Over 25+ Years

» An industry pioneer with a deep track record of delivering attractive risk-adjusted returns across a number of secondary solutions



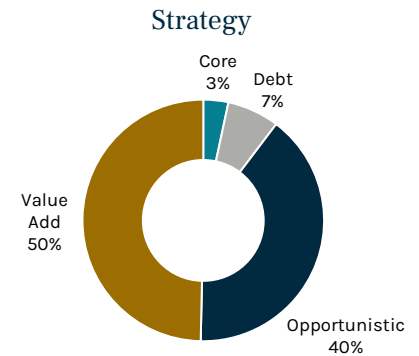
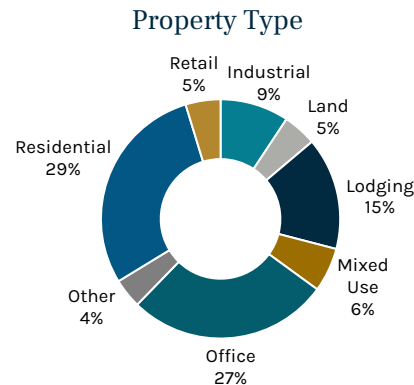
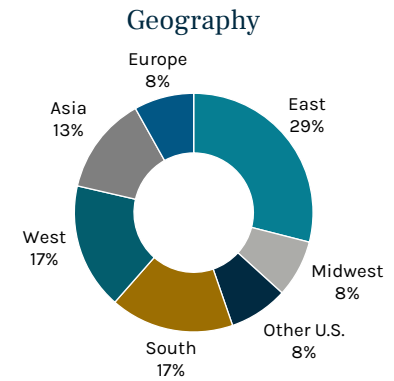
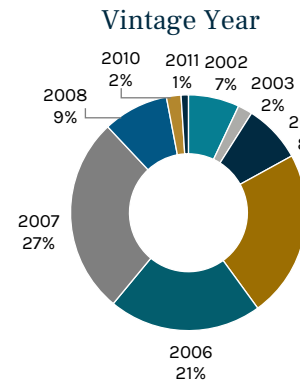
(\$, Millions)	Vintage Year	Committed Capital	Contributed Capital	Gross Distributions	Residual Value	Total Value	Gross IRR	Net IRR	Net TVPI
Landmark Prior Funds ¹	1996 - 2005	\$1,032	\$963	\$1,442	\$22	\$1,464	33.9%	27.0%	1.40x
LREF VI	2010	718	629	1,022	41	1,063	23.8%	18.3%	1.53x
LREF VII	2014	1,616	1,492	1,423	490	1,913	11.0%	7.3%	1.19x
LREF VIII	2017	3,333	1,597	1,006	1,483	2,489	30.5%	20.8%	1.40x
Total		\$6,699	\$4,681	\$4,893	\$2,036	\$6,929	33.2%	25.4%	1.35x

All data as of September 30, 2021, unless otherwise specified (including in Endnotes). Performance results are unaudited. **Past performance is not necessarily indicative of future results, nor does it ensure that investors will not incur a loss with respect to their investment.** Includes realized and unrealized investments and no assurance can be made that unrealized values will be realized as indicated. **Please also refer to the Endnotes contained in the Appendix.** Landmark has historically used a modest level of leverage as evidenced by its most recent vintage funds. RE fund managers have progressively relied on fund level tools, such as subscription lines of credit, making relative performance comparisons of fund managers challenging.

Landmark Real Estate Fund VI

Partnership Overview as of December 31, 2021		\$M
Final Closing	March 2011	
Total Partnership Capital		\$717.7
Invested/Committed		\$681.0
Contributed Equity		\$629.6
Distributions to Partners ¹ (154.3% of Contributed Equity)		\$971.2
Net Asset Value ²		\$37.4
Net IRR ³ (as of September 30, 2021)		18.3%
Net TVPI ⁴ (as of September 30, 2021)		1.53x

Fund Attributes at Acquisition	
30 transactions	
83 partnership interests	
Exposure to 51 sponsors and over 1,925 underlying property interests	
90% funded on committed capital of underlying funds	
2006 weighted average vintage	
Weighted average 30% discount to NAV	



- Distributions made to the partners from the fund, including carried interest if applicable.
- The Net Asset Value is based upon valuations as most recently received from the underlying general partners (generally as of September 30, 2021) adjusted for contributions made and distributions received through December 31, 2021, as well as other balance sheet items of the Landmark fund as of December 31, 2021.
- The Net IRR which represents an effective annualized internal rate of return is calculated using the contributions made by the limited partners; the distributions made to the limited partners; and the limited partners' share of the residual value as of quarter end. The cash flow dates used in the IRR calculations are based on the actual dates of the cash flows. The Net IRR is after all investment advisory fees, carried interest, taxes (but does not include taxes or withholdings incurred by investors directly) and other expenses. Landmark's funds have used and may continue to utilize short term credit facilities for general cash management purposes, as well as modest long-term credit facilities as permitted by the respective fund's governing documentation. The IRR would have likely been lower had the applicable fund called capital from its partners instead of utilizing the credit facility. The most recent funds may also utilize a credit facility in their portfolio.
- The Net TVPI is calculated using the contributions made by the limited partners, the distributions made to the limited partners, and the limited partners' share of the Residual Value as of quarter end. The Net TVPI is after all investment advisory fees, carried interest, taxes (but does not include taxes or withholdings incurred by investors directly) and other expenses.

Charts illustrate fund diversification at acquisition. Past diversification may not be indicative of the degree of future diversification. Diversification does not assure profit or protect against market loss. The performance of each fund is presented together with such fund's affiliated parallel funds or accounts on a combined basis, given that their investments are substantially the same. **Past performance is not necessarily indicative of future results, nor does it ensure that investors will not incur a loss with respect to their investment.**

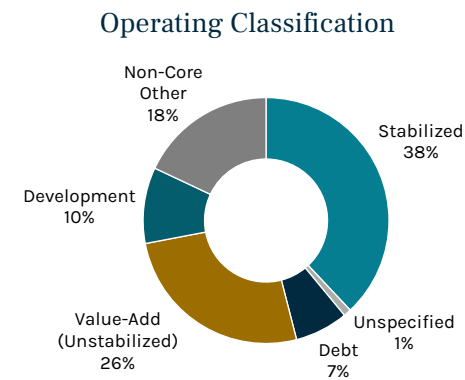
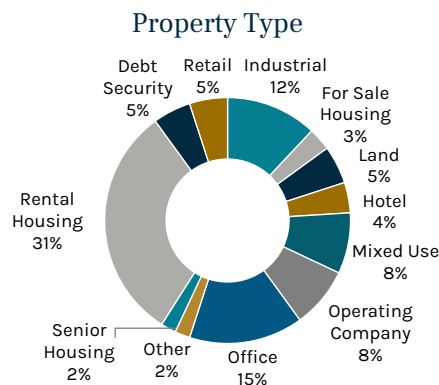
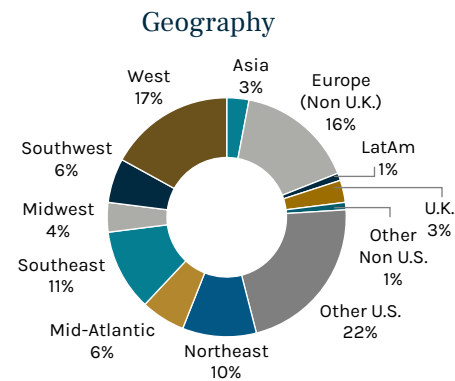
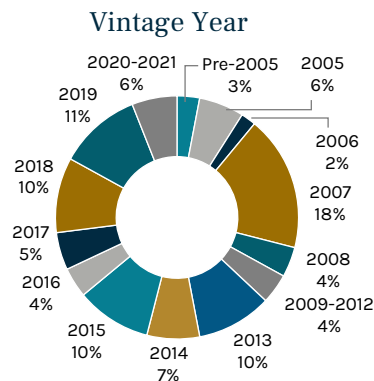
Includes realized and unrealized investments and no assurance can be made that unrealized values will be realized as indicated.

Landmark Real Estate Fund VIII

Partnership Overview as of December 31, 2021		\$M
Final Closing	March 2018	
Total Partnership Capital		\$3,333.3
Invested/Committed		\$3,373.6
Contributed Equity		\$1,762.9
Distributions to Partners ¹ (48.1% of Contributed Equity)		\$847.4
Net Asset Value ²		\$1,634.3
Net IRR ³ (as of September 30, 2021)		20.8%
Net TVPI ⁴ (as of September 30, 2021)		1.40x

Fund Attributes at Acquisition	
63 transactions	
193 partnership interests	
Exposure to 80 sponsors and over 4,375 underlying property interests	
78.4% funded on committed capital of underlying funds	
2012 weighted average vintage	
Weighted average 15.1% discount to NAV	

Subsequent Activity through April 1, 2022	
Distributions to Partners ¹	\$172.1M



- Distributions made to the partners from the fund, including carried interest if applicable.
- The Net Asset Value is based upon valuations as most recently received from the underlying general partners (generally as of September 30, 2021) adjusted for contributions made and distributions received through December 31, 2021, as well as other balance sheet items of the Landmark fund as of December 31, 2021.
- The Net IRR which represents an effective annualized internal rate of return is calculated using the contributions made by the limited partners; the distributions made to the limited partners; and the limited partners' share of the residual value as of quarter end. The cash flow dates used in the IRR calculations are based on the actual dates of the cash flows. The Net IRR is after all investment advisory fees, carried interest, taxes (but does not include taxes or withholdings incurred by investors directly) and other expenses. Landmark's funds have used and may continue to utilize short term credit facilities for general cash management purposes, as well as modest long-term credit facilities as permitted by the respective fund's governing documentation. The IRR would have likely been lower had the applicable fund called capital from its partners instead of utilizing the credit facility. The most recent funds may also utilize a credit facility in their portfolio.
- The Net TVPI is calculated using the contributions made by the limited partners, the distributions made to the limited partners, and the limited partners' share of the Residual Value as of quarter end. The Net TVPI is net of all investment advisory fees, carried interest, taxes (but does not include taxes or withholdings incurred by investors directly) and other expenses.

Charts illustrate fund diversification at acquisition. Past diversification may not be indicative of the degree of future diversification. Diversification does not assure profit or protect against market loss. The performance of each fund is presented together with such fund's affiliated parallel funds or accounts on a combined basis, given that their investments are substantially the same. **Past performance is not necessarily indicative of future results, nor does it ensure that investors will not incur a loss with respect to their investment.** Includes realized and unrealized investments and no assurance can be made that unrealized values will be realized as indicated.

Account Overview as of 12/31/2021

MWRA Employees' Retirement System

	LREP VI	LREP VIII
Commitment	\$2,000,000	\$4,000,000
Contributed Capital	\$1,754,530	\$2,117,923
<i>% of Capital Drawn</i>	87.7%	52.9%
Distributions Received	\$2,636,017	\$1,018,135
<i>% of Contributed Capital</i>	150.2%	48.1%
Estimated Partner's Capital*	\$93,801	\$1,859,968
Subsequent Contributions	\$0	\$0
Subsequent Distributions	\$0	\$205,601
9/30/21 Residual Value Net IRR / TVPI	19.9% / 1.56x	20.7% / 1.40x

Past performance is not necessarily indicative of future results. Projections and forward-looking statements regarding estimated investment outcomes are based on assumptions that we believe are reasonable at this time. However, actual results may vary materially from stated expectations, and we make no guarantees of the future performance of the Fund.

Landmark Private Equity

Experienced Team with the Ability to Leverage the Wider Platform

» A leading private equity senior investment team with 18 years' average experience¹

Private Equity Secondaries Investment Committee – 24 Years' Average Experience

Chad Alfeld Partner 26 years	Francisco Borges Partner, Co-Head of Secondaries 36 years	Sebastien Burdel Partner 19 years	Timothy Haviland Partner, Co-Head of Secondaries 36 years	Joel Holsinger Partner, Co-Head of Alternative Credit 24 years	Scott Humber Partner 26 years
Edward Keith Partner 13 years		Barry Miller Partner 24 years	Kathryn Regan Partner 22 years	Luca Salvato Partner 22 years	Nate Walton Partner, Private Equity Group 20 years

Private Equity Secondaries Investment Team

Sebastien Burdel Partner 19 years	Scott Humber Partner 26 years	Edward Keith Partner 13 years	Barry Miller Partner 24 years
Kathryn Regan Partner 22 years	Luca Salvato Partner 22 years	Clement Beaudin Principal 7 years	Alvin Butler Principal 13 years
David Herbers Principal 13 years	Evan O'Keeffe Vice President 8 years	Amrit Singh Vice President 9 years	Colin Cahill Senior Associate 4 years
Connor Neumann Senior Associate 4 years	Jeremy Picard Senior Associate 4 years	Eric Oh Senior Associate 3 years	Vincent Iyoriobhe Associate 3 years
Mikos Legrand Associate 3 years	William Maltz Associate 2 years	Matthew Morris Associate 3 years	Nick Brown Associate 2 years
	Aidan Datene Associate 2 years	Joel Halpern Associate 2 years	

Quantitative Research Group

Barry Griffiths, Ph.D. Partner 26 years
Avi Turetsky, Ph.D. Partner 14 years
Dr. Ralph Eissler Principal 15 years
Rob Hershfield Principal 9 years
William Kieser, Ph.D. Vice President 3 years
Matthew Pyrz Vice President 7 years
Jiaping Zhang, Ph.D. Vice President 25 years

Capital Markets / Portfolio Mgmt.

Linda Rowland Managing Director 17 years
Sean Silva Managing Director 14 years
Denys Burnis Vice President 6 years
Alinah Shahid Senior Associate 7 years
Nick Karp Senior Associate 4 years
Roshan Chagan² Partner 19 years

Ares Leadership

Michael Arougheti Co-Founder, CEO Ares Management 28 years
Bennett Rosenthal Co-Founder, Director, Partner and Co-Chairman of Private Equity Group 28 years
Kipp deVeer Partner, Head of Ares Credit Group 26 years
Blair Jacobson Partner, Co-Head of European Credit 23 years

Landmark Additional Resources

Quantitative Research Group  23 Professionals	Real Estate Secondaries  21 Professionals	Infrastructure Secondaries  6 Professionals	Strategy and Support Functions  87 Professionals
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Data is as of April 2022.

1. At Principal level or above for the Landmark private equity team.

2. Ares team member.

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Ares Due Diligence and Support

Global Direct Lending  ~225 Professionals	Liquid & Alternative Credit  ~86 Professionals	Real Estate  195+ Professionals	Private Equity  110+ Professionals
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Strong Cycle-Tested Track Record Over 30+ Years

» A pioneer in private equity GP solutions with a deep track record of delivering attractive risk-adjusted returns across a broad number of secondary solutions

Total Landmark Equity Partners' Funds



(\$, Billions)	Vintage Year	Total LP Commitments	Contributed Capital	Gross Distributions	Residual Value	Total Value	Net IRR	Net DPI	Net TVPI
LEP XVI	2017	4.9	2.2	0.9	3.4	4.3	43.9% ²	0.30x	1.73x
LEP XV	2013	3.3	2.7	2.5	1.9	4.4	14.9%	0.82x	1.47x
Landmark Prior Funds ¹	1990 – 2008	6.6	6.4	9.5	0.3	9.8	17.2%	1.38x	1.42x
Total		14.8	11.3	12.9	5.6	18.5	17.6%	1.03x	1.50x

- LEP XVI total gross distributions as of December 31, 2021 were \$2.0 billion, resulting in a Net DPI of 0.63x
- LEP XV total gross distributions as of December 31, 2021 were \$2.8 billion, resulting in a Net DPI of 0.94x

All data as of September 30, 2021 unless otherwise specified (including in Endnotes). Performance results are unaudited. Certain funds of the vintage 1990-1995 were co-managed by Landmark Partners and a third-party advisory firm. The performance of each fund is presented together with such fund's affiliated parallel funds or accounts on a combined basis, given that their investments are substantially the same. **Past performance is not necessarily indicative of future results, nor does it ensure that investors will not incur a loss with respect to their investment.** Includes realized and unrealized investments and no assurance can be made that unrealized values will be realized as indicated. There is no assurance that distributions will continue at these levels or at all. **Please also refer to the Endnotes contained in the Appendix.**

Landmark Equity Partners XV

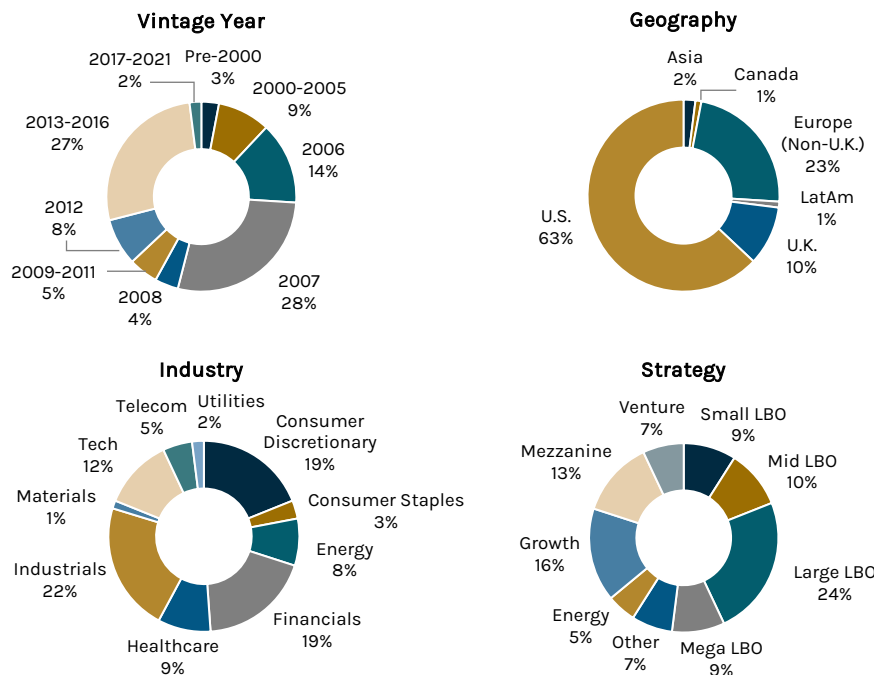
Partnership Overview as of December 31, 2021 \$M

Final Closing	December 2014
Total Partnership Capital	\$3,282.8
Invested/Committed ¹	\$3,464.6
Contributed Equity	\$2,655.0
Distributions to Partners ² (94.5% of Contributed Equity)	\$2,507.9
Net Asset Value ³	\$1,527.7
Net IRR ⁴ (as of September 30, 2021)	14.9%

Fund Attributes at Acquisition

- 60 transactions
- 183 fund interests, managed by 110 sponsors
- Over 1,800 company investments
- 67% invested and average 7.0 years of age at acquisition
- 10% public and 90% private investments
- 2,805 liquidity events and 96 IPOs since inception through December 31, 2021

Fund Diversification at Acquisition



1. Invested/Committed Capital includes transactions completed and under contract.
2. Distributions made to the partners from the fund, including carried interest if applicable.
3. The Net Asset Value is based upon valuations as most recently received from the underlying general partners (generally as of September 30, 2021) adjusted for contributions made and distributions received through December 31, 2021, as well as other balance sheet items of the Landmark fund as of December 31, 2021.
4. The Net IRR which represents an effective annualized internal rate of return is calculated using the contributions made by the limited partners; the distributions made to the limited partners; and the limited partners' share of the residual value as of quarter end. The cash flow dates used in the IRR calculations are based on the actual dates of the cash flows. Funds prior to Landmark Equity Partners XI use daily cash flows after 2010 and monthly cash flows before 2011. The Net IRR is after all investment advisory fees, carried interest, taxes (but does not include taxes or withholdings incurred by investors directly) and other expenses. Landmark's funds have used and may continue to utilize short term credit facilities for general cash management purposes, as well as modest long-term credit facilities as permitted by the respective fund's governing documentation. The IRRs would have likely been lower had the applicable fund called capital from its partners instead of utilizing the credit facility. Current and future Landmark funds may also utilize a credit facility in their portfolios.

Charts illustrate fund diversification at acquisition. Past diversification may not be indicative of the degree of future diversification. Diversification does not assure profit or protect against market loss. The performance of each fund is presented together with such fund's affiliated parallel funds or accounts on a combined basis, given that their investments are substantially the same. **Past performance is not necessarily indicative of future results, nor does it ensure that investors will not incur a loss with respect to their investment.** Includes realized and unrealized investments and no assurance can be made that unrealized values will be realized as indicated.

Account Overview as of 12/31/2021

MWRA Employees' Retirement System

	LEP XV
Commitment	\$3,000,000
Contributed Capital	\$2,408,209
<i>% of Capital Drawn</i>	80.3%
Distributions Received	\$2,287,914
<i>% of Contributed Capital</i>	95%
Estimated Partner's Capital*	\$1,256,435
Subsequent Contributions	\$0
Subsequent Distributions	\$45,962
9/30/2021 Residual Value Net IRR	14.3% / 1.48x

Appendix

Performance

» Real Estate Secondary Funds Inception through September 30, 2021

(Millions)	Vintage Year	Committed Capital	Contributed Capital	Gross Distributions	Residual Value	Total Value	Gross IRR	Net IRR
Landmark Real Estate Fund I ¹	1996	\$210.0	\$210.0	\$489.8	\$0.0	\$489.8	52.3%	45.1%
Landmark Real Estate Fund II ¹	1997	334.8	334.8	532.9	0.0	532.9	20.0%	16.6%
Landmark Real Estate Fund IV	2001	119.1	106.1	184.4	0.0	184.4	23.8%	19.4%
Landmark Real Estate Fund V	2005	368.1	312.0	234.5	21.8	256.3	-3.4%	-4.3%
Landmark Real Estate Fund VI	2010	717.7	629.6	1,022.5	40.7	1,063.2	23.8%	18.3%
Landmark Real Estate Fund VII	2014	1,616.2	1,491.7	1,422.8	490.5	1,913.3	11.0%	7.3%
Landmark Real Estate Fund VIII	2017	3,333.3	1,596.9	1,005.6	1,483.3	2,488.9	30.5%	20.8%
Landmark Secondary Real Estate Funds		\$6,699.2	\$4,681.1	\$4,892.5	\$2,036.3	\$6,928.8	33.2%	25.4%

All data as of September 30, 2021 unless otherwise specified (including in Endnotes). Performance results are unaudited. **Past performance is not necessarily indicative of future results, nor does it ensure that investors will not incur a loss with respect to their investment.** Includes realized and unrealized investments and no assurance can be made that unrealized values will be realized as indicated. **Please also refer to the Endnotes contained in the Appendix.** Landmark has historically used a modest level of leverage as evidenced by its most recent vintage funds. RE fund managers have progressively relied on fund level tools, such as subscription lines of credit, making relative performance comparisons of fund managers challenging.

Performance Track Record

» Private Equity Secondary Funds Inception through September 30, 2021

(Millions)	Vintage Year	Committed Capital	Contributed Capital	Gross Distributions	Residual Value	Total Value	Net IRR	Net TVPI	Max Net Multiple
Landmark Venture Partners ¹	1990	\$47.3	\$47.3	\$137.2	\$0.0	\$137.2	28.7%	2.64x	2.64x
Landmark Equity Partners II	1992	97.8	97.8	218.6	0.0	218.6	34.8%	2.08x	3.12x
Landmark Direct Equities	1992	6.3	6.3	9.1	0.0	9.1	52.6%	1.39x	1.53x
Landmark Equity Partners III ¹	1993	281.5	281.5	881.3	0.0	881.3	33.6%	2.82x	3.34x
Landmark Equity Partners IV	1994	217.1	211.1	346.7	0.0	346.7	16.6%	1.51x	1.99x
Landmark Mezzanine Partners	1995	61.0	60.5	118.4	0.0	118.4	29.7%	1.81x	2.17x
Landmark Equity Partners V	1995	297.6	294.1	386.2	0.0	386.2	8.2%	1.23x	1.42x
Landmark Secondary Partners	1998	228.7	226.9	320.1	0.0	320.1	5.4%	1.33x	1.43x
Landmark Secondary Partners IX	1999	357.4	343.5	319.6	0.0	319.6	-3.1%	0.86x	0.82x
Landmark Equity Partners X	2000	583.1	554.2	711.8	0.0	711.8	4.1%	1.20x	1.29x
Landmark Equity Partners XI	2002	626.0	594.4	1,000.0	0.0	1,000.0	22.5%	1.54x	1.92x
Landmark Equity Partners XII	2004	427.3	404.8	706.8	0.0	706.8	24.9%	1.59x	1.87x
Landmark Equity Partners XIII	2006	1,194.5	1,147.8	1,620.9	4.0	1,624.9	5.4%	1.32x	1.50x
Landmark Equity Partners XIII-A	2007	155.2	156.4	182.9	1.8	184.7	4.9%	1.13x	1.19x
Landmark Equity Partners XIV	2008	1,997.2	1,943.3	2,586.5	319.5	2,906.0	9.6%	1.35x	1.73x
Landmark Equity Partners XV ¹	2013	3,282.8	2,653.4	2,456.1	1,864.8	4,320.9	14.9%	1.47x	2.25x
Landmark Equity Partners XVI ¹	2017	4,945.3	2,232.9	910.8	3,358.6	4,269.4	43.9% ²	1.73x	1.83x

All data as of September 30, 2021 unless otherwise specified (including in Endnotes). Performance results are unaudited. **Past performance is not necessarily indicative of future results, nor does it ensure that investors will not incur a loss with respect to their investment.** Includes realized and unrealized investments and no assurance can be made that unrealized values will be realized as indicated. **Please also refer to the Endnotes contained in the Appendix.**

Endnotes

» Notes to page 11 - Strong Cycle-Tested Track Record Over 25+ Years

Committed Capital: Total fund size less released commitments as applicable.

Contributed Capital: Represents equity capital contributed to the funds.

Gross Distributions: Distributions made to the partners from the funds, including carried interest and investment management fees as applicable.

Residual Value: Defined as the reported value of the underlying investments, generally provided by the underlying fund managers as of the table date and other balance sheet items held by the partnerships as of such date.

Total Value: Represents Gross Distributions, defined as distributions made to the partners from the funds, including carried interest and investment management fees as applicable, plus remaining Residual Value, which is defined as the reported value of the underlying investments, generally provided by the underlying fund managers as of the table date and other balance sheet items held by the partnerships as of such date.

Gross IRR / Net IRR: The Gross IRR which represents an effective annualized internal rate of return is calculated using the contributions made by the partners; Gross Distributions of the fund and the Residual Value as of quarter end. The Net IRR which represents an effective annualized internal rate of return is calculated using the contributions made by the limited partners; the distributions made to the limited partners; and the limited partners' share of the Residual Value as of quarter end. The cash flow dates used in the IRR calculations are based on the actual dates of the cash flows. Funds prior to Landmark Real Estate Fund V use daily cash flows after 2010 and monthly cash flows before 2011. The Net IRR is after all investment advisory fees, carried interest, taxes (but does not include taxes or withholdings incurred by investors directly) and other expenses. Landmark's funds have used and may continue to utilize short term credit facilities for general cash management purposes, as well as modest long-term credit facilities as permitted by the respective fund's governing documentation. The IRRs would have likely been lower had the applicable fund called capital from its partners instead of utilizing the credit facility. Current and future Landmark funds may also utilize a credit facility in their portfolio.

Net TVPI: The Net TVPI is calculated using the contributions made by the limited partners, the distributions made to the limited partners, and the limited partners' share of the Residual Value as of quarter end. The Net TVPI is after all investment advisory fees, carried interest, taxes (but does not include taxes or withholdings incurred by investors directly) and other expenses.

1. Includes the following Landmark funds: Landmark Real Estate Fund I, Landmark Real Estate Fund II Landmark Real Estate Fund IV and Real Estate Fund V. Landmark Real Estate Fund I and Landmark Real Estate Fund II are also known as Landmark Equity Fund VI and Landmark Equity Fund VII, respectively. Landmark Real Estate Fund III was formed with \$21.3 million of equity to acquire direct interests in value-added real estate investments and was not involved in making secondary investments.

The results set forth in the performance table are unaudited. The performance of each fund is presented together with such fund's affiliated parallel funds or accounts on a combined basis, given that their investments are substantially the same. **Past performance is not necessarily indicative of future results, nor does it ensure that investors will not incur a loss with respect to their investment.** Includes realized and unrealized investments and no assurance can be made that unrealized values will be realized as indicated. While Landmark's reported returns of unrealized or partially realized investments are based on assumptions that Landmark believes are reasonable under the circumstances, the actual realized returns on Landmark's unrealized investments will depend on, among other factors, future operating results, the value of the assets and market conditions and other similar considerations.

» Notes to page 22 - Real Estate Secondary Funds Inception through September 30, 2021

Committed Capital: Total fund size less released commitments as applicable.

Contributed Capital: Represents equity capital contributed to the funds.

Gross Distributions: Distributions made to the partners from the funds, including carried interest and investment management fees as applicable.

Residual Value: Defined as the reported value of the underlying investments, generally provided by the underlying fund managers as of the table date and other balance sheet items held by the partnerships as of such date.

Total Value: Represents Gross Distributions, defined as distributions made to the partners from the funds, including carried interest and investment management fees as applicable, plus remaining Residual Value, which is defined as the reported value of the underlying investments, generally provided by the underlying fund managers as of the table date and other balance sheet items held by the partnerships as of such date.

Gross IRR / Net IRR: The Gross IRR which represents an effective annualized internal rate of return is calculated using the contributions made by the partners; Gross Distributions of the fund and the Residual Value as of quarter end. The Net IRR which represents an effective annualized internal rate of return is calculated using the contributions made by the limited partners; the distributions made to the limited partners; and the limited partners' share of the Residual Value as of quarter end. The cash flow dates used in the IRR calculations are based on the actual dates of the cash flows. Funds prior to Landmark Real Estate Fund V use daily cash flows after 2010 and monthly cash flows before 2011. The Net IRR is after all investment advisory fees, carried interest, taxes (but does not include taxes or withholdings incurred by investors directly) and other expenses. Landmark's funds have used and may continue to utilize short term credit facilities for general cash management purposes, as well as modest long-term credit facilities as permitted by the respective fund's governing documentation. The IRRs would have likely been lower had the applicable fund called capital from its partners instead of utilizing the credit facility. Current and future Landmark funds may also utilize a credit facility in their portfolio.

1. Landmark Real Estate Fund I and Landmark Real Estate Fund II are also known as Landmark Equity Fund VI and Landmark Equity Fund VII, respectively.

The results set forth in the performance table are unaudited. The performance of each fund is presented together with such fund's affiliated parallel funds or accounts on a combined basis, given that their investments are substantially the same. **Past performance is not necessarily indicative of future results, nor does it ensure that investors will not incur a loss with respect to their investment.** Includes realized and unrealized investments and no assurance can be made that unrealized values will be realized as indicated. While Landmark's reported returns of unrealized or partially realized investments are based on assumptions that Landmark believes are reasonable under the circumstances, the actual realized returns on Landmark's unrealized investments will depend on, among other factors, future operating results, the value of the assets and market conditions and other similar considerations.

Endnotes

» Notes to page 14 and 19 – Account Overview

Definitions:

Commitment: Limited Partners total commitment size less released commitments as applicable

Contributed Capital: Capital contributed by the Limited Partner to the fund(s)

Distributions Received: Distributions received by the Limited Partner from the fund(s)

Partner's Capital: Limited Partners share of the Total Partners' Capital as reported in the fund financial statements as of 12/31/2021

Residual Value: Limited Partners share of Residual Value as of 9/30/2021

Subsequent Contributions: Capital contributed by the Limited Partner to the fund(s) post 12/31/2021

Subsequent Distributions: Distributions received by the Limited Partner from the fund(s) post 12/31/2021

Residual Value Net IRR / TVPI:

Net IRR: The Residual Value Net IRR represents an effective annualized internal rate of return and incorporates daily cash flows including the contributions made by the individual investor; the distributions made to the individual investor; and the individual investor's estimated share of the Residual Value as of quarter end. The Net IRR is after all investment advisory fees, carried interest, taxes (but does not include taxes or withholdings incurred by investors directly) and other expenses. Landmark's funds have used and may continue to utilize short term credit facilities for general cash management purposes, as well as modest long-term credit facilities as permitted by the respective fund's governing documentation. The IRRs would have likely been lower had the applicable fund called capital from its partners instead of utilizing the credit facility.

Net TVPI: The Residual Value Net TVPI is calculated using the contributions made by the individual investor, the distributions made to the individual investor, and the individual investor's estimated share of the Residual Value as of quarter end. The Net TVPI is after all investment advisory fees, carried interest, taxes (but does not include taxes or withholdings incurred by investors directly) and other expenses.

The Residual Value used in the Residual Value Net IRR and TVPI represents an estimate of the individual investor's share of Residual Value, including the reported value generally provided by the underlying fund managers as of the calculation date and other balance sheet items held by the fund as of such date. An investor's ultimate share of a fund's Residual Value may deviate from this estimate.

The Residual Value Net IRR and TVPI are unaudited. **Past performance is not necessarily indicative of future results, nor does it ensure that investors will not incur a loss with respect to their investment.** Includes realized and unrealized investments and no assurance can be made that unrealized values will be realized as indicated.

*These estimated partners' capital balances are based upon information which is currently available and may differ significantly from final December 31, 2021 audited balances. The balances are based upon valuations as most recently received from the underlying general partners (generally as of September 30, 2021) adjusted for contributions and distributions received through December 31, 2021, and operating activity of the Landmark partnership. Final partners' capital balances will be included in the audited December 31, 2021 financial statements, which will be available no later than June 28, 2022.

Endnotes

» Notes to page 18 - Strong Cycle-Tested Track Record Over 30+ Years

Total LP Commitments: Total fund size less released commitments as applicable.

Contributed Capital: Represents equity capital contributed to the funds.

Gross Distributions: Distributions made to the partners from the funds, including carried interest and investment management fees as applicable.

Residual Value: Defined as the reported value of the underlying investments, generally provided by the underlying fund managers as of the table date and other balance sheet items held by the partnerships as of such date.

Total Value: Represents Gross Distributions, defined as distributions made to the partners from the funds, including carried interest and investment management fees as applicable, plus remaining Residual Value, which is defined as the reported value of the underlying investments, generally provided by the underlying fund managers as of the table date and other balance sheet items held by the partnerships as of such date.

Net IRR: The Net IRR which represents an effective annualized internal rate of return is calculated using the contributions made by the limited partners; the distributions made to the limited partners; and the limited partners' share of the Residual Value as of quarter end. The cash flow dates used in the Net IRR calculations are based on the actual dates of the cash flows. Funds prior to Landmark Equity Partners XI use daily cash flows after 2010 and monthly cash flows before 2011. The Net IRR is after all investment advisory fees, carried interest, taxes (but does not include taxes or withholdings incurred by investors directly) and other expenses. Landmark's funds have used and may continue to utilize short term credit facilities for general cash management purposes, as well as modest long-term credit facilities as permitted by the respective fund's governing documentation. The net IRRs would have likely been lower had the applicable fund called capital from its partners instead of utilizing the credit facility. Current and future Landmark funds may also utilize a credit facility in their portfolios.

Net DPI: The Net DPI is calculated using the contributions made by the limited partners and the distributions made to the limited partners. The Net DPI is after all investment advisory fees, carried interest, taxes (but does not include taxes or withholdings incurred by investors directly) and other expenses.

Net TVPI: The Net TVPI is calculated using the contributions made by the limited partners, the distributions made to the limited partners, and the limited partners' share of the Residual Value as of quarter end. The Net TVPI is net of all investment advisory fees, carried interest, taxes (but does not include taxes or withholdings incurred by investors directly) and other expenses.

1. Includes the following Landmark funds: Landmark Venture Partners, Landmark Equity Partners II, Landmark Direct Equities, Landmark Equity Partners III, Landmark Equity Partners IV, Landmark Mezzanine Partners, Landmark Equity Partners V, Landmark Secondary Partners, Landmark Secondary Partners IX, Landmark Equity Partners X, Landmark Equity Partners XI, Landmark Equity Partners XII, Landmark Equity Partners XIII/XIII-A and Landmark Equity Partners XIV. The strategy of each of these funds is to acquire interests in private equity investments through secondary market transactions. Please refer to the performance table in the Appendix of these materials.
2. The Net IRR for Landmark Equity Partners XVI exceeds 35% through the applicable time period. Landmark expects this metric to diminish significantly over the life of the fund.

The results set forth in the performance table are unaudited. Certain funds of the vintage 1990-1995 were co-managed by Landmark Partners and a third-party advisory firm. The performance of each fund is presented together with such fund's affiliated parallel funds or accounts on a combined basis, given that their investments are substantially the same. Past performance is not necessarily indicative of future results, nor does it ensure that investors will not incur a loss with respect to their investment. Includes realized and unrealized investments and no assurance can be made that unrealized values will be realized as indicated. While Landmark's reported returns of unrealized or partially realized investments are based on assumptions that Landmark believes are reasonable under the circumstances, the actual realized returns on Landmark's unrealized investments will depend on, among other factors, future operating results, the value of the assets and market conditions and other similar considerations.

Endnotes

» Notes to page 23 - Performance Track Record

Total LP Commitments: Total fund size less released commitments as applicable.

Contributed Capital: Represents equity capital contributed to the funds.

Gross Distributions: Distributions made to the partners from the funds, including carried interest and investment management fees as applicable.

Residual Value: Defined as the reported value of the underlying investments, generally provided by the underlying fund managers as of the table date and other balance sheet items held by the partnerships as of such date.

Total Value: Represents Gross Distributions, defined as distributions made to the partners from the funds, including carried interest and investment management fees as applicable, plus remaining Residual Value, which is defined as the reported value of the underlying investments, generally provided by the underlying fund managers as of the table date and other balance sheet items held by the partnerships as of such date.

Net IRR: The Net IRR which represents an effective annualized internal rate of return is calculated using the contributions made by the limited partners; the distributions made to the limited partners; and the limited partners' share of the Residual Value as of quarter end. The cash flow dates used in the IRR calculations are based on the actual dates of the cash flows. Funds prior to Landmark Equity Partners XI use daily cash flows after 2010 and monthly cash flows before 2011. The Net IRR is after all investment advisory fees, carried interest, taxes (but does not include taxes or withholdings incurred by investors directly) and other expenses. Landmark's funds have used and may continue to utilize short term credit facilities for general cash management purposes, as well as modest long-term credit facilities as permitted by the respective fund's governing documentation. The IRRs would have likely been lower had the applicable fund called capital from its partners instead of utilizing the credit facility. Current and future Landmark funds may also utilize a credit facility in their portfolio.

Net TVPI: The Net TVPI is calculated using the contributions made by the limited partners, the distributions made to the limited partners, and the limited partners' share of the Residual Value as of quarter end. The Net TVPI is net of all investment advisory fees, carried interest, taxes (but does not include taxes or withholdings incurred by investors directly) and other expenses.

The results set forth in the performance table are unaudited. Certain funds of the vintage 1990-1995 were co-managed by Landmark Partners and a third-party advisory firm. The performance of each fund is presented together with such fund's affiliated parallel funds or accounts on a combined basis, given that their investments are substantially the same. Past performance is not necessarily indicative of future results, nor does it ensure that investors will not incur a loss with respect to their investment. Includes realized and unrealized investments and no assurance can be made that unrealized values will be realized as indicated. While Landmark's reported returns of unrealized or partially realized investments are based on assumptions that Landmark believes are reasonable under the circumstances, the actual realized returns on Landmark's unrealized investments will depend on, among other factors, future operating results, the value of the assets and market conditions and other similar considerations.

Ares Management - Endnote

1. Ares had \$306 billion of AUM as of December 31, 2021. Unless otherwise specified, all AUM numbers and other information are provided as of December 31, 2021 for Credit, Private Equity, Real Assets, Secondary Solutions and Strategic Initiatives, as adjusted for Ares Management's acquisition of AMP Capital's Infrastructure Debt platform ("Infrastructure Debt"), which closed on February 10, 2022. Following this acquisition, Ares has combined its Real Estate Group with its expanded infrastructure debt and equity activities into the Real Assets Group. Real Assets consists of four strategies: Real Estate Debt and Real Estate Equity (collectively, \$41.2 billion of AUM), Infrastructure Debt (\$7.9 billion of AUM) and Infrastructure Opportunities (\$4.8 billion of AUM). Infrastructure Opportunities was previously categorized as part of the Private Equity Group as Infrastructure and Power. AUM amounts include funds managed by Ivy Hill Asset Management, L.P., a wholly owned portfolio company of Ares Capital Corporation and registered investment adviser. AUM managed by Ares Insurance Solutions excludes assets which are sub-advised by other Ares investment groups or invested in Ares funds and investment vehicles.

LANDMARK PARTNERS

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Investor Cash Flow Summary
1/1/1900 - 3/31/2021

	Commitment	Date	Contributions	Distributions	Recallable Distribution	Recalled Distribution	Commitment Release	Remaining Commitment with Recallable
MWRA Employees' Retirement System								
Landmark Equity Partners XV, L.P.								
		10/30/2013	(314,168)	0	0	0	0	2,685,832
		1/15/2014	41,611	0	0	0	0	2,727,443
		3/7/2014	(101,176)	0	0	0	0	2,626,267
		3/28/2014	41,765	0	0	0	0	2,668,032
		4/7/2014	(18,611)	0	0	0	0	2,649,421
		5/30/2014	(17,328)	0	0	0	0	2,632,093
		8/13/2014	(331,356)	0	0	0	0	2,300,737
		9/23/2014	161,495	0	0	0	0	2,462,232
		10/17/2014	(103,739)	0	0	0	0	2,358,493
		2/13/2015	36,879	0	0	0	0	2,395,372
		3/27/2015	0	0	0	0	0	2,395,372
		4/1/2015	0	71,172	0	0	0	2,324,200
		6/2/2015	0	34,294	0	0	0	2,289,906
		6/10/2015	0	48,037	0	0	0	2,241,869
		6/24/2015	(89,550)	0	0	0	0	2,152,319
		7/22/2015	0	30,654	0	0	0	2,121,665
		8/6/2015	(42,065)	0	0	0	0	2,079,600
		8/24/2015	0	21,790	0	0	0	2,101,390
		9/11/2015	(211,931)	0	0	0	0	1,889,459
		9/26/2015	0	9,843	0	0	0	1,899,302
		10/30/2015	0	26,430	0	0	0	1,925,732
		12/3/2015	(31,598)	0	0	0	0	1,894,134
		12/16/2015	0	26,121	0	0	0	1,920,255
		1/13/2016	0	23,389	0	0	0	1,943,644
		1/15/2016	(30,654)	0	0	0	0	1,912,990
		2/5/2016	(19,753)	0	0	0	0	1,893,237
		3/1/2016	0	16,889	0	0	0	1,910,126
		3/31/2016	0	12,952	12,952	0	0	1,923,078
		4/21/2016	0	15,292	15,292	0	0	1,938,370
		5/13/2016	0	31,244	31,244	0	0	1,969,614
		5/25/2016	0	34,385	34,385	0	0	2,004,000
		6/17/2016	(7,208)	0	0	0	0	1,996,792
		7/1/2016	(71,128)	0	0	0	0	1,925,664
		7/22/2016	(3,960)	0	0	0	0	1,921,704
		7/27/2016	0	17,895	17,895	0	0	1,939,599
		9/9/2016	0	59,538	59,538	0	0	1,999,137
		9/23/2016	(19,032)	0	0	0	0	1,980,105
		10/26/2016	0	11,242	11,242	0	0	1,991,347
		11/18/2016	(61,026)	0	0	0	0	1,930,321
		11/30/2016	0	20,151	20,151	0	0	1,950,472
		12/21/2016	(36,670)	0	0	0	0	1,913,802
		12/22/2016	0	22,847	22,847	0	0	1,936,649
		1/6/2017	(78,552)	0	0	0	0	1,858,097
		2/6/2017	(24,775)	0	0	0	0	1,833,322
		2/21/2017	0	25,085	25,085	0	0	1,858,407
		3/30/2017	0	19,694	0	0	0	1,878,101
		4/21/2017	(19,045)	0	0	0	0	1,859,056
		4/28/2017	0	14,659	0	0	0	1,873,715
		5/11/2017	0	26,741	0	0	0	1,899,456
		6/2/2017	(69,124)	0	0	0	0	1,830,332
		6/9/2017	0	19,854	0	0	0	1,850,186
		6/28/2017	(46,402)	0	0	0	0	1,803,784
		7/14/2017	0	22,603	0	0	0	1,826,387
		8/4/2017	0	61,949	0	0	0	1,888,336
		8/25/2017	(20,077)	0	0	0	0	1,868,259
		8/30/2017	0	11,537	0	0	0	1,879,796
		9/11/2017	(38,104)	0	0	0	0	1,841,692
		9/14/2017	29,955	0	0	0	0	1,871,647
		9/27/2017	(61,723)	0	0	0	0	1,809,924
		9/29/2017	0	20,403	0	0	0	1,830,327
		10/6/2017	0	100,686	0	0	0	1,931,013
		10/19/2017	0	27,387	0	0	0	1,958,400
		11/24/2017	(81,457)	0	0	0	0	1,876,943
		12/22/2017	0	35,781	0	0	0	1,912,724
		12/31/2017	0	0	(14,855)	0	0	1,927,579
		1/18/2018	0	17,572	0	0	0	1,945,151
		1/31/2018	(16,150)	0	0	0	0	1,929,001
		2/2/2018	0	46,437	0	0	0	1,975,438
		2/26/2018	(72,540)	0	0	0	0	1,902,898
		3/9/2018	0	37,499	0	0	0	1,940,397
		3/26/2018	(178,960)	0	0	0	0	1,761,437
		3/29/2018	0	41,431	0	0	0	1,802,868
		4/17/2018	(18,463)	0	0	0	0	1,784,405
		4/30/2018	0	32,500	0	0	0	1,816,905
		5/23/2018	(35,639)	0	0	0	0	1,781,266
		6/19/2018	0	22,129	0	0	0	1,803,395
		6/26/2018	(25,948)	0	0	0	0	1,777,447
		7/17/2018	(17,103)	0	0	0	0	1,760,344
		7/26/2018	0	38,910	0	0	0	1,809,254
		8/30/2018	0	128,540	0	0	0	1,937,794
		9/25/2018	(11,269)	0	0	0	0	1,926,525
		10/31/2018	0	32,686	0	0	0	1,959,211
		11/29/2018	0	77,827	0	0	0	2,037,038
		1/30/2019	0	85,893	0	0	0	2,122,931
		2/28/2019	0	13,438	0	0	0	2,136,369
		3/22/2019	(26,157)	0	0	0	0	2,110,212
		3/29/2019	0	10,113	0	0	0	2,120,325
		4/16/2019	(35,711)	0	0	0	0	2,084,614
		5/1/2019	0	8,517	0	0	0	2,093,131
		5/28/2019	(14,139)	0	0	0	0	2,078,992
		5/31/2019	0	9,845	0	0	0	2,088,837
		6/28/2019	0	5,960	0	0	0	2,104,797
		7/2/2019	(7,119)	0	0	0	0	2,097,678
		7/25/2019	(14,629)	0	0	0	0	2,083,049
		7/31/2019	0	26,118	0	0	0	2,109,167
		9/5/2019	(20,490)	0	0	0	0	2,088,677
		9/27/2019	(20,798)	12,827	0	0	0	2,077,879
		10/17/2019	(20,311)	12,884	0	0	0	2,069,952
		10/31/2019	0	9,561	0	0	0	2,079,513
		11/22/2019	(7,393)	12,573	0	0	0	2,084,693
		12/18/2019	(14,111)	0	0	0	0	2,070,582
		12/20/2019	0	24,464	0	0	0	2,095,046
		1/24/2020	(7,940)	0	0	0	0	2,087,106
		2/7/2020	(38,115)	9,790	0	0	0	2,058,781
		3/2/2020	0	25,187	(1,558)	0	0	2,082,410
		3/31/2020	0	49,847	(39,699)	0	0	2,132,558
		5/22/2020	(17,007)	0	0	0	0	2,115,551
		7/31/2020	0	26,933	(5,438)	0	0	2,136,046
		8/18/2020	(121,100)	0	0	0	0	2,014,946
		9/28/2020	0	35,694	(5,430)	0	0	2,045,210
		10/27/2020	0	0	(10,272)	0	0	2,055,482
		11/11/2020	0	19,146	(4,910)	0	0	2,069,718
		12/16/2020	0	0	(10,430)	0	0	2,059,288
		1/22/2021	0	0	(37,908)	0	0	2,021,380
		3/10/2021	0	0	(22,793)	0	0	1,998,587
		3/19/2021	0	52,560	0	0	0	2,051,147
Landmark Equity Partners XV, L.P.	3,000,000		(2,408,209)	1,846,305	85,773	0	0	677,564
MWRA Employees' Retirement System	3,000,000		(2,408,209)	1,846,305	85,773	0	0	677,564
Grand Total - All Investors	3,000,000		(2,408,209)	1,846,305	85,773	0	0	677,564

Fund Name	Commitment	Contributions	Distributions	Recallable Distribution	Recalled Distribution	Commitment Release	Remaining Commitment with Recallable
Landmark Equity Partners XV, L.P.	3,000,000	(2,408,209)	1,846,305	85,773	0	0	677,564
Grand Total - All Funds	3,000,000	(2,408,209)	1,846,305	85,773	0	0	677,564

Notes:
Negative amounts represent a reduction in remaining commitments.
Amounts in the Recallable Distribution column increase or reduce Remaining Commitment and are non-cash events to the Limited Partners.
Continues.

Investor Cash Flow Summary

1/1/1900 - 3/31/2021

	Commitment	Date	Contributions	Distributions	Recallable Distribution	Recalled Distribution	Commitment Release	Remaining Commitment with Recallable
MWRA Employees' Retirement System								
Landmark Real Estate Partners VI, L.P.								
		4/27/2011	(387,097)	0	0	0	0	1,612,903
		6/28/2011	(69,670)	0	0	0	0	1,543,233
		7/29/2011	0	18,841	0	0	0	1,543,233
		12/6/2011	0	0	0	0	0	1,543,233
		12/15/2011	(202,319)	0	0	0	0	1,340,914
		2/17/2012	0	42,311	0	0	0	1,340,914
		3/20/2012	(78,030)	0	0	0	0	1,262,884
		4/27/2012	0	16,528	0	0	0	1,262,884
		5/24/2012	(83,603)	0	0	0	0	1,179,281
		6/28/2012	0	67,763	0	0	0	1,179,281
		8/17/2012	0	24,791	0	0	0	1,179,281
		8/31/2012	0	36,361	0	0	0	1,179,281
		12/20/2012	0	19,832	0	0	0	1,179,281
		1/25/2013	(122,618)	23,139	0	0	0	1,056,663
		2/28/2013	0	16,527	0	0	0	1,056,663
		3/27/2013	(53,589)	0	0	0	0	1,003,074
		3/28/2013	0	11,569	0	0	0	1,003,074
		6/28/2013	0	40,988	0	0	0	1,003,074
		8/2/2013	(213,467)	0	0	0	0	789,607
		8/30/2013	0	35,534	0	0	0	789,607
		9/26/2013	0	13,222	0	0	0	789,607
		10/3/2013	0	35,039	0	0	0	789,607
		10/23/2013	0	59,500	0	0	0	789,607
		11/26/2013	0	33,716	0	0	0	789,607
		12/19/2013	0	46,608	0	0	0	789,607
		12/20/2013	(119,482)	0	0	0	0	670,125
		12/24/2013	0	107,429	0	0	0	670,125
		4/24/2014	0	66,110	0	0	0	670,125
		6/4/2014	(139,339)	0	0	0	0	530,786
		6/27/2014	0	95,033	0	0	0	530,786
		7/7/2014	(91,963)	0	0	0	0	438,823
		7/25/2014	0	64,458	0	0	0	438,823
		8/29/2014	0	28,758	0	0	0	438,823
		9/25/2014	0	132,220	0	0	0	438,823
		10/10/2014	0	56,194	0	0	0	438,823
		10/24/2014	0	56,193	0	0	0	438,823
		11/26/2014	0	66,111	0	0	0	438,823
		12/23/2014	0	44,624	0	0	0	438,823
		1/22/2015	0	18,511	0	0	0	438,823
		1/27/2015	(16,721)	0	0	0	0	422,102
		2/26/2015	0	52,888	0	0	0	422,102
		3/11/2015	0	29,750	0	0	0	422,102
		3/30/2015	(36,228)	0	0	0	0	385,874
		4/17/2015	0	62,805	0	0	0	385,874
		4/30/2015	0	26,444	0	0	0	385,874
		5/20/2015	(34,835)	0	0	0	0	351,039
		6/26/2015	0	43,798	0	0	0	351,039
		7/31/2015	0	82,638	0	0	0	351,039
		8/28/2015	0	62,805	0	0	0	351,039
		9/30/2015	0	49,583	0	0	0	351,039
		12/21/2015	0	43,633	0	0	0	351,039
		2/16/2016	0	70,738	0	0	0	351,039
		3/24/2016	(15,806)	0	0	0	0	335,233
		3/31/2016	0	43,963	0	0	0	335,233
		6/30/2016	0	74,130	0	0	0	335,233
		9/28/2016	0	25,598	0	0	0	335,233
		10/18/2016	(6,688)	0	0	0	0	328,545
		11/1/2016	0	9,337	0	0	0	328,545
		12/19/2016	(83,075)	110,906	0	0	0	245,470
		1/31/2017	0	130,328	0	0	0	245,470
		3/30/2017	0	29,670	0	0	0	245,470
		5/12/2017	0	33,277	0	0	0	245,470
		7/28/2017	0	85,229	0	0	0	245,470
		9/28/2017	0	28,495	0	0	0	245,470
		12/4/2017	0	27,517	0	0	0	245,470
		3/5/2018	0	33,452	0	0	0	245,470
		7/9/2018	0	21,691	0	0	0	245,470
		12/20/2018	0	34,906	0	0	0	245,470
		1/14/2019	0	38,979	0	0	0	245,470
		3/26/2019	0	45,087	0	0	0	245,470
		9/4/2019	0	19,198	0	0	0	245,470
		12/12/2019	0	10,763	0	0	0	245,470
		1/16/2020	0	13,090	0	0	0	245,470
		10/23/2020	0	11,010	0	0	0	245,470
Landmark Real Estate Partners VI, L.P.	2,000,000		(1,754,530)	2,629,618	0	0	0	245,470
MWRA Employees' Retirement System	2,000,000		(1,754,530)	2,629,618	0	0	0	245,470
Grand Total - All Investors	2,000,000		(1,754,530)	2,629,618	0	0	0	245,470

Fund Name	Commitment	Contributions	Distributions	Recallable Distribution	Recalled Distribution	Commitment Release	Remaining Commitment with Recallable
Landmark Real Estate Partners VI, L.P.	2,000,000	(1,754,530)	2,629,618	0	0	0	245,470
Grand Total - All Funds	2,000,000	(1,754,530)	2,629,618	0	0	0	245,470

Notes:

Negative amounts represent a reduction in remaining commitments.

Amounts in the Recallable Distribution column increase or reduce Remaining Commitment and are non-cash events to the Limited Partners.

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Investor Cash Flow Summary

1/1/1900 - 3/31/2021

	Commitment	Date	Contributions	Distributions	Recallable Distribution	Recalled Distribution	Commitment Release	Remaining Commitment with Recallable
MWRA Employees' Retirement System								
Landmark Real Estate Partners VIII, L.P.								
		10/20/2017	(608,550)	0	0	0	0	3,391,450
		11/22/2017	0	0	0	0	0	3,391,450
		11/29/2017	95,564	0	0	0	0	3,487,014
		12/7/2017	64,397	0	0	0	0	3,551,411
		12/22/2017	0	0	0	0	0	3,551,411
		5/7/2018	0	0	0	0	0	3,551,411
		5/11/2018	0	161,524	161,524	0	0	3,712,935
		5/24/2018	0	26,566	26,566	0	0	3,739,501
		8/1/2018	0	37,317	37,317	0	0	3,776,818
		9/24/2018	(299,338)	0	0	0	0	3,477,480
		12/14/2018	0	117,571	117,571	0	0	3,595,051
		12/18/2018	(94,626)	0	0	0	0	3,500,425
		2/12/2019	0	80,971	80,971	0	0	3,581,396
		3/11/2019	(215,212)	0	0	0	0	3,366,184
		5/23/2019	0	27,839	27,839	0	0	3,394,023
		7/12/2019	0	21,851	21,851	0	0	3,415,874
		9/25/2019	(299,339)	30,807	30,807	0	0	3,147,342
		10/31/2019	0	16,114	16,114	0	0	3,163,456
		12/17/2019	(249,449)	18,709	18,709	0	0	2,932,716
		1/17/2020	0	27,963	27,963	0	0	2,960,679
		3/25/2020	(62,362)	49,890	32,768	0	0	2,931,085
		7/30/2020	0	34,723	0	0	0	2,931,085
		10/22/2020	0	52,284	0	0	0	2,931,085
		12/18/2020	(236,976)	0	0	0	0	2,694,109
		3/30/2021	0	44,801	0	0	0	2,694,109
Landmark Real Estate Partners VIII, L.P.	4,000,000		(1,905,891)	748,930	600,000	0	0	2,694,109
MWRA Employees' Retirement System	4,000,000		(1,905,891)	748,930	600,000	0	0	2,694,109
Grand Total - All Investors	4,000,000		(1,905,891)	748,930	600,000	0	0	2,694,109

Fund Name	Commitment		Contributions	Distributions	Recallable Distribution	Recalled Distribution	Commitment Release	Remaining Commitment with Recallable
Landmark Real Estate Partners VIII, L.P.	4,000,000		(1,905,891)	748,930	600,000	0	0	2,694,109
Grand Total - All Funds	4,000,000		(1,905,891)	748,930	600,000	0	0	2,694,109

Notes:

Negative amounts represent a reduction in remaining commitments.

Amounts in the Recallable Distribution column increase or reduce Remaining Commitment and are non-cash events to the Limited Partners.

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LANDMARK PARTNERS

an ARES company

Quarter End	Partner's Capital Balance		
	LEP XV	LREP VI	LREP VIII
12/31/2021 (ESTIMATE)*	\$ 1,256,435	\$ 93,801	\$ 1,859,968
09/30/2021	\$ 1,538,002	\$ 79,068	\$ 1,520,208
06/30/2021	\$ 1,495,279	\$ 79,556	\$ 1,363,102
03/31/2021	\$ 1,496,032	\$ 88,245	\$ 1,473,074
12/31/2020	\$ 1,558,119	\$ 88,540	\$ 1,531,045
09/30/2020	\$ 1,191,683	\$ 104,769	\$ 1,242,476
06/30/2020	\$ 1,057,229	\$ 109,233	\$ 1,242,965
03/31/2020	\$ 1,230,160	\$ 114,790	\$ 1,326,469
12/31/2019	\$ 1,280,760	\$ 128,229	\$ 1,355,940
09/30/2019	\$ 1,262,024	\$ 154,407	\$ 1,079,445
06/30/2019	\$ 1,151,157	\$ 175,622	\$ 814,025
03/31/2019	\$ 1,079,463	\$ 179,953	\$ 860,349
12/31/2018	\$ 1,170,228	\$ 267,143	\$ 685,258
09/30/2018	\$ 1,359,757	\$ 326,147	\$ 683,273
06/30/2018	\$ 1,431,757	\$ 346,258	\$ 430,111
03/31/2018	\$ 1,344,541	\$ 343,376	\$ 609,572
12/31/2017	\$ 1,230,210	\$ 377,844	\$ 688,297
09/30/2017	\$ 1,161,722	\$ 407,653	\$ 338,603
06/30/2017	\$ 1,124,269	\$ 516,066	
03/31/2017	\$ 1,006,208	\$ 546,163	
12/31/2016	\$ 956,245	\$ 708,233	
09/30/2016	\$ 835,696	\$ 748,160	
06/30/2016	\$ 798,492	\$ 768,889	
03/31/2016	\$ 863,553	\$ 846,036	
12/31/2015	\$ 875,307	\$ 948,021	
09/30/2015	\$ 914,201	\$ 979,072	
06/30/2015	\$ 699,927	\$ 1,132,078	
03/31/2015	\$ 727,032	\$ 1,212,466	
12/31/2014	\$ 771,689	\$ 1,265,436	
09/30/2014	\$ 711,909	\$ 1,412,910	
06/30/2014	\$ 474,624	\$ 1,487,939	
03/31/2014	\$ 410,224	\$ 1,470,173	
12/31/2013	\$ 411,333	\$ 1,422,478	
09/30/2013		\$ 1,474,407	
06/30/2013		\$ 1,227,588	
03/31/2013		\$ 1,211,761	
12/31/2012		\$ 1,068,616	
09/30/2012		\$ 997,266	
06/30/2012		\$ 1,012,490	
03/31/2012		\$ 998,759	
12/31/2011		\$ 918,160	
09/30/2011		\$ 660,559	
06/30/2011		\$ 661,271	
03/31/2021		\$ 177,012	

*These estimated partners' capital balances are based upon information which is currently available and may differ significantly from final December 31, 2021 audited balances. The balances are based upon valuations as most recently received from the underlying general partners (generally as of September 30, 2021) adjusted for contributions and distributions received through December 31, 2021, and operating activity of the Landmark partnership. Final partners' capital balances will be included in the audited December 31, 2021 financial statements, which will be available no later than June 28, 2022.

Past performance is not necessarily indicative of future results, nor does it ensure that investors will not incur a loss with respect to their investment.



Notice to Recipients

At your request, the information and materials submitted herewith are provided to you on a confidential basis in order to assist you in your business due diligence with respect to an existing or potential future investment in an investment vehicle sponsored by Ares or Landmark Partners, an Ares company (which shall be included by reference in the term "Ares" for purposes of these disclosures). These materials are being provided for informational and discussion purposes only and are not, and may not be relied on in any manner as, legal, tax, investment, accounting or other advice.

By acceptance of this questionnaire, the recipient, including its legal and financial advisors, board members and/or trustees, as applicable (collectively along with anyone else who receives this questionnaire through the person to whom they were originally delivered, "recipient"), hereby acknowledges and agrees that information included in the questionnaire includes confidential and proprietary information ("Confidential Information") that is not otherwise publicly available or otherwise prepared for public dissemination and is subject to any other confidentiality provisions between recipient and Ares (including, if applicable, the limited partnership agreement(s) of any fund(s) described herein). The distribution of the divulgence of any of these materials to any person, other than the person to whom they were originally delivered and such person's advisors, without the prior consent of Ares, is prohibited. Recipient agrees to use this questionnaire solely in connection with its evaluation of the relevant Ares entity and not for any other purpose. Moreover, some of the confidential information is based on information provided to Ares in accordance with underlying confidentiality agreements and/or prepared by referenced portfolio companies for Ares respecting Ares' (portfolio) investment in such company; as such no representations are made to the completeness and/or accuracy of the confidential information. In any event, in light of the confidential nature of such information, the recipient further acknowledges and understands that disclosure of such confidential information and/or any other unauthorized use thereof may result in potential damages to and claims by Ares and/or the applicable portfolio company. Accordingly, recipient agrees to maintain the confidential nature of the confidential information and limit its use accordingly solely in connection with the purpose for which this questionnaire was prepared and the relevant Ares entity referred to herein. Recipient further agrees that damages due a breach of the foregoing, including misuse and/or other publication of the confidential information may be difficult to determine and that Ares (and/or potentially the subject portfolio company, as applicable) may be entitled to injunctive relief and other equitable remedies.

The information contained herein has been prepared to assist the recipient in making its own evaluation of Landmark Partners, an Ares company or the relevant Ares entity and does not purport to be all-inclusive of the information that recipient may desire respecting its evaluation of the same. These materials are not intended as an offer to sell, or the solicitation of an offer to purchase, any security, the offer and/or sale of which can only be made by definitive offering documentation. Any subscription in relation to any fund will only be accepted on the basis of definitive offer documentation (the "Agreements") which will be issued to a prospective investor on a confidential basis upon request. Any information contained in these materials relating to the terms and conditions of any fund will be superseded, and is qualified in its entirety, by reference to the agreements, which should be reviewed for complete information concerning the rights, privileges and obligations of investors in any fund. These materials contain information about Ares and certain of its personnel and affiliates and the historical performance of certain funds and/or investment vehicles whose portfolios are managed by Ares. This information is supplied to provide information to Ares' general portfolio management experience. Ares makes no representation or warranty (express or implied) with respect to the information contained herein (including, without limitation, information obtained from third parties) and expressly disclaims any and all liability based on or relating to the information contained in, or errors or omissions from, these materials, or based on or relating to the recipient's use of these materials, or any other written or oral communications transmitted to the recipient in the course of its evaluation of Ares. Recipient should conduct its own investigations and analyses of Ares and the information set forth in these materials. These materials are neither an offer to sell, nor the solicitation of an offer to purchase, any security, the offer and/or sale of which can only be made by definitive offering documentation. Any offer or solicitation with respect to any securities that may be issued by any investment vehicle (each, an "Ares Fund") managed or sponsored by Ares Management LLC or any of its subsidiary or other affiliated entities (collectively, "Ares Management") will be made only by means of definitive offering memoranda as amended, restated and/or supplemented from time to time (the "Memorandum") and the Fund's subscription documents, which will be furnished to qualified investors on a confidential basis at their request for their consideration in connection with such offering and will contain material information that is not set forth herein, including risk factors relating to any such investment. Any such offering memoranda will supersede these materials (in whatever form) provided by Ares Management to prospective investors. In addition, these materials are not an offer to sell, or the solicitation of an offer to purchase securities of Ares Management Corporation ("Ares Corp"), the parent of Ares Management. An investment in Ares Corp is discrete from an investment in any fund directly or indirectly managed by Ares Corp. Collectively, Ares Corp, its affiliated entities, and all underlying subsidiary entities shall be referred to as "Ares" unless specifically noted otherwise. Certain Ares Fund securities may be offered through our affiliate, Ares Investor Services LLC ("AIS"), a broker-dealer registered with the SEC, and a member of FINRA and SIPC.

The information contained in these materials is not meant to be reviewed in lieu of the Memorandum and will be superseded by, and is qualified in its entirety by reference to, the Fund's Amended and Restated Limited Partnership Agreement (as amended and/or restated from time to time, the "Partnership Agreement") and the Memorandum, which will contain information about the Fund's investment objective and terms and conditions of an investment in the Fund, tax information and risk disclosures that are important to any investment decision regarding the Fund and which should be read carefully prior to an investment in the Fund. The information contained in these materials does not constitute part of the Memorandum. This information contains only a high-level summary of certain terms and it does not contain all material information pertinent to an investment decision. No person has been authorized to make any statement concerning the Fund other than as will be set forth in the Memorandum and the definitive subscription documents and any representation or information not contained therein may not be relied upon. The information contained in these materials must be kept strictly confidential and may not be reproduced (in whole or in part) or redistributed in any format without the express written approval of Landmark Partners, LLC (together with its affiliates, "Landmark"). By accepting these materials, the recipient agrees that it will, and will cause its representatives and advisors to, use the information only to evaluate its potential interest in the Fund and for no other purpose and will not, and will cause its representatives and advisors not to, divulge any such information to any other party. The information in these materials is proprietary to the Fund and the General Partner, and accordingly, by accepting this document, the recipient agrees that it will return or destroy any electronic or hard copy of these materials within five calendar days of a written request by the General Partner. Neither the Fund nor any of its affiliates makes any representation or warranty, express or implied, as to the accuracy or completeness of the information contained in these materials and nothing contained therein or herein should be relied upon as a promise or representation as to past or future performance of the Fund or any other entity. An investment in the Fund entails a high degree of risk and no assurance can be given that the Fund's investment objective will be achieved or that investors will receive a return of their capital. The making available of these materials does not imply that any information contained therein is correct as of any date subsequent to the date of these materials and Landmark does not undertake any obligation to update or revise any information in these materials to reflect events, circumstances or other changes occurring after the date hereof. Given that the Fund is still in its fundraising period there may be material changes or updates to the terms described herein. The General Partner is under no obligation, and currently does not expect, to update or supplement the responses provided herein to reflect such changes.

Recipients should note that these materials contain summaries of certain terms of the Partnership Agreement and certain disclosures made in the Memorandum. Such summaries are not complete and the entire text of the Memorandum should be read, copies of which will be provided to any prospective investor upon request and which should be reviewed for complete information concerning the rights, privileges and obligations of investors in the Fund.

Prospective investors should make their own investigations and evaluations of the information contained in these materials. Prior to the closing of a private offering of interests in the Fund, Landmark will give investors the opportunity to ask questions and receive additional information concerning the terms and conditions of such offering and other relevant matters. Each prospective investor should consult its own legal, accounting, tax and other advisors as to legal, business, tax, regulatory, financial, accounting, EBSA and related matters concerning the information contained in these materials and such offering and in order to make an independent determination of the suitability and consequences of a potential investment in the Fund.

Interests in the Fund will be illiquid, as there is no public market for interests in the Fund and none is expected to develop. There will be restrictions on transferring interests in the Fund, investments may be leveraged and the investment performance may be volatile. Before deciding to invest in the Fund, prospective investors should pay particular attention to the risk factors contained in the Memorandum. Investors should have the financial ability and willingness to accept the risk characteristics of the Fund's investments. No assurance can be given that the Fund's investment objective will be achieved or that investors will receive a return of their capital.

Unless otherwise indicated, "Gross IRR" means an aggregate, annual, compound, gross internal rate of return on investments. Gross IRRs do not reflect management fees, "carried interest", taxes, transaction costs in connection with the disposition of unrealized investments and other expenses that are borne by investors in the Fund, which will reduce returns and in the aggregate are expected to be substantial. For a description of such fees, "carried interest", and expenses, please see the Memorandum.

Certain information (including economic and market information) contained in these materials has been obtained from sources unaffiliated with Landmark. While such sources are believed to be reliable, neither Landmark nor any of its affiliates assumes any responsibility for such information. Certain forecasts prepared by Landmark are included in these materials and although Landmark believes the assumptions underlying such forecasts to be reasonable, no representation is or can be made as to their attainability.

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Certain transaction summaries and hypothetical illustrations set forth in these materials may contain target with respect to the performance of such investments or the Fund. Any such targets are set out for illustrative purposes only, and do not constitute a forecast. They have been prepared based on Landmark's current view in relation to future events and various assumptions and estimations, including estimations and assumptions about events that have not occurred, any of which may prove incorrect. While the targets are based on assumptions and estimations that Landmark believes are reasonable under the circumstances, they are subject to uncertainties, changes (including changes in economic, operational, political, legal, tax, public health and other circumstances) and other risks, including, but not limited to, broad trends in business and finance, tax and other legislation affecting the Fund, its investors and investments, interest rates, inflation, market conditions, the availability and cost of short-term or long-term funding and capital, all of which are beyond Landmark's control and any of which may cause the relevant actual, financial and other results to be materially different from the results expressed or implied by such targets. Any targeted returns in these materials are not a guarantee, forecast or prediction and are not necessarily indicative of future results. There can be no assurance that any transaction will achieve comparable results. Actual returns for a transaction may vary significantly from the targeted returns set forth in these materials. No assurance, representation or warranty is made by any person that any of the targets will be achieved and no recipient should rely on these targets. None of Landmark, its affiliates or any of their respective directors, officers, employees, partners, shareholders, advisors and agents makes any assurance, representation or warranty as to the accuracy of such targets. Nothing contained in these materials may be relied upon as a guarantee, promise or forecast or a representation as to the future. A broad range of risk factors could cause the Fund to fail to meet its investment objectives and there can be no assurance that the Fund will achieve these objectives, including those described in the risk factor section in the Memorandum. Further, any statements and discussions of the business environment and investment strategy of the Fund included herein or elsewhere (for example, with respect to financial markets, business opportunities, demand and other conditions) are subject to the ongoing novel coronavirus outbreak ("COVID-19"). The full impact of COVID-19 is particularly uncertain and difficult to predict, therefore any such statements do not reflect its ultimate potential effects, which may substantially and adversely impact the Fund's execution of its investment strategy.

As with all performance information, past or targeted performance is not necessarily indicative of future results, nor does it ensure that investors will not incur a loss with respect to their investment, and there can be no assurance that the returns generated by the Fund will equal or exceed those of other investment activities of Landmark or its principals, or that the Fund will be able to implement its investment strategy or achieve its investment objectives. Current performance may be lower or higher than the performance data quoted. In addition, while Landmark's valuations of unrealized investments are based on assumptions that Landmark believes are reasonable under the circumstances, the actual realized returns on Landmark funds' unrealized investments will depend on, among other factors, future operating results of the portfolio companies held by the underlying funds, the underlying funds itself, the value of the assets and market conditions at the time of disposition of an underlying asset, related transaction costs and other similar factors, all of which may differ from the assumptions and circumstances on which an underlying sponsor's reported value is based and on which Landmark's estimates are based. As a general matter, the performance of any other Landmark investment fund, or any Landmark principals or Landmark as a firm, is not necessarily indicative of the Fund's performance and, accordingly, prospective investors should attach correspondingly qualified consideration to any such investment performance information and should not rely on any such performance information when making an investment decision.

Certain information contained in these materials constitutes "forward-looking statements," which can be identified by the use of terms such as "may," "will," "should," "seek," "expect," "anticipate," "project," "estimate," "intend," "continue," "target" or "believe" (or the negatives thereof) or other variations thereon or comparable terminology. Due to various risks and uncertainties, including those set forth in the risk factor section in the Memorandum, actual events or results or actual performance of each fund may differ materially from those reflected or contemplated in such forward-looking statements. As a result, investors should not rely on such forward-looking statements in making their investment decisions. No representation or warranty is made as to future performance or such forward-looking statements and Landmark further expressly disclaims any obligation or undertaking to update any of the projections or forward-looking statements contained in these materials.

Unless otherwise indicated, all internal rates of return are presented on a "gross" basis (i.e., they do not reflect the investment advisory fees, carried interest, taxes, transaction costs and other expenses to be borne by investors in a fund, which will reduce returns and, in the aggregate are expected to be substantial). Net IRRs are after all investment advisory fees, carried interest, taxes (but do not include taxes or withholding incurred by investors directly) and other expenses. As used throughout these materials, and unless otherwise indicated, "gross IRR" and "net IRR" shall mean an aggregate, compound, annual, gross or net, as applicable, internal rate of return on investments. Gross IRRs and net IRRs are calculated using underlying reported values and on the basis of the actual timing of cash inflows and outflows, aggregated monthly or daily, as indicated in these materials, and the returns are annualized.

These materials do not contain any financial product advice and are intended to be for informational purposes only. These materials are not intended to provide, and should not be relied upon, for accounting, legal, tax advice or investment recommendations. You should consult your financial, tax, legal, accounting or other professional advisor before making any investment decision.

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On March 30, 2021, Landmark Partners, LLC ("Landmark") entered into a definitive agreement (the "Transaction") with Ares Management Corporation (NYSE: ARES) ("Ares"). The Transaction closed on June 2, 2021 and, pursuant to the terms of this agreement, Landmark has become a wholly owned indirect subsidiary of Ares. The investment process and investment decision authority, along with responsibility for the day-to-day operations of the firm remain with the partners of Landmark. Investment decisions



PRESENTATION TO THE
**MASSACHUSETTS WATER
RESOURCES AUTHORITY
RETIREMENT BOARD**

PRESENTED BY
Francesco Daniele, Director of Client Services
Laura Strickland, Senior Client Services Officer

APRIL 28, 2022

Deborah B. Goldberg, Treasurer and Receiver General, Chair
Michael G. Trotsky, CFA, Executive Director and Chief Investment Officer

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PRIM BOARD & PRIT FUND OVERVIEW



AS OF DECEMBER 31, 2021

PRIT Fund Snapshot

As of December 31, 2021

PRIT FUND FACTS

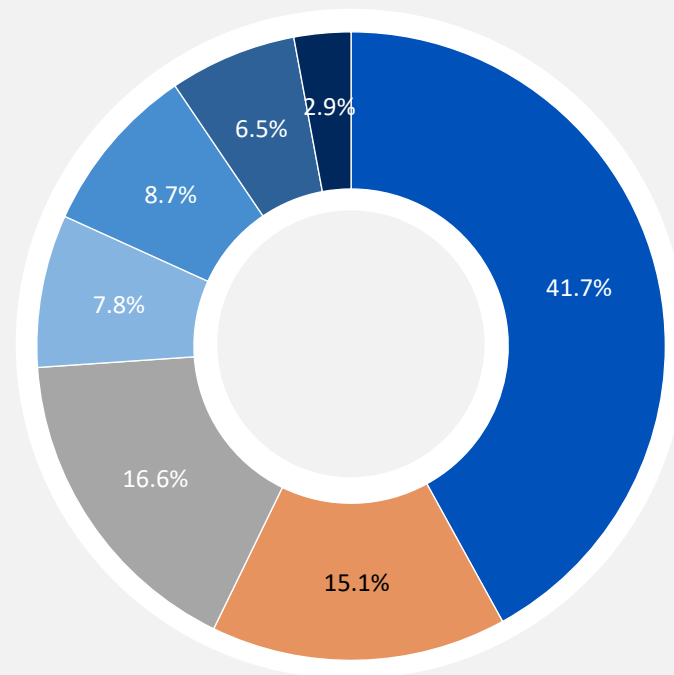
- \$104.3 billion AUM
- 53 public markets portfolios
- 16 real estate, timber and REIT portfolios
- 100+ private equity managers;
200+ partnerships
- 34 portfolio completion strategies managers

OVERSIGHT AND STAFFING

- 9 appointed and elected trustees
- 4 advisory committees, consisting of 35 industry professionals and Board members
- Staff of 54 professionals
 - 2 PhDs
 - 25 Masters
 - 15 CFAs
 - 6 CPAs
 - 3 CAIAs
 - 1 FRM
 - 1 CRE
 - 19 CFA Investment Foundations Program Certificate Holders

ASSET ALLOCATION

(as of 12/31/21)



TARGET RANGES

(approved 2/17/22)

- Global Equities 33% - 43%
- Core Fixed Income 12% - 18%
- Private Equity 12% - 18%
- Portfolio Completion Strategies 7% - 13%
- Real Estate 7% - 13%
- Value-Added Fixed Income 5% - 11%
- Timberland 1% - 7%

About PRIM



\$104.3 billion investment fund that invests public employee pension benefits

- PRIM has a professional, experienced and focused investment staff.
- PRIM does not administer benefits.

PRIM's mission is to relieve the pension funding burden on the taxpayer

- Self-funded agency which generates asset returns for the Massachusetts pension system.
- PRIM's Project SAVE initiative is achieving over \$250 million annualized value enhancing activities for the fund annually.

PRIM is independent and governed by a nine-member Board of Trustees

- Massachusetts State Treasurer is the Chair of the PRIM Board.
- A robust committee structure lends investment and operational expertise to the decision-making process.



PRIM Core Beliefs

We believe that any investment must be evaluated on three equally important parameters: return, risk and cost.

We don't make tactical asset allocation decisions or investment decisions based on market or economic predictions. Instead, we engineer a strategic, long-term asset allocation strategy that we hope will stand the test of a long-time horizon.

We value a basis point of cost reduction more than a basis point of return. Because we can count on cost savings every year, but nobody ever really knows what the markets will deliver.

PRIM Top 10 Accomplishments

1

Stable organization: Exceptional staff with low turnover supported by a strong, stable Board and Committee structure

2

National recognition for PRIM and its staff

3

Strong relative and absolute investment performance

4

Sophisticated risk management platform and framework

5

Methodical asset allocation decisions

6

Project SAVE

7

Re-engineered Hedge Fund program – Portfolio Completion Strategies

- Direct hedge funds
- Hedge fund replication
- Emerging manager direct hedge fund
- Hedge fund and other credit fund co-investment

8

Enhanced manager search and selection process

9

Private Equity co-investment

10

Direct Real Estate Program

PRIM Board



Chair
DEBORAH B. GOLDBERG
State Treasurer and
Receiver General,
Commonwealth of Massachusetts



**Ruth Ellen
Fitch**

Appointee of
the State
Treasurer



**James B.G.
Hearty**

Designee
of the
Governor,
Ex Officio
Member



**Peter
Monaco**

Appointee
of the
Governor,
Non-State
Employee or
Official



Carly Rose

Appointee
of the
Governor,
Public Safety



**Theresa F.
McGoldrick,
Esquire**

State
Retirement
Board
Member
(SRB)



**Dennis J.
Naughton**

Teachers'
Retirement
Board
Member
(TRB)



**Robert L.
Brousseau**

Elected
Representative
State Teachers'
Retirement
System



**Paul E.
Shanley,
Esquire**

Elected
Representative
State
Employees
Retirement
System



PRIM Advisory Committees

Investment Committee

The Committee advises the Board with respect to the asset allocation policy of PRIM and related investment policies and assist the Board in overseeing the investment program. The mandate of the Investment Committee does not include real estate and timber. Members include:

1. **Deborah B. Goldberg**, Chair, Treasurer and Receiver General of Massachusetts, PRIM Board Chair (Ex Officio)
2. **Joseph C. Bonfiglio**, Massachusetts & Northern New England Laborers' District Council
3. **C. LaRoy Brantley**, Investment Consultant
4. **Michael Even**, Former President and CEO, Numeric Investors
5. **Constance M. Everson**, CFA, Managing Director, Capital Markets Outlook Group
6. **Ruth Ellen Fitch**, Esq., Board Member, Former President and CEO, the Dimock Center
7. **James B. G. Hearty**, Board Member, Former Partner, Clough Capital (Ex Officio)
8. **Peter Monaco**, Board Member, Managing Director, Raptor Group
9. **Phillip H. Perelmuter**, Former Managing Partner, Wellington Management
10. **Philip Rotner**, Chief Investment Officer, Boston Children's Hospital
11. **Paul E. Shanley**, Esq., Board Member, Director of Professional Liability, Amity Insurance
12. **Glenn P. Strehle**, CFA, Treasurer Emeritus, MIT
13. **Timothy L. Vaill**, Former Chairman and CEO, Boston Private Holdings

Real Estate Committee

The Committee advises the Board in setting investment policy within the real estate and timber portfolios and assist the Board in overseeing these portfolios. Members include:

1. **Jill S. Hatton**, CRE, Chair, Real Estate Investment Professional
2. **Deborah B. Goldberg**, Treasurer and Receiver General of Massachusetts, PRIM Board Chair (Ex Officio)
3. **Lydia Chesnick**, Esq., Partner, Bernkopf Goodman LLP
4. **Robert Gifford**, RGA Corp.
5. **Anthony E. Hubbard**, Esq., CVS Health
6. **Jack Lutz**, PhD., Forest Research Group
7. **William F. (Bill) McCall, Jr.**, CRE, McCall & Almy, Inc.
8. **Garlan Morse, Jr.**, CRE, Morris and Morse Company, Inc.
9. **Peter F. O'Connell**, Marina Bay Company
10. **Carly Rose**, Board Member, Public Safety Union Member



PRIM Advisory Committees

Administration and Audit Committee

The Committee assists the Board in overseeing all issues related to the governance, administration, and audit functions of PRIM, and to provide recommendations for the Board's consideration. Members include:

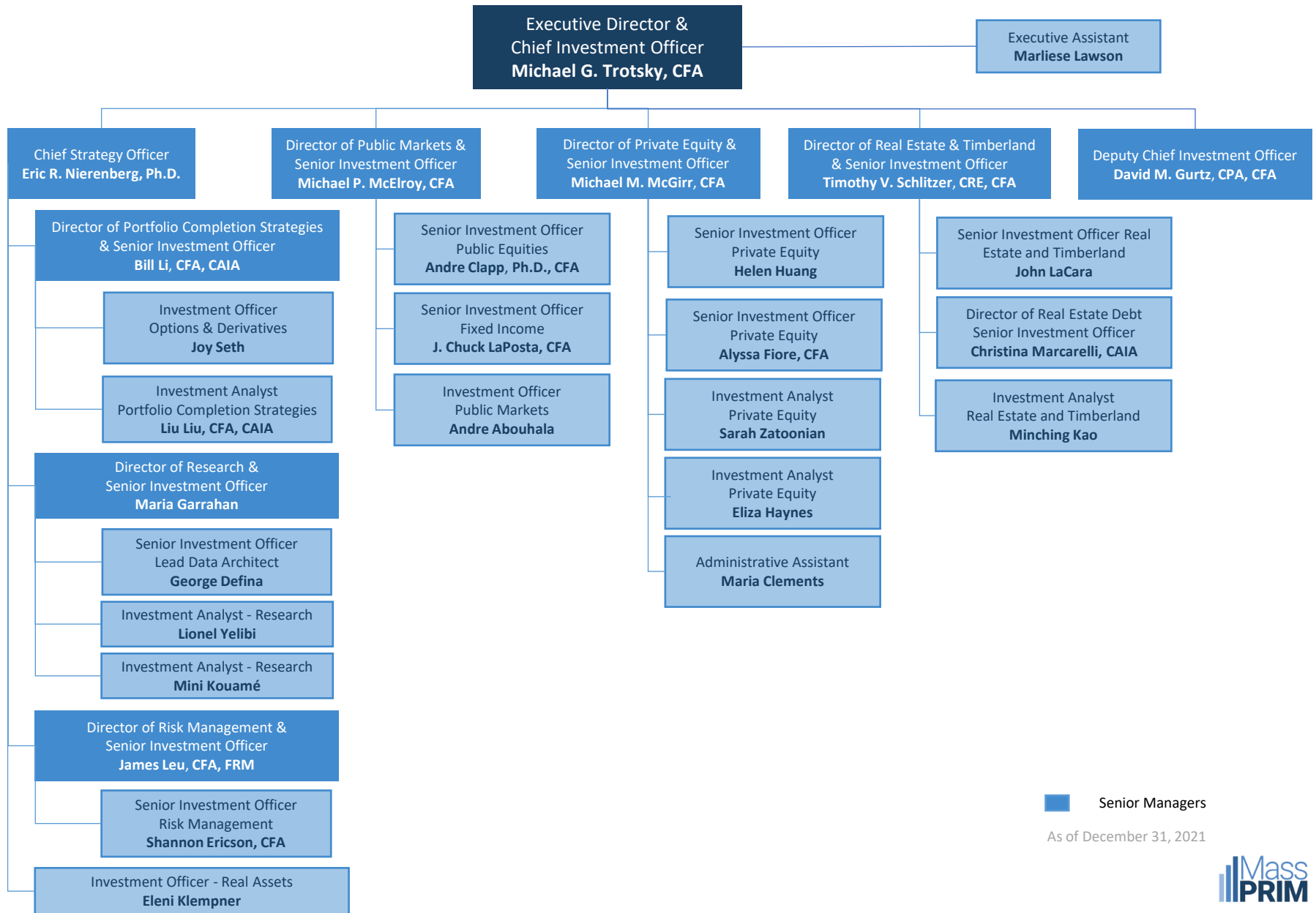
1. **Robert L. Brousseau**, Chair, Board Member, Retired Teacher, Town of Wareham School System
2. **Deborah B. Goldberg**, Treasurer and Receiver General of Massachusetts, PRIM Board Chair (Ex Officio)
3. **Patrick E. Brock**, Chairman, Hampshire County Retirement Board
4. **Karen E. Gershman**, CPA, Former Partner and Chief Operating Officer, Health Advances
5. **James B. G. Hearty**, Board Member, Former Partner, Clough Capital (Ex Officio)
6. **Theresa F. McGoldrick**, Esq., Board Member, National Executive Vice President, National Association of Government Employees (NAGE)
7. **Dennis J. Naughton**, Board Member, Retired Educator, Millis Public Schools
8. **Michele A. Whitham**, Esq., Founder & Principal, Whitham Law LLC

Compensation Committee

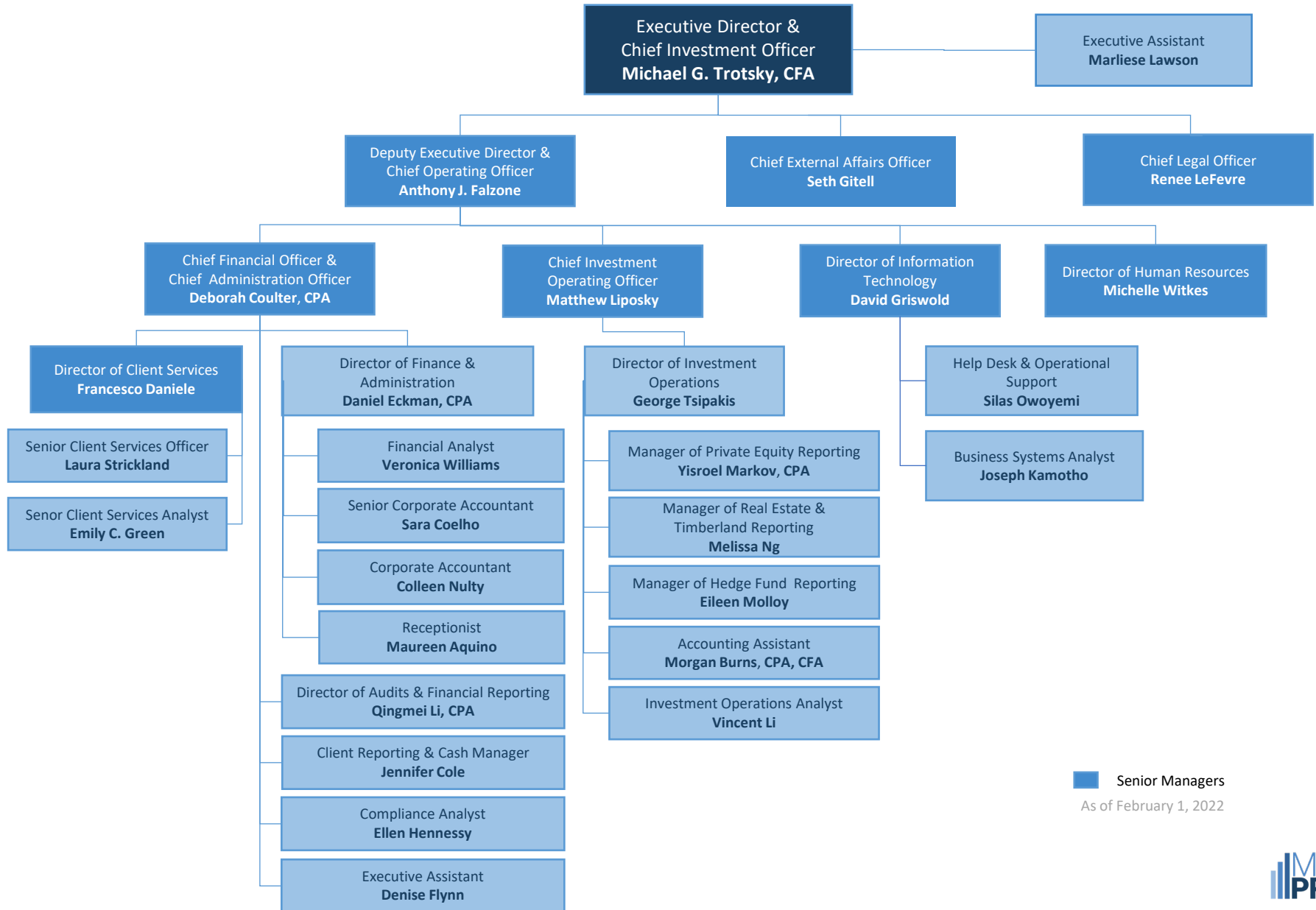
The Committee assists the Board in overseeing staff compensation and benefit policies. The Administration and Audit Committee is responsible for assisting the Board on other human resource matters. Members include:

1. **Michele A. Whitham**, Esq., Chair, Founder & Principal, Whitham Law LLC
2. **Deborah B. Goldberg**, Treasurer and Receiver General of Massachusetts, PRIM Board Chair (Ex Officio)
3. **Robert L. Brousseau**, Board Member, Retired Teacher, Town of Wareham School System
4. **Patrick E. Brock**, Chairman, Hampshire County Retirement Board

PRIM Investment Team



PRIM Finance and Operations Team



Senior Managers
As of February 1, 2022

Recent Recognition

PRIM's Private Equity Portfolio ranked #4 by the American Investment Council

PRIM's Private Equity Portfolio has been ranked #4 among 176 U.S. public pension funds based on 10-year performance by the American Investment Council's Public Pension Study. PRIM is the only fund that has been in the top five every year the study has been conducted, including #1 rankings in 2019, 2018, 2015, and 2013. (July 2021)

Institutional Investor's Partnership of the Year Award Finalist

PRIM's Portfolio Completions Strategies team was one of four finalists for "Partnership of the Year" at their Allocators' Choice Awards. This is the sixth time PRIM has been recognized for outstanding innovation by *Institutional Investor*, as nominated by industry peers and colleagues, including "Plan of the Year" – winner, 2016, "Plan of the Year" – nominee 2017, 2018, 2019, and Michael Trotsky, CFA, Executive Director and Chief Investment Officer of MassPRIM "Lifetime Achievement Award" in 2019. (June 2021)

GIPS Compliance

For the 4th consecutive year, PRIM has completed the CFA Institute's Global Investment Performance Standards of Integrity and transparency. PRIM is one of only a handful of large public pension plans to comply with the GIPS standards. Additionally, Matt Liposky, PRIM's Chief Investment Operations Officer, was selected to the CFA Institute's GIPS Standards Asset Owner Subcommittee. (August 2021)

Certificate of Achievement for Excellence in Financial Reporting – Government Finance Officer Association

PRIM was awarded the Government Finance Officer Association's Certificate of Achievement for Excellence in Financial Reporting for the 16th consecutive year. (June 2021)

MIT Sloan/PRIM Collaboration on Environmental, Social, and Governance Ratings Research

Asset Managers MFS Investment Management, AQR Capital Management, Asset Management One, and solutions provider Qontigo have joined with PRIM and the MIT Sloan Sustainability Initiative as founding members of the Aggregate Confusion Project. The groundbreaking collaboration seeks to create more reliable and transparent ESG data and benchmarks for investors. (October 2021)

PRIM FUTURE Initiative on Diversity & Inclusion

PRIM launched the FUTURE initiative, which is designed to implement the newly created Investment Equity law, the law created and championed by Treasurer Goldberg and signed into law in January 2021. The new law will help PRIM create an enhanced pathway for diverse investment managers and vendors to compete successfully for contracts. (May 2021)

Commonwealth's Citation for Outstanding Performance

Deb Coulter, PRIM's Chief Financial Officer and Chief Administration Officer, and Matt Liposky, PRIM's Chief Investment Operations Officer, were each awarded the Commonwealth's Citation for Outstanding Performance by the Treasurer for great work in their respected areas (November 2021)



PRIM'S FUTURE INITIATIVE



PRIM's FUTURE Initiative

PRIM believes that diversity of thought and investment equity is critical to the FUTURE success of PRIM and the asset management industry. To successfully implement and accomplish these goals, PRIM must plan for the FUTURE:

F U T U R E

**Firmwide
Commitment**

Continuation of PRIM's firmwide commitment to diversity and inclusion and diversity of thought.

Unbiased

PRIM will remain unbiased when evaluating and selecting investment managers or other vendors.

Transparent

PRIM will be fully transparent as to the progress toward our goals, as well as our successes and challenges.

**Utilize
Technology**

PRIM will utilize technology to successfully track and manage the amount of data this initiative requires.

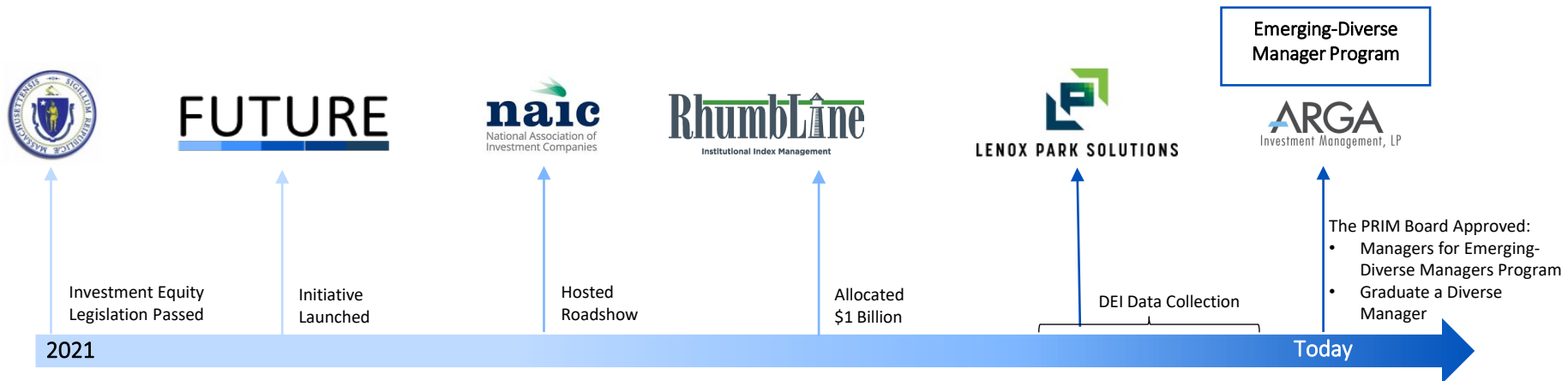
Resources

PRIM will employ additional internal and external resources as required to accomplish our goals.

Expand

PRIM will expand the conversation about diversity and inclusion in the asset management industry by being at the forefront of meaningful change.

FUTURE Initiative Update



Investment Equity Legislation Passed

- Investment Equity Legislation passed that sets goals for PRIM to reduce barriers and increase the use of diverse investment managers and vendors.

Reduced Barriers

- Identified, researched and recommending managers for PRIM's Emerging-Diverse Manager Program.

Enhance Diversity, Equity & Inclusion (DEI) Reporting

- Hired Lenox Park Solutions (Lenox Park) to survey, measure and track comprehensive DEI information for all of PRIM's investment managers and vendors. Survey launched on October 25th.

Improved Sourcing

- Hosted a NAIC Roadshow of diverse managers. (July 15th)
- Received 60+ diverse manager submissions on new PRIM webpage.

Allocated Capital to Diverse Managers

- In 2021, PRIM committed \$2.2 billion to diverse managers.

Graduate Managers

- In December, the PRIM Board voted to graduate a diverse manager (Arga) from the Xponance manager-of-managers portfolio.

PRIM staff continues to meet, discuss and partner with industry leaders on DEI.



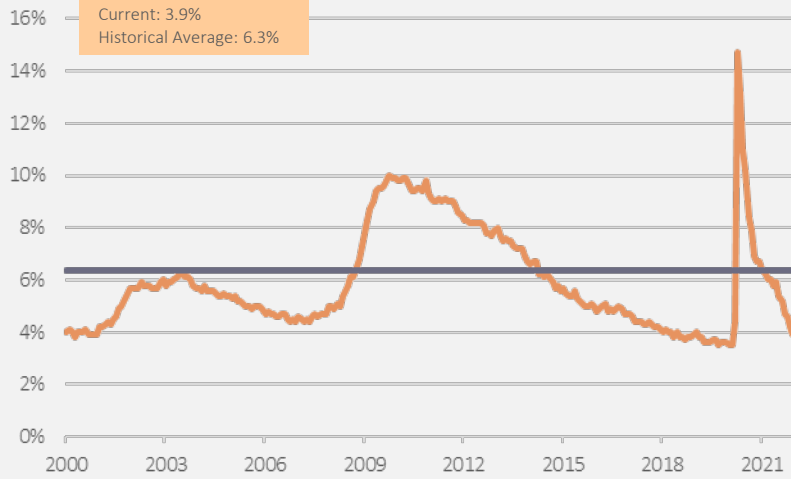
ECONOMIC BACKDROP

Mass
PRIM

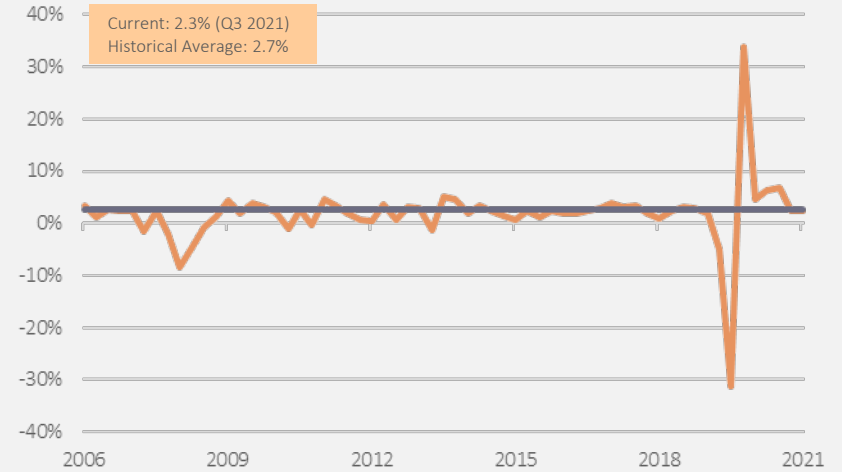
AS OF DECEMBER 31, 2021

U.S. Economic Data

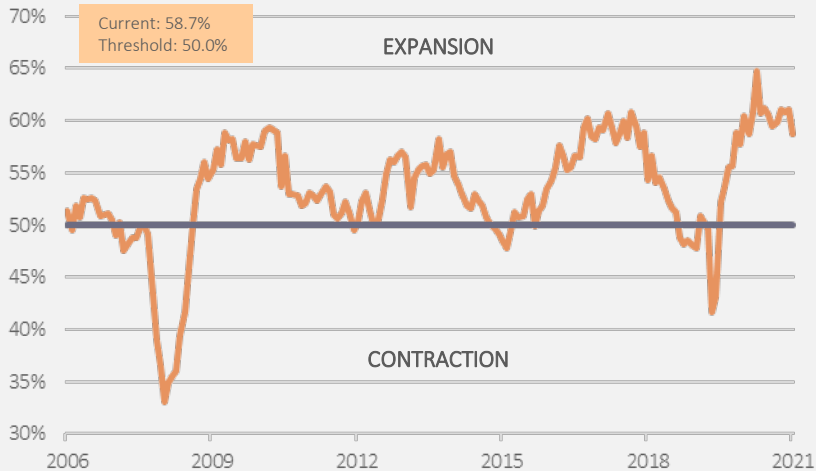
UNEMPLOYMENT RATE



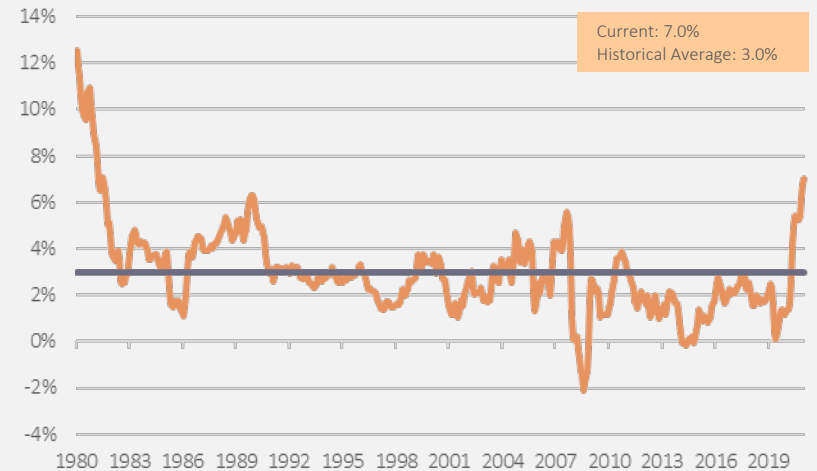
GDP GROWTH RATE



MANUFACTURING PMI

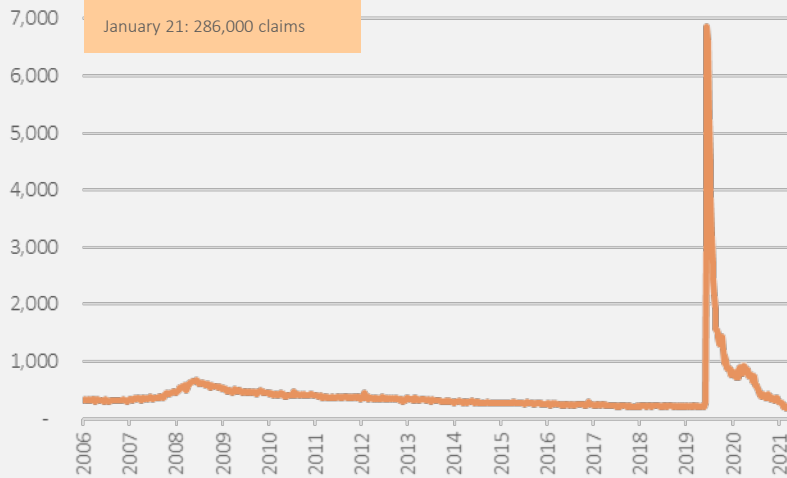


CONSUMER PRICE INDEX

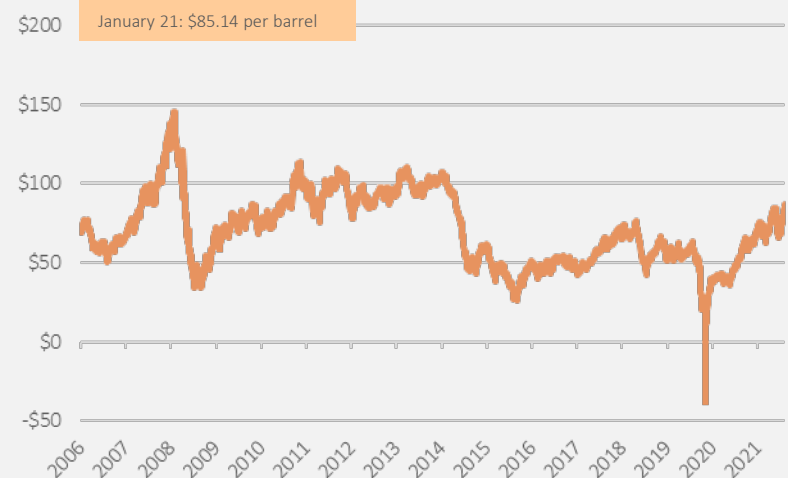


U.S. Economic Data

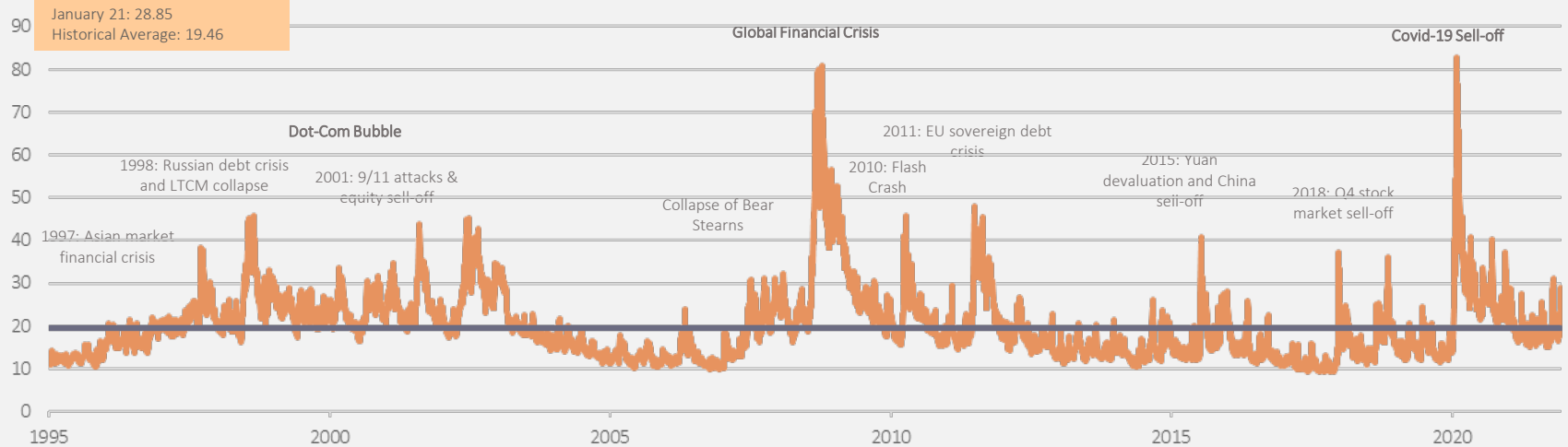
WEEKLY INITIAL JOBLESS CLAIMS (IN MILLIONS)



WTI CRUDE OIL (\$/BBL)



CBOE MARKET VOLATILITY INDEX (VIX)





PRIT FUND ASSET ALLOCATION TARGETS

Mass
PRIM

Changes to Target Ranges – PRIT Fund Asset Allocation

Approved February 17, 2022

Increase in Allocation Range

Private Equity:
Target Band moves up 1%

Same Allocation Range

Core Fixed Income:
Target Band stays the same

Value-Added Fixed Income:
Target Band stays the same

Real Estate:
Target Band stays the same

Timberland:
Target Band stays the same

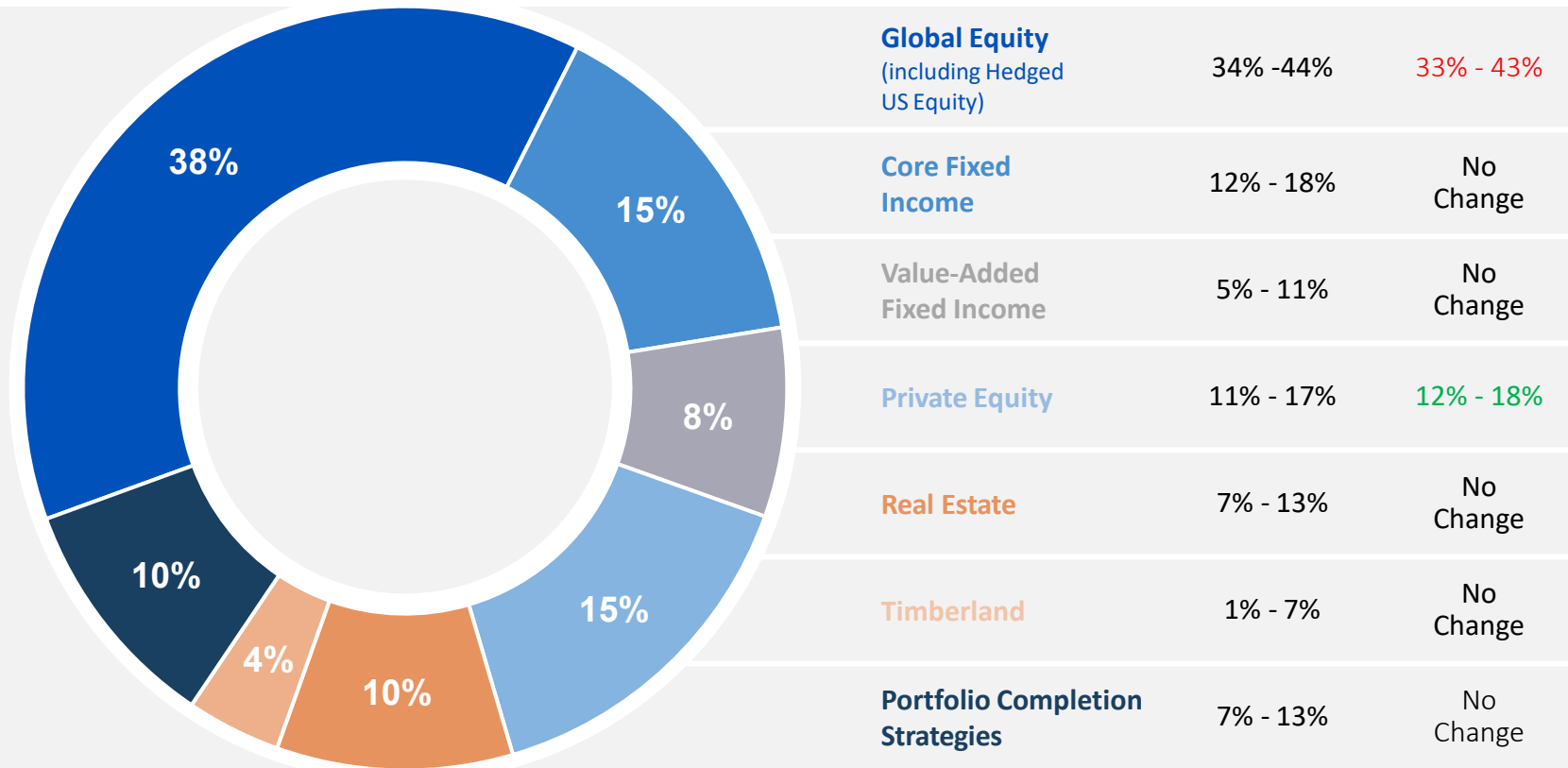
Portfolio Completion Strategies:
Target Band stays the same

Decrease in Allocation Range

Global Equity:
Target Band moves down 1%

PRIT Asset Allocation

Approved February 17, 2022



The ranges in the PRIM asset allocation reflect the long-standing use of bands around a midpoint. Managing the asset allocation to a particular midpoint in the range is not always possible, practical or advisable.

PRIM 2022 Asset Allocation Recommendations

NEPC Capital Market Assumptions with PE and Global Equity Changes

		12/31/21 Asset Class Assumptions	
Asset Classes	Target Range	10 Yr. Expected Return	30 Yr. Expected Return
US Equity ¹		4.6%	6.3%
International Equities ²		5.4%	6.4%
Emerging International Equities ³		8.3%	8.7%
Hedged Equity ⁴		4.2%	5.7%
Global Equity	33% - 43%		
Core Bonds		2.0%	3.1%
Short-Term Fixed Income ⁵		1.4%	2.4%
20+ Yr. Treasury STRIPS		1.0%	2.1%
TIPS/ILBs		1.2%	2.3%
Core Fixed Income	12% - 18%		
Value-Added Fixed Income ⁶	5% - 11%	5.2%	6.4%
Private Equity	12% - 18%	9.1%	10.1%
Real Estate ⁷	7% - 13%	5.0%	6.0%
Timberland ⁸	1% - 7%	5.3%	6.6%
Portfolio Completion (PCS) ⁹	7% - 13%	4.2%	5.4%
Total Fund Expected Return¹⁰		5.7%	6.9%

1. Blended allocation to large-cap equity, small-cap equity, micro-cap equity
2. Blended allocation to large-cap equity and small-cap equity
3. Blended allocation to large-cap equity and small-cap equity
4. Modeled as US LIBOR, US large-cap equity, and US small-cap equity
5. Modeled as Short-Term Treasury

6. Blended allocation to high yield, bank loans, EMD, private debt
7. Blended allocation to Private Real Estate and REITs
8. Timberland is modeled as Private Real Assets Infrastructure/Land
9. Modeled as equal weighted blend of Hedge Fund Equity, Credit, and Macro
10. Asset classes modeled at the midpoint of the asset allocation range



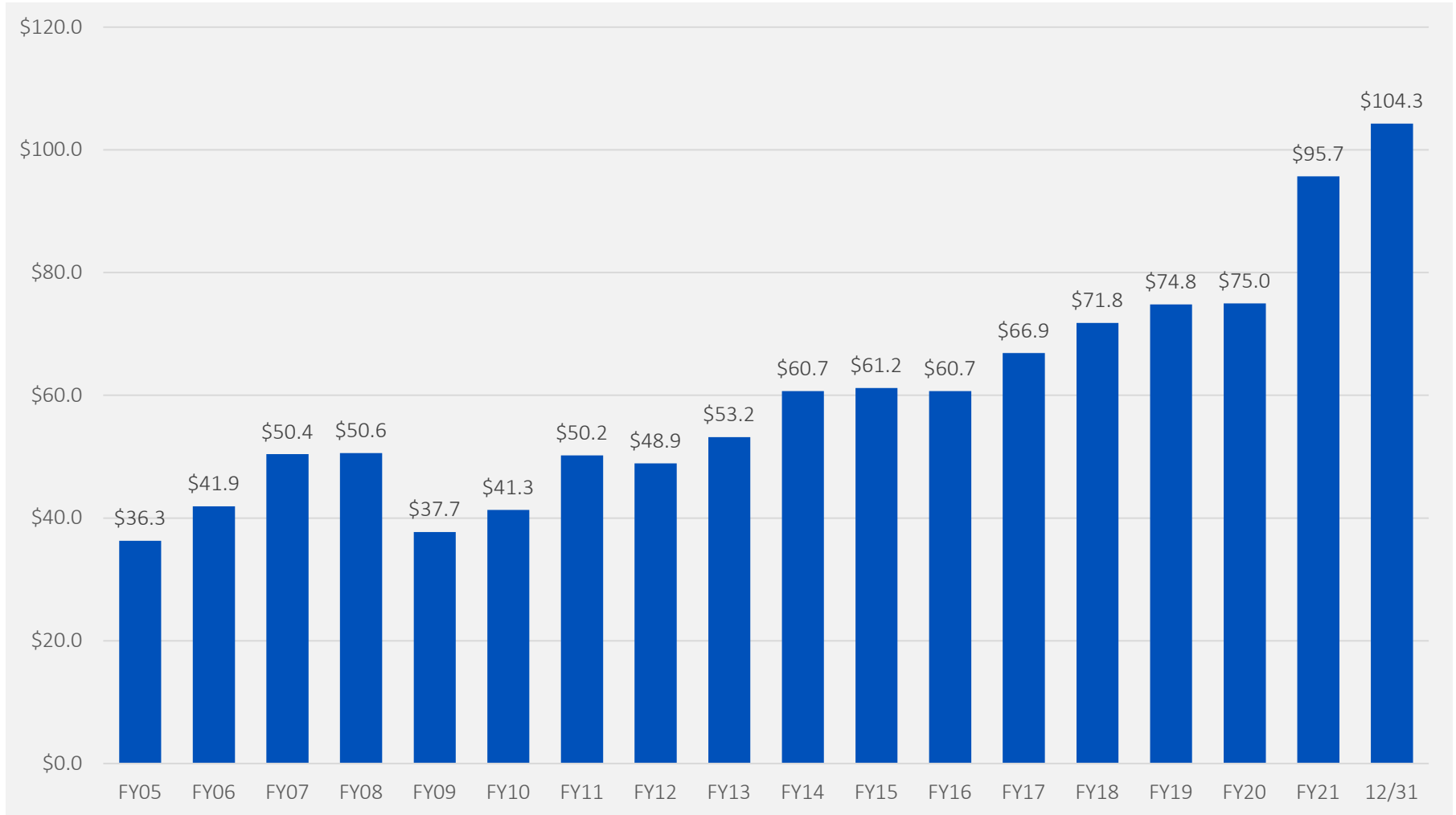
PRIT FUND PERFORMANCE

Mass
PRIM

AS OF DECEMBER 31, 2021

Total PRIT Fund Fiscal Year Market Value

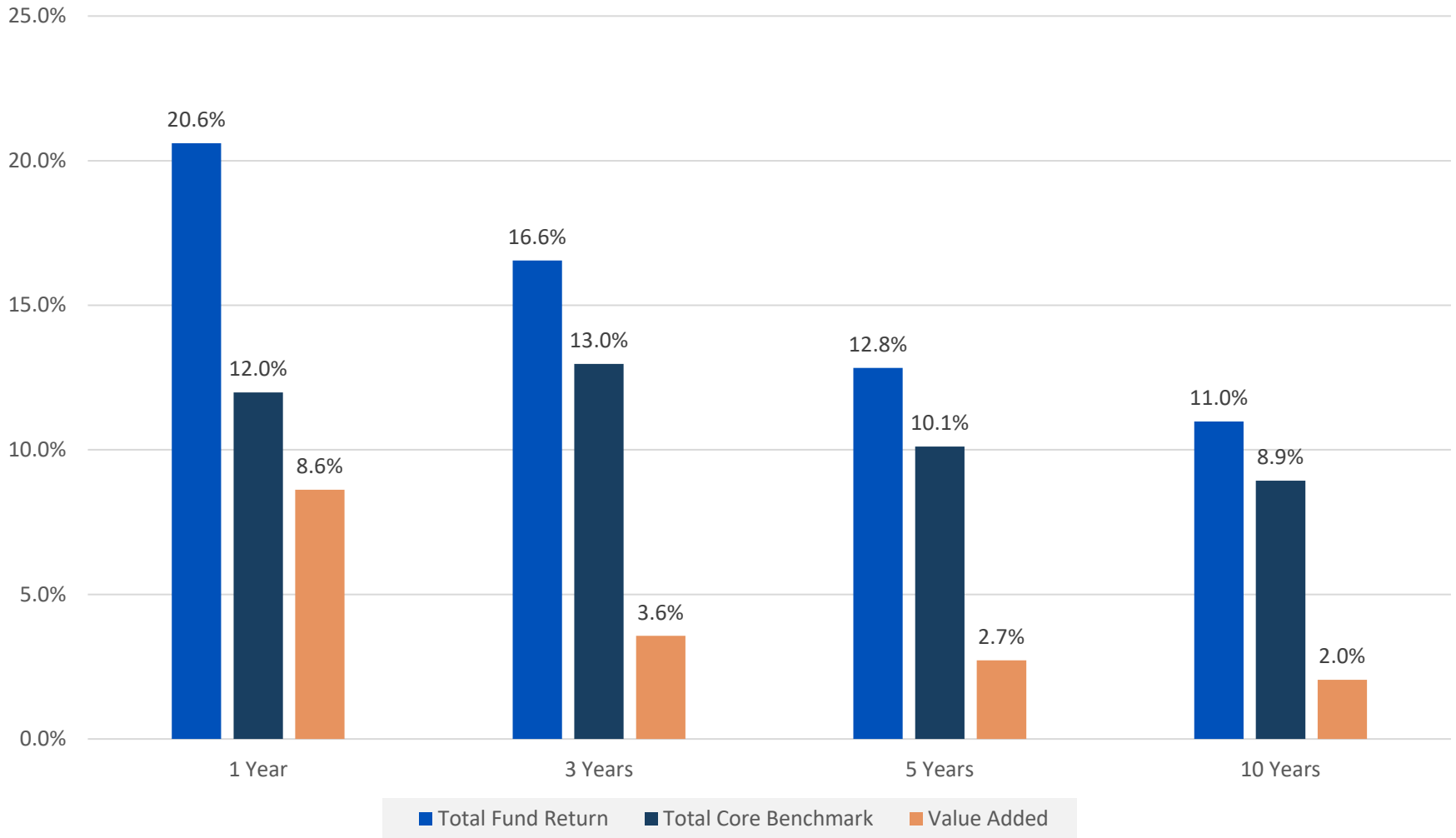
Value (\$Billions)



Source: BNY Mellon. As of December 31, 2021.

PRIT Fund Total Returns

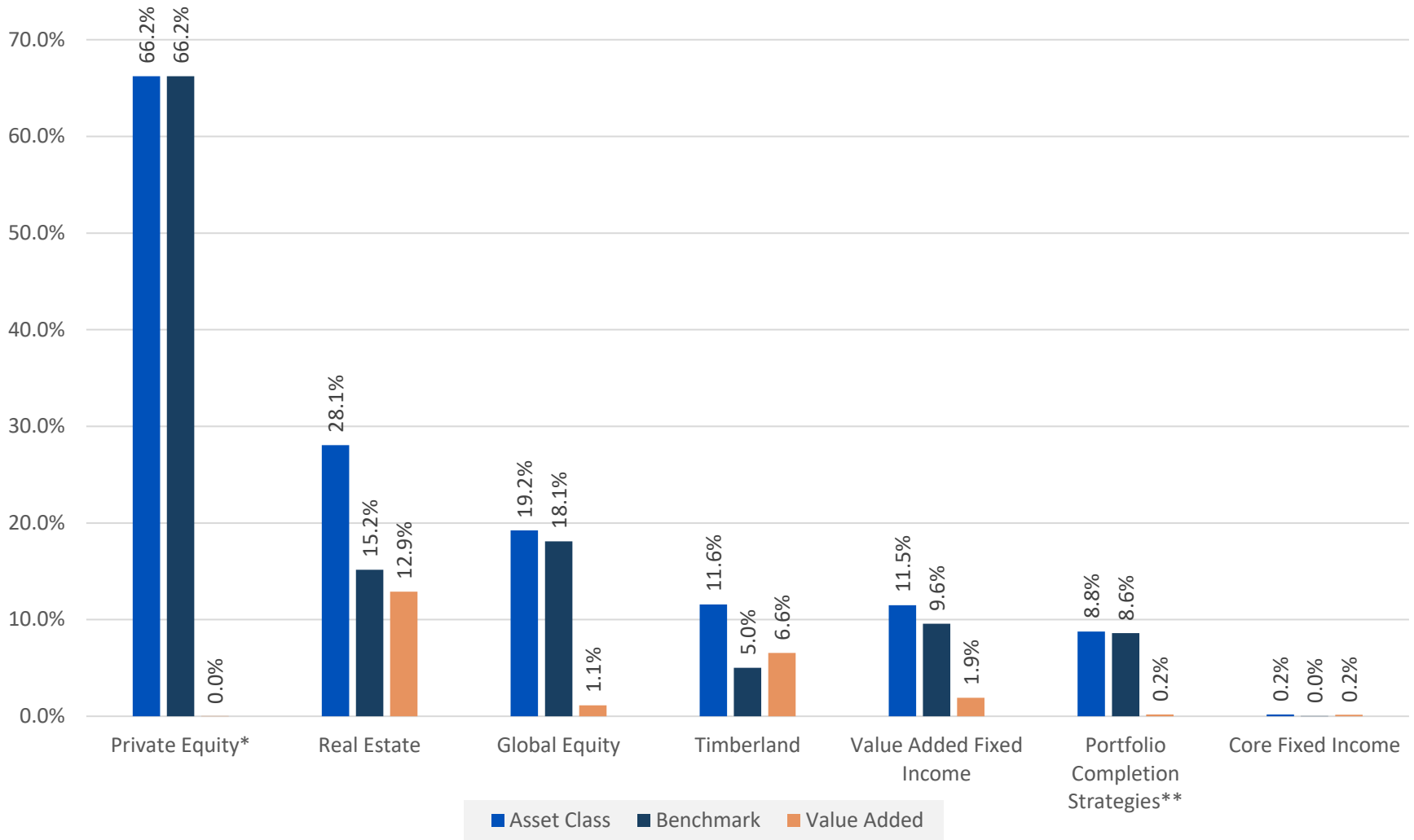
Annualized Returns as of December 31, 2021 (Gross of Fees)



Source: BNY Mellon. Totals may not add due to rounding. Total Core Benchmark includes private equity benchmark.

PRIT Asset Class Performance Summary

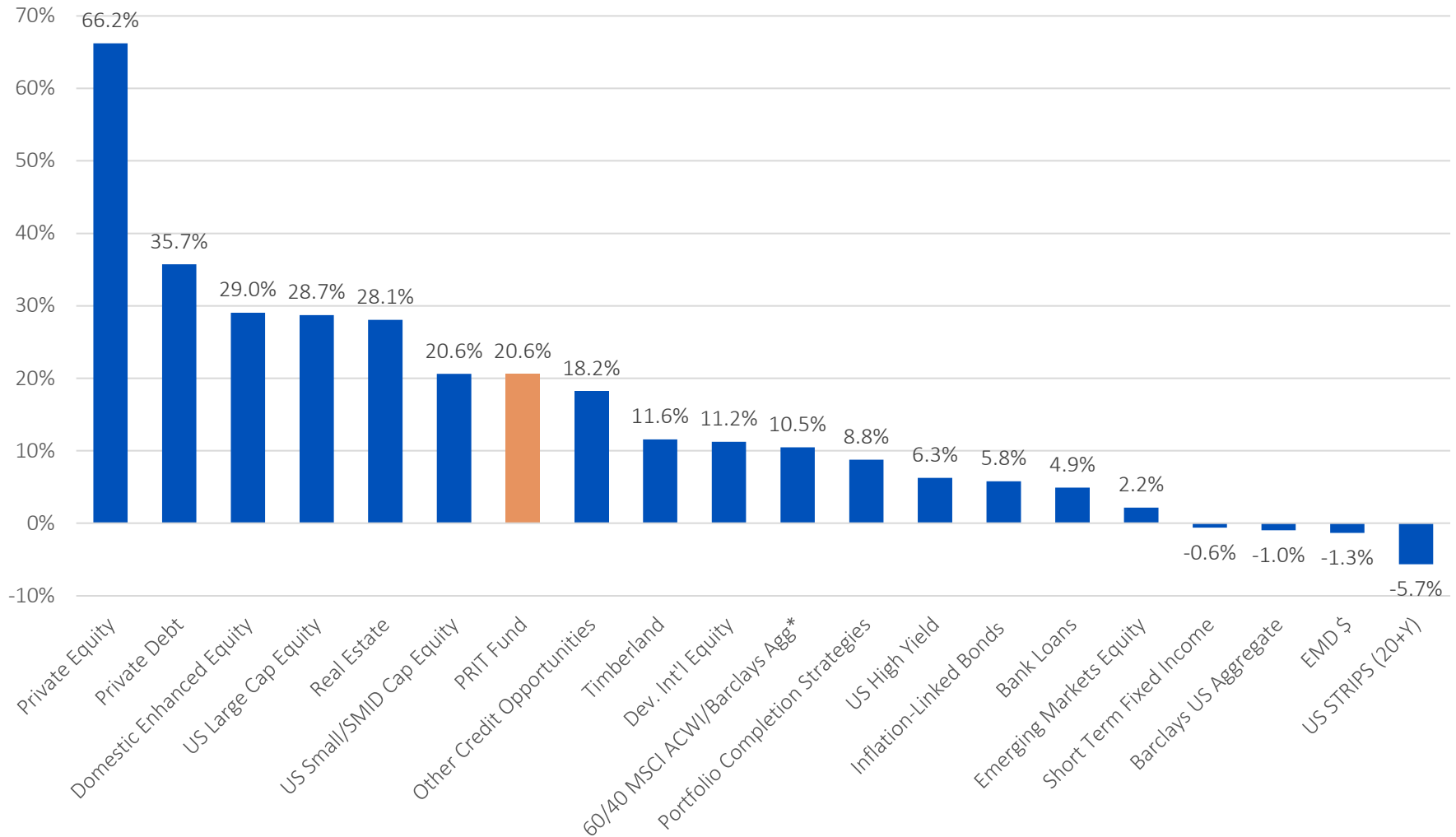
One-Year Ended December 31, 2021 (Gross of Fees)



Source: BNY Mellon. Totals may not add due to rounding. *Benchmark is actual performance. **Hedge Fund returns are net of fees.

PRIT Performance By Strategy – One-Year

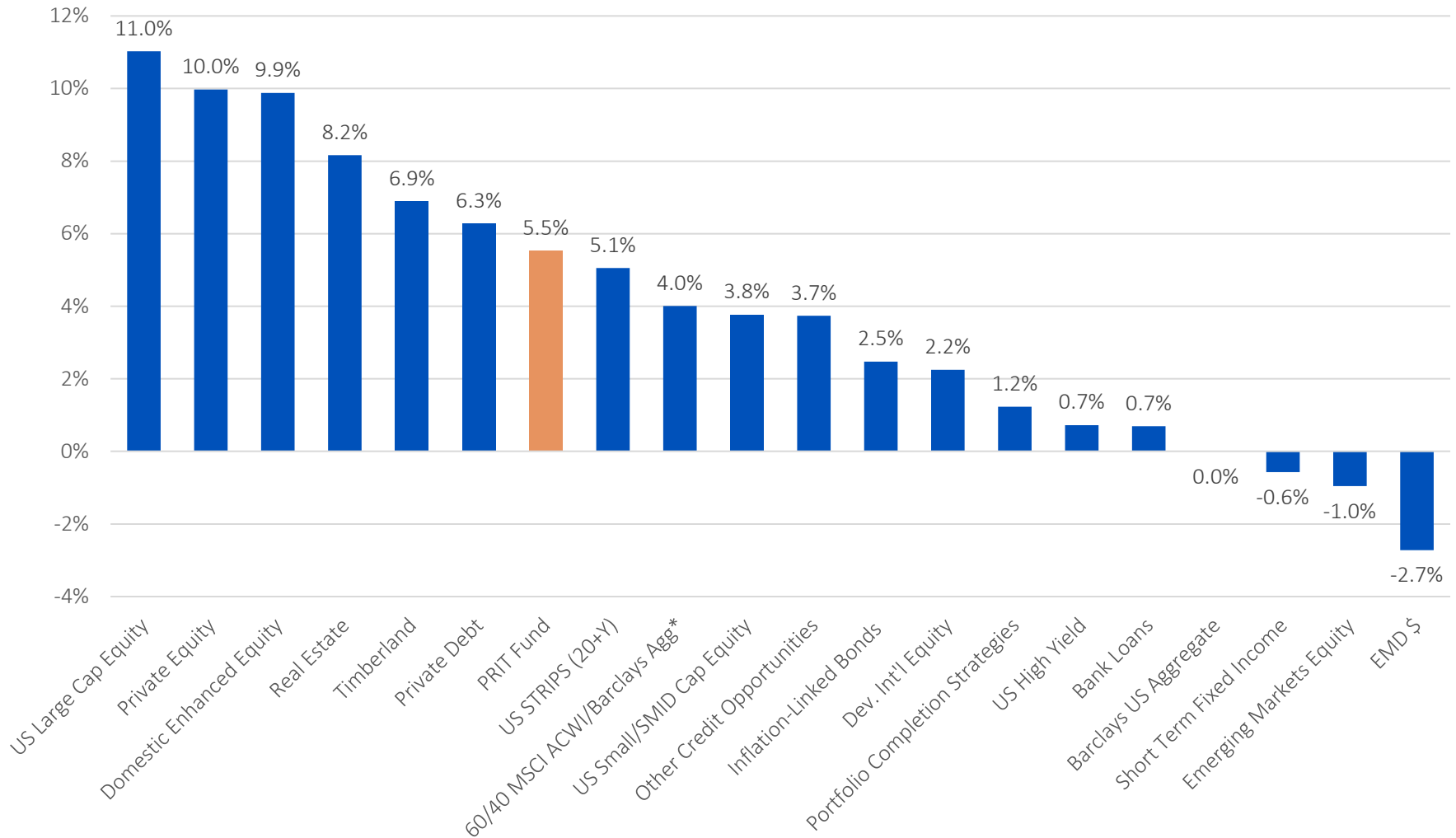
One-Year Ended December 31, 2021 (Gross of Fees)



Source: BNY Mellon, FactSet. All performance figures reflected are PRIT Fund Asset Class returns. *MSCI ACWI/Barclays Aggregate is derived from a 60/40 combination of index returns.

PRIT Performance By Strategy – Fourth Quarter 2021

Quarter Ended December 31, 2021 (Gross of Fees)



Source: BNY Mellon, FactSet. All performance figures reflected are PRIT Fund Asset Class returns. *MSCI ACWI/Barclays Aggregate is derived from a 60/40 combination of index returns.

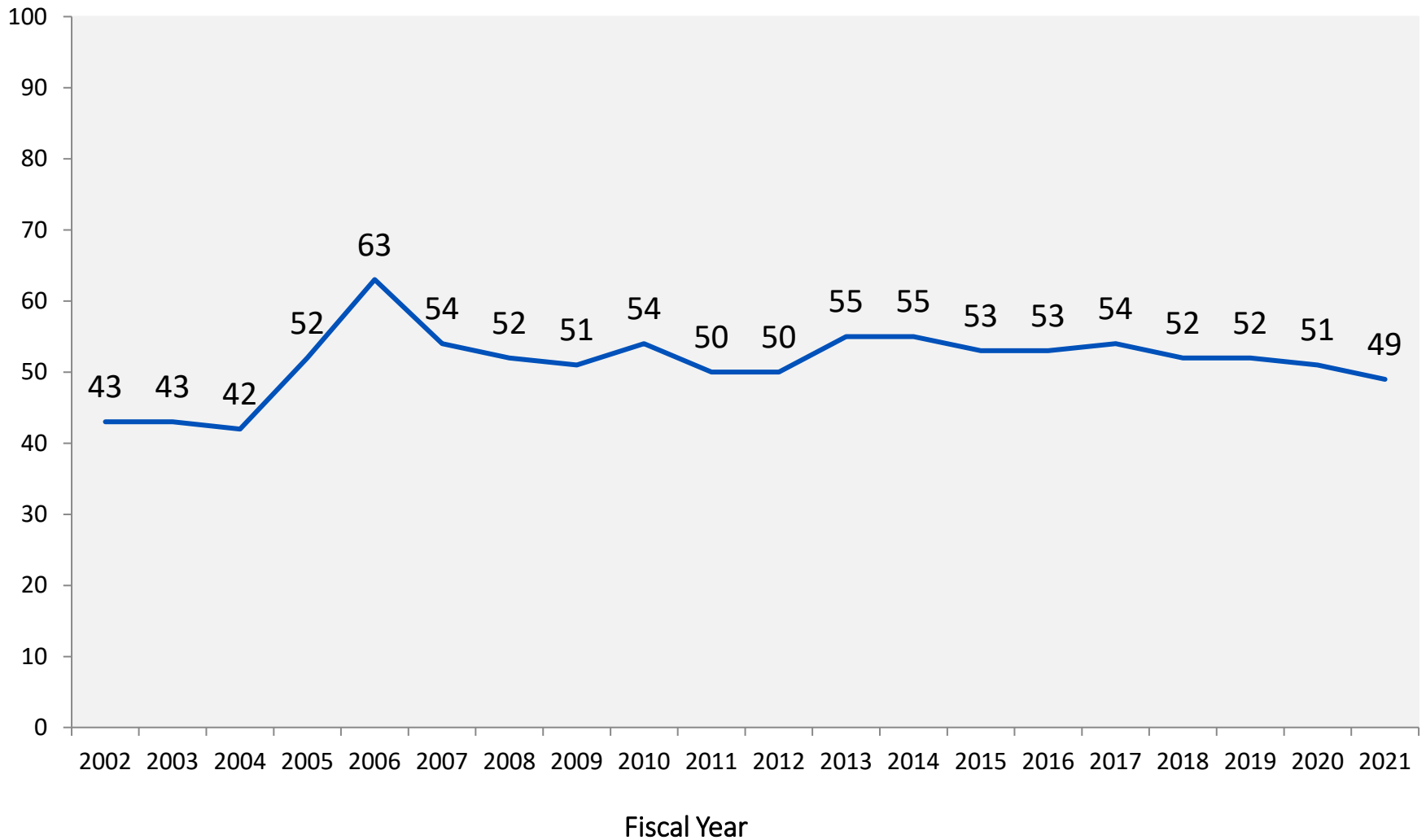
PRIT Fund Annualized Returns By Asset Class

As of December 31, 2021 (Gross of Fees)

1 Year	3 Year	5 Year	10 Year
PRIVATE EQUITY 66.2%	PRIVATE EQUITY 33.2%	PRIVATE EQUITY 29.6%	PRIVATE EQUITY 23.4%
REAL ESTATE 28.1%	GLOBAL EQUITY 20.7%	GLOBAL EQUITY 14.7%	GLOBAL EQUITY 12.3%
GLOBAL EQUITY 19.2%	REAL ESTATE 12.9%	REAL ESTATE 10.6%	REAL ESTATE 11.2%
TIMBER 11.6%	VALUE-ADDED FIXED INCOME 8.5%	VALUE-ADDED FIXED INCOME 7.2%	VALUE-ADDED FIXED INCOME 6.2%
VALUE-ADDED FIXED INCOME 11.5%	CORE FIXED INCOME 7.7%	CORE FIXED INCOME 5.5%	TIMBER 6.0%
PORTFOLIO COMPLETION STRATEGIES 8.8%	PORTFOLIO COMPLETION STRATEGIES 5.7%	TIMBER 5.3%	PORTFOLIO COMPLETION STRATEGIES 5.1%
CORE FIXED INCOME 0.2%	TIMBER 5.2%	PORTFOLIO COMPLETION STRATEGIES 4.6%	CORE FIXED INCOME 4.7%

Source: BNY Mellon.

Total PRIT Fund - Ratio of Expenses in Basis Points



MWRA Employees' Retirement System

Net of Fees Returns as of December 31, 2021

	MKT \$	%	Month	QTR	FY '22	Calendar YTD	1 Year	3 Year	5 Year	10 Year	Inception
MASSACHUSETTS WATER RESOURCES											
AUTHORITY EMPLOYEES' RETIREMENT SYSTEM	33,426,387	100%	2.00	4.58	9.61	25.20	25.20	14.15	11.62	10.39	8.95
CAPITAL FUND	5,489,034	16%	2.96	5.39	7.84	19.94	19.94	16.06	12.36	10.52	
HEDGE FUNDS	15,343,146	46%	1.04	1.34	1.58	9.45	9.45	6.08	4.91	5.30	
PRIVATE EQUITY 2008	1,040,193	3%	5.09	7.03	19.70	37.33	37.33	17.12	20.98	20.23	
PRIVATE EQUITY 2009	161,001	0%	14.46	14.43	31.92	80.13	80.13	52.15	39.19	28.77	
PRIVATE EQUITY 2010	887,561	3%	23.04	23.13	52.25	130.25	130.25	43.03	36.42	25.98	
PRIVATE EQUITY 2011	1,108,210	3%	-0.24	8.25	36.34	108.13	108.13	35.85	31.59	21.08	
PRIVATE EQUITY 2012	845,930	3%	1.48	-0.06	10.10	44.23	44.23	28.93	26.14		
PRIVATE EQUITY 2014	2,507,907	8%	0.55	12.98	27.34	57.35	57.35	30.64	29.51		
PRIVATE EQUITY 2017	2,461,665	7%	0.73	6.61	23.95	57.75	57.75	28.80			
PRIVATE EQUITY 2020	2,450,214	7%	0.88	6.81	12.21	35.11	35.11				
PRIVATE EQUITY 2021	1,131,525	3%	3.48	3.78	6.04						
IMPLEMENTATION BENCHMARK											
			3.29	4.60	6.36	17.65	17.65	15.36	11.95	10.15	
TOTAL HEDGE FUNDS BENCHMARK											
			0.85	0.71	0.96	9.04	9.04	6.84	5.08	4.24	

Inception date: February 1, 1988

A nighttime photograph of the Boston waterfront, showing a cobblestone promenade in the foreground, a body of water, and a city skyline with illuminated buildings in the background under a dark blue sky.

APPENDIX PRIT FUND ASSET CLASS DETAIL

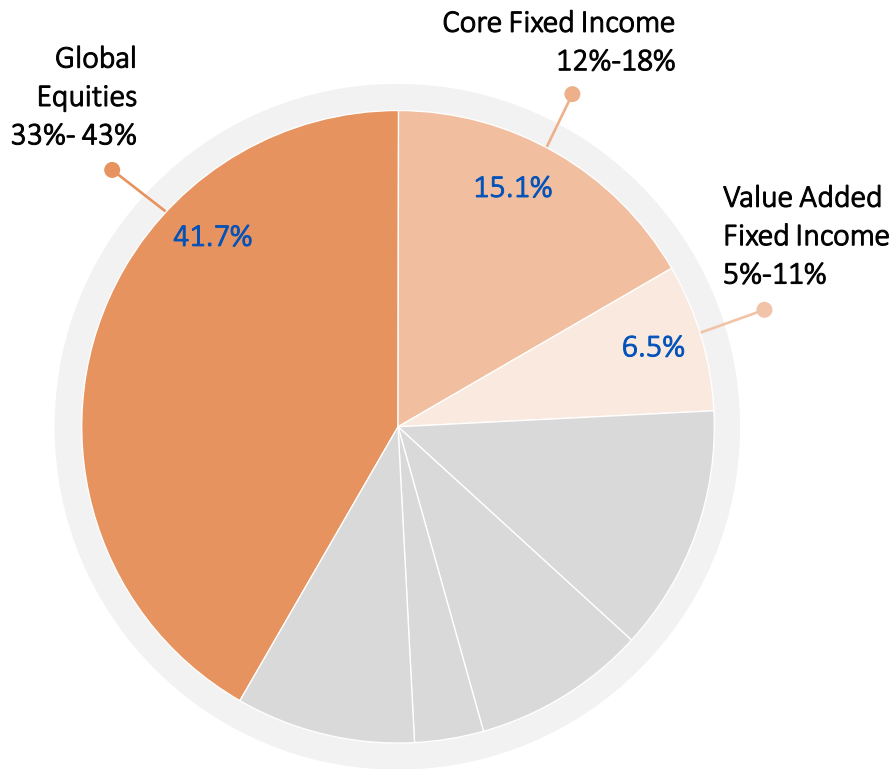
The logo for Mass PRIM, featuring the word "Mass" in a serif font above the word "PRIM" in a bold, sans-serif font. To the left of the text are three vertical bars of increasing height, resembling a bar chart.

AS OF DECEMBER 31, 2021

Public Market Portfolios

PRIT FUND TARGET ASSET ALLOCATION

Actual Allocation as of December 31, 2021



Source: BNY Mellon and PRIM Staff.
*Excludes Private Debt allocation.

\$64.1 billion 62.1% of PRIT Fund

- Global Equities: \$43.1 billion, 41.7% of PRIT Fund
- Public Fixed Income: \$21.0 billion, 20.4% of PRIT Fund*

44% Active / 56% Passive

- Global Equities: 38% Active / 62% Passive
- Public Fixed Income: 56% Active / 44% Passive

53 Portfolios

- 27 equity portfolios
- 26 fixed income portfolios

15 Asset Classes

- U.S. Large Cap Equity
- U.S. Small/SMID Cap Equity
- Developed International Equity
- Developed International Small Cap Equity
- Emerging Markets Equity
- Emerging Markets Small Cap Equity
- Core Bonds
- 20+ Year STRIPS
- Short Term Fixed Income
- U.S. TIPS
- Global Inflation-Linked Bonds
- High Yield Bonds
- Bank Loans
- EMD \$
- Other Credit Opportunities

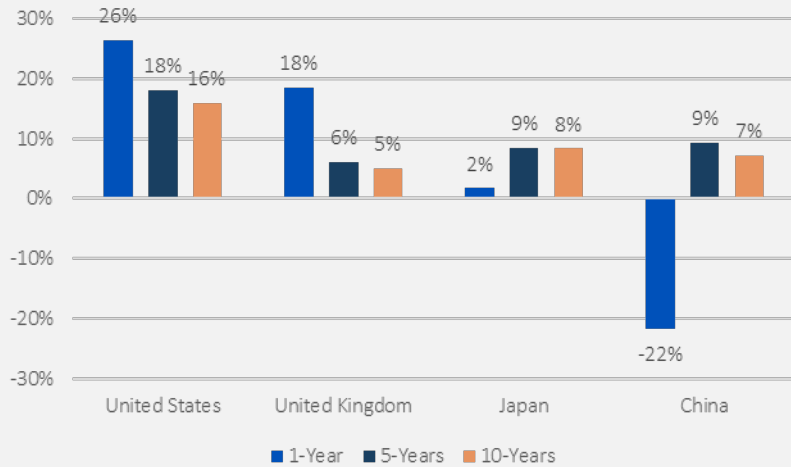


Public Markets – Key Initiatives

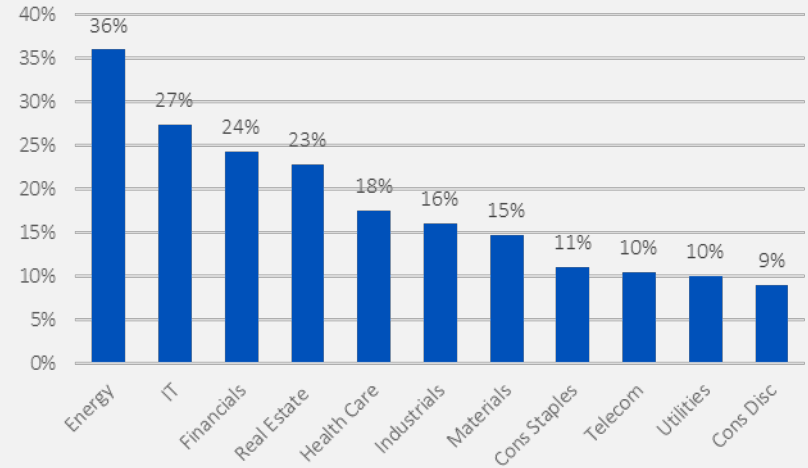
- Continue to source and allocate to diverse investment managers.
- Utilize approved managers of managers to implement PRIM’s Emerging-Diverse Manager Program.
- Research and identify value managers in Developed International and Domestic Equity.
- Continue to identify Other Credit Opportunities investments, including co-investment opportunities.
- Work with PRIM Risk Team on implementation of fixed income portfolio analytics.
- Continue to upgrade analytical tools to improve investment research/analysis.
- Evaluate role of specialized equity managers within PRIT Fund structure.

Public Equity Review

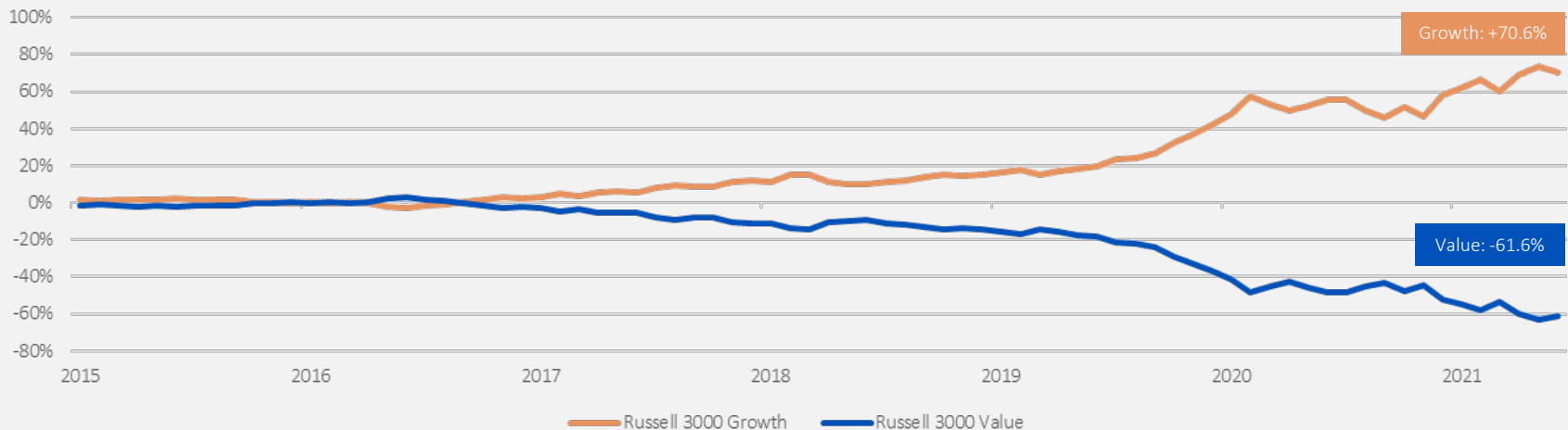
MAJOR COUNTRY RETURNS (MSCI ACWI)



GLOBAL ONE-YEAR RETURN BY SECTOR (MSCI ACWI)

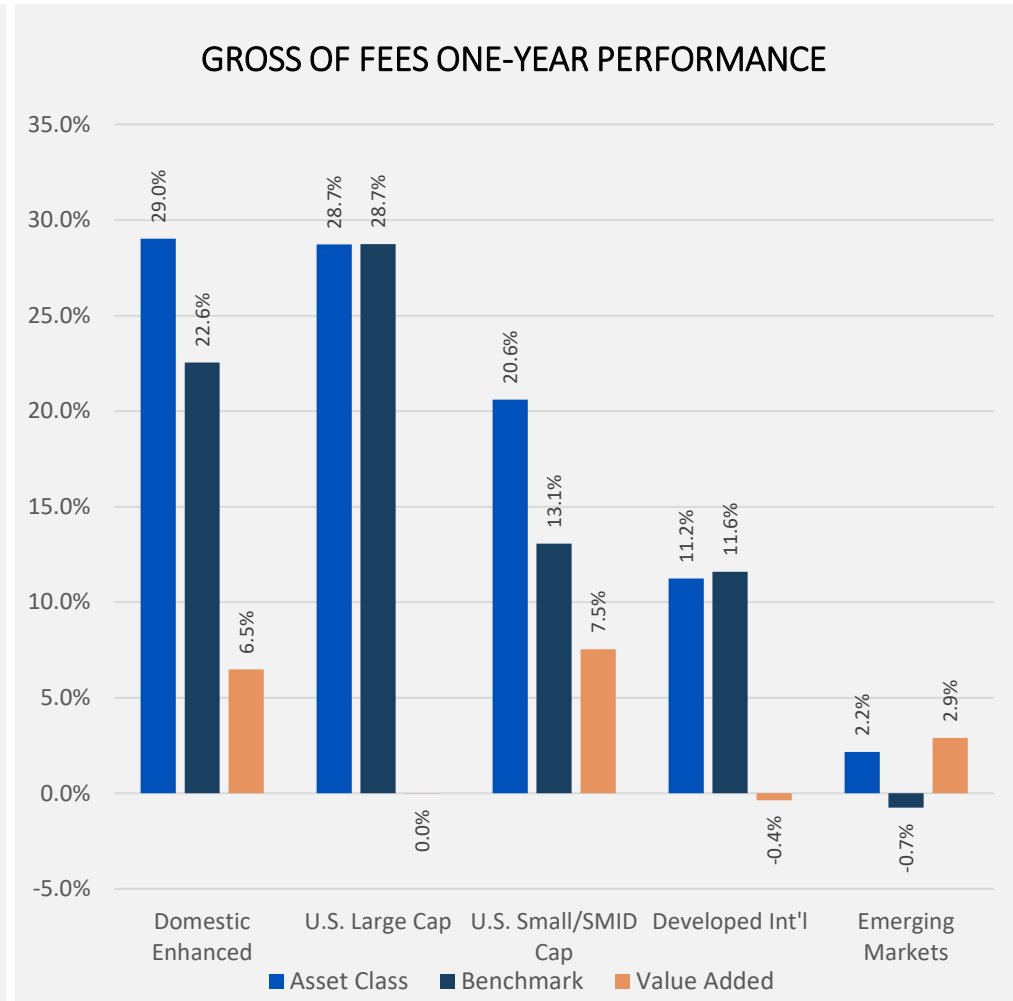
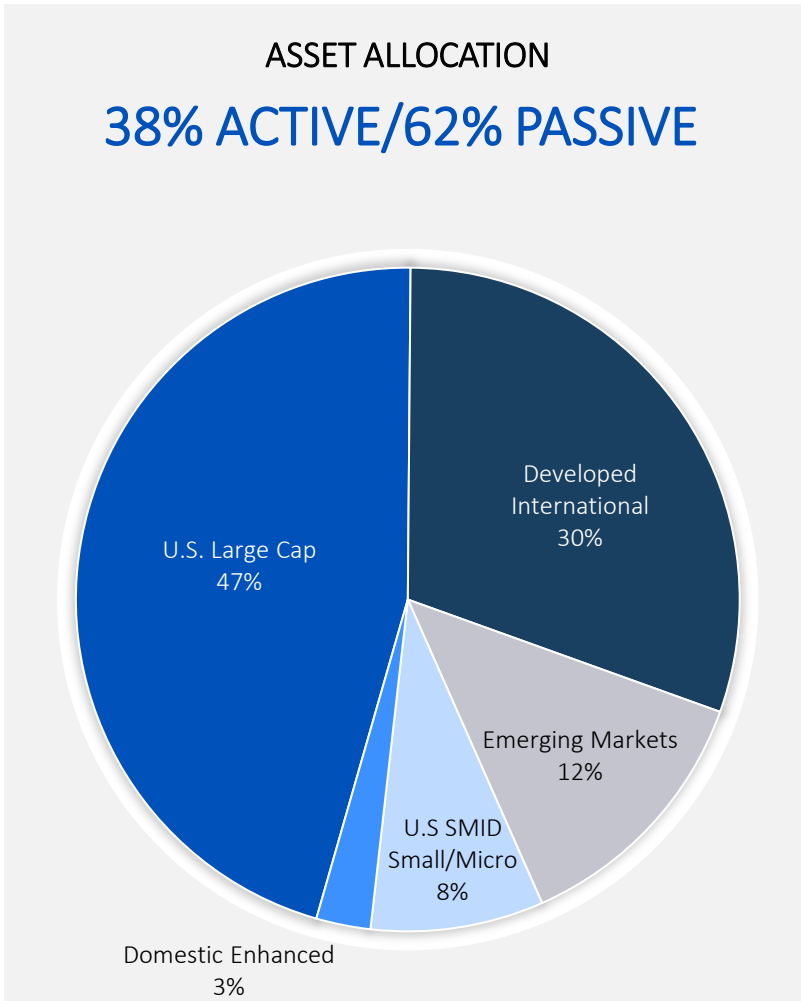


VALUE VS. GROWTH: RELATIVE RETURNS VS. RUSSELL 3000 (CUMULATIVE)



Global Equity

As of December 31, 2021, \$43.1 Billion – 41.7% of PRIT Fund (Target 33%-43%)

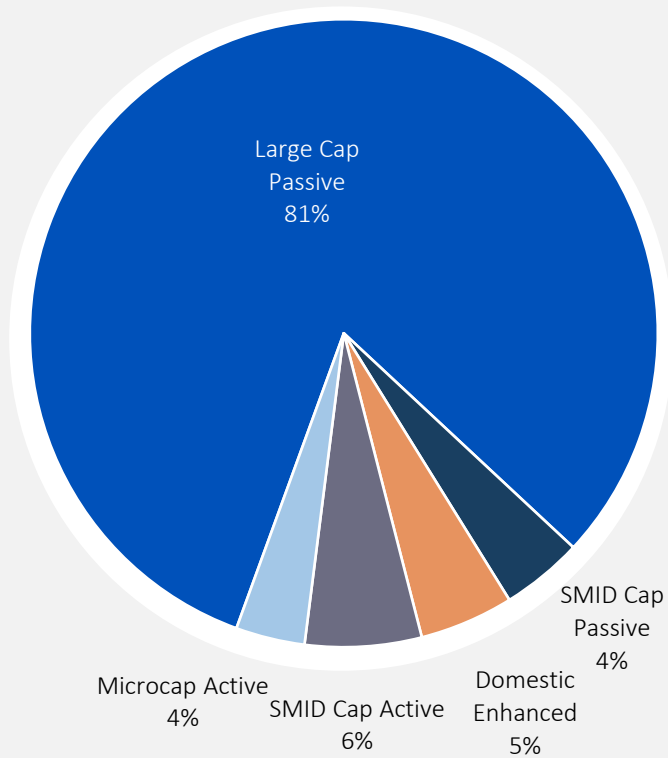


Source: BNY Mellon, PRIM Staff..

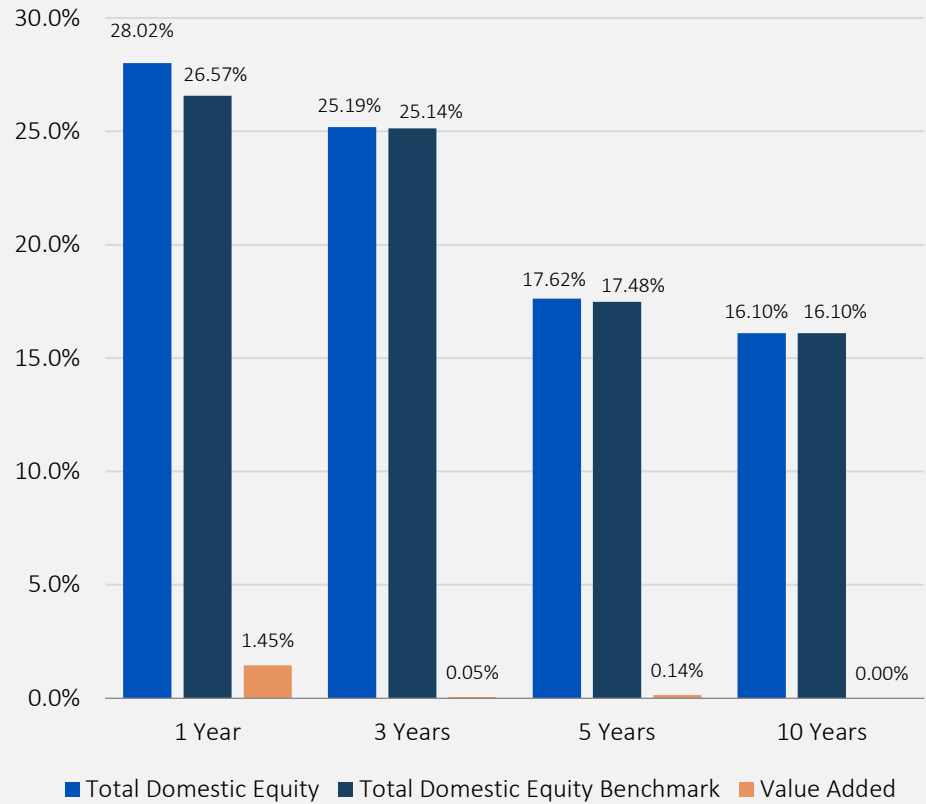
Domestic Equity

As of December 31, 2021, \$24.8 Billion – 24.0% of PRIT Fund

ASSET ALLOCATION 10% ACTIVE/90% PASSIVE



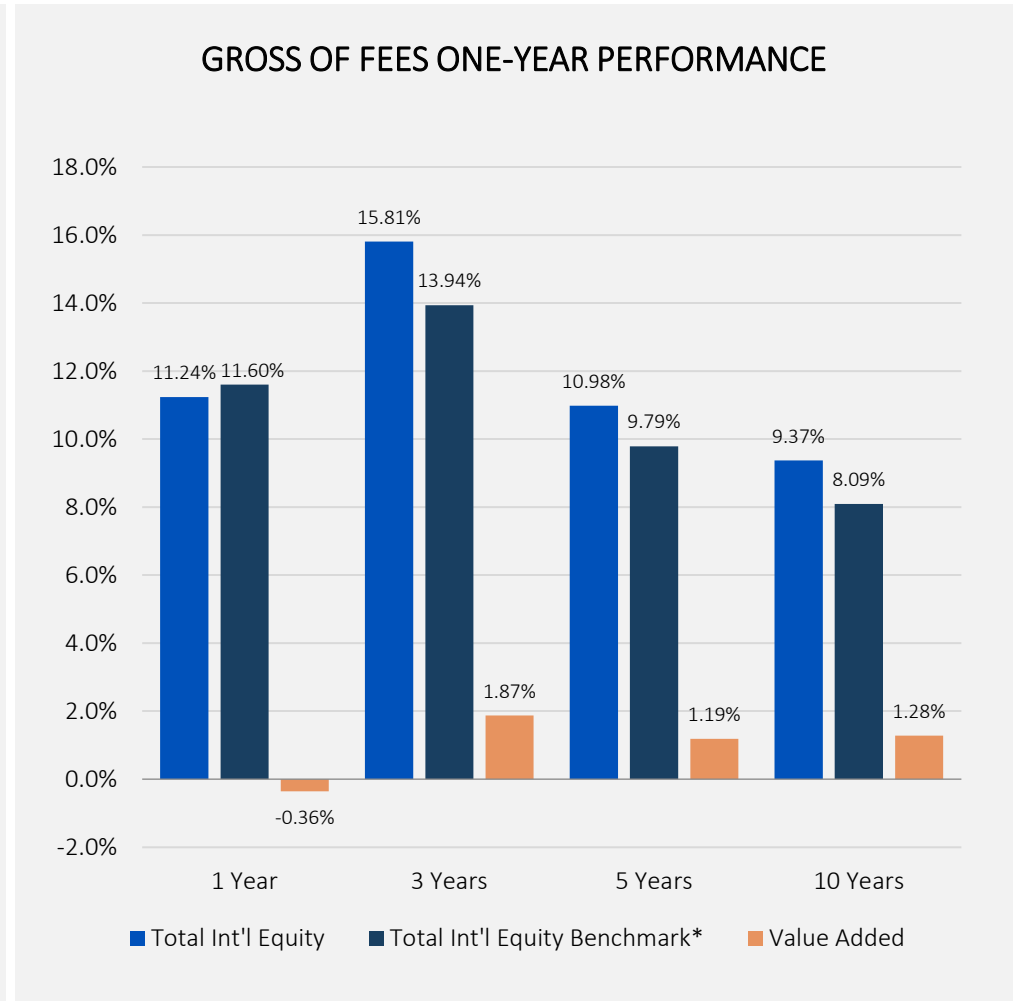
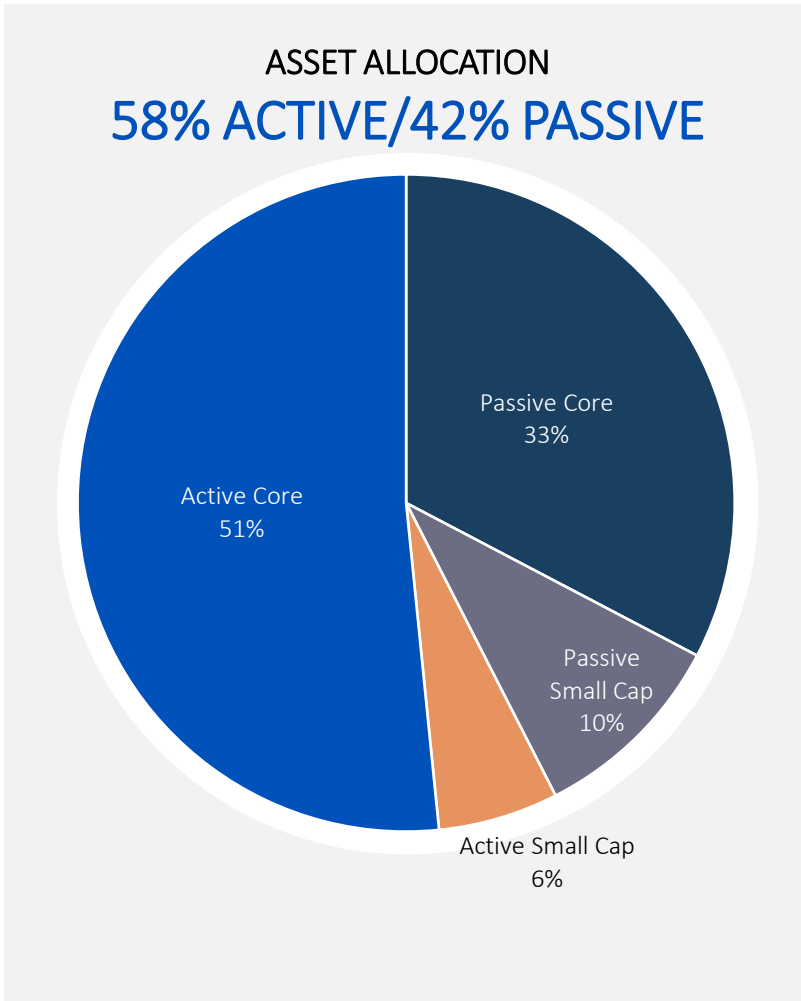
GROSS OF FEES ONE-YEAR PERFORMANCE



*Total Domestic Equity Benchmark: Currently the Total Domestic Equity benchmark is calculated by applying the investment performance of the sub asset class benchmarks to the sub asset class weights within the total domestic equity portfolio.

Developed International Equity

As of December 31, 2021, \$13.1 Billion – 12.7% of PRIT Fund

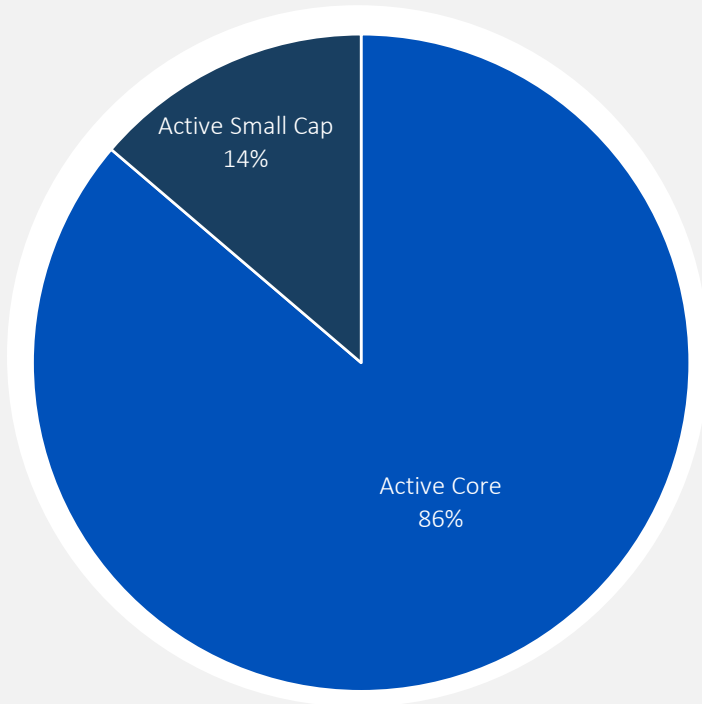


*Total International Equity Benchmark: Custom MSCI World Ex-US IMI Net Divs, customized to exclude legislatively prohibited tobacco, Sudan and Iran securities (blend is maintained by MSCI).

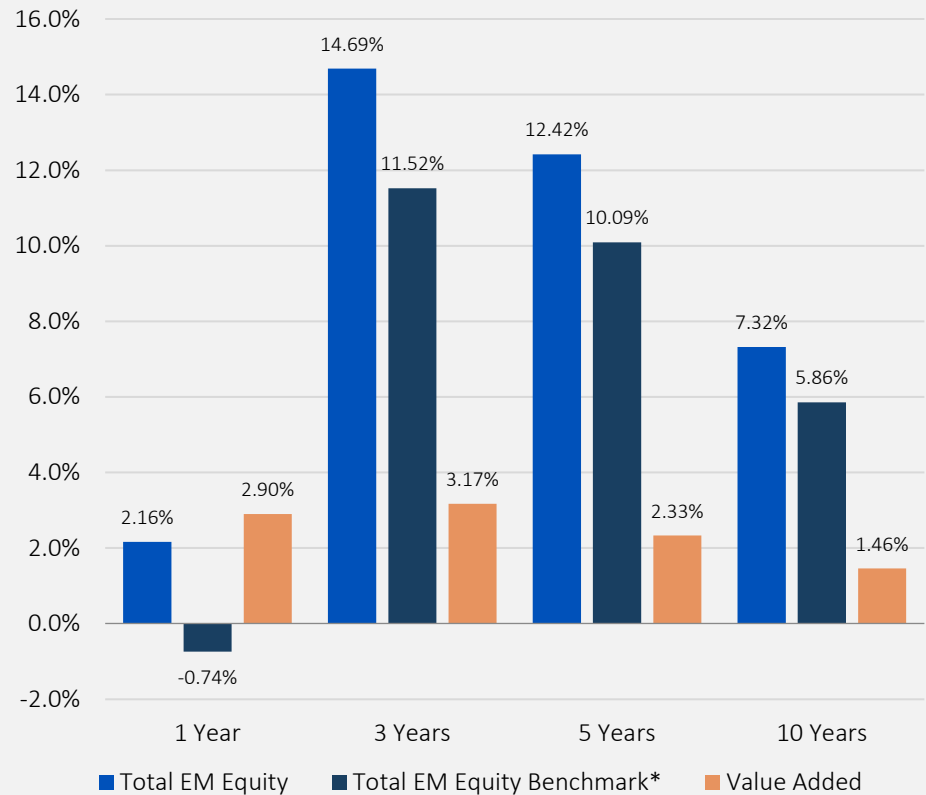
Emerging Markets Equity

As of December 31, 2021, \$5.1 Billion – 5.0% of PRIT FUND

ASSET ALLOCATION 100% ACTIVE



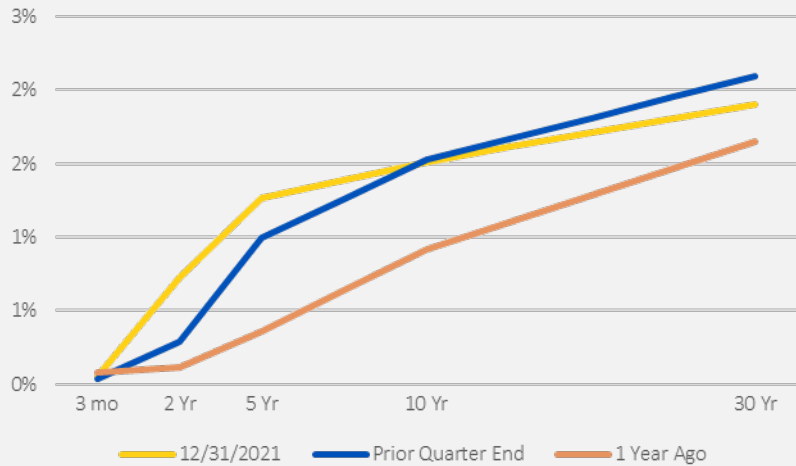
GROSS OF FEES ONE-YEAR PERFORMANCE



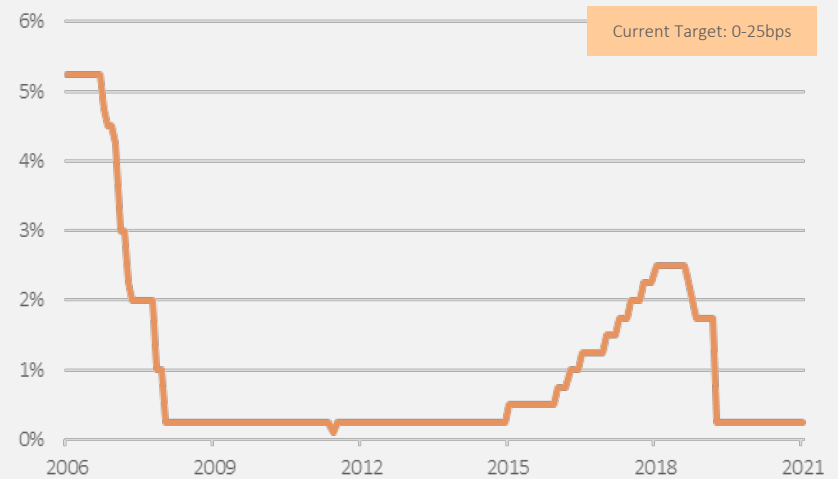
*Total Emerging Markets Equity Benchmark: currently Custom MSCI Emerging Markets IMI Net Divs, customized to exclude legislatively prohibited tobacco, Sudan and Iran securities (blend is maintained by MSCI).

Public Fixed Income Review

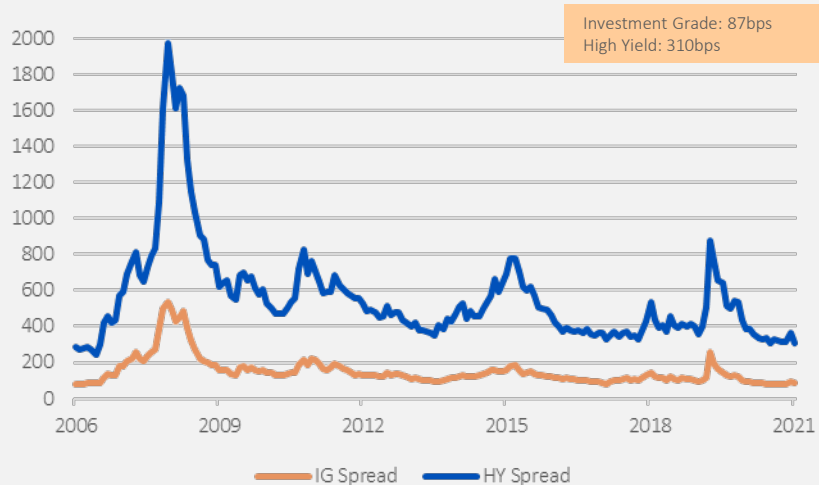
U.S. TREASURY YIELD CURVE



TARGET FED FUNDS RATE



U.S. CREDIT SPREADS

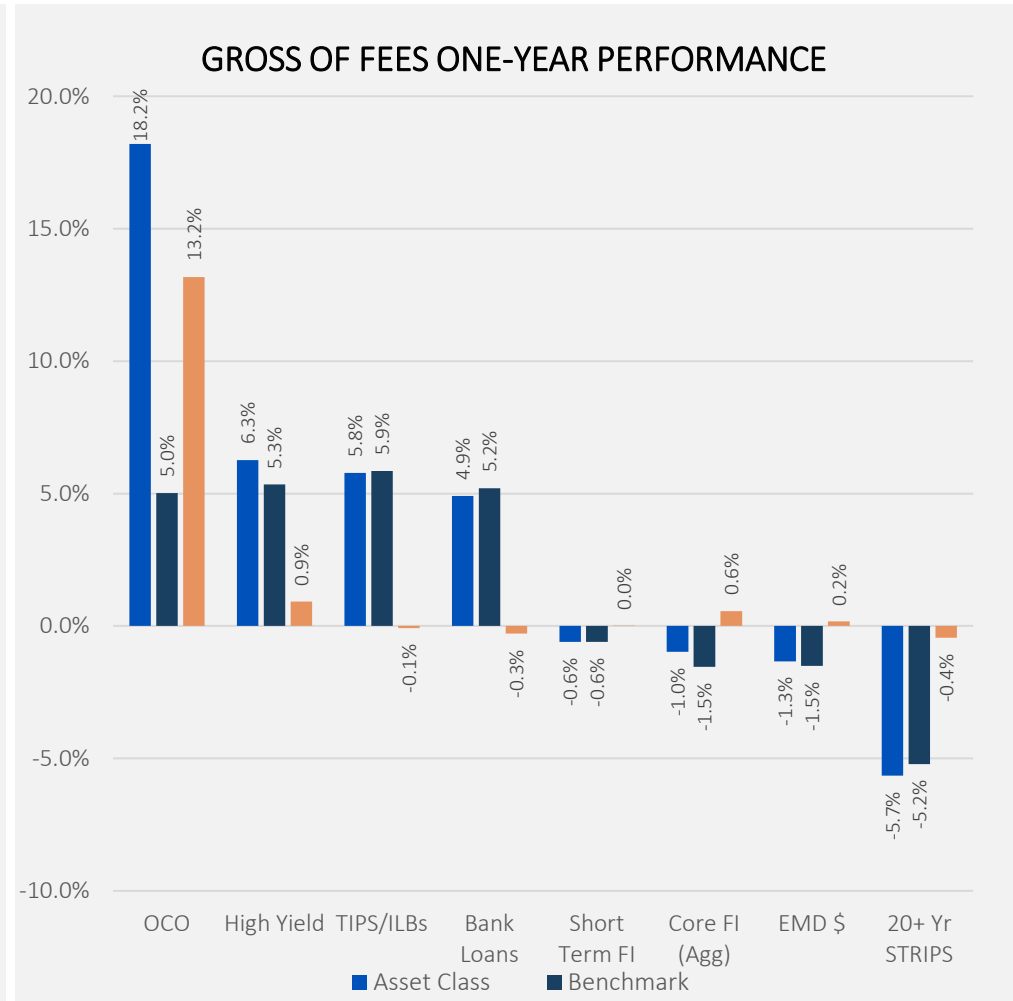
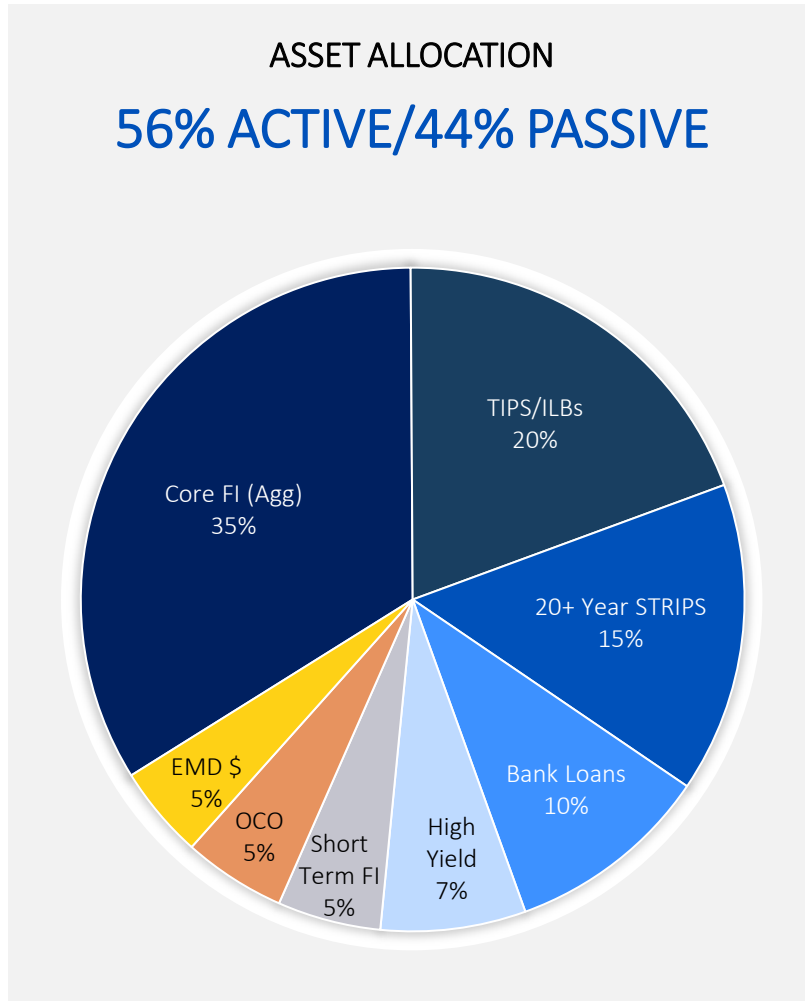


EMERGING MARKETS DEBT SPREAD



Core & Value-Added Fixed Income

As of December 31, 2021, \$21.0 Billion – 20.4% of PRIT Fund* (Target 17%-29%)



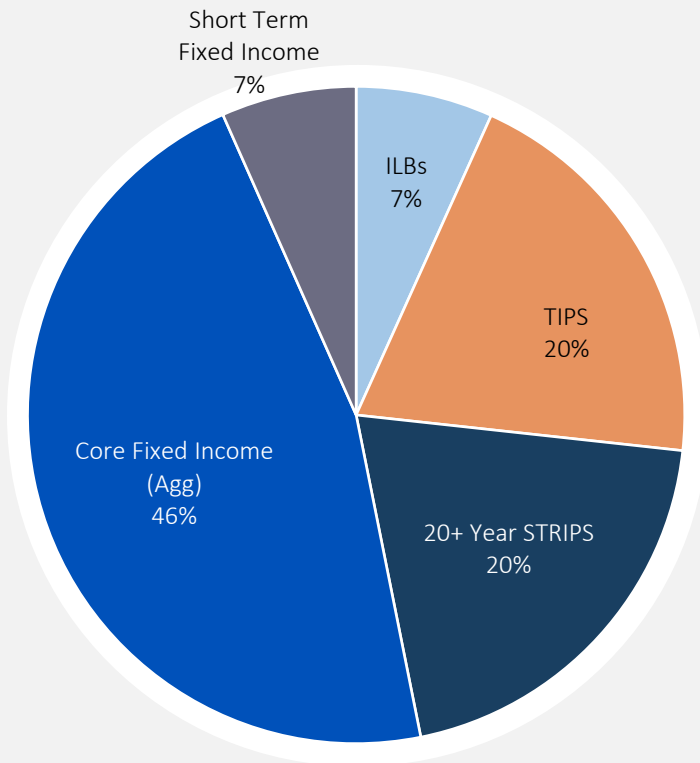
Source: BNY Mellon, PRIM Staff. *Excludes Private Debt allocation.

Domestic Investment Grade & Inflation-Linked Fixed Income

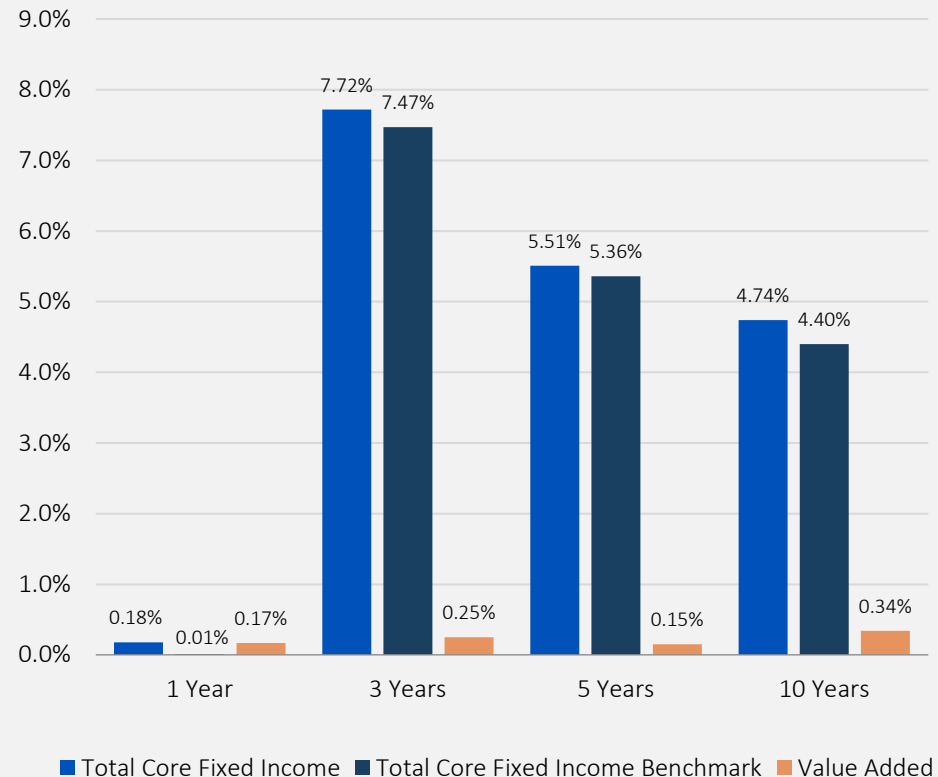
As of December 31, 2021, \$15.7 Billion – 15.1% of PRIT Fund (Target 12%-18%)

ASSET ALLOCATION

41% ACTIVE/59% PASSIVE



GROSS OF FEES ONE-YEAR PERFORMANCE

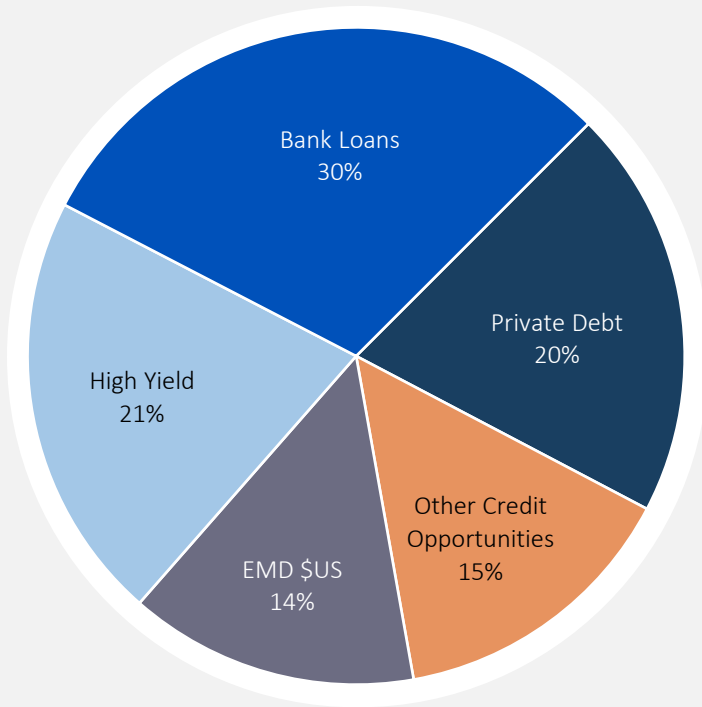


*Core Fixed Income Benchmark: Currently 46.6666% BC Aggregate/20% BC US TIPS/6.6667% BC ILB US\$ Hedged/20% BC STRIPS 20+/6.6667% Bloomberg Barclays US Treasury 1-3 Year Index.

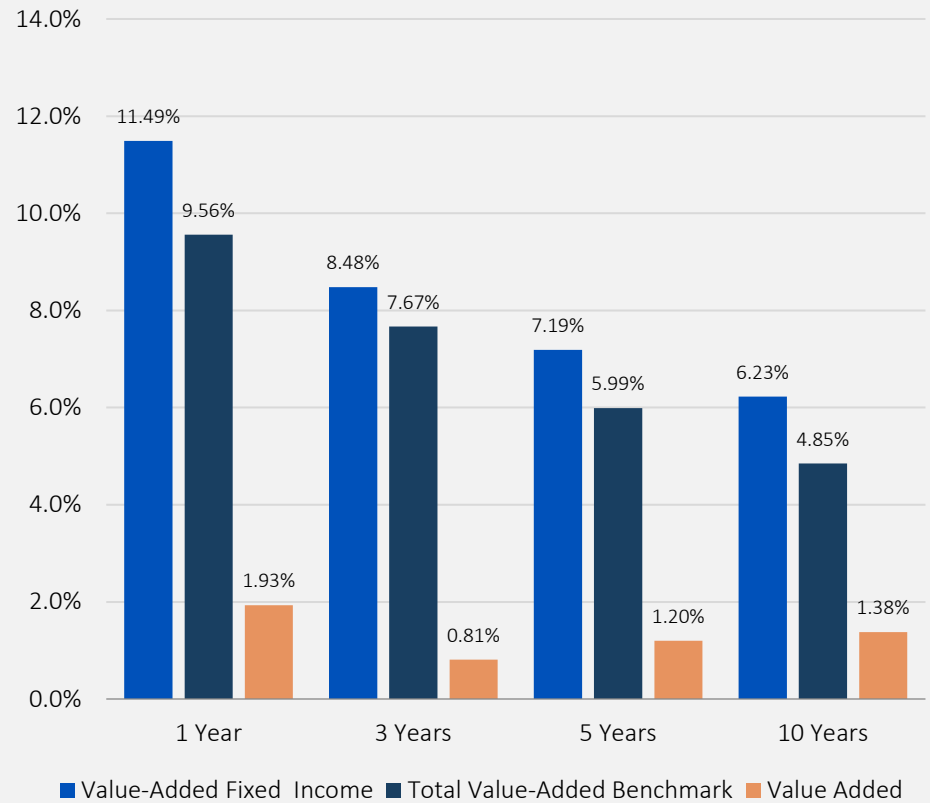
Value-Added Fixed Income

As of December 31, 2021, \$6.8 Billion – 6.5% of PRIT Fund (Target 5%-11%)

ASSET ALLOCATION 100% ACTIVE



GROSS OF FEES ONE-YEAR PERFORMANCE



*The Value-Added benchmark is calculated by applying the investment performance of the sub asset class benchmarks to the sub asset class weights within the value-added fixed income portfolio, Private Debt component is using actual Private Debt Returns. These weightings will be automatically adjusted on a monthly basis.

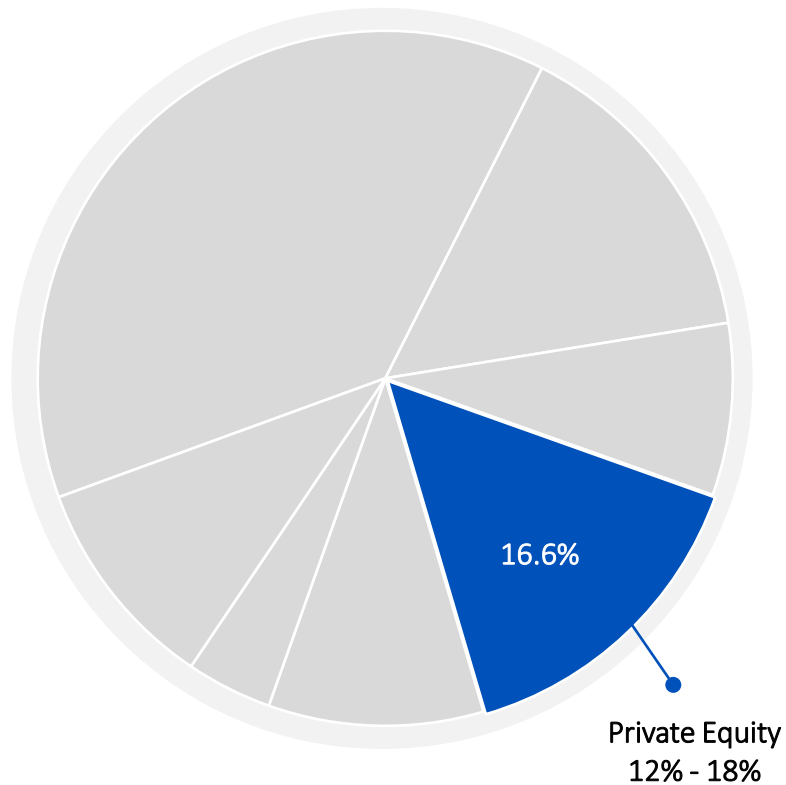
PRIVATE EQUITY PORTFOLIO



Private Equity Portfolio

PRIT FUND TARGET ASSET ALLOCATION

Actual Allocation as of December 31, 2021



Private Equity

\$17.2 billion, 16.6% of PRIT Fund

Private Debt

\$1.4 billion, 1.3% of PRIT Fund

114 investment managers

7 team members

~ 30 investment decisions/year

5 core investment strategies:

- Large buyouts
- Small and mid cap buyouts
- Growth equity
- Venture capital
- Distressed debt

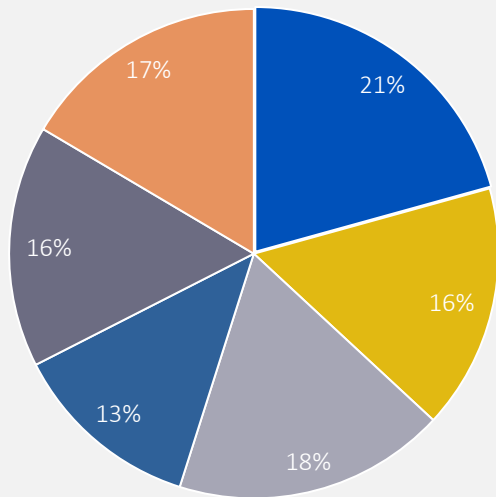


Private Equity Key Initiatives

- **Execute successful Private Equity Investment strategy.**
 - Increase Private Equity target allocation range to PRIT Fund to 12% to 18%.
 - Commitment goal of \$2.7 billion to \$3.3 billion to funds and co-investments.
 - Raise co-investment capacity to 40% of 2022 fund commitments.
 - Continue to scale and improve co-investment program
- **Continue to source and allocate to diverse investment managers.**
- **Utilize approved manager of managers to implement PRIM's Emerging-Diverse Manager Program**
- **Private Equity Research**
 - Further refine and accelerate venture capital strategy.
 - Improve governance terms to benefit limited partners.
 - Develop new analytical tools to enhance decision making.
- **Build the team's expertise and capacity.**
 - Recruit experienced team members with complementary skills to existing members.
 - Increase collaboration with other PRIM teams.

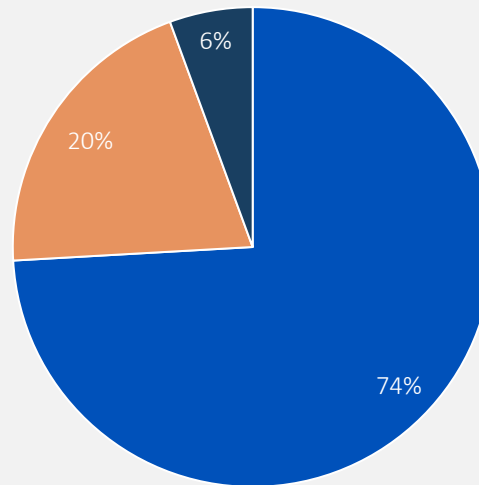
Private Equity Diversification

By Strategy



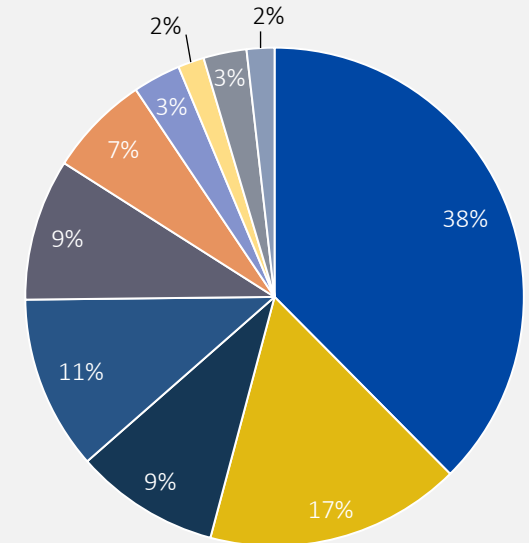
- Buyout - Mid
- Buyout - Large
- Buyout - Mega
- Buyout - Small
- Venture Capital
- Growth Equity

By Geography



- North America
- Western Europe
- Other

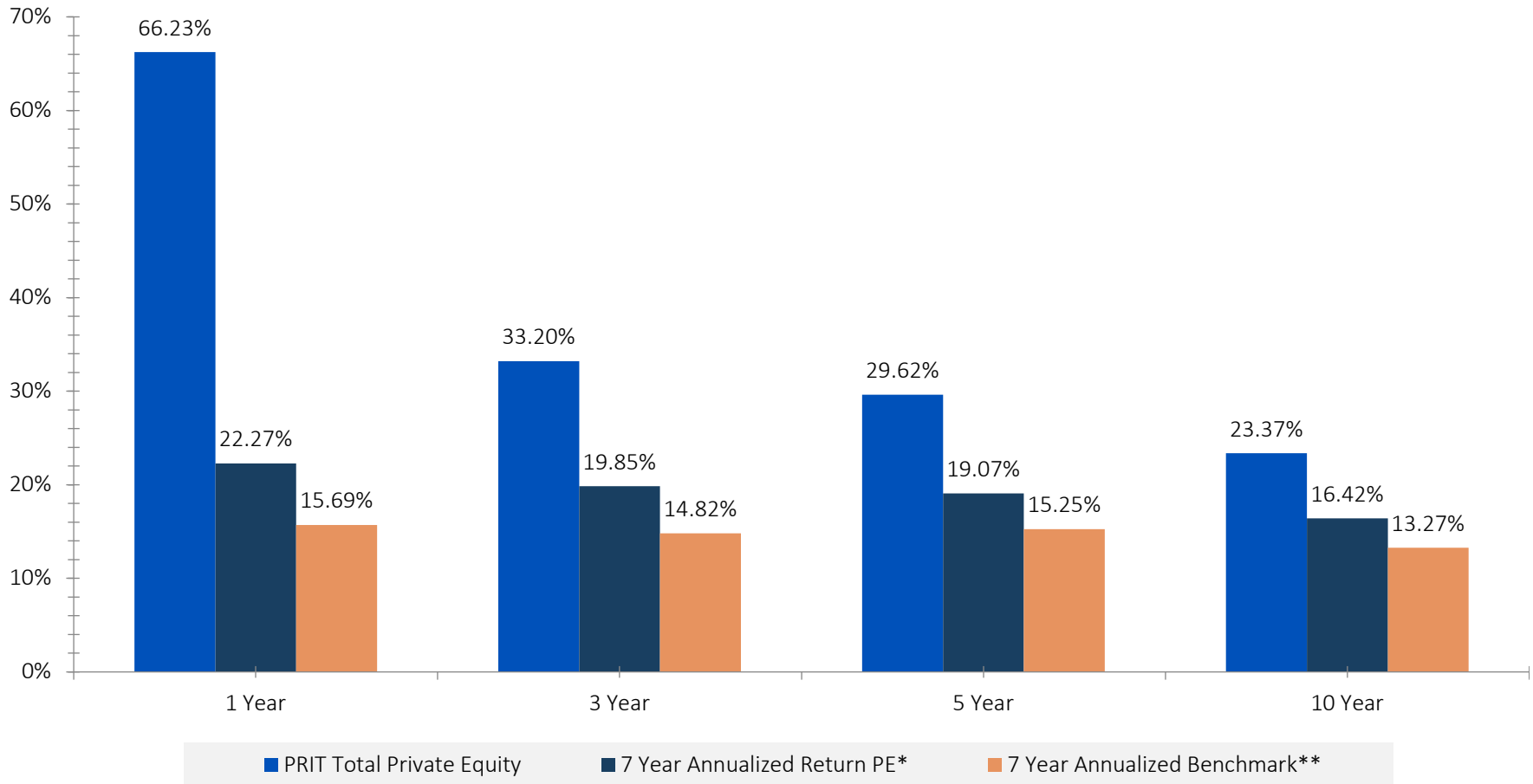
By Sector



- Information Technology
- Health Care
- Consumer Discretionary
- Industrials
- Financials
- Communication Services
- Energy & Utilities
- Materials
- Consumer Staples
- Other

Private Equity

Annualized Returns as of December 31, 2021 (Gross of Fees)



* The 7 Year Annualized performance is used in the Policy Return and Policy Benchmark.

**The 7 Year Annualized Benchmark: Currently 7-year annualized return of a blend of the 85.9% Russell 3000 + 3% / 14.1% MSCI Europe IMI + 3%.

Private Equity Performance by Vintage Year

Performance Summary By Vintage Year as of September 30, 2021

Private Equity Vintage Year	Capital Committed	Paid-In Capital	Percentage Contributed	Capital Distributed	Percentage Distributed	Reported Market Value	TVPI	Net IRR 9/30/2021	Cambridge Median IRR
1986	\$77,680,426	\$79,264,625	102.04%	\$238,804,549	301.28%	-	3.01x	15.58%	9.47%
1987	216,385,228	215,372,662	99.53%	420,456,645	195.22%	-	1.95x	11.34%	15.15%
1988	93,451,860	89,954,995	96.26%	184,708,592	205.33%	-	2.05x	14.99%	11.77%
1989	61,340,193	59,296,115	96.67%	126,898,769	214.01%	-	2.14x	20.38%	13.55%
1990	218,931,380	225,129,257	102.83%	516,114,811	229.25%	-	2.29x	13.51%	20.16%
1991	1,000,000	1,000,000	100.00%	796,310	79.63%	-	0.80x	(4.22%)	20.26%
1992	28,010,702	27,694,264	98.87%	51,950,840	187.59%	-	1.88x	23.29%	18.47%
1993	141,028,336	141,074,541	100.03%	265,054,027	187.88%	-	1.88x	18.20%	19.17%
1994	15,000,000	15,024,279	100.16%	28,813,938	191.78%	-	1.92x	19.98%	18.46%
1995	231,102,975	195,027,747	84.39%	371,379,718	190.42%	88,011	1.90x	17.23%	16.16%
1996	64,257,593	67,485,450	105.02%	110,478,819	163.71%	-	1.64x	12.65%	10.33%
1997	380,791,347	399,674,317	104.96%	744,523,311	186.28%	-	1.86x	17.37%	11.08%
1998	524,974,028	510,296,161	97.20%	788,651,911	154.55%	2,381,908	1.55x	7.76%	8.15%
1999	413,881,039	411,160,285	99.34%	373,455,602	90.83%	414,012	0.91x	(1.59%)	(0.42%)
2000	1,009,468,703	987,719,492	97.85%	1,718,643,198	174.00%	19,690,284	1.76x	12.66%	3.10%
2001	540,866,877	524,120,700	96.90%	1,105,357,553	210.90%	8,496,835	2.13x	26.09%	8.62%
2002	128,587,392	129,710,425	100.87%	227,147,120	175.12%	12,166,156	1.84x	12.20%	8.10%
2003	521,790,693	534,068,384	102.35%	979,830,979	183.47%	6,087,047	1.85x	17.54%	9.77%
2004	400,000,000	394,951,529	98.74%	929,438,584	235.33%	13,369,244	2.39x	23.32%	7.73%
2005	680,975,285	694,247,659	101.95%	1,068,572,530	153.92%	12,720,088	1.56x	9.53%	7.92%
2006	1,911,235,568	1,968,048,330	102.97%	3,089,391,927	156.98%	90,119,755	1.62x	8.60%	7.38%
2007	943,890,702	1,021,307,797	108.20%	1,635,584,228	160.15%	93,391,966	1.69x	11.69%	9.15%
2008	1,444,596,059	1,530,901,031	105.97%	2,724,531,162	177.97%	176,979,071	1.90x	14.60%	9.08%
2009	520,655,214	548,492,290	105.35%	965,624,761	176.05%	90,592,114	1.93x	18.91%	13.33%
2010	381,250,000	404,702,821	106.15%	939,654,452	232.18%	701,705,204	4.06x	25.25%	13.56%
2011	1,501,979,300	1,648,418,478	109.75%	2,718,064,243	164.89%	987,241,838	2.25x	18.81%	15.75%
2012	709,813,056	806,104,982	113.57%	1,268,338,956	157.34%	604,567,303	2.32x	23.09%	15.82%
2013	465,061,557	548,592,434	117.96%	623,741,249	113.70%	626,731,693	2.28x	19.93%	16.61%
2014	1,186,120,661	1,196,021,574	100.83%	1,377,018,192	115.13%	1,932,225,890	2.77x	27.31%	22.44%
2015	953,564,359	1,036,977,158	108.75%	911,764,091	87.93%	1,658,850,762	2.48x	28.95%	21.66%
2016	1,663,612,609	1,596,299,279	95.95%	922,292,637	57.78%	2,434,456,157	2.10x	27.81%	25.05%
2017	700,523,733	582,254,390	83.12%	168,977,270	29.02%	878,480,308	1.80x	26.16%	29.72%
2018	1,834,413,240	1,515,193,403	82.60%	383,850,981	25.33%	2,262,779,238	1.75x	34.92%	30.75%
2019	2,052,233,327	1,287,722,773	62.75%	218,306,915	16.95%	2,119,763,731	1.82x	64.12%	37.62%
2020	2,971,051,144	1,191,331,920	40.10%	34,543,036	2.90%	1,440,994,975	1.24x	41.18%	31.39%
2021	2,603,151,757	444,268,884	17.07%	35,117	0.01%	476,024,013	1.07x	14.11%	(2.12%)
Total Private Equity:	\$27,592,676,345	\$23,028,910,429	83.46%	\$28,232,797,024	122.60%	\$16,650,317,603	1.95x	14.68%	

Private Markets Portfolios

2008 Vintage Year Deal Activity

Name of Partnerships	Type	Segment	Amount
Hellman & Friedman Capital Partners VII	Large Market Buyout	Special Equity	200
TPG Partners VI	Large Buyout	Special Equity	200
Onex Partners III	Upper Middle to Large Market Buyout	Special Equity	150
Blackstone Capital Partners VI	Large Market Buyout	Special Equity	100
Odyssey Investment Partners IV	Middle Market Buyout	Special Equity	100
Advent International GPE VI	Europe Middle Market Buyout	Special Equity	100
Charterhouse Capital Partners IX	Europe Middle Market Buyout	Special Equity	80
American Securities Fund V	Middle Market Buyout	Special Equity	75
H.I.G. Bayside Debt & LBO Fund II	Lower Middle Market Distressed LBO	Special Equity	75
Thoma Bravo IX	Middle Market Buy and Build	Special Equity	50
TowerBrook Investors III	US and Europe Middle Market Buyout	Special Equity	50
Candover 2008 Fund	Europe Middle Market Buyout	Special Equity	15
Battery Ventures VIII Side-Car	Multi Stage Venture Capital	Venture Capital	11
Union Square Ventures 2008	Early Stage Ventures	Venture Capital	10
Total			\$1,216

Private Markets Portfolios

2009 Vintage Year Deal Activity

Name of Partnerships	Type	Segment	Amount
TA XI	Growth		150
Gores Capital Partners III	Middle Market	Buyout	100
Charlesbank Equity Fund VII	Middle Market	Buyout	95
KPS Special Situations Fund III Supplemental	Middle Market	Special Situations	50
Highland Capital Partners Fund VIII	Growth	Multi Stage	30
Battery Ventures IX	Growth	Multi Stage	29
SV Life Sciences V	Growth Health Care	Multi Stage	25
WestView Capital Partners II	Growth	Multi Stage	25
Xenon Private Equity Fund V	Middle Market- Italy	Buyout	17
Total			\$521

Private Markets Portfolios

2010 Vintage Year Deal Activity

Name of Partnerships	Type	Segment	Amount
American Securities Fund VI	Middle Market	Buyout	150
Centerbridge Capital Partners II	Middle Market	Buyout	150
Golder, Thoma, Cressey & Rauner Fund X	Middle Market	Buyout	150
Montagu Private Equity IV	Middle Market- Western Europe	Buyout	60
Insight Venture Partners VII	Info. Tech and New Media	Late stage	50
Insight Venture Partners Co-investment Fund II	Info. Tech and New Media	Late stage	15
Ethos Private Equity VI	Middle Market- South Africa	Buyout	40
Gilde Buy-Out Fund IV	Middle Market- Benelux	Buyout	30
Institutional Venture Partners XIII	Info. Tech and New Media	Late Stage	25
SAIF Partners IV	China and India	Late Stage	25
Flagship Ventures Fund IV	Info. Tech	Early Stage	20
Polaris Venture Partners VI		Multi Stage	20
Rembrandt Venture Partners II	Info. Tech	Early Stage	20
Spark Capital III	Info. Tech	Early Stage	20
Union Square Ventures Opportunity Fund	Info. Tech and New Media	Late Stage	11
Total			\$786

Private Markets Portfolios

2011 Vintage Year Deal Activity

Name of Partnerships	Type	Segment	Amount
Vista Equity Partners Fund IV	Buyout	Middle Market	150
Providence Equity Partners Fund VII	Buyout	Middle Market	100
Berkshire Partners VIII	Buyout	Middle Market	100
KKR North America Fund XI	Buyout	Mega	100
Denham Commodity Partners Fund VI	Diversified Natural Resources	Growth	100
Thoma Bravo Fund X	Buyout	Middle Market	75
Genstar Capital Partners VI	Buyout	Middle Market	60
Quad-C Partners VIII	Buyout	Middle Market	50
Hony Capital Fund V	China Focused	Growth	40
Chequers Capital XVI	France	Middle Market	30
Sofinnova Venture Partners VIII	Life Sciences	Late stage	20
Rembrandt Venture Partners Fund Three	Information Technology	Early Stage	20
Keytone Ventures II	China Focused	Early Stage	20
Index Ventures Growth II	Venture	Growth	20
Union Square Ventures 2012 Fund	Information Technology	Early Stage	15
Kepha Partners Fund II	Information Technology	Early Stage	15
Total			\$915

Private Markets Portfolios

2012 Vintage Year Deal Activity

Name of Partnerships	Type	Segment	Amount
Advent International GPE VII	Global Mid-to Large Buyout	Special Equity	145
Nordic Capital Fund VIII	Europe Large Buyout	Special Equity	115
Technology Crossover Ventures VIII	Late Stage VC- Information Technology	Venture Capital	100
Insight Venture Partners VIII	Late Stage VC-Info. Tech & New Media	Venture Capital	94
TowerBrook Investors IV	US and Europe Middle Market	Special Equity	75
Institutional Venture Partners XIV	Late Stage VC- Information Technology	Venture Capital	40
Catalyst Investors III	Growth Equity	Venture Capital	26
Ascent Venture Partners V	Early Stage VC- Information Technology	Venture Capital	12
Index Ventures VI	Europe Late- Stage VC- Information Technology	Venture Capital	10
Index Life VI (Medicxi)	Europe Late- Stage VC-Life Sciences	Venture Capital	8
Total			\$624

Private Markets Portfolios

2014 Vintage Year Deal Activity

Name of Partnerships	Type	Segment	Amount
Hellman & Friedman Capital Partners VIII	Large Buyout	Special Equity	230
Centerbridge Capital Partners Fund III, L.P.	Large Buyout	Special Equity	175
Thoma Bravo Fund XI	Upper middle Market Buyout	Special Equity	150
Vista Equity Partners Fund V	Large and Upper middle Market Buyout	Special Equity	100
Quantum Energy Partners Fund VI, L.P.	Large Buyout	Special Equity	100
H.I.G. Middle Market LBO Fund II	Middle Market Buyout	Special Equity	50
Thomas H. Lee Equity Fund VII, L.P.	Large and Upper middle Market Buyout	Special Equity	50
Spark Capital Growth Fund	Late stage venture capital	Venture	40
Sofinnova Venture Partners IX	Multi stage venture capital	Venture	30
Insight Venture Partners Co-investment Fund III	Growth Equity	Venture	22
Xenon Private Equity Fund VI	Italy-focused middle Market Buyout	Special Equity	17
Ascent Venture Partners VI	Early stage venture capital	Venture	14
Index Ventures VII	European venture capital	Venture	10
Total			\$1,294

Private Markets Portfolios

2017 Vintage Year Deal Activity

Name of Partnerships	Type	Segment	Amount
Trident VII, L.P.	Middle Market Buyout – Sector Focused	Special Equity	50
CVC Capital Partners VII, L.P.	Large Buyout - Europe	Special Equity	228
Chequers Capital XVII	Middle Market Buyout - Europe	Special Equity	51
Onex Partners Fund V, L.P.	Large Buyout	Special Equity	160
Quantum Energy Partners VII & Quantum Energy Partners Co-Investment Fund	Middle Market Buyout	Special Equity	165
GTCR Fund XIII, L.P.	Middle Market Buyout	Special Equity	200
Charlesbank Equity Fund IX, L.P & Charlesbank Equity Fund IX Overage Allocation Program	Middle Market Buyout	Special Equity	150
Insight Venture Partners X, L.P.	Growth Equity	Venture	80
Waterland Private Equity Fund VII	Middle Market Buyout - Europe	Special Equity	60
Flagship Pioneering Fund VI, L.P.	Early Stage Venture – Life Sciences	Venture	25
Nordic Capital Fund IX	Large Buyout - Europe	Special Equity	115
Thomas H. Lee Equity Fund VIII, L.P.	Middle Market Buyout	Special Equity	50
Westview Capital Partners IV, L.P.	Middle Market Buyout	Special Equity	50
Berkshire Fund IX Co-Investment, L.P.	Large Buyout	Special Equity	20
Total			\$1,404

Private Markets Portfolios

2020 Vintage Year Deal Activity

Name of Partnerships	Type	Segment	Amount
Index Ventures X	Seed and Early-Stage Venture - Tech - Europe and U.S.	Venture	18
Index Ventures Growth V	Growth and Late-Stage Venture - Tech - Europe and U.S.	Venture	46
Insight Partners XI	Growth Equity - Software, Software-Enabled Services, and Internet Businesses	Venture	140
Thoma Bravo Explore Fund	Lower-Middle Market Buyout - Software and Tech Svcs	Special Equity	60
Thoma Bravo Discover Fund III	Middle Market Buyout - Software and Tech Services	Special Equity	150
Thoma Bravo Fund XIV	Large Buyout - Software and Tech Services	Special Equity	275
Flagship Pioneering Origination Fund VII	Seed, Early-, and Late-Stage Venture - Therapeutics, Health Tech, and Agricultural Tech	Venture	25
CVC Capital Partners Fund VIII	Large and Upper-Middle Market Buyout - Europe and North America	Special Equity	309
Elysian Capital III	Lower-Middle Market Buyout - United Kingdom	Special Equity	74
Nordic Capital Fund X	Middle Market Buyout - Healthcare, Tech and Payments, and Financial Services - Northern Europe	Special Equity	197
Technology Crossover Ventures Fund XI	Growth Equity - High Growth Technology - U.S. and Western Europe	Venture	200
GTCR Fund XIII	Middle Market Buyout – Financial Services and Tech, Growth Business Services, Healthcare, TMT	Special Equity	273
Charlesbank Equity Fund X	Middle Market Buyout – Business Services, Consumer, Healthcare, Industrials, Technology - North America	Special Equity	175
Charlesbank Equity Overage Fund X	Middle Market Buyout – Business Services, Consumer, Healthcare, Industrials, Technology - North America	Special Equity	25
Waterland Private Equity Fund VIII	Small and Middle Market Buyout – Europe	Special Equity	60
USV 2021	Seed and Early-Stage Technology - North America and Europe	Venture	11
USV Climate 2021	Early-Stage Technology - Climate Change Mitigation/Adaptation - North America and Europe	Venture	4
Total			\$2,042

Private Markets Portfolios

2021 Vintage Year Deal Activity

Name of Partnerships	Type	Segment	Amount
JMI Equity Fund X*	Growth Equity Software and Tech-Enabled Services	Venture	80
Thomas H. Lee Equity Fund IX*	Middle Market Buyout	Special Equity	200
Hellman & Friedman Capital Partners Fund X*	Large Buyout	Special Equity	350
TA Associates XIV*	Small/Middle-Market Buyout	Special Equity	335
TA Select Opportunities Fund II*	Large Buyout	Special Equity	100
Providence Strategic Growth Fund V*	Growth Equity Software and Tech—Enabled Services	Venture	175
Insight Venture Partners XII*	Growth Equity Software, Software-Enabled Services and Internet	Venture	150
Insight Partners XII Buyout Annex Fund*	Buyout Software, Software-Enabled Services and Internet	Special Equity	50
Insight Partners Fund X Follow-on Fund*	Growth Equity	Venture	75
Quad-C Partners X*	US Small Buyout	Special Equity	150
Thompson Street Fund VI*	US Small Buyout	Special Equity	150
Flagship Pioneering Fund VII*	Seed, Early-, and Late-Stage Venture - Therapeutics, Health Tech, and Agricultural Tech	Venture	30
Nordic Capital Evolution Fund*	Northern Europe Middle-Market Buyout - Healthcare, Technology & Payments, and Financial Services	Special Equity	94
Index Ventures XI*	Europe and US Early-Stage Venture - Tech	Venture	20
Index Ventures Growth VI*	Europe and US Late-State Venture - Tech	Venture	50
Tidemark Fund I	Growth Equity Technology	Venture	75
Trident IX*	North America Large & Middle-Market Financial Services	Special Equity	150
Georgian Alignment Fund II*	North America Software	Growth Equity	50
Georgian Growth Fund VI*	North America Software	Growth Equity	100
GTCR Strategic Growth Fund*	Middle Market Buyout – Financial Services and Tech, Growth Business Services, Healthcare, TMT	Special Equity	100
Spark Capital Fund VII*	Seed, Early-, and Late-Stage Consumer and Tech	Venture	14
Spark Capital Growth Fund IV*	Seed, Early-, and Late-Stage Consumer and Tech	Venture	28
Total Commitments Through 12/02/2021			\$2,432
<i>2021 Investment Plan</i>			\$2,100 - \$2,700

MWRA Employees' Retirement System

Life-to-Date Activity Summary

Vintage Year	Percent Vintage Fund	Targeted Commitment	Adjusted Commitment	Drawn Capital	Percent Commitment			Interest Paid (Earned)	Management Fees
					Drawn	Distributions	Direct Fees		
2008	0.20%	3,000,000	2,430,460	2,209,072	90.89%	4,500,828	13,590	(1,986)	6,901
2009	0.07%	1,000,000	348,735	321,949	92.32%	731,845	0	(395)	879
2010	0.10%	1,000,000	786,250	745,915	94.87%	1,393,834	193	(793)	2,412
2011	0.15%	1,500,000	1,372,500	1,245,651	90.76%	2,416,411	7,981	(1,335)	3,589
2012	0.10%	1,000,000	628,638	579,998	92.26%	904,364	1	(498)	2,017
2014	0.14%	2,000,000	1,820,605	1,644,620	90.33%	1,630,358	701	36	3,602
2017	0.14%	2,000,000	2,081,508	1,604,815	77.10%	363,245	2,047	1,456	1,636
2020	0.25%	5,000,000	5,183,133	2,431,486	46.91%	28,984	140	253	672
2021	0.21%	5,000,000	5,717,050	2,061,430	36.06%	475	159	120	616
2022	0.23%	7,500,000	179,928	180,235	100.17%	0	0	16	37
LTD Total		\$29,000,000	\$20,548,806	\$13,025,170	63.39%	\$11,970,342	\$24,813	(\$3,125)	\$22,361

As of March 23, 2022

Please note that all management fees and interest paid/earned are in addition to the adjusted commitment.



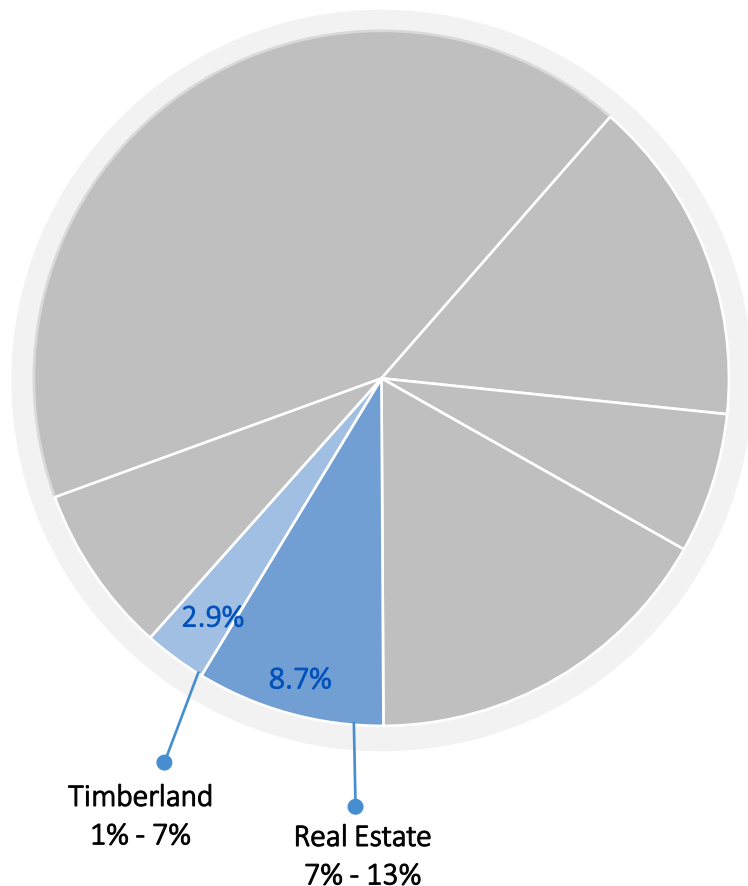
REAL ESTATE AND TIMBERLAND PORTFOLIO

**Mass
PRIM**

Real Estate and Timberland Portfolios

PRIT FUND TARGET ASSET ALLOCATION

Actual Allocation as of December 31, 2021



\$11.9 billion, 11.6% of PRIT Fund

- Real Estate: \$9.0 billion, 8.7% of PRIT Fund
- Timberland: \$3.0 billion, 2.9% of PRIT Fund

16 portfolios

- 6 core portfolios
- 5 non-core portfolios
- 2 global REIT portfolios
- 2 timberland portfolios
- 1 direct investment portfolio

Property investments

- Real estate – 103 properties
- Timberland – 23 properties

140 global real estate securities

4 primary strategies

- Core U.S. private real estate
- Non-core U.S. private real estate
- Global real estate securities
- Global timberland

5 team members

Real Estate and Timberland Key Initiatives

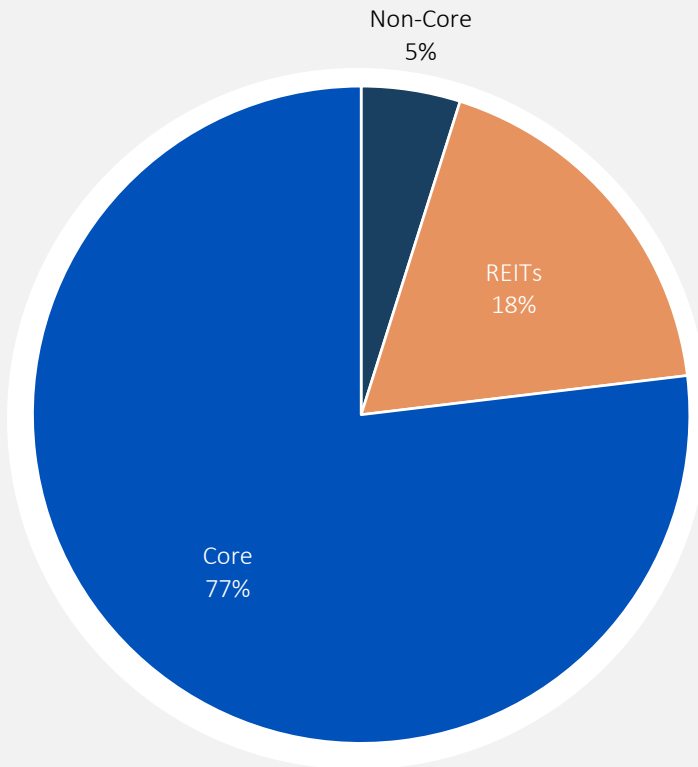


- Continue to source and allocate to diverse investment managers.
- Utilize approved manager of managers to implement PRIM's Emerging-Diverse Manager Program for Real Estate investments.
- Collaborate with PRIM's Research and Risk Teams on ESG and Climate Impact Research in Timberland.
- Form a Strategic Working Group to review the existing real estate portfolio and identify strategic investment opportunities.
- Continue to use REITs and PRIM's internal real estate financing facility as sources of capital to fund new acquisitions and maintain PRIM's current leverage structure.
- Complete Request for Proposal (RFP) process for Real Estate and Timberland Appraisal Services.
- Oversee the implementation of asset business plans and hold-sell recommendations in the real estate and timberland separate accounts.

Real Estate

As of December 31, 2021, \$9.0 Billion – 8.7% of PRIT Fund (Target 7%-13%)

ASSET ALLOCATION

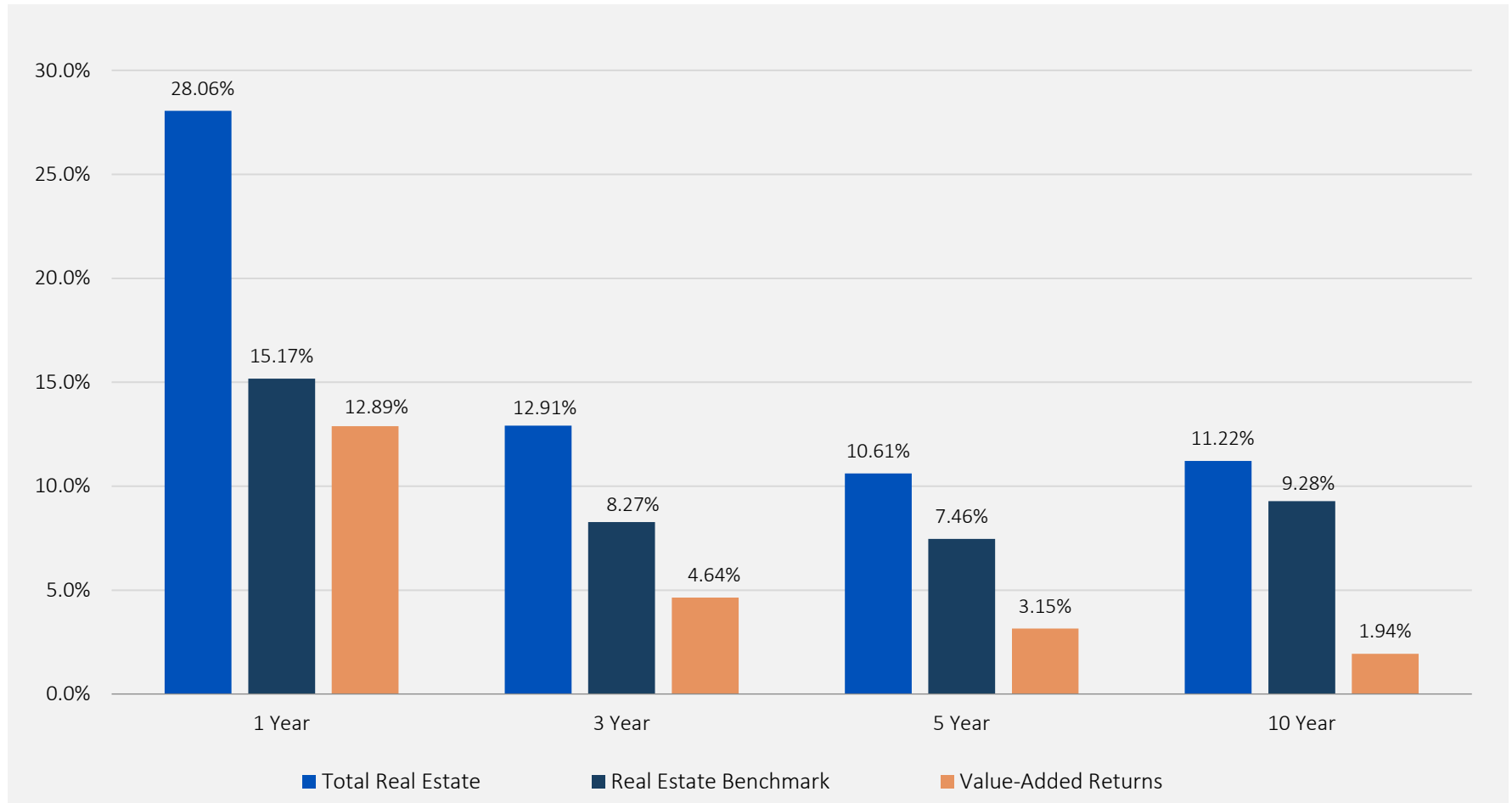


- Equity investments in both directly-owned properties and **REIT** securities
- Directly-owned **Core** properties make up the majority of the real estate portfolio
 - **Core** properties are typically well-leased, operating properties that provide regular cash flow from rents
- **Non-Core** investments make up approximately 5% of the real estate portfolio
 - **Non-Core** includes properties that are under development

*Total Real Estate Benchmark: Currently 80% NCREIF PROPERTY ONE QTR LAG/20% FTSE EPRA NAREIT Developed Net Total Return

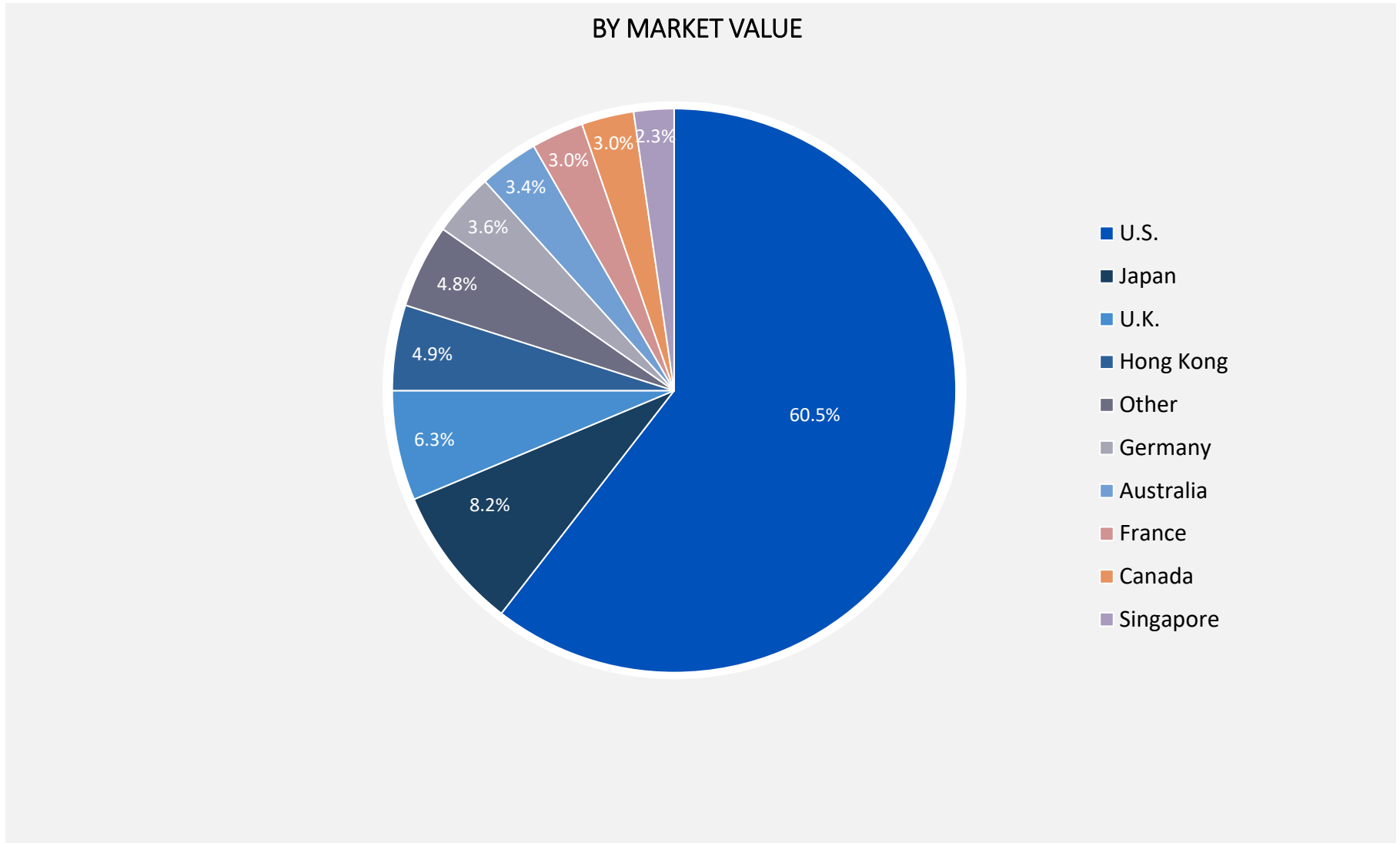
Total Real Estate Performance

Annualized Returns as of December 31, 2021 (Gross of Fees)

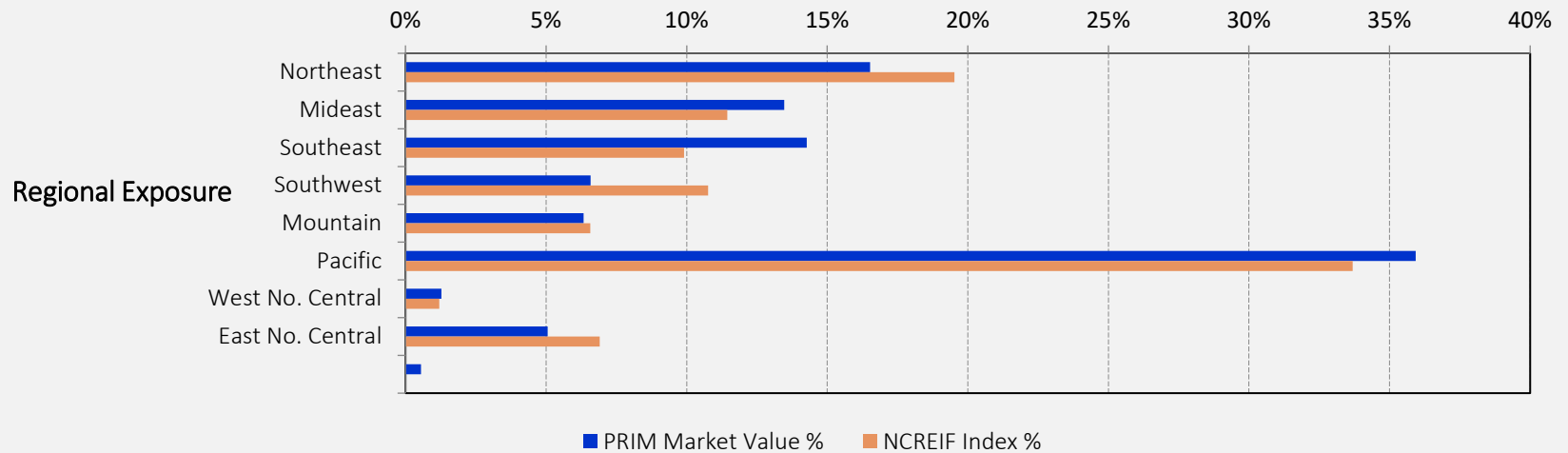
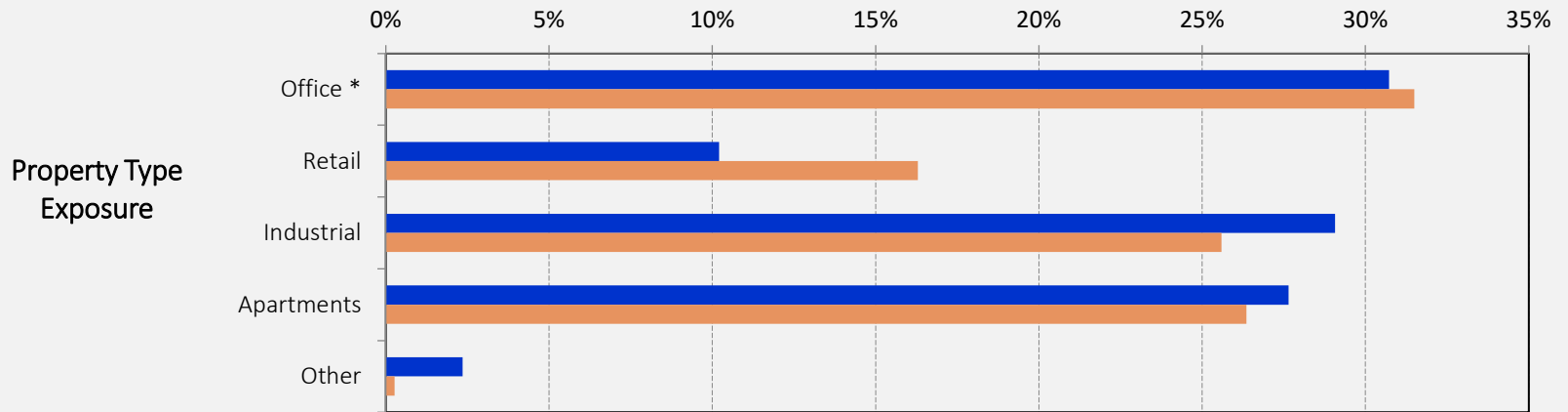


Benchmark: Currently 80% NCREIF PROPERTY ONE QTR LAG/20% FTSE EPRA NAREIT Developed Net Total Return.

Public Real Estate (REITs) Exposure by Country

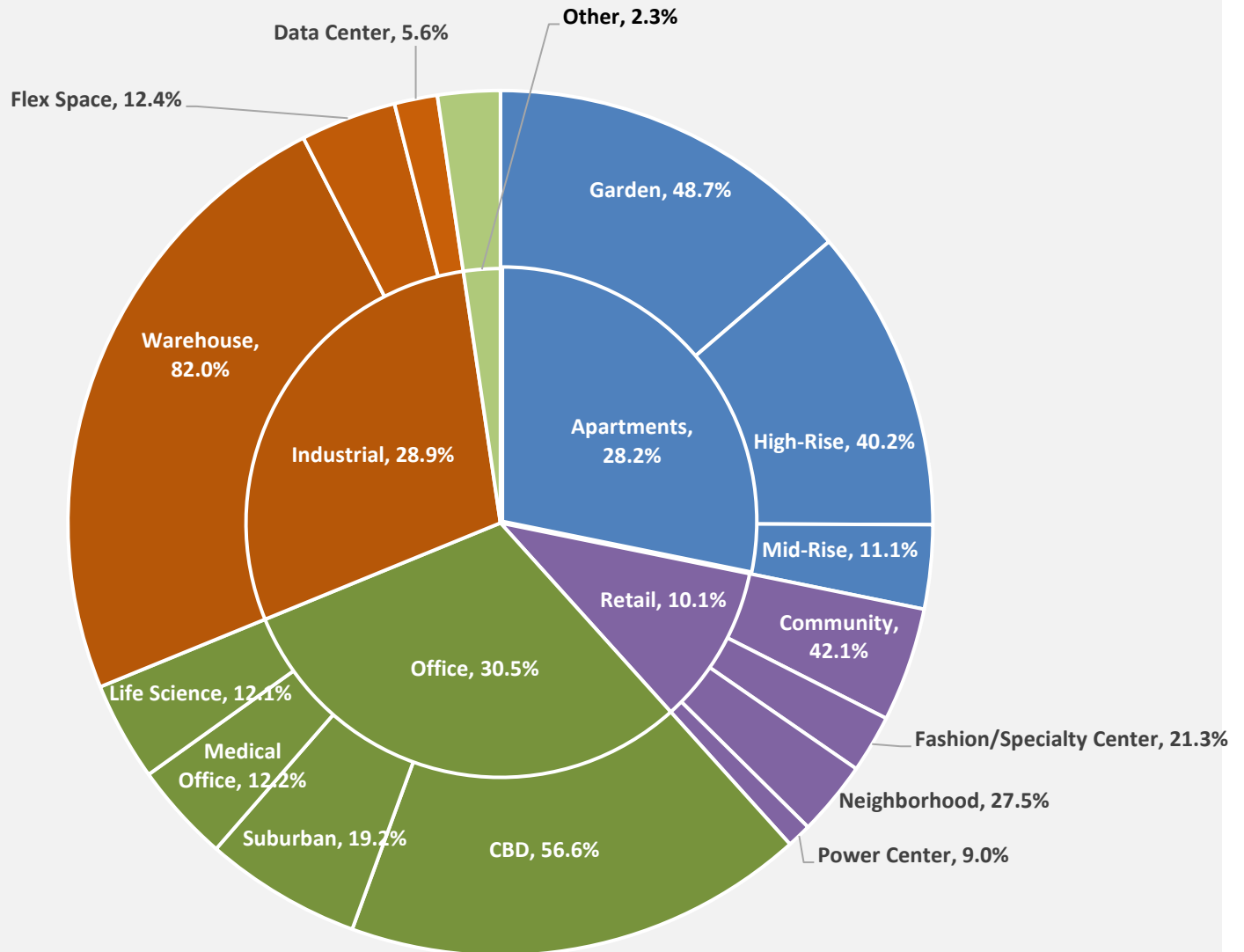


Private Real Estate Portfolio Exposure



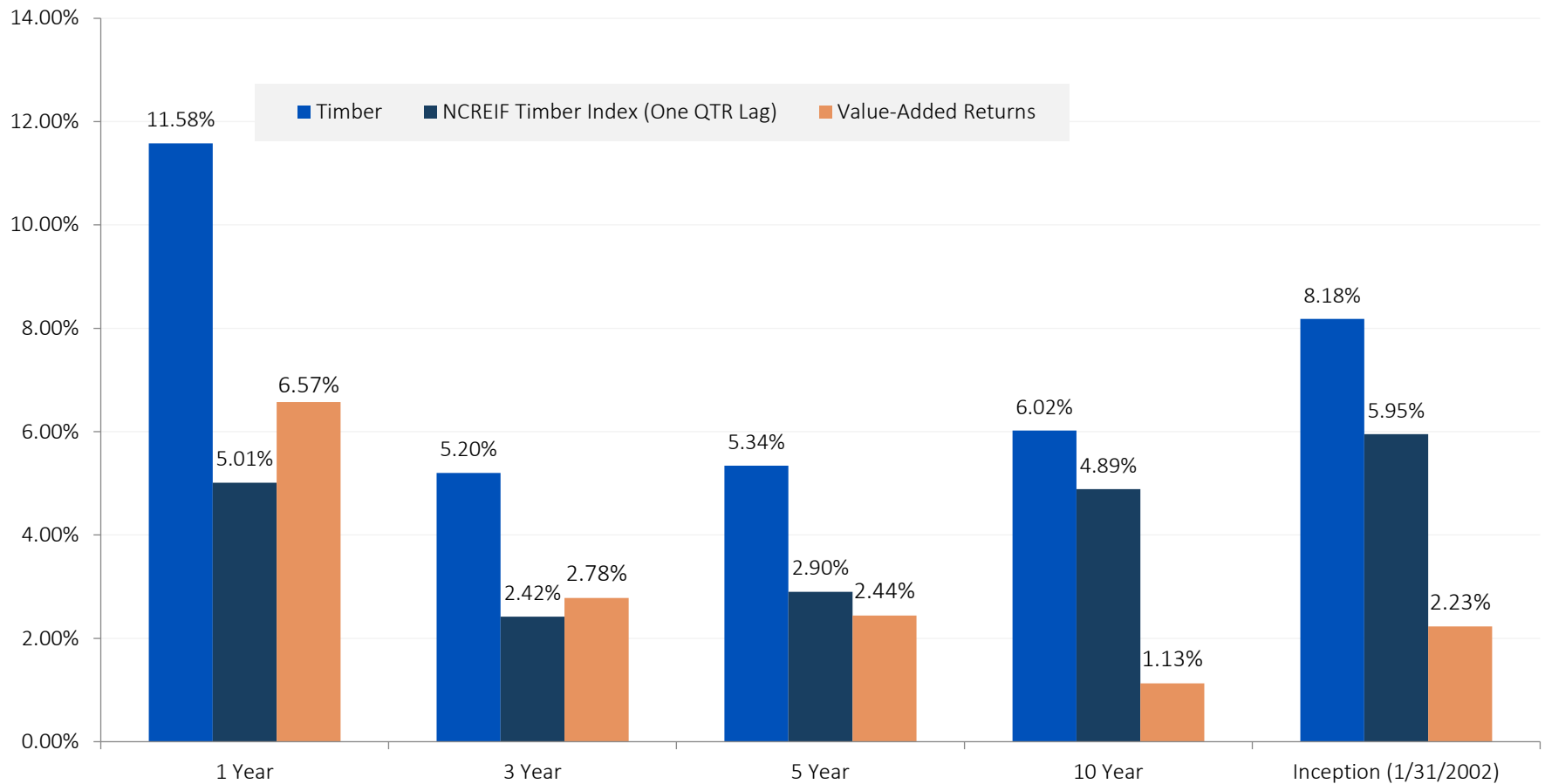
* Office includes life science assets

Property Subtype Breakdown



Timberland

Annualized Returns as of December 31, 2021 (Gross of Fees)

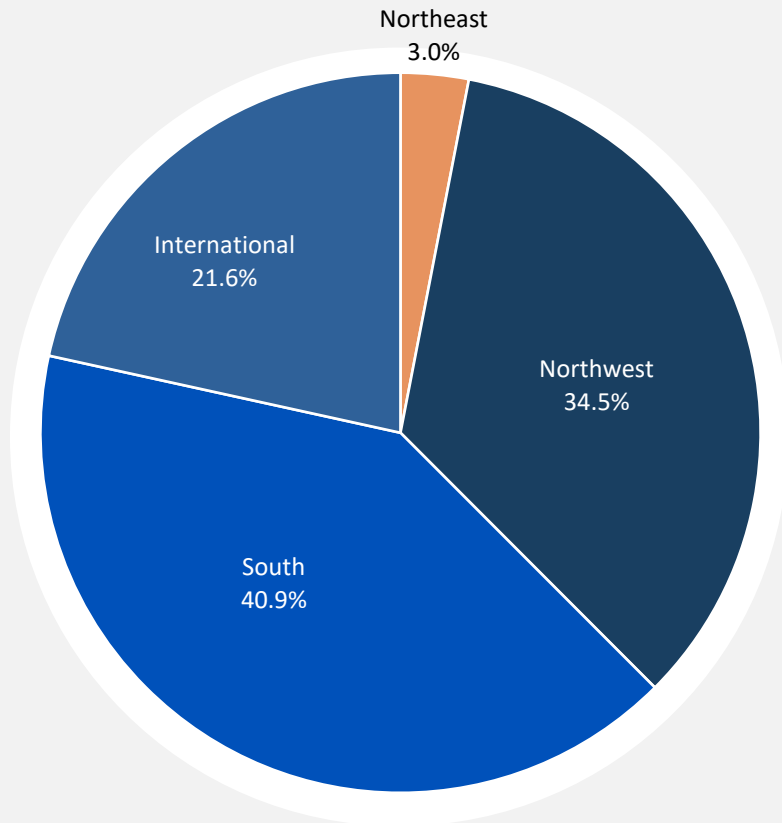


Benchmark: Currently NCREIF Timberland Index.

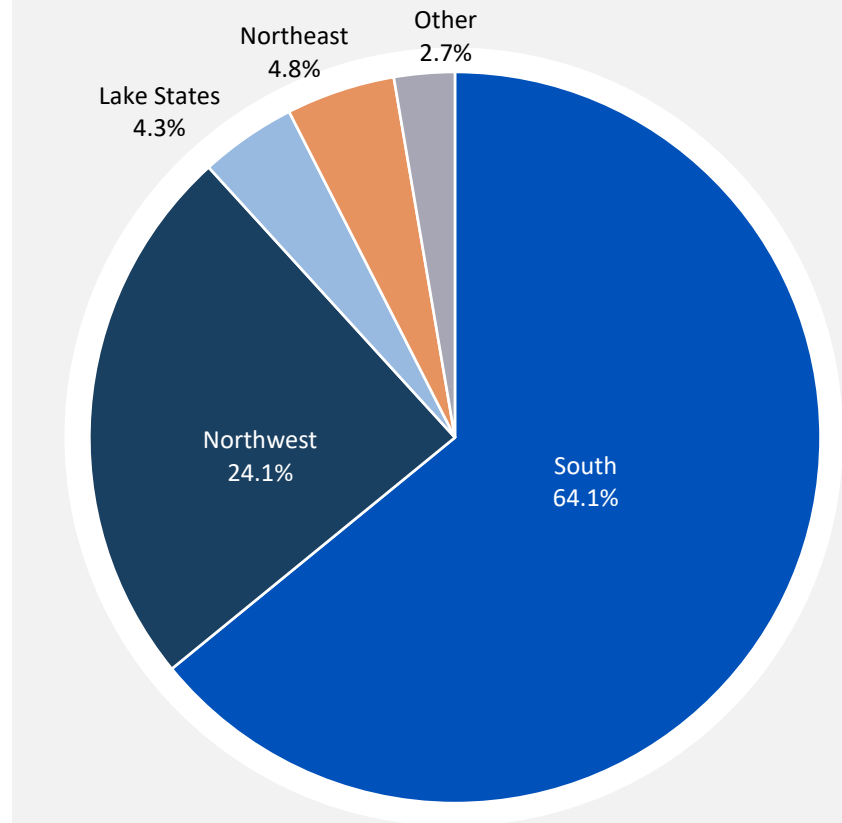
Timberland Exposure by Region vs. Benchmark

As of December 31, 2021, \$3.0 Billion – 2.9% of PRIT Fund (Target 1%-7%)

PRIM REGION EXPOSURE



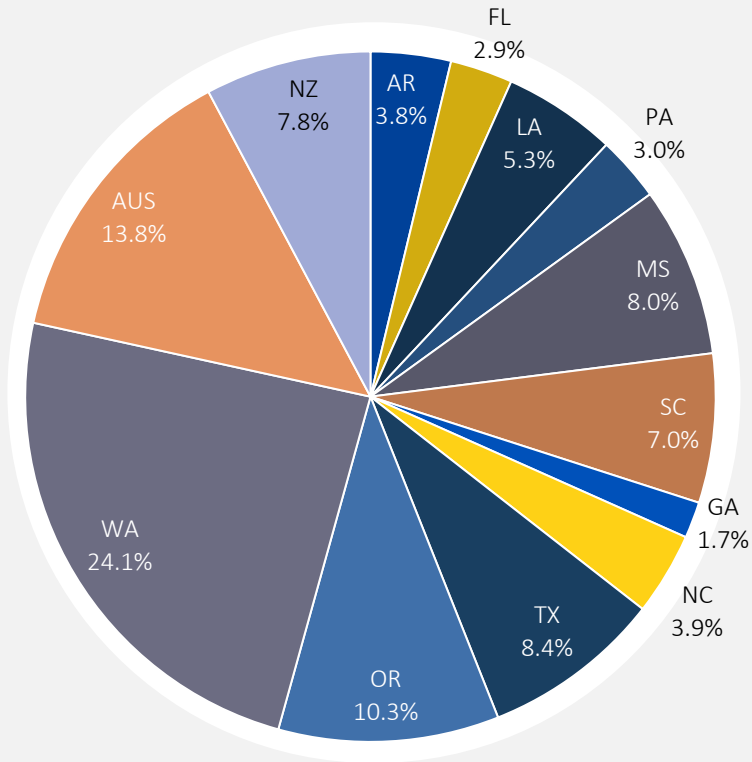
BENCHMARK



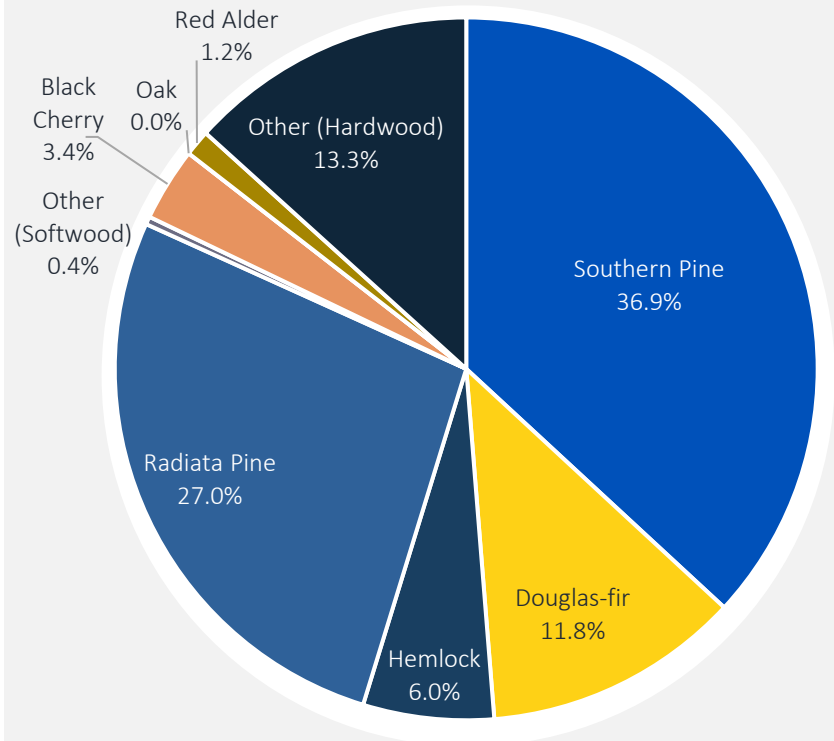
Timberland Exposure by State/Region

Timberland Exposure by Species

BY EQUITY VALUE



BY ACRES



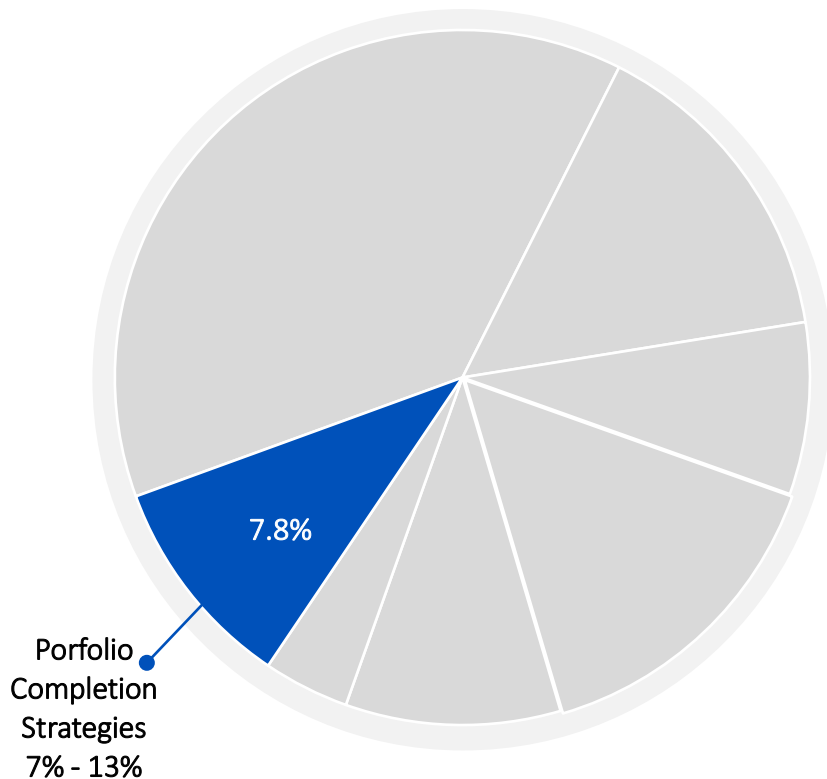
PORTFOLIO COMPLETION STRATEGIES



Portfolio Completion Strategies (PCS)

PRIT FUND TARGET ASSET ALLOCATION

Actual Allocation as of December 31, 2021



PCS \$8.0 billion, 7.8% of PRIT Fund

- Direct Hedge Funds: \$6.6 billion, 81% of PCS
- Hedge Fund of Funds: \$0.6 billion, 8% of PCS
- Real Assets: \$0.9 billion, 11% of PCS

27 Hedge Fund managers:

- 1 FoHF Manager
- 26 direct hedge fund managers

7 Real Assets managers

11 team members

Collaboration across all PRIM teams

Portfolio Completion Strategies

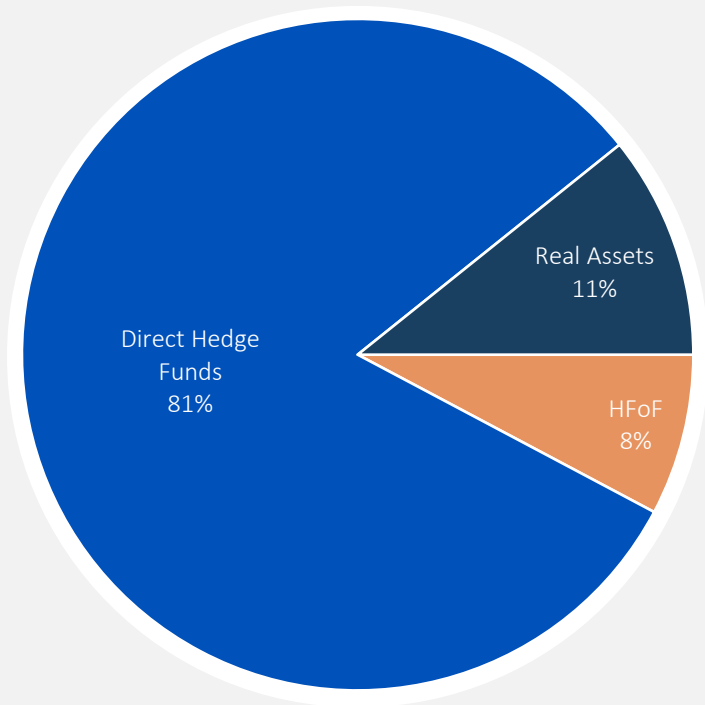
Key Initiatives

- Enhance reporting framework for Hedge Funds portfolio and Real Assets portfolio.
- Investments:
 - Research peer allocator's evolving practice of hedge funds investing; survey pension and endowments & foundations.
 - Directional Funds – continue building PRIM's knowledge of country/sector specialist funds.
 - Stable Value Funds – maintain manager level focus; re-evaluate specific mandate, as needed.
 - Complete hedge optimization for the Replication Program.
 - Complete ramping up the Emerging Manager Hedge Fund program and summarize preliminary experiences.
 - Real Assets – review PRIM's long-term investment thesis.
- Monitor implementation of PCS & Other Credit Opportunities Co-investments
- Continue to source and allocate to diverse investment managers.
- Continue collaboration with PRIM teams on investment and co-investments opportunities.
- Finish strategic study of PCS's organizational resources.

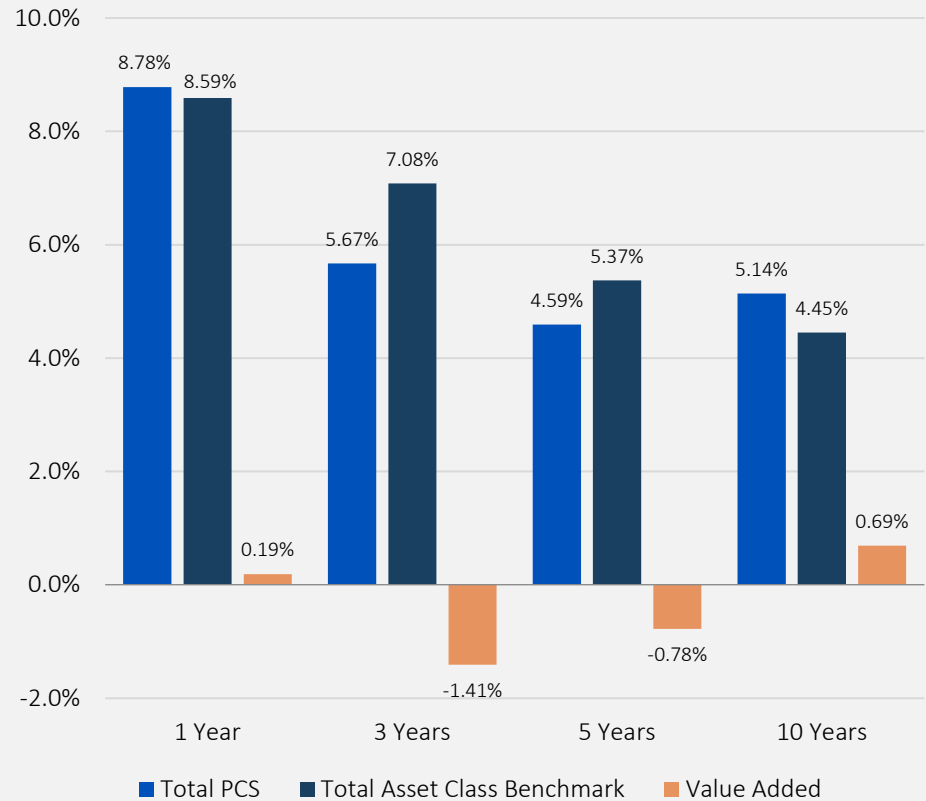
Portfolio Completion Strategies

As of December 31, 2021, \$8.0 Billion – 7.8% of PRIT Fund (Target 7%-13%)

ASSET ALLOCATION

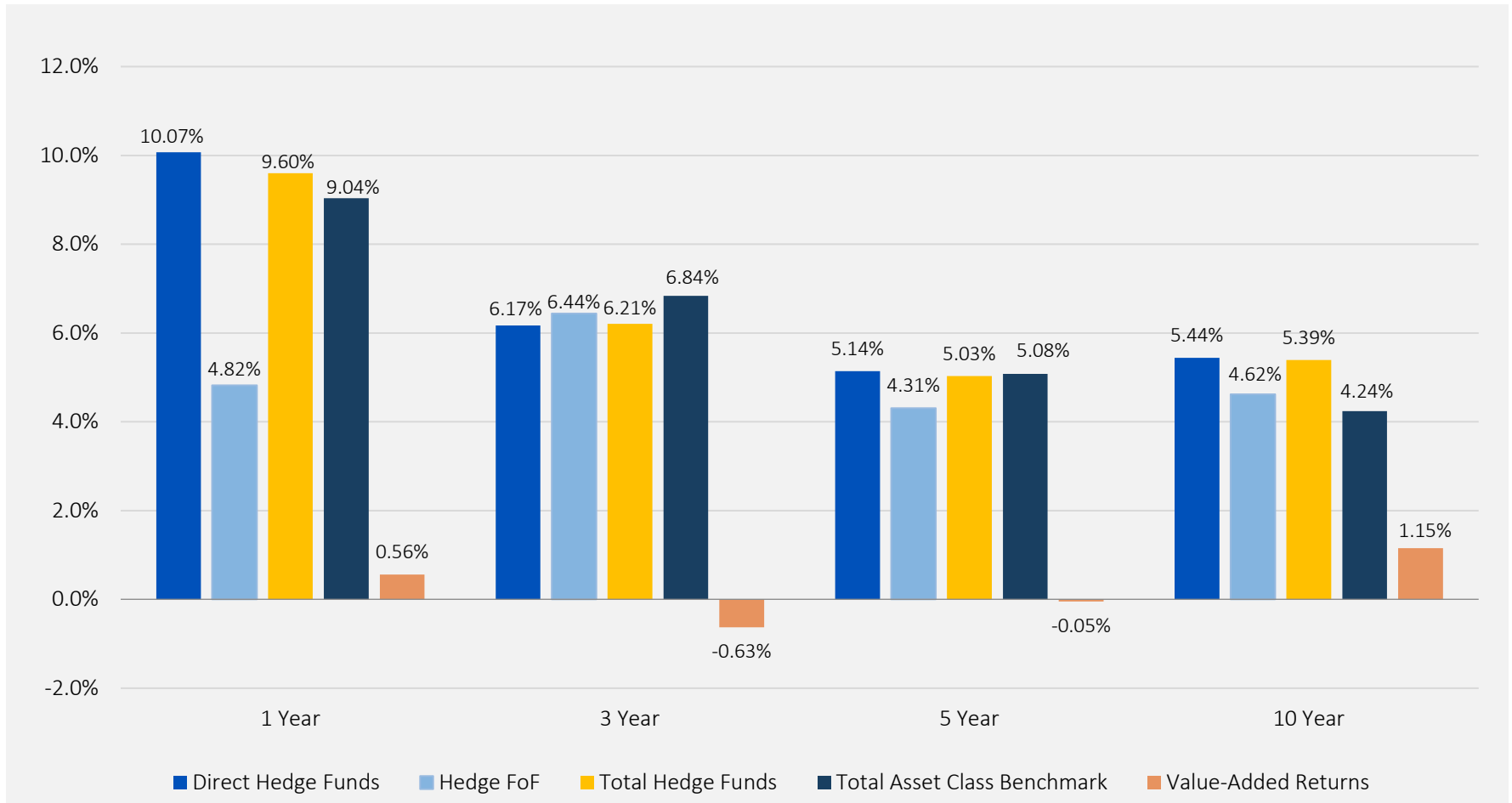


ONE-YEAR PERFORMANCE*



Hedge Funds Performance

Annualized Returns as of December 31, 2021 (Net of Fees)



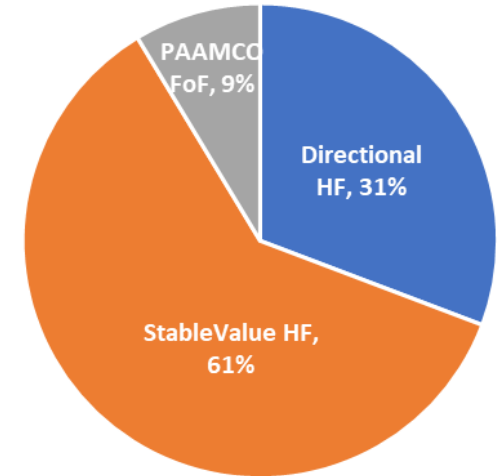
Benchmark: Currently using a composite of several HFRI sub-indices. (HFRI indices - Flash returns are used through 12/31/11. Current returns reflect most up to date performance and are subject to change.)

PRIM Hedge Funds Portfolio Snapshot

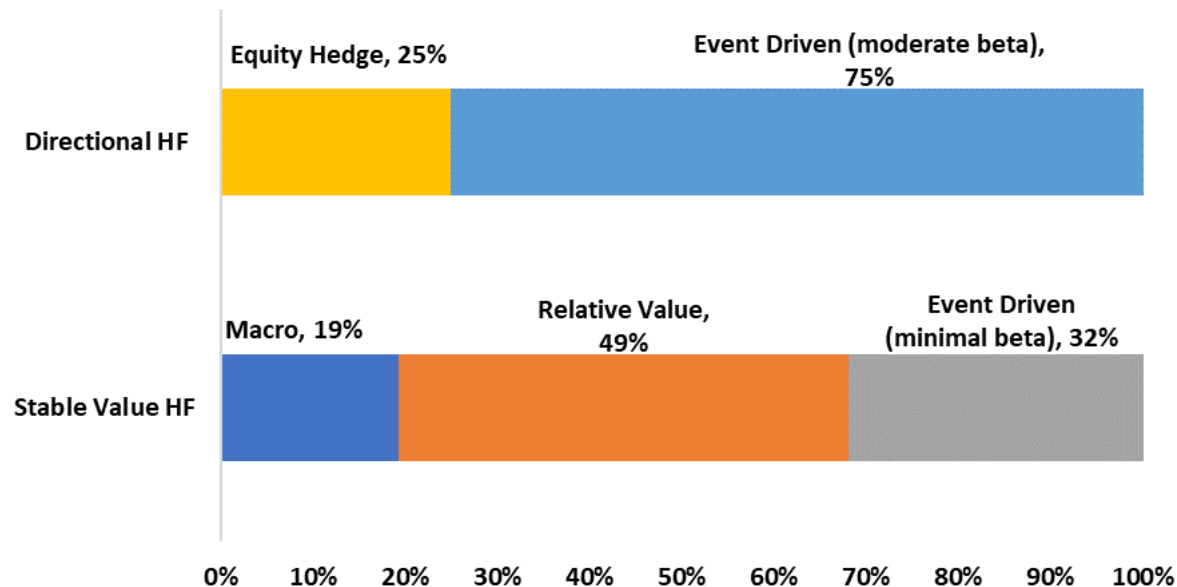
As of December 31, 2021, \$7.2 Billion – 6.9% of PRIT Fund

- Directional Hedge Funds: \$2.2 Billion
- Stable Value Hedge Funds: \$4.4 Billion
- Hedge Fund of Funds: \$0.6 Billion

Hedge Fund Portfolio Breakdown



Sub Strategy Breakdown



Sharpe Ratio and Market Beta Performance

As of December 31, 2021 (Net of Fees)

	Directional HF	StableValue HF	Total HF	Total PCS	PRIT Fund	MSCI ACWI	Barclays Agg	
1 Year	Return	15.3%	8.3%	9.5%	8.6%	20.1%	18.5%	-1.5%
	Vol	8.7%	1.4%	3.3%	2.9%	4.3%	9.5%	2.8%
	Sharpe Ratio	1.7	5.8	2.8	2.9	4.6	2.0	(0.5)
	<i>EQ Beta</i>	<i>0.5</i>	<i>0.0</i>	<i>0.2</i>	<i>0.2</i>	<i>0.4</i>	<i>1.0</i>	<i>0.0</i>
	<i>Bond Beta</i>	<i>(0.9)</i>	<i>(0.3)</i>	<i>(0.5)</i>	<i>(0.4)</i>	<i>0.1</i>	<i>0.4</i>	<i>1.0</i>
	<i>Correlation With PRIT Fund</i>	<i>0.1</i>	<i>0.1</i>	<i>0.1</i>	<i>0.1</i>	<i>1.0</i>	<i>0.8</i>	<i>0.1</i>
3 Year	Return			6.1%	5.5%	16.0%	20.4%	4.8%
	Vol			6.1%	5.5%	8.1%	17.1%	3.4%
	Sharpe Ratio			1.0	1.0	2.0	1.2	1.4
	<i>EQ Beta</i>			<i>0.3</i>	<i>0.2</i>	<i>0.4</i>	<i>1.0</i>	<i>0.0</i>
	<i>Bond Beta</i>			<i>(0.1)</i>	<i>(0.1)</i>	<i>0.1</i>	<i>0.3</i>	<i>1.0</i>
	<i>Correlation With PRIT Fund</i>			<i>0.7</i>	<i>0.7</i>	<i>1.0</i>	<i>0.9</i>	<i>0.0</i>
5 Year	Return			4.9%	4.4%	12.3%	14.4%	3.6%
	Vol			5.1%	4.9%	7.2%	14.8%	3.1%
	Sharpe Ratio			1.0	0.9	1.7	1.0	1.2
	<i>EQ Beta</i>			<i>0.2</i>	<i>0.2</i>	<i>0.5</i>	<i>1.0</i>	<i>0.0</i>
	<i>Bond Beta</i>			<i>(0.1)</i>	<i>(0.1)</i>	<i>0.1</i>	<i>0.2</i>	<i>1.0</i>
	<i>Correlation With PRIT Fund</i>			<i>0.8</i>	<i>0.8</i>	<i>1.0</i>	<i>0.9</i>	<i>0.0</i>

PRIM Hedge Funds and PCS Performance Breakdown

As of December 31, 2021 (Net of Fees)

- Within PRIT Hedge Funds, trailing 1 Year:
 - **Directional Hedge Funds** noticeably outperformed the benchmark
 - **Stable Value Hedge Funds** slightly underperformed the benchmark
- As of February 2020, Stable Value Hedge Funds and Directional Hedge Funds are reported separately due to their different value propositions

	NAV	as of Total HF	as of Total PCS	1 Month	1 Year
Directional HF	\$2.22 bn	31%	28%	1.4%	15.3%
Directional HF BM				1.2%	11.1%
StableValue HF	\$4.38 bn	61%	54%	0.9%	8.3%
StableValue HF BM				0.7%	8.4%
PAAMCO FoF	\$0.62 bn	9%	8%	1.2%	4.8%
PAAMCO FoF BM				0.7%	7.3%
Real Assets	\$0.87 bn	N/A	11%	-1.2%	1.6%
Real Assets BM				1.2%	4.8%

Glossary of PRIT Fund Investment Terms

Active Management – Refers to a portfolio management strategy where the manager makes specific investments with the goal of outperforming an investment benchmark index.

Barclays Capital Aggregate Bond Index – An index that replicates the U.S. investment-grade bond market. The index is comprised of government and corporate bonds.

Core Fixed Income Portfolio – Investments in investment-grade bonds (see definition of Barclays Capital Aggregate Bond Index).

Domestic Equity Portfolio – Investments in shares of publicly-traded U.S. companies utilizing a large capitalization (large cap), small and middle capitalization (small/smld cap), and micro capitalization (micro cap) strategies.

Emerging Markets Equity Portfolio – The primary strategy for this portfolio is investing in companies in developing countries, including, but not limited to, China, Brazil, Russia, South Korea, Taiwan, India and Turkey. These countries typically have less efficient securities markets, and thus there is opportunity for substantial returns.

Hedge Fund Research, Inc. (HFRI) – An organization that specializes in the areas of indexation and analysis of hedge funds.

International Equity Portfolio – The primary strategy for this portfolio is investing in companies in developed markets, industrialized nations outside of the United States, including, but not limited to, Japan, Germany, the United Kingdom, France, Italy, Switzerland, Hong Kong, Canada, and Australia.

MSCI ACWI Index – Captures large and mid cap representation across 23 Developed Markets and 25 Emerging Markets.

MSCI Emerging Markets Index – Captures large and mid cap representation across 25 Emerging Markets.

MSCI Europe Investable Market Index – Captures large, mid and small cap representation across 15 Developed Markets

Passive Management - An investing strategy that tracks a market-weighted index or portfolio. The most popular method is to mimic the performance of an externally specified index by buying an index fund.

Portfolio Completion Strategies (PCS) – The objective of the PCS portfolio is to provide the PRIT Fund access to broader investment opportunities. Investments selected for the PCS portfolio should enhance the risk/return profile of the PRIT Fund. Investments may include long-term strategic investments or short-term opportunistic investments. Some of these strategies include hedge funds and real assets.

Private Equity Portfolio – Two components comprise the PRIT Fund’s Private Equity portfolio: venture capital (early-stage and multi-stage) and special equity partnerships (buyout and growth equity). Unlike public markets, where the investor has the ability to “cash out” of positions at any time, these private market investments are illiquid.

Real Estate Portfolio – Equity investments in both directly-owned properties and REIT securities. Directly-owned core properties make up most of the portfolio. Core properties are typically well-leased, operating properties that provide regular cash flow from rents. Non-core investments include properties that are under development.

REIT – A company that owns, and in most cases operates, income-producing real estate. REITs often trade on major exchanges like other securities and provide investors with a liquid stake in real estate.

Russell 3000 Index – A stock market index that measures the performance of the largest 3,000 U.S. companies representing approximately 97% of the investable U.S. equity market.

Standard & Poor’s (S&P) 500 Index – A U.S. stock market index based on the market capitalizations of 500 large companies having common stock listed on the NYSE or NASDAQ.

Timberland Portfolio – Direct investments in timberland: in the United States timberland markets are divided into three regions, each with distinct economic characteristics: the Pacific Northwest, the Northeast and the Southeast. The Pacific Northwest is a high value softwood market, in which the growing cycle to produce a mature tree is forty to fifty years; in Australia, there is approximately 2 million hectares (4.9 million acres) of plantation timberlands that are almost evenly split between hardwood and softwood species.

Treasury Inflation-Protected Securities (TIPS) – Investment grade fixed income investments designed to provide a hedge against rising inflation. The principal of a TIPS increases with inflation and decreases with deflation, as measured by the Consumer Price Index. When a TIPS matures, the investor is paid the adjusted principal or original principal, whichever is greater.

Treasury Separate Trading of Registered Interest and Principal of Securities (STRIPS) – Bonds that are sold at a discount to their face value. The investor does not receive interest payments but is repaid the full-face value when the bonds mature. Also called “zero coupon” bonds.

Value Added Fixed Income – A fixed income portfolio consisting of the following strategies: high yield bonds (non-investment grade corporate debt); bank loans (senior secured corporate debt); emerging markets debt (debt issued within the emerging, or developing countries, marketplace, and private debt (investments in private partnerships that invest directly in companies under financial distress).



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THANK YOU

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Firm: RhumbLine Advisers Limited Partnership
Strategy/Product: MA S&P 500 Pooled Index Fund/Tips Pooled Index Fund
Client: MWRA

NEPC Manager Due Diligence Questionnaire - Update

Instructions

In support of our upcoming meeting we ask that you please complete this due diligence questionnaire. Please provide your responses in the form of brief descriptions, lists or tables added directly to this Word document.

Thank you for taking the time to complete this questionnaire. Please note that all materials submitted in relation to MWRA Retirement System may be subject to disclosure consistent with Massachusetts Public Record laws.

Firm/Organization

1. Have there been any changes in ownership or management in the past year?

Effective December 1st, 2021, we added to 3 new partner interest awards to: Gina Berard, Sr. Manager-Investment Operations, Antonio Ballestas, Portfolio Manager and MaryAlice McClanahan, Finance and Compliance Associate. RhumbLine remains 100% employee-owned, and majority-owned by women and minorities.

2. List firm AUM, net flows and accounts gained/lost for the past 5 years.

Firm AUM (as of 3/31/2022): \$92,265.8MM

During the past 5 years (3/31/17 thru 3/31/22), we gained 354 accounts totaling \$22,752.2MM in assets. During this same time period, we lost 87 accounts totaling \$7,211.0MM in assets. This nets to an increase of 267 accounts with \$15,541.2MM in AUM.

3. Have there been any new or discontinued products in the past year?

RhumbLine's strategic plan is to stay the course and continue to offer plain vanilla, customized and smart beta index products to existing and new institutional clients. RhumbLine has the capacity to manage additional strategies and add client relationships without requiring significant additions to staff due to the efficiencies we have built into our business model. RhumbLine recently opened the following new products during the past year:

- 1.) TOBAM MaxDiv USA (3/2021)



- 2.) Russell Top 200 Growth (3/2021)
- 3.) MSCI ACWI Minimum Volatility (6/2021)
- 4.) MSCI ACWI ESG Leaders (8/2021)
- 5.) Bloomberg US Long Term Treasury (7/2021)

4. Are any products capacity constrained?

No. We do not have any capacity constraints on any of our products.

5. Describe any current or pending regulatory, compliance or litigation issues and the expected business impact.

None.

6. Describe your diversity, equity and inclusion efforts with regard to the firm and its employees.

Please refer to attachment; *Diversity, Equity & Inclusion Policy Summary_2022*

Portfolio Management Team

1. Have there been any changes in the portfolio management team in the past year?

No.

2. Are there any expected changes to the team in the future (planned additions or departures)?

We are in the process of interviewing Portfolio Manager candidates to add capacity to the Investment Management Team.

Process

1. Have there been significant changes in any of the areas below in the past year?

- Identification of investment ideas
- Process for exploring and vetting ideas
- Portfolio trading practices including buy/sell rules
- Approach to portfolio monitoring and risk management

Not Applicable. We have not experienced any changes related to the areas listed above.



Philosophy

1. Describe recent changes in investment philosophy, if any.

Not Applicable. Our investment philosophy has remained the same since inception of our firm (1990).

Portfolio

1. If not included in your meeting presentation, provide portfolio holdings, sector exposure, geographic exposure and common characteristics (yield, duration, market cap, P/E, etc.).

2. List strategy AUM, net flows and accounts gained/lost for the past 5 years.

S&P 500 Index Strategy (as of March 31, 2022): \$31,731.1MM
TIPS Pooled Index Strategy: (as of March 31, 2022): \$2,301.5MM

During the past 5 years (3/31/2017 thru 3/31/2022) we gained a total 74 accounts invested in the S&P 500 Index Strategy totaling \$2,969.2 MM in assets. We lost 20 accounts in the S&P 500 Index Strategy totaling \$518.0 MM in assets.

During the past 5 years (3/11/2017 thru 3/31/2022) we gained a total of 15 accounts invested in the TIPS Index Strategy totaling \$1,503.6 MM in assets. During this same time period we have not lost any accounts invested in the TIPS Index Strategy.

3. Describe investor concentration for the strategy and note the percent of AUM attributable to the top five investors.

Top 5 Investors in the S&P 500 Index Strategy:

- 1.) 33.8%
- 2.) 29.7%
- 3.) 8.0%
- 4.) 6.1%
- 5.) 3.8%

Top 5 Investors in the TIPS Index Strategy:

- 1.) 60.3%
- 2.) 13.5%
- 3.) 8.7%
- 4.) 8.0%
- 5.) 4.8%

Performance / Market Outlook



- 1. If not included in your meeting presentation, provide trailing returns as of the most recent quarter-end and calendar year returns for the past 10 years, both relative to benchmark.**

Please refer to the following attachments:

Quarterly Portfolio Performance 10 Year Trailing_20220331

Yearly Portfolio Performance 10 Year Trailing_20211231

**Please note, the TIPS Pooled Index Fund started in July 2021 so there is no yearly performance as of 12/31/21.*

- 2. Briefly discuss recent performance trends and identify environments in which the strategy is likely to be in or out of favor.**

Not applicable. As an index manager our performance goal is to match the performance of the appropriate index.

- 3. Describe your market outlook and how strategy positioning is impacted by your views.**

Our market outlook has always been to stay within the set guidelines of the index (S&P 500 Pooled Index Fund & TIPS Pooled Index Fund).

- 4. Could you please include a slide in your presentation that shows the MWRA's account history, initial contribution, cumulative subsequent contributions, cumulative subsequent distributions, gain/loss and current value.**

Please refer to attachment included in presentation

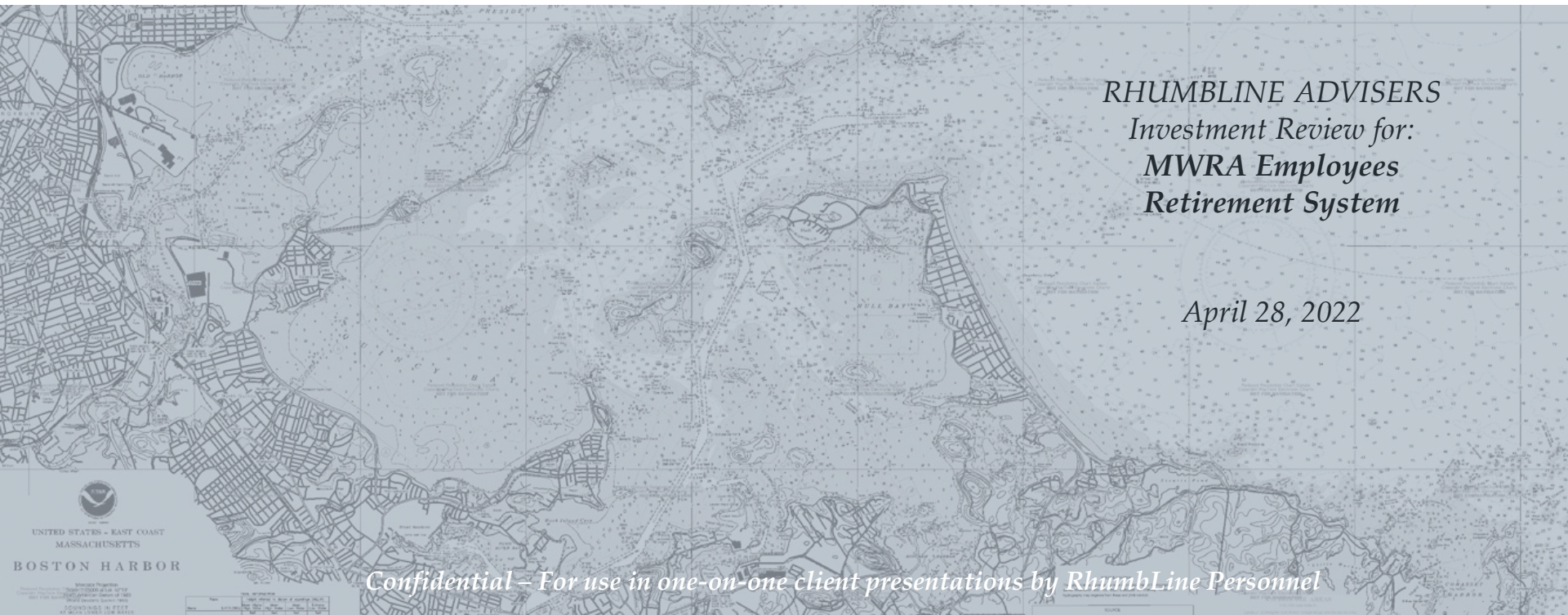


RhumbLine

Institutional Index Management

*RHUMBLINE ADVISERS
Investment Review for:
MWRA Employees
Retirement System*

April 28, 2022



Confidential – For use in one-on-one client presentations by RhumbLine Personnel



UNITED STATES - EAST COAST
MASSACHUSETTS
BOSTON HARBOR

Vertical Projection
Datum: North American 83
Scale: 1:50,000
SOUNDINGS IN FEET
AT MEAN LOW WATER

S&P 500 Pooled Index Fund

Date of Inception: February 28, 1997



PERFORMANCE (Gross of Management Fees thru 3/31/2022)

	<u>PORTFOLIO</u>	<u>S&P 500 INDEX</u>
2022 - YTD thru March	-4.60%	-4.60%
Trailing 1 Year	15.61%	15.65%
Trailing 3 Year (Annualized)	18.90%	18.92%
Trailing 5 Year (Annualized)	15.96%	15.99%
Trailing 10 Year (Annualized)	14.60%	14.64%
Since Inception (Annualized)	9.29%	9.22%

MARKET VALUE SUMMARY

Initial Contribution (2/28/1997):	\$5,000,000
Additional Contributions:	\$73,031,650
Withdrawals:	<u>\$73,684,842</u>
Net Investment:	\$4,346,808
Market Value (as of March 31, 2022):	<u>\$70,668,501.95</u>

PARTICIPANT SUMMARY

Total Market Value of RhumbLine's S&P 500 Pooled Index Fund as of 3/31/2022:	\$886.8MM
Number of Investors:	14
MWRA Employees Retirement System % of Ownership:	7.97%

COMMISSIONS & TRADING (4/1/2021 thru 3/31/2022)

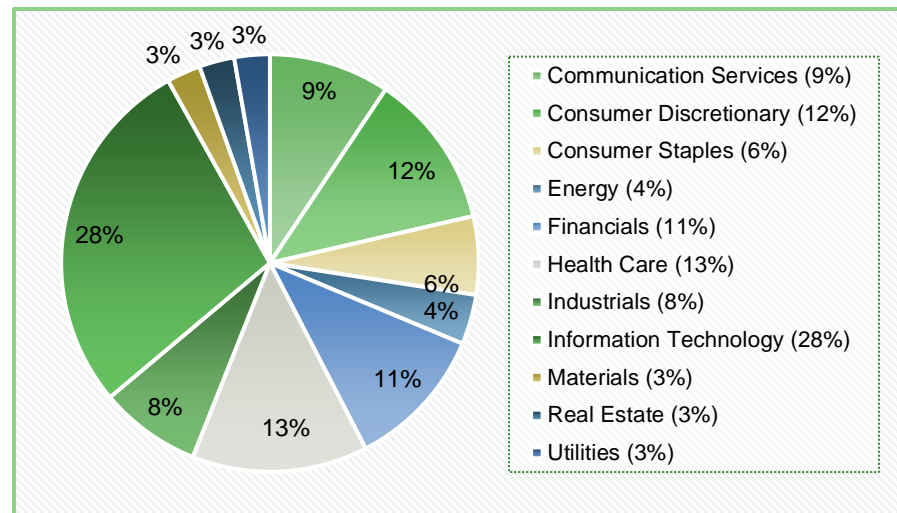
Brokers Utilized:	Virtu (ITG), Instinet, Jefferies, Liquidnet, Cabrera, Penserra, Dash Financial, Loop Capital & Siebert Williams Shank
Commissions:	\$13,862
Pro Rata Share:	\$1,105
Total Shares Traded:	1,732,019
Average Commission per Share:	0.8 ¢ /share

S&P 500 Pooled Index Fund

as of March 31, 2022

SECTOR RETURNS & WEIGHTS

<u>NAME</u>	<u># of STOCKS</u>	<u>2022 (YTD) RETURN</u>
Communication Services	27	-11.83
Consumer Discretionary	60	-9.07
Consumer Staples	32	-1.01
Energy	21	39.04
Financials	67	-1.70
Health Care	65	-2.57
Industrials	72	-2.26
Information Technology	75	-8.45
Materials	28	-2.40
Real Estate	29	-6.23
Utilities	29	4.75
TOTALS:	506	



TOP 10 HOLDINGS

<u>NAME</u>	<u>WEIGHT</u>	<u>2022 (YTD) RETURN</u>	<u>MARKET CAP (\$MM)</u>
Apple Inc	7.04	-1.54	2,849,538
Microsoft Corp	6.01	-8.14	2,311,359
Amazon Com Inc	3.72	-2.23	1,658,806
Tesla Mtrs Inc	2.35	1.97	1,113,708
Alphabet Inc Cl-A	2.18	-3.99	836,505
Alphabet Inc Cl-C	2.02	-3.48	1,006,080
Nvidia Corp	1.78	-7.21	682,150
Berkshire Hathaway Inc	1.67	18.03	455,682
Meta Platforms Inc	1.34	-33.89	609,489
Unitedhealth Group	1.25	1.86	479,830
TOTALS:	29.36		

CHARACTERISTICS

	<u>PORTFOLIO</u>	<u>S&P 500 INDEX</u>
Number of Holdings	506	505
Weighted Market Cap (\$MM)	601,569	602,255
P/B Ratio	4.02	4.02
P/E Ratio	24.45	24.48
Dividend Yield (%)	1.39	1.39
5 Year Earnings Growth (%)	18.27	18.26
Return on Equity (%)	47.93	47.95
Beta	1.00	1.00

Bloomberg TIPS Pooled Index Fund

Date of Inception: July 30, 2021



PERFORMANCE (Gross of Management Fees thru 3/31/2022)

	<u>PORTFOLIO</u>	<u>BLOOMBERG TIPS INDEX</u>
2022 - YTD thru March	-2.99%	-3.02%
Since Inception	-1.59%	-1.62%

MARKET VALUE SUMMARY

Initial Contribution (7/30/2021):	\$30,170,144.80
Withdrawals:	<u>\$16,000,211.20</u>
Net Investment:	\$14,169,933.60
Market Value (as of March 31, 2022):	<u>\$13,879,612.81</u>

Characteristics

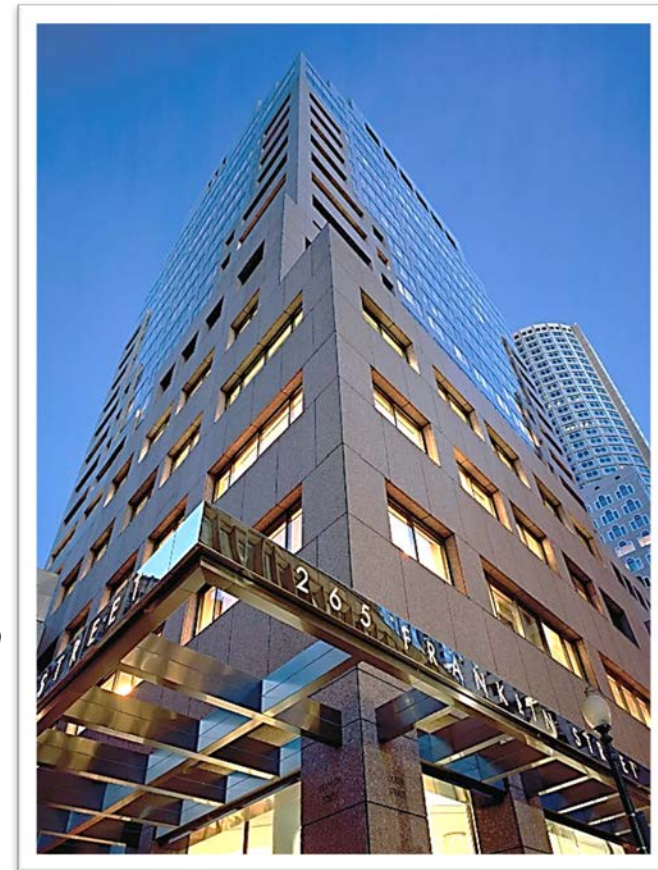
as of March 31, 2022

	<u>PORTFOLIO</u>	<u>US TIPS INDEX</u>
Number of Issues	46	46
Price (\$)	108.678	108.587
Coupon	0.596	0.582
Effective Average Life	7.97	7.96
Current Yield	0.52	0.51
Yield to Maturity	2.43	2.43
Effective Duration	7.49	7.49
Effective Convexity	1.11	1.11
Quality	AAA	AAA

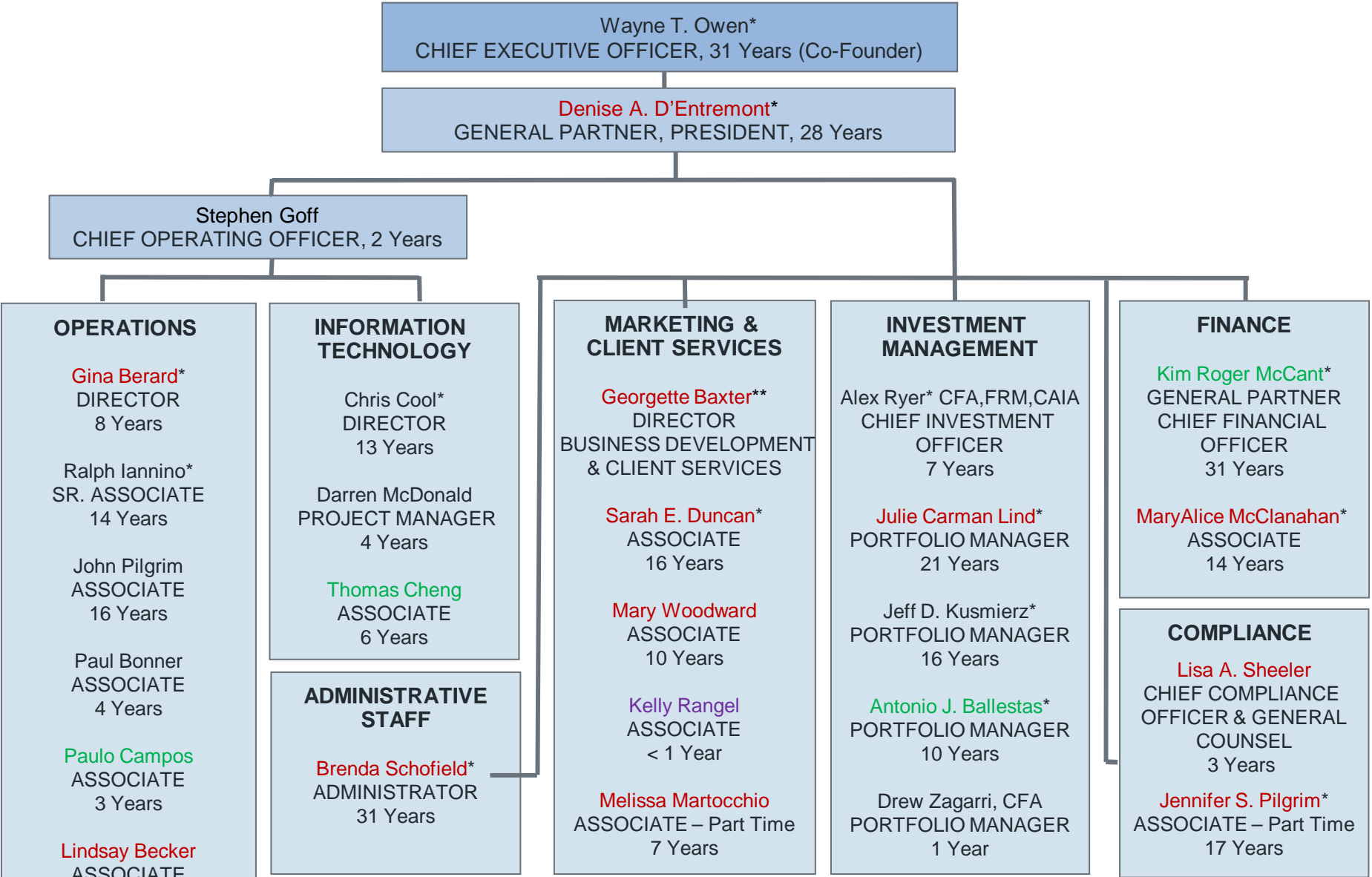
Current Profile

as of March 31, 2022

- Assets under management: \$92.3 Billion
- Asset classes include:
 - Domestic Equity
 - Domestic Fixed Income
 - International Equity
- Diversified client base:
 - 120 Public Funds: 295 Accounts/\$61.1 Billion
 - 51 Corporate/ERISA: 82 Accounts/\$13.5 Billion
 - 88 Endowments/Foundations: 191 Accounts/\$8.6 Billion
 - 44 Taft-Hartley: 76 Accounts/\$5.1 Billion
 - 1 Sub-Advisory: 5 Accounts/\$3.9 Billion



Organization Chart



* Partners of the Firm
of years equals tenure at Firm

100% Employee-Owned
56% Women/Minority-Owned
44% Other

**Starting April 2022

RhumbLine Business Update

March 2022



Product Highlights

Launched and funded the following new products:

- Bloomberg Capital US 1-3 Yr. Government Bond
 - Bloomberg US Government Long
 - Bloomberg US Long Term Treasury
 - Bloomberg US Intermediate Treasury Bond
 - ICE BofA US 3-Month Treasury Bill
 - S&P Global Low Volatility
 - S&P 1000
 - S&P 1000 Value
 - MSCI US
 - MSCI World
 - MSCI World ex-US
 - MSCI ACWI ESG Leaders
 - Russell 1000 HEDI Moderate TTE
 - Russell 2500 Value
 - TOBAM MaxDiv USA
 - Bloomberg TIPS *(Available as a Pooled or a SMA)*
 - FTSE Nareit All Equity *(Available as a Pooled or a SMA)*
 - MSCI ACWI Min. Volatility *(Avail. as a Pooled or a SMA)*
-

PUBLIC FUNDS

- Bucks County Employees Ret. Fund (PA)
- Illinois Police Officers Pension
- Wilmington Retirement Plan (DE)

CORPORATE FUNDS

- Christian City (GA)
- Time Warner Cable Pension Plans (NC)
- Sacramento SPCA

ENDOWMENT/FOUNDATION FUNDS

- Museum of Modern Art
- Pittsburgh Theological Seminary
- Suffolk University (MA)

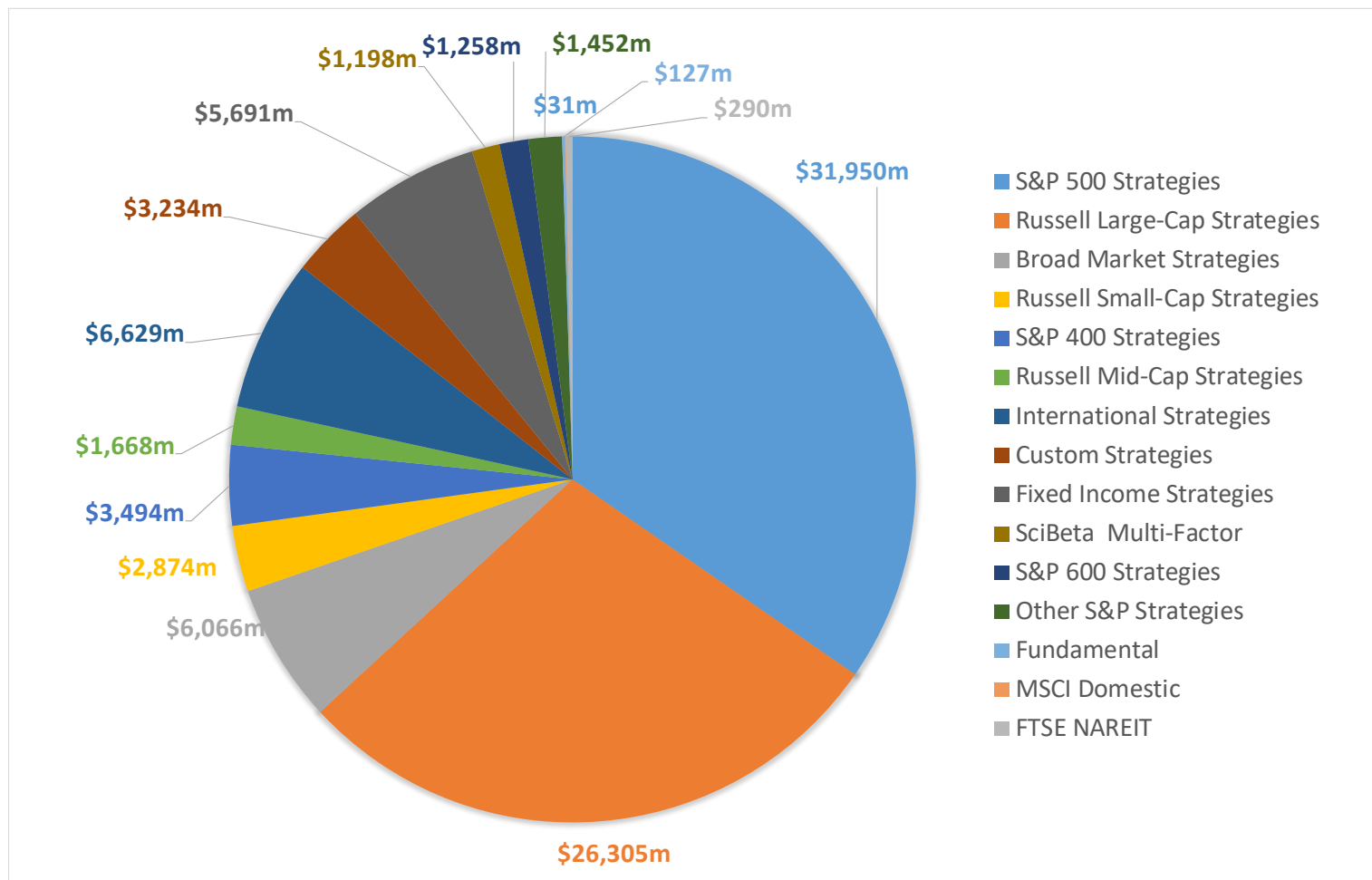
TAFT-HARTLEY FUNDS

- Fulton Fish Market Pension Fund (NY)
- UBC Healthcare Trust Fund (WV)
- Southern States Millwright Reg. Council (AR)

Breakdown of Strategies

\$92,265.8 MILLION

as of March 31, 2022



Please note that of the total assets under management, customized strategies are as follows:
 Socially Screened = \$9,112.6MM, Sudan-Free = \$8,410.5MM, Other Screens = \$13,339.6MM

LARGE CAP INDEX STRATEGIES

- Equal-Weighted Mega Cap
- S&P 100
- S&P 500*
- S&P 500 Equal Weighted*
- Russell Top 200
- Russell Top 200 Growth
- Russell 1000*
- Russell 1000 Growth*
- Russell 1000 Value*
- MSCI US

MID CAP INDEX STRATEGIES

- S&P 400*
- S&P 400 Growth
- Russell Mid Cap
- Russell Mid Cap Growth
- Russell Mid Cap Value

SMALL-MID CAP INDEX STRATEGIES

- S&P 1000
- S&P 1000 Value
- Russell 2500
- Russell 2500 Value
- Russell Small Cap Completeness

SMALL CAP INDEX STRATEGIES

- S&P 600*
- Russell 2000
- Russell 2000 Growth
- Russell 2000 Value

FIXED INCOME STRATEGIES

- Core Bond*
- ICE BofA US 3-Mo. Treasury Bill
- Intermediate Government/Credit
- Bloomberg Capital US 5-7 Yr. Treasury Bond
- Bloomberg Capital US 1-3 Yr. Government
- Bloomberg US TIPS*
- Bloomberg US Government Long
- Bloomberg US Long Term Treasury
- Bloomberg US Intermediate Treasury Bond

BROAD MARKET INDEX STRATEGIES

- S&P 1500
- S&P 1500 ex-Fossil Fuels
- Russell 3000
- Wilshire 5000
- MSCI Global Investible US

INTERNATIONAL INDEX STRATEGIES

- S&P ADR
- MSCI EAFE*
- MSCI ACWI
- MSCI ACWI ex-US
- MSCI ACWI ex-Fossil Fuels
- MSCI ACWI Minimum Volatility*
- MSCI ACWI ESG Leaders
- MSCI Emerging Markets
- MSCI Japan Broad
- MSCI World
- MSCI World ex-Fossil Fuels
- MSCI World ex-US
- DJ Brookfield Global Infrastructure
- DJ Brookfield Global Infrastructure Composite
- S&P Global Natural Resources
- S&P Global Low Volatility

ALTERNATIVE STRATEGIES

- Russell RAFI US
- Russell RAFI Global ex-US
- Russell 1000 HEDI Moderate TTE
- RhumbLine Multi-Factor
- Energy Select Sector
- FTSE Nareit All Equity REIT*
- S&P Global Low Volatility
- SciBeta US Multi-Beta Multi-Strategy 4-Factor EW
- SciBeta Dev ex-US Value Diversified Multi-Strategy
- TOBAM MaxDiv USA

SPECIALTY STRATEGIES

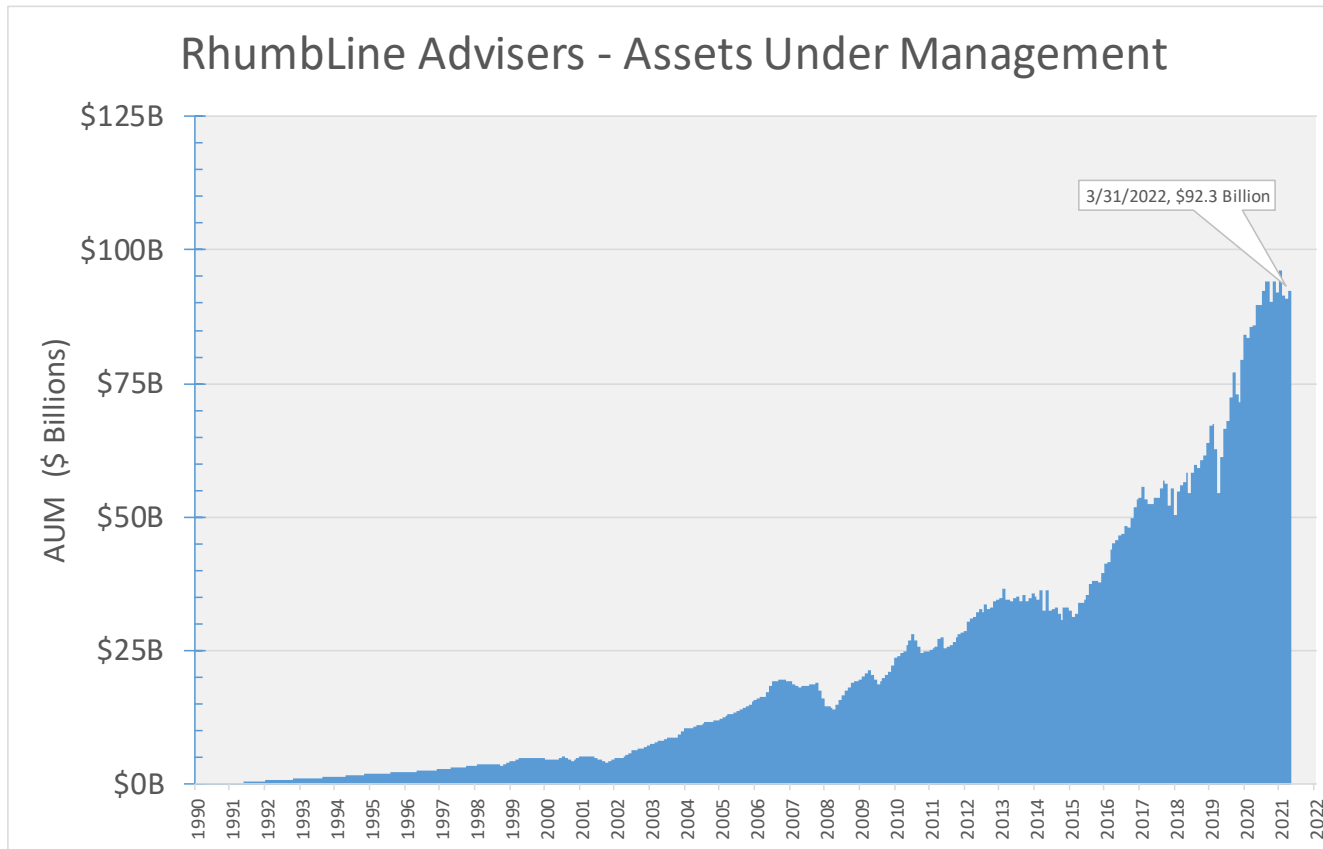
- Completeness
- Customized Screens
- Customized Tax-Efficient
- Equal Weighted
- Fossil Fuel-Free
- High Quality
- Minimum Volatility
- Sudan-Free
- Sustainable Investment
- Tobacco-Free

*Also available through a pooled investment fund to qualified investors with at least \$5 million in assets.

**Please contact us if interested in any index or strategy that is not listed.

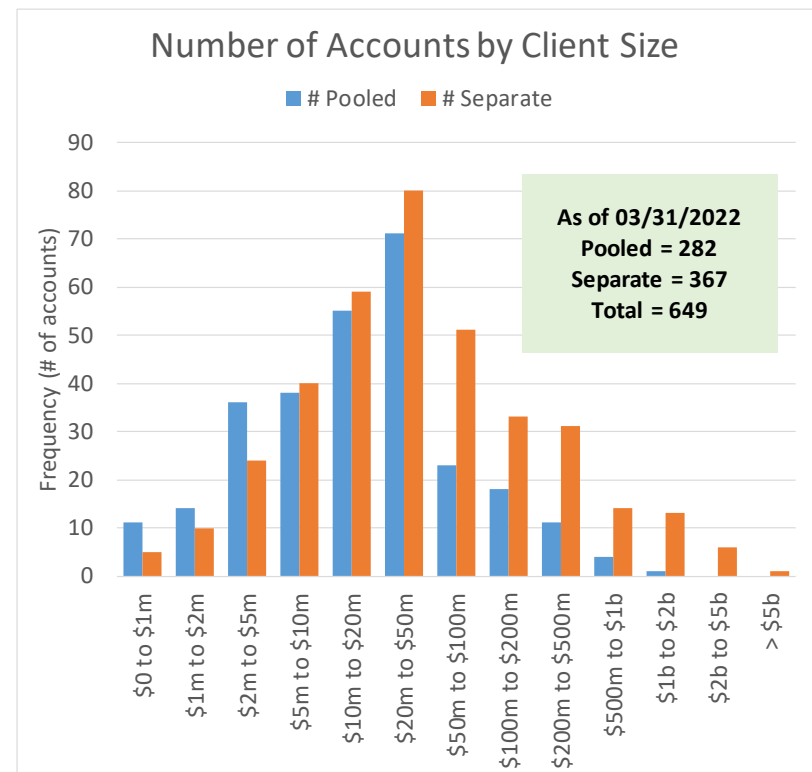
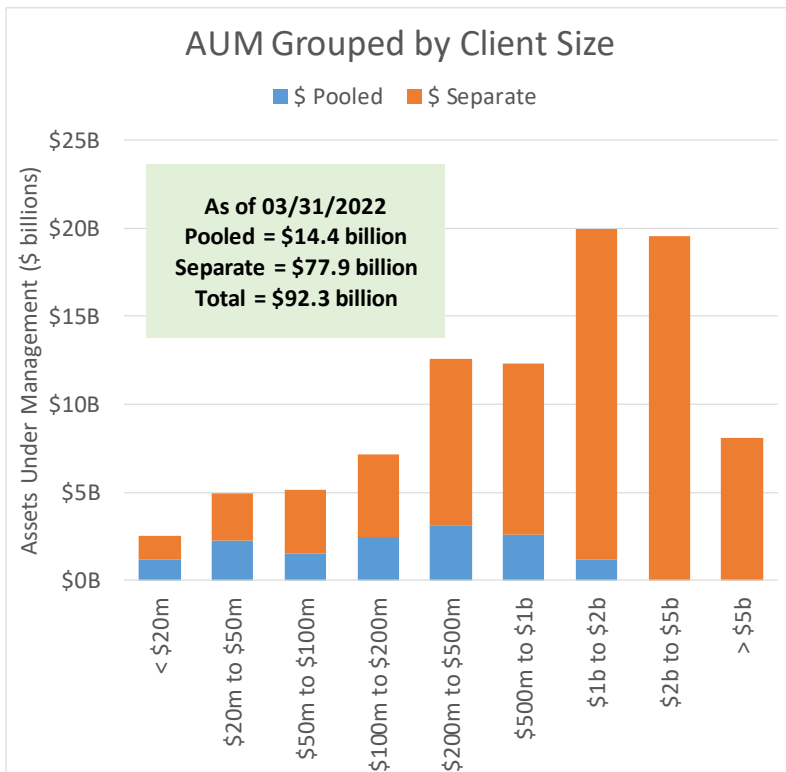
Assets Under Management

as of March 31, 2022



Distribution of AUM as of March 31, 2022

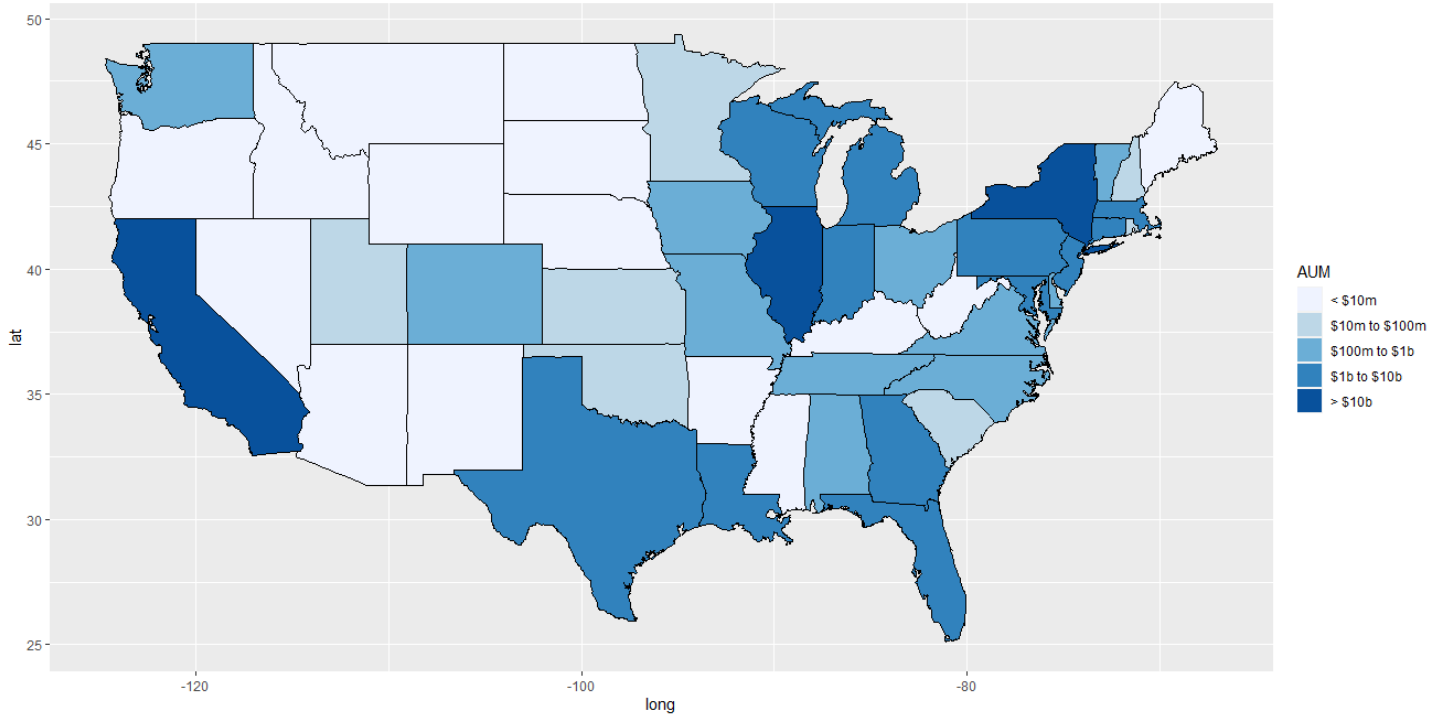
Sum and number of client accounts managed by RhumbLine, grouped into AUM bins.



AUM by State

as of March 31, 2022

RhumbLine Advisers: Assets Under Management, by State (as of 2022-03-31)



Composite Returns (Gross of Management Fees)

as of December 31, 2021



INDEX STRATEGIES	Inception Date	Annualized						Assets as of 12/31/21 (\$M)
		4th QTR 2021 (%)	1-YR Trailing (%)	3-YR Trailing (%)	5-YR Trailing (%)	Since Inception (%)		
LARGE CAP								
S&P 100	08/09	11.32	29.29	27.56	19.46	15.64	\$30.3	
S&P 100 Index		11.35	29.36	27.62	19.50	15.66		
Equal Weighted Mega Cap	07/11	8.55	28.46	23.40	16.13	14.77	\$597.7	
Equal Weighted Mega Cap Index		8.57	28.57	23.62	16.29	14.75		
S&P 500*	12/90	11.02	28.66	26.00	18.42	11.38	\$33,217.6	
S&P 500 Index		11.03	28.71	26.07	18.47	11.24		
S&P 500 Equal Weighted*	07/03	8.98	29.56	23.59	15.72	12.04	\$224.7	
S&P 500 Equal Weighted Index		9.01	29.63	23.64	15.73	11.99		
Russell Top 200	11/96	10.99	27.86	27.25	19.68	9.52	\$6,056.5	
Russell Top 200 Index		11.00	27.90	27.28	19.70	9.46		
Russell 1000*	12/96	9.77	26.42	26.14	18.38	9.93	\$14,490.2	
Russell 1000 Index		9.78	26.45	26.21	18.43	9.90		
Russell 1000 Growth*	12/99	11.65	27.59	34.04	25.29	7.50	\$3,575.0	
Russell 1000 Growth Index		11.64	27.60	34.08	25.32	7.44		
Russell 1000 Value*	05/96	7.76	25.11	17.60	11.14	9.27	\$2,812.2	
Russell 1000 Value Index		7.77	25.16	17.64	11.16	9.21		
Russell 1000 HEDI Moderate TTE	02/20	11.80	25.47	-	-	29.22	\$496.6	
Russell 1000 HEDI Moderate TTE Index		11.81	25.51	-	-	29.29		
MSCI US	10/19	10.12	26.83	-	-	25.72	\$32.3	
MSCI US Index		10.08	26.97	-	-	25.85		
TOBAM MaxDiv USA	03/21	2.58	-	-	-	8.26	\$94.7	
TOBAM MaxDiv USA Index		2.57	-	-	-	8.24		

The above composite returns are supplemental information to the GIPS® compliant performance presentations which are available upon request. Please refer to the disclosure page at the back of this presentation for important disclosures and disclaimers.

Composite Returns (Gross of Management Fees) as of December 31, 2021



INDEX STRATEGIES	Inception Date	4th QTR 2021 (%)	1-YR Trailing (%)	Annualized			Assets as of 12/31/21 (\$M)
				3-YR Trailing (%)	5-YR Trailing (%)	Since Inception (%)	
MID CAP							
S&P 400*	07/95	7.95	24.63	21.32	13.05	12.05	\$3,626.3
S&P 400 Index		8.00	24.76	21.41	13.09	11.96	
S&P 400 Growth	09/17	7.97	18.78	22.56	-	14.32	\$77.6
S&P 400 Growth Index		8.00	18.90	22.62	-	14.37	
Russell Mid Cap	12/05	6.43	22.58	23.27	15.09	10.55	\$918.6
Russell Mid Cap Index		6.44	22.58	23.29	15.10	10.53	
Russell Mid Cap Growth	04/99	2.87	12.77	27.48	19.83	9.37	\$681.2
Russell Mid Cap Growth Index		2.85	12.73	27.46	19.83	9.41	
Russell Mid Cap Value	08/07	8.53	28.31	19.55	11.28	9.08	\$147.0
Russell Mid Cap Value Index		8.54	28.34	19.62	11.22	9.04	
MID-SMALL CAP							
S&P 1000	05/19	7.27	25.30	-	-	18.89	\$335.7
S&P 1000 Index		7.27	25.35	-	-	19.00	
S&P 1000 Value	12/20	6.91	30.70	-	-	30.70	\$284.0
S&P 1000 Value Index		6.89	30.72	-	-	30.72	
Russell 2500 Value	02/20	6.38	27.76	-	-	26.29	\$561.5
Russell 2500 Value Index		6.36	27.78	-	-	26.44	
Russell Small Cap Completeness	05/07	1.68	13.54	24.45	15.68	9.94	\$20.1
Russell Small Cap Completeness Index		1.32	12.64	24.21	15.53	9.81	
SMALL CAP							
S&P 600*	05/03	5.63	26.73	20.07	12.42	12.04	\$1,257.9
S&P 600 Index		5.64	26.82	20.11	12.42	11.97	
Russell 2000	12/04	2.32	15.37	20.16	12.11	9.05	\$2,592.2
Russell 2000 Index		2.14	14.82	20.02	12.02	8.99	
Russell 2000 Growth	03/05	0.09	2.92	21.12	14.51	10.42	\$76.2
Russell 2000 Growth Index		0.01	2.83	21.17	14.53	10.43	
Russell 2000 Value	04/04	4.39	28.24	18.00	9.10	8.78	\$344.2
Russell 2000 Value Index		4.36	28.27	17.99	9.07	8.77	

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Composite Returns (Gross of Management Fees)

as of December 31, 2021

INDEX STRATEGIES	Inception Date	4th QTR 2021 (%)	1-YR Trailing (%)	3-YR Trailing (%)	Annualized			Assets as of 12/31/21 (\$M)
					5-YR Trailing (%)	Since Inception (%)		
BROAD MARKET								
S&P 1500	06/11	10.71	28.63	25.64	-	21.19		\$109.5
S&P 1500 Index		10.71	28.45	25.63	-	21.16		
Russell 3000	12/09	9.33	25.76	25.74	17.94	15.03		\$4,434.1
Russell 3000 Index		9.28	25.66	25.79	17.97	15.00		
Wilshire 5000	04/07	9.75	26.98	26.14	18.14	10.65		\$1,751.5
Wilshire 5000 Index		9.58	26.70	26.11	18.11	10.55		
Russell RAFI US	04/14	9.07	31.83	22.75	14.95	12.61		\$106.9
Russell RAFI US Index		9.01	31.88	22.93	14.99	12.67		
INTERNATIONAL								
DJ Brookfield Global Infrastructure Composite	10/17	6.88	21.17	12.17	-	6.84		\$906.6
DJ Brookfield Global Infrastructure Composite Index		6.70	20.23	11.24	-	5.97		
DJ Brookfield Global Infrastructure	06/15	7.70	20.52	13.57	9.67	7.49		\$236.6
DJ Brookfield Global Infrastructure Index		7.49	19.87	12.80	8.89	6.76		
MSCI Emerging Markets	01/13	-0.95	-4.79	10.11	9.72	3.95		\$321.9
MSCI Emerging Markets Index		-1.31	-2.54	10.94	9.88	4.04		
MSCI ACWI ex-US	04/14	1.92	7.80	13.19	9.50	5.27		\$2,167.9
MSCI ACWI ex-US Index		1.82	7.82	13.18	9.61	5.17		
MSCI ACWI Minimum Volatility*	06/21	6.24	-	-	-	5.88		\$484.9
MSCI ACWI Minimum Volatility Index		6.29	-	-	-	6.38		
MSCI EAFE*	05/14	2.76	11.59	13.78	9.81	5.24		\$1,069.4
MSCI EAFE Index		2.69	11.26	13.54	9.55	5.00		

Composite Returns (Gross of Management Fees)

as of December 31, 2021



INDEX STRATEGIES	Inception Date	4th QTR 2021 (%)	1-YR Trailing (%)	Annualized			Assets as of 12/31/21 (\$M)
				3-YR Trailing (%)	5-YR Trailing (%)	Since Inception (%)	
INTERNATIONAL (continued)							
Russell RAFI Global ex-US	04/14	1.92	14.28	12.18	8.66	5.09	\$20.4
Russell RAFI Global ex-US Index		0.78	14.06	11.95	8.69	5.03	
S&P Global Natural Resources	10/17	7.25	24.82	13.68	-	7.64	\$404.7
S&P Global Natural Resources Index		7.18	24.40	13.12	-	7.19	
SciBeta Dev. ex-US Value Diversified Multi-Strategy	02/17	2.59	14.59	11.83	-	7.73	\$966.4
SciBeta Dev. ex-US Value Diversified Multi-Strategy Index		2.66	14.44	11.56	-	7.55	
FIXED INCOME							
Core Bond*	03/05	0.03	-1.63	4.66	3.54	4.07	\$1,152.5
Bloomberg US Aggregate Bond Index		0.01	-1.54	4.79	3.57	4.09	
Bloomberg US TIPS*	12/12	2.33	5.89	8.39	5.32	2.65	\$2,352.4
Bloomberg US TIPS Index		2.36	5.96	8.44	5.34	2.67	
Bloomberg US Government Long	12/19	3.05	-4.49	-	-	5.78	\$935.5
Bloomberg US Government Long Index		3.05	-4.57	-	-	5.91	
Bloomberg US Intermediate Treasury Bond	05/20	-0.56	-1.68	-	-	-1.04	\$156.1
Bloomberg US Intermediate Treasury Bond Index		-0.57	-1.72	-	-	-1.06	
Bloomberg US Long-Term Treasury	07/21	3.09	-	-	-	0.01	\$134.0
Bloomberg US Long-Term Treasury Index		3.08	-	-	-	-0.09	
SPECIALTY							
Real Estate - FTSE Nareit All Equity REIT*	05/13	16.14	41.27	19.94	12.45	10.99	\$309.4
Real Estate - FTSE Nareit All Equity REIT Index		16.17	41.30	19.93	12.46	10.98	

*Also available as a pooled investment fund to qualified investors with at least \$5 million in assets.

** The asset figures above reflect the total strategy assets and include accounts which have been excluded from composites. Composite assets are listed on the GIPS® compliant presentations, which are available upon request.

The above composite returns are supplemental information to the GIPS® compliant performance presentations which are available upon request. Please refer to the disclosure page at the back of this presentation for important disclosures and disclaimers.

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The U.S. Dollar is the currency used to express performance. Returns are presented gross of management fees and include trading expenses and the reinvestment of all income. Actual returns will be reduced by investment advisory fees and other expenses that may be incurred in the management of the account. Performance returns of RhumbLine's pooled funds are also net professional fees including custody and audit expenses. The collection of fees produces a compounding effect on the total rate of return, net of management fees. As an example, the effect of investment management fees on the total value of a client's portfolio assuming (a) quarterly fee assessment, (b) \$10,000,000 investment, (c) portfolio return of 8% a year, and (d) 0.10% annual investment advisory fee would be \$10,416 in the first year, and cumulative effects of \$59,816 over five years and \$143,430 over ten years. Actual investment advisory fees will vary. More information on RhumbLine's investment advisory fees are available upon request and are described in Part 2A of RhumbLine's Form ADV. PAST PERFORMANCE IS NOT INDICATIVE OF FUTURE RESULTS.

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*To the MWRA Employees Retirement System:
Thank you for your business and continued support
of our firm!*



THE RHUMBLINE TEAM

UNITED STATES - EAST COAST
MASSACHUSETTS
BOSTON HARBOR

RhumbLine Advisers
 PERFORMANCE HISTORY
 GROSS OF FEES
MWRA Retirement System
S&P 500 Pooled Index Fund - L801
 RhumbLine Account 1mwra
 From 03-31-11 to 03-31-22

		<u>PORTFOLIO</u>	<u>S&P 500 INDEX</u>	
3/31/2011	to	6/30/2011	0.11	0.1
6/30/2011	to	9/30/2011	-13.81	-13.87
9/30/2011	to	12/31/2011	11.77	11.82
12/31/2011	to	3/31/2012	12.54	12.59
3/31/2012	to	6/30/2012	-2.74	-2.75
6/30/2012	to	9/30/2012	6.32	6.35
9/30/2012	to	12/31/2012	-0.37	-0.38
12/31/2012	to	3/31/2013	10.57	10.61
3/31/2013	to	6/30/2013	2.91	2.91
6/30/2013	to	9/30/2013	5.2	5.24
9/30/2013	to	12/31/2013	10.49	10.51
12/31/2013	to	3/31/2014	1.78	1.81
3/31/2014	to	6/30/2014	5.22	5.23
6/30/2014	to	9/30/2014	1.13	1.13
9/30/2014	to	12/31/2014	4.93	4.93
12/31/2014	to	3/31/2015	0.95	0.95
3/31/2015	to	6/30/2015	0.26	0.28
6/30/2015	to	9/30/2015	-6.42	-6.44
9/30/2015	to	12/31/2015	7.04	7.04
12/31/2015	to	3/31/2016	1.32	1.35
3/31/2016	to	6/30/2016	2.44	2.46
6/30/2016	to	9/30/2016	3.85	3.85
9/30/2016	to	12/31/2016	3.82	3.82
12/31/2016	to	3/31/2017	6.05	6.07
3/31/2017	to	6/30/2017	3.08	3.09
6/30/2017	to	9/30/2017	4.47	4.48
9/30/2017	to	12/31/2017	6.63	6.64
12/31/2017	to	3/31/2018	-0.76	-0.76
3/31/2018	to	6/30/2018	3.42	3.43
6/30/2018	to	9/30/2018	7.7	7.71
9/30/2018	to	12/31/2018	-13.5	-13.52
12/31/2018	to	3/31/2019	13.6	13.65
3/31/2019	to	6/30/2019	4.29	4.3
6/30/2019	to	9/30/2019	1.7	1.7
9/30/2019	to	12/31/2019	9.05	9.07
12/31/2019	to	3/31/2020	-19.54	-19.6
3/31/2020	to	6/30/2020	20.48	20.54
6/30/2020	to	9/30/2020	8.93	8.93
9/30/2020	to	12/31/2020	12.12	12.15
12/31/2020	to	3/31/2021	6.17	6.17
3/31/2021	to	6/30/2021	8.53	8.55
6/30/2021	to	9/30/2021	0.57	0.58
9/30/2021	to	12/31/2021	11.02	11.03
12/31/2021	to	3/31/2022	-4.6	-4.6

RhumbLine Advisers
PERFORMANCE HISTORY
GROSS OF FEES
MWRA Retirement System
S&P 500 Pooled Index Fund - L801
RhumbLine Account 1mwra
From 12-31-11 to 12-31-21

			<u>PORTFOLIO</u>	<u>S&P 500 INDEX</u>
12/31/2011	to	12/31/2012	15.95	16
12/31/2012	to	12/31/2013	32.26	32.39
12/31/2013	to	12/31/2014	13.64	13.69
12/31/2014	to	12/31/2015	1.38	1.38
12/31/2015	to	12/31/2016	11.9	11.96
12/31/2016	to	12/31/2017	21.77	21.83
12/31/2017	to	12/31/2018	-4.39	-4.38
12/31/2018	to	12/31/2019	31.4	31.49
12/31/2019	to	12/31/2020	18.4	18.4
12/31/2020	to	12/31/2021	28.66	28.71

RhumbLine Advisers
PERFORMANCE HISTORY
GROSS OF FEES
MWRA Employees Retirement System
RhumbLine TIPS Trust - L865
RhumbLine Account 14mmwra
From 07-30-21 to 03-31-22

			<u>PORTFOLIO</u>	<u>Bloomberg</u> <u>Barclay's US TIPS</u>
9/30/2021	to	12/31/2021	2.33	2.36
12/31/2021	to	3/31/2022	-2.99	-3.02

31-Mar-22

Report Date	Security	Security Symbol	Cusip	Quantity	Total Cost	Unit Adjusted Cost	Date	Price	Market Value	Pct Assets
3/31/2022	3M CO COM	mmm	88579Y101	13183	1595660.2	121.04	1/28/1994	148.88	1962685.04	0.22
3/31/2022	5TH 3RD BANCORP COM	fitb	316773100	15859	325903.16	20.55	3/15/1996	43.04	682571.36	0.08
3/31/2022	ABBOTT LAB COM	abt	002824100	40818	2353373.29	57.66	2/3/1994	118.36	4831218.46	0.54
3/31/2022	ABBVIE INC COM USD0.01	abbv	00287Y109	40808	2002989.23	49.08	2/3/1994	162.11	6615384.88	0.75
3/31/2022	ABIOMED INC	abmd	003654100	1055	349774.36	331.54	5/30/2018	331.24	349458.2	0.04
3/31/2022	ACCENTURE PLC CLASS A ORDINARY SHARES	acn	G1151C101	14524	1699341.57	117	7/13/2011	337.23	4897928.52	0.55
3/31/2022	ACTIVISION BLIZZARD INC COM STK	atvi	00507V109	17986	783472.5	43.56	9/21/2015	80.11	1440858.46	0.16
3/31/2022	ADOBE INC	adbe	00724F101	10916	1559919.45	142.9	6/10/1997	455.62	4973547.92	0.56
3/31/2022	ADVANCE AUTO PTS INC COM	aap	00751Y106	1463	231316.44	158.11	7/8/2015	206.96	302782.48	0.03
3/31/2022	ADVANCED MICRO DEVICES INC	amd	007903107	37769	1045168.76	27.67	3/17/2017	109.34	4129662.46	0.47
3/31/2022	AES CORP COM	aes	00130H105	15464	220110.28	14.23	12/2/1998	25.73	397888.72	0.04
3/31/2022	AFLAC INC COM	afl	001055102	14098	398762.66	28.29	6/9/1999	64.39	907770.22	0.1
3/31/2022	AGILENT TECHNOLOGIES INC COM	a	00846U101	6922	256971.77	37.12	12/31/1992	132.33	915988.26	0.1
3/31/2022	AIR PRODS & CHEMS INC COM	apd	009158106	5123	628623.4	122.71	12/31/1992	249.91	1280288.93	0.14
3/31/2022	AKAMAI TECHNOLOGIES	akam	00971T101	3772	197711.12	52.42	7/26/2007	119.39	450339.08	0.05
3/31/2022	ALASKA AIR GROUP INC COM	alk	011659109	2825	174896.2	61.91	5/13/2016	58.01	163878.25	0.02
3/31/2022	ALBEMARLE CORP COM	alb	012653101	2716	229934.68	84.66	7/11/2016	221.15	600643.4	0.07
3/31/2022	ALEXANDRIA REAL ESTATE EQUITIES INC COM	are	015271109	3268	416841.14	127.55	3/17/2017	201.25	657685	0.07
3/31/2022	ALIGN TECHNOLOGY INC	align	016255101	1701	286993.74	168.72	6/16/2017	436	741636	0.08
3/31/2022	ALLEGION PUB LTD CO ORD SHS	alle	G0176J109	2080	113556.22	54.59	11/17/2010	109.78	228342.4	0.03
3/31/2022	ALLIANT ENERGY CORP COM	lnt	018802108	5813	253845.85	43.67	7/11/2016	62.48	363196.24	0.04
3/31/2022	ALLSTATE CORP COM	all	020002101	6068	328948.15	54.21	12/31/1992	138.51	840478.74	0.09
3/31/2022	ALPHABET INC CAP STK CL A	googl	02079K305	6942	5217664.8	751.61	3/31/2006	2781.35	19308131.7	2.18
3/31/2022	ALPHABET INC CAP STK CL C	goog	02079K107	6411	4740418	739.42	3/31/2006	2792.99	17905859.27	2.02
3/31/2022	ALTRIA GROUP INC COM	mo	02209S103	42478	1446755.61	34.06	12/31/1992	52.25	2219475.5	0.25
3/31/2022	AMAZON.COM INC COM	amzn	023135106	10099	10348620.97	1024.72	3/16/2006	3259.95	32922235.05	3.71
3/31/2022	AMCOR PLC	amcr	G0250X107	35591	385958.3	10.84	6/6/2019	11.33	403246.03	0.05
3/31/2022	AMER ELEC PWR CO INC COM	aep	025537101	11630	632803.21	54.41	12/31/1992	99.77	1160325.1	0.13
3/31/2022	AMEREN CORP COM	ae	023608102	5981	281809.32	47.12	12/31/1992	93.76	560778.56	0.06
3/31/2022	AMERICAN AIRLINES INC COM USD1	aal	02376R102	15019	530894.52	35.35	3/20/2015	18.25	274096.75	0.03
3/31/2022	AMERICAN EXPRESS CO	xp	025816109	13889	899080.53	64.73	12/31/1992	187	2597243	0.29
3/31/2022	AMERICAN INTERNATIONAL GROUP INC COM	aig	026874784	19233	1143410.43	59.45	12/31/1992	62.77	1207255.41	0.14
3/31/2022	AMERICAN TOWER CORP	amt	03027X100	10544	1248520.47	118.41	11/21/2007	251.22	2648863.68	0.3
3/31/2022	AMERICAN WTR WKS CO INC NEW COM	awk	030420103	4215	354029.64	83.99	3/18/2016	165.53	697708.95	0.08
3/31/2022	AMERIPRISE FINL INC COM	amp	03076C106	2592	182390.76	70.37	12/31/1992	300.36	778533.12	0.09
3/31/2022	AMERISOURCEBERGEN CORP COM	abc	03073E105	3370	148897.85	44.18	9/1/2001	154.71	521372.7	0.06
3/31/2022	AMETEK INC NEW COM	ame	031100100	5370	306370.48	57.05	9/20/2013	133.18	715176.6	0.08
3/31/2022	AMGEN INC COM	amgn	031162100	12948	1523511.5	117.66	12/31/1992	241.82	3131085.36	0.35
3/31/2022	AMPHENOL CORP NEW CL A	aph	03209S101	13774	305039.59	22.15	10/9/2008	75.35	1037870.9	0.12
3/31/2022	ANALOG DEVICES INC COM	adi	032654105	12357	928924.72	75.17	11/4/1999	165.18	2041129.26	0.23
3/31/2022	ANSYS INC	anss	03662Q105	2026	302609.35	149.36	6/16/2017	317.65	643558.9	0.07
3/31/2022	ANTHEM INC COM	antm	036752103	5603	753103.97	134.41	7/19/1999	491.22	2752305.66	0.31
3/31/2022	AON PLC	aon	G0403H108	5004	432446.55	86.42	8/23/1996	325.63	1629452.52	0.18
3/31/2022	APA CORP	apa	03743Q108	8433	477352.79	56.61	11/24/1997	41.33	348535.89	0.04
3/31/2022	APPLE INC COM STK	aapl	037833100	357332	10810168.84	30.25	12/31/1992	174.61	62393740.52	7.04
3/31/2022	APPLIED MATERIALS INC COM	amat	038222105	20224	535825.76	26.49	7/6/1995	131.8	2665523.2	0.3
3/31/2022	APTIV PLC	aptv	G6095L109	6260	307588.15	49.14	12/21/2012	119.71	749384.6	0.08
3/31/2022	ARCHER-DANIELS-MIDLAND CO COM	adm	039483102	12921	419397.99	32.46	12/31/1992	90.26	1166249.46	0.13
3/31/2022	ARCONIC CORP	hwm	443201108	8928	255381.7	28.6	12/31/1992	35.94	320872.32	0.04
3/31/2022	ARISTA NETWORKS INC COM	anet	040413106	5203	369457.71	71.01	8/27/2018	138.98	723112.94	0.08
3/31/2022	ASSURANT INC COM	aiz	04621X108	1323	89374.57	67.55	5/22/2007	181.83	240561.09	0.03
3/31/2022	AT&T INC COM	t	00206R102	165419	5132985.25	31.03	12/31/1992	23.63	3908850.96	0.44

3/31/2022	ATMOS ENERGY CORP COM	ato	049560105	3071	302917.04	98.64	2/14/2019	119.49	366953.79	0.04
3/31/2022	AUTODESK INC	adsk	052769106	4992	379834.08	76.09	1/31/1994	214.35	1070035.2	0.12
3/31/2022	AUTOMATIC DATA PROCESSING INC COM	adp	053015103	9761	766812.01	78.56	12/31/1992	227.54	2221017.94	0.25
3/31/2022	AUTOZONE INC COM	azo	053332102	486	282125.74	580.51	2/6/1997	2044.58	993665.88	0.11
3/31/2022	AVALONBAY CMNTYS REIT	avb	053484101	3244	485948.07	149.8	1/29/2007	248.37	805712.28	0.09
3/31/2022	AVERY DENNISON CORP COM	avy	053611109	1922	109239.9	56.84	2/1/1994	173.97	334370.34	0.04
3/31/2022	BAKER HUGHES CO	bkr	057226100	20247	611821.94	30.22	2/4/1994	36.41	737193.27	0.08
3/31/2022	BALL CORP COM	bll	058498106	7502	245934.94	32.78	12/31/1992	90	675180	0.08
3/31/2022	BANK NEW YORK MELLON CORP COM STK	bk	064058100	17584	602626.96	34.27	7/6/1995	49.63	872693.92	0.1
3/31/2022	BANK OF AMERICA CORP	bac	060505104	166070	3382851.05	20.37	12/31/1992	41.22	6845405.4	0.77
3/31/2022	BATH & BODY WORKS INC	bbwi	070830104	6037	173937.04	28.81	12/31/1992	47.8	288568.6	0.03
3/31/2022	BAXTER INTL INC COM	bax	071813109	11598	583517.78	50.31	12/31/1992	77.54	899308.92	0.1
3/31/2022	BECTON DICKINSON & CO COM	bdx	075887109	6646	1063661.91	160.05	12/31/1992	266	1767836	0.2
3/31/2022	BERKLEY W R CORP COM	wrb	084423102	4858	221022.8	45.5	12/4/2019	66.59	323494.22	0.04
3/31/2022	BERKSHIRE HATHAWAY INC DEL CL B NEW	brk.b	084670702	42021	6070553.1	144.46	2/12/2010	352.91	14829631.11	1.67
3/31/2022	BEST BUY INC COM STK	bby	086516101	5039	219452.42	43.55	7/19/1999	90.9	458045.1	0.05
3/31/2022	BIO-RAD LABS INC CLASS A	bio	090572207	501	226434.46	451.96	6/19/2020	563.23	282178.23	0.03
3/31/2022	BIO-TECHNE CORP COM	tech	09073M104	910	450472.75	49.02	8/27/2021	433.04	394066.4	0.04
3/31/2022	BIOMERIE INC	biib	09062X103	3411	567781.18	166.46	2/1/2000	210.6	718356.6	0.08
3/31/2022	BLACKROCK INC COM STK	blk	09247X101	3310	1215587.49	367.25	4/5/2011	764.17	2529402.7	0.29
3/31/2022	BOEING CO COM	ba	097023105	12649	1980486.21	156.57	3/12/1993	191.5	2422283.5	0.27
3/31/2022	BOOKING HOLDINGS INC	bkng	09857L108	952	989401.96	1039.29	11/19/2009	2348.45	2235724.4	0.25
3/31/2022	BORG WARNER INC COM	bwa	099724106	5561	206550.02	37.14	12/21/2011	38.9	216322.9	0.02
3/31/2022	BOSTON SCIENTIFIC CORP COM	bsx	101137107	32906	743798.77	22.6	7/6/1995	44.29	1457406.74	0.16
3/31/2022	BRISTOL MYERS SQUIBB CO COM	bmy	110122108	50670	2293289.7	45.26	1/28/1994	73.03	3700430.1	0.42
3/31/2022	BROADCOM INC	avgo	11135F101	9530	1749535.77	183.58	5/9/2014	629.68	6000850.6	0.68
3/31/2022	BROADRIDGE FINL SOLUTIONS INC COM STK	br	11133T103	2707	318114.13	117.52	6/15/2018	155.71	421506.97	0.05
3/31/2022	BROWN & BROWN INC COM	bro	115236101	5400	307881	57.01	9/17/2021	72.27	390258	0.04
3/31/2022	BROWN-FORMAN INC CL B NON-VTG COM	bf.b	115637209	4238	141139.24	33.3	12/31/1992	67.02	284030.76	0.03
3/31/2022	BSTN PPTYS INC	bxp	101121101	3300	317446.78	96.2	3/31/2006	128.8	425040	0.05
3/31/2022	C H ROBINSON WORLDWIDE INC COM NEW COM NE	chrw	12541W209	3018	180478.94	59.8	3/21/2007	107.71	325068.78	0.04
3/31/2022	CADENCE DESIGN SYSTEMS INC	cdns	127387108	6405	302273.71	47.19	9/15/2017	164.46	1053366.3	0.12
3/31/2022	CAESARS ENTERTAINMENT INC	cZR	12769G100	4958	442873.35	89.32	3/19/2021	77.36	383550.88	0.04
3/31/2022	CAMPBELL SOUP CO COM	cpb	134429109	4694	190064.79	40.49	12/31/1992	44.57	209211.58	0.02
3/31/2022	CAP 1 FNCL COM	cof	14040H105	9759	600513.85	61.53	8/4/1998	131.29	1281259.11	0.14
3/31/2022	CARDINAL HLTH INC	cah	14149Y108	6541	288194.66	44.06	6/10/1997	56.7	370874.7	0.04
3/31/2022	CARMAX INC COM	kmx	143130102	3764	165707.70	44.02	7/1/2010	96.48	363150.72	0.04
3/31/2022	CARNIVAL CORP COM PAIRED	ccl	143658300	18659	556540.44	29.83	1/14/1999	20.22	377284.98	0.04
3/31/2022	CARRIER GLOBAL CORP	carr	14448C104	20049	522263.93	26.05	2/3/1994	45.87	919647.63	0.1
3/31/2022	CATALENT INC	ctlt	148806102	3975	337378.12	84.87	9/18/2020	110.9	440827.5	0.05
3/31/2022	CATERPILLAR INC COM	cat	149123101	12415	1024278.02	82.5	1/28/1994	222.82	2766310.3	0.31
3/31/2022	CBOE GLOBAL MARKETS INC	cboe	12503M108	2473	224942.86	90.96	3/1/2017	114.42	282960.66	0.03
3/31/2022	CBRE GROUP INC	cbre	12504L109	7769	240314.9	30.93	11/21/2006	91.52	711018.88	0.08
3/31/2022	CDW CORP COM	cdw	12514G108	3148	374279.73	118.89	9/23/2019	178.89	563145.72	0.06
3/31/2022	CELANESE CORP DEL COM SER A STK	ce	150870103	2528	224404.51	88.77	12/21/2018	142.87	361175.36	0.04
3/31/2022	CENTENE CORP	cnc	15135b101	13516	605608.21	44.81	4/8/2016	84.19	1137912.04	0.13
3/31/2022	CENTERPOINT ENERGY INC COM	cnp	15189T107	14618	305811.84	20.92	12/31/1992	30.64	447895.52	0.05
3/31/2022	CERIDIAN HCM HOLDING INC	cday	15677J108	3121	340703.97	109.17	9/17/2021	68.36	213351.56	0.02
3/31/2022	CERNER CORP COM	cern	156782104	6214	278848.38	44.87	5/14/2010	93.56	581381.84	0.07
3/31/2022	CF INDS HLDGS INC COM	cf	125269100	4974	147620	29.68	9/3/2008	103.06	512620.44	0.06
3/31/2022	CHARLES RIV LABORATORIES INTL INC	crl	159864107	1172	385322.53	328.77	5/14/2021	283.97	332812.84	0.04
3/31/2022	CHARTER COMMUNICATIONS INC NEW CL A	chtr	16119P108	2766	847096.49	306.25	9/9/2016	545.52	1508908.32	0.17
3/31/2022	CHEVRON CORP COM	cvx	166764100	44496	4284747.36	96.3	1/28/1994	162.83	7245283.68	0.82
3/31/2022	CHIPOTLE MEXICAN GRILL INC CL A	cmg	169656105	651	380231.81	584.07	5/13/2011	1582.03	1029901.53	0.12
3/31/2022	CHUBB LTD COM	cb	H1467J104	9884	1012786.14	102.47	1/15/2016	213.9	2114187.6	0.24
3/31/2022	CHURCH & DWIGHT INC COM	chd	171340102	5668	282124.15	49.77	1/22/2016	99.38	563285.84	0.06
3/31/2022	CIGNA CORP COM	ci	125523100	7455	870874.74	116.82	12/31/1992	239.61	1786292.55	0.2
3/31/2022	CIN FNCL CORP COM	cnf	172062101	3479	195499.84	56.19	1/2/1998	135.96	473004.84	0.05
3/31/2022	CINTAS CORP COM	ctas	172908105	2026	192706.13	95.12	3/30/2001	425.39	861840.14	0.1
3/31/2022	CISCO SYSTEMS INC	cSCO	17275R102	97550	2986354.09	30.61	12/30/1993	55.76	5439388	0.61
3/31/2022	CITIGROUP INC COM NEW COM NEW	c	172967424	45864	2728064.31	59.48	12/31/1992	53.4	2449137.6	0.28
3/31/2022	CITIZENS FINL GROUP INC COM	cfg	174610105	9893	256393.65	25.92	2/3/2016	45.33	448449.69	0.05
3/31/2022	CITRIX SYS INC COM	ctxs	177376100	2792	163763.56	58.65	12/7/1999	100.9	281712.8	0.03
3/31/2022	CLOROX CO COM	clx	189054109	2852	261800.46	91.8	12/31/1992	139.03	396513.56	0.04

3/31/2022	CME GROUP INC COM	cme	12572Q105	8311	971265.92	116.87	8/24/2006	237.86	1976854.46	0.22
3/31/2022	CMS ENERGY CORP COM	cms	125896100	6727	229496.79	34.12	5/6/1999	69.94	470486.38	0.05
3/31/2022	COCA COLA CO COM	ko	191216100	90006	3418532.14	37.98	12/31/1992	62	5580372	0.63
3/31/2022	COGNIZANT TECH SOLUTIONS CRP COM	ctsh	192446102	12067	474153.48	39.29	11/21/2006	89.67	1082047.89	0.12
3/31/2022	COLGATE-PALMOLIVE CO COM	ci	194162103	19418	998388.06	51.42	1/28/1994	75.83	1472466.94	0.17
3/31/2022	COMCAST CORP NEW-CL A	cmcsa	20030N101	105565	2820140.97	26.71	12/31/1992	46.82	4942553.3	0.56
3/31/2022	COMERICA INC COM	cma	200340107	3045	127764.12	41.96	12/7/1995	90.43	275359.35	0.03
3/31/2022	CONAGRA BRANDS INC	cag	205887102	11138	275623.76	24.75	12/31/1992	33.57	373902.66	0.04
3/31/2022	CONOCOPHILLIPS COM	cop	20825C104	30537	1710140.48	56	8/23/1999	100	3053700	0.34
3/31/2022	CONS EDISON INC COM	ed	209115104	8152	505751.15	62.04	12/31/1992	94.68	771831.36	0.09
3/31/2022	CONSTELLATION BRANDS INC CL A	stz	21036P108	3742	362210.28	96.8	7/21/2005	230.32	861857.44	0.1
3/31/2022	CONSTELLATION ENERGY	ceg	21037T109	7552	252303.1	33.41	12/31/1992	56.25	424800	0.05
3/31/2022	COOPER COS INC COM NEW COM NEW	coo	216648402	1145	253440.66	221.35	9/30/2016	417.59	478140.55	0.05
3/31/2022	COPART INC	cprt	217204106	4943	310722.4	62.86	6/29/2018	125.47	620198.21	0.07
3/31/2022	CORNING INC COM	glw	219350105	17703	344237.91	19.45	12/31/1992	36.91	653417.73	0.07
3/31/2022	CORTEVA INC	ctva	22052L104	16867	402129.91	23.84	1/28/1994	57.48	969515.16	0.11
3/31/2022	COSTCO WHOLESALE CORP NEW COM	cost	22160K105	10130	1520359.22	150.08	10/22/1993	575.85	5833360.5	0.66
3/31/2022	COTERRA ENERGY INC	ctra	127097103	18871	368600.79	19.53	6/26/2008	26.97	508950.87	0.06
3/31/2022	CROWN CASTLE INTL CORP NEW COM	cci	22822V101	10002	914690.33	91.45	3/21/2012	184.6	1846369.2	0.21
3/31/2022	CSX CORP COM	csx	126408103	51378	553782.59	10.78	12/31/1992	37.45	1924106.1	0.22
3/31/2022	CUMMINS INC	cmi	231021106	3313	307078.47	92.69	1/28/1994	205.11	679529.43	0.08
3/31/2022	CVS HEALTH CORP COM	cvs	126650100	30297	1409837.49	46.53	12/31/1992	101.21	3066359.37	0.35
3/31/2022	D R HORTON INC COM	dhi	23331A109	7450	228730.33	30.7	7/21/2005	74.51	550999.5	0.06
3/31/2022	DANAHER CORP COM	dhr	235851102	14732	1153510.48	78.3	3/31/1999	293.33	4321337.56	0.49
3/31/2022	DARDEN RESTAURANTS INC COM	dri	237194105	3013	164323.79	54.54	12/31/1992	132.95	400578.35	0.05
3/31/2022	DAVITA HEALTHCARE PT	dva	23918K108	1514	66629.29	44.01	8/5/2008	113.11	171248.54	0.02
3/31/2022	DEERE & CO COM	de	244199105	6533	618374.48	94.65	1/28/1994	415.46	2714200.18	0.31
3/31/2022	DELTA AIR LINES INC DEL COM NEW COM NEW	dal	247361702	14857	496836.86	33.44	9/20/2013	39.57	587891.49	0.07
3/31/2022	DENTSPLY SIRONA INC COM	xray	24906P109	5070	236745.58	46.7	11/21/2008	49.22	249545.4	0.03
3/31/2022	DEVON ENERGY CORP NEW COM	dvn	25179M103	14580	503655.41	34.54	9/22/2000	59.13	862115.4	0.1
3/31/2022	DEXCOM INC COM	dxcm	252131107	2239	941905.68	420.68	5/11/2020	511.6	1145472.4	0.13
3/31/2022	DIAMONDBACK ENERGY	fang	25278x109	3958	401481.59	101.44	11/30/2018	137.08	542562.64	0.06
3/31/2022	DIGITAL RLTY TR INC COM	dlr	253868103	6540	720490.71	110.17	5/20/2016	141.8	927372	0.1
3/31/2022	DISCOVER FINL SVCS COM STK	dfs	254709108	6789	253192.16	37.29	7/20/1993	110.19	748079.91	0.08
3/31/2022	DISCOVERY INC - A	disca	25470F104	3924	91714.11	23.37	3/3/2010	24.92	97786.08	0.01
3/31/2022	DISCOVERY INC-C	disk	25470F302	7035	178387.98	25.36	3/3/2010	24.97	175663.95	0.02
3/31/2022	DISH NETWORK CORP CL A COM STK	dish	25470M109	5784	307440.13	53.15	3/17/2017	31.65	183063.6	0.02
3/31/2022	DOLLAR GEN CORP NEW COM	dg	256677105	5404	418213.61	77.39	12/21/2012	222.63	1203092.52	0.14
3/31/2022	DOLLAR TREE INC COM	dltr	256746108	5221	339961.18	65.11	12/21/2011	160.15	836143.15	0.09
3/31/2022	DOMINION ENERGY INC	d	25746U109	18694	1125969.88	60.23	12/31/1992	84.97	1588429.18	0.18
3/31/2022	DOMINOS PIZZA INC COM	dpz	25754A201	844	318614.22	377.5	5/11/2020	407.01	343516.44	0.04
3/31/2022	DOVER CORP COM	dov	260003108	3343	167060.94	49.97	12/31/1992	156.9	524516.7	0.06
3/31/2022	DOW INC	dow	260557103	17055	654960.09	38.4	1/28/1994	63.72	1086744.6	0.12
3/31/2022	DTE ENERGY CO COM	dte	233331107	4497	286357.74	63.68	12/31/1992	132.21	594548.37	0.07
3/31/2022	DUKE ENERGY CORP NEW COM NEW COM NEW	duk	26441C204	17804	1213591.09	68.16	12/31/1992	111.66	1987994.64	0.22
3/31/2022	DUKE RLTY CORP COM NEW REIT	dre	264411505	8818	256291.73	29.06	7/25/2017	58.06	511973.08	0.06
3/31/2022	DUPONT DE NEMOURS INC	dd	26614N102	11840	659304.81	55.68	1/28/1994	73.58	871187.2	0.1
3/31/2022	DXC TECHNOLOGY CO	dx	23355L106	5850	303914.52	51.95	12/31/1992	32.63	190885.5	0.02
3/31/2022	EASTMAN CHEM CO COM	emn	277432100	3021	149805.58	49.59	1/1/1994	112.06	338533.26	0.04
3/31/2022	EATON CORP PLC SHS	etn	629183103	9225	512655.79	55.57	12/31/1992	151.76	1399986	0.16
3/31/2022	EBAY INC COM	ebay	278642103	14501	280449.41	19.34	7/19/2002	57.26	830327.26	0.09
3/31/2022	ECOLAB INC COM STK USD1	ecl	278865100	5760	552426.34	95.91	12/31/1992	176.56	1016985.6	0.11
3/31/2022	EDISON INTL COM	eix	281020107	8819	438697.3	49.74	12/31/1992	70.1	618211.9	0.07
3/31/2022	EDWARDS LIFESCIENCES CORP COM	ew	28176E108	14425	448118.91	31.07	4/5/2011	117.72	1698111	0.19
3/31/2022	ELECTRONIC ARTS INC COM	ea	285512109	6559	530620.28	53.46	7/26/2002	126.51	829779.09	0.09
3/31/2022	ELI LILLY & CO COM	lly	532457108	18328	1371079.15	74.81	2/2/1994	286.37	5248589.36	0.59
3/31/2022	EMERSON ELECTRIC CO COM	emr	291011104	13247	626302.67	47.28	12/31/1992	98.05	1298868.35	0.15
3/31/2022	ENPHASE ENERGY INC COM	enph	29355A107	3132	637033.14	203.39	1/6/2021	201.78	631974.96	0.07
3/31/2022	ENTERGY CORP NEW COM	etr	29364G103	4666	386005.31	82.73	12/31/1992	116.75	544755.5	0.06
3/31/2022	EOG RESOURCES INC COM	eog	26875P101	12844	768576.9	59.84	12/5/2000	119.23	1531390.12	0.17
3/31/2022	EPAM SYS INC COM	epam	29414B104	1317	897102.04	681.17	12/13/2021	296.61	390635.37	0.04
3/31/2022	EQTY RESDNTL EFF 5/15/02	eqr	29476L107	7922	425669.92	53.73	12/3/2001	89.92	712346.24	0.08
3/31/2022	EQUIFAX INC COM	efx	294429105	2833	207907.65	73.39	10/1/1997	237.1	671704.3	0.08
3/31/2022	EQUINIX INC COM PAR \$0.001	eqix	29444U700	2077	791003.11	380.84	3/20/2015	741.62	1540344.74	0.17

3/31/2022	ESSEX PPTY TR REIT	ess	297178105	1511	322890.06	213.69	4/1/2014	345.48	522020.28	0.06
3/31/2022	ESTEE LAUDER COMPANIES INC CL A	US el	518439104	5366	464743.03	86.61	3/16/2006	272.32	1461269.12	0.16
3/31/2022	ETSY INC COM	etsy	29786A106	2943	328894.96	111.75	9/18/2020	124.28	365756.04	0.04
3/31/2022	EVEREST RE GROUP LTD F	re	g3223r108	914	232726.64	254.62	6/16/2017	301.38	275461.32	0.03
3/31/2022	EVERGY INC	evrg	30034W106	5323	292443.66	54.94	6/4/2018	68.34	363773.82	0.04
3/31/2022	EVERSOURCE ENERGY COM	es	30040W108	7981	396170.68	49.64	3/17/2009	88.19	703844.39	0.08
3/31/2022	EXELON CORP COM	exc	30161N101	22657	645680.43	28.5	12/31/1992	47.63	1079152.91	0.12
3/31/2022	EXPEDIA GROUP INC	expe	30212P303	3370	291402.51	86.47	10/12/2007	195.67	659407.9	0.07
3/31/2022	EXPEDITORS INTL WASH INC COM	expd	302130109	3933	200180.04	50.9	10/12/2007	103.16	405728.28	0.05
3/31/2022	EXTRA SPACE STORAGE INC COM	exr	30225T102	3109	287786.28	92.57	1/22/2016	205.6	639210.4	0.07
3/31/2022	EXXON MOBIL CORP COM	xom	30231G102	97176	6654978.05	68.48	12/31/1992	82.59	8025765.84	0.9
3/31/2022	F5 INC	ffiv	315616102	1399	186770.49	133.5	12/17/2010	208.95	292321.05	0.03
3/31/2022	FACTSET RESH SYS INC COM STK	fds	303075105	874	413511.25	473.12	12/17/2021	434.15	379447.1	0.04
3/31/2022	FASTENAL CO COM	fast	311900104	13352	266776.64	19.98	10/9/2008	59.4	793108.8	0.09
3/31/2022	FEDERAL RLTY INVT TR SH BEN INT NEW SH BE	frt	313745101	1623	242430.78	149.37	2/3/2016	122.07	198119.61	0.02
3/31/2022	FEDEX CORP COM	fdx	31428X106	5661	626509.72	110.67	12/31/1992	231.39	1309898.79	0.15
3/31/2022	FIDELITY NATL INFORMATION SVCS INC COM ST	fis	31620M106	14105	1410451.32	100	11/21/2006	100.42	1416424.1	0.16
3/31/2022	FIRST REP BK SAN FRANCISCO CALIF NEW COM	frc	33616C100	4158	371183.87	89.27	12/31/2018	162.1	674011.8	0.08
3/31/2022	FIRSTENERGY CORP COM	fe	337932107	12638	509646.85	40.33	12/31/1992	45.86	579578.68	0.07
3/31/2022	FISERV INC COM	fisv	337738108	13664	820873.19	60.08	5/2/2001	101.4	1385529.6	0.16
3/31/2022	FLEETCOR TECHNOLOGIES INC COM	flt	339041105	1885	436024.65	231.31	6/19/2018	249.06	469478.1	0.05
3/31/2022	FMC CORP COM (NEW)	fmc	302491303	2943	142633.81	48.47	9/15/2009	131.57	387210.51	0.04
3/31/2022	FORD MTR CO DEL COM PAR \$0.01 COM PAR \$0	f	345370860	90720	999232.36	11.01	12/31/1992	16.91	1534075.2	0.17
3/31/2022	FORTINET INC	ftnt	34959E109	3137	253788.73	80.9	10/10/2018	341.74	1072038.38	0.12
3/31/2022	FORTIVE CORP COMMON STOCK USD. 01	ftv	34959J108	8306	342151.82	41.19	3/31/1999	60.93	506084.56	0.06
3/31/2022	FORTUNE BRANDS HOME & SEC INC COM	fbhs	34964C106	3151	186348.51	59.14	7/11/2016	74.28	234056.28	0.03
3/31/2022	FOX CORP - CLASS A	foxa	35137L105	7436	224678.91	30.22	12/17/2004	39.45	293350.2	0.03
3/31/2022	FOX CORP- CLASS B	fox	35137L204	3410	116617.95	34.2	9/21/2015	36.28	123714.8	0.01
3/31/2022	FREEMONT-MCMORAN INC	fcx	35671D857	33308	643820.07	19.33	8/29/1995	49.74	1656739.92	0.19
3/31/2022	FRKLN RES INC COM	ben	354613101	6411	185114.46	28.87	5/4/1998	27.92	178995.12	0.02
3/31/2022	GALLAGHER ARTHUR J & CO COM	ajg	363576109	4812	281192.45	58.44	6/17/2016	174.6	840175.2	0.09
3/31/2022	GARMIN LTD	grmn	H2906T109	3524	214177.54	60.78	12/21/2012	118.61	417981.64	0.05
3/31/2022	GARTNER INC COM	it	366651107	1908	224738.05	117.79	4/5/2017	297.46	567553.68	0.06
3/31/2022	GEN MTRS CO COM	gm	37045V100	33600	1223642.81	36.42	6/13/2013	43.74	1469664	0.17
3/31/2022	GENERAC HLDGS INC COM	gnrc	368736104	1465	447755.27	305.63	3/19/2021	297.26	435485.9	0.05
3/31/2022	GENERAL DYNAMICS CORP COM	gd	369550108	5268	523085.58	99.29	12/31/1992	241.18	1270536.24	0.14
3/31/2022	GENERAL ELECTRIC CO	ge	369604301	25425	3571707.81	140.48	12/31/1992	91.5	2326387.5	0.26
3/31/2022	GENERAL MILLS INC COM	gis	370334104	14000	585706.8	41.84	12/31/1992	67.72	948080	0.11
3/31/2022	GENUINE PARTS CO COM	gpc	372460105	3306	200536.58	60.66	12/31/1992	126.02	416622.12	0.05
3/31/2022	GILEAD SCIENCES INC	gild	375558103	29002	1421681.61	49.02	7/22/2004	59.45	1724168.9	0.19
3/31/2022	GLOBAL PMTS INC COM	gpn	37940X102	6721	569886.98	84.79	4/25/2016	136.84	919701.64	0.1
3/31/2022	GLOBE LIFE INC	gl	37959E102	2154	83394.06	38.72	12/31/1992	100.6	216692.4	0.02
3/31/2022	GOLDMAN SACHS GROUP INC COM	gs	38141G104	7764	1260651.29	162.37	7/19/2002	330.1	2562896.4	0.29
3/31/2022	GRAINGER W W INC COM	gww	384802104	1005	149166.23	148.42	12/31/1992	515.79	518368.95	0.06
3/31/2022	HALLIBURTON CO COM	hal	406216101	20785	575039.69	27.67	12/31/1992	37.87	787127.95	0.09
3/31/2022	HARTFORD FINL SVCS GROUP INC COM	hig	416515104	7903	296851.6	37.56	12/31/1992	71.81	567514.43	0.06
3/31/2022	HASBRO INC COM	has	418056107	3007	185281.58	61.62	12/31/1992	81.92	246333.44	0.03
3/31/2022	HCA HOLDINGS INC COM	hca	40412C101	5448	468932.54	86.07	2/4/2015	250.62	1365377.76	0.15
3/31/2022	HEALTHPEAK PROPERTIES INC	peak	42250P103	12422	412779.52	33.23	4/9/2008	34.33	426447.26	0.05
3/31/2022	HERSHEY COMPANY COM STK USD1	hsy	427866108	3375	269433.93	79.83	12/31/1992	216.63	731126.25	0.08
3/31/2022	HESS CORP COM STK	hes	42809H107	6401	367626.05	57.43	12/31/1992	107.04	685163.04	0.08
3/31/2022	HEWLETT PACKARD ENTERPRISE CO COM	hpe	42824C109	30374	306076.92	10.08	12/31/1992	16.71	507549.54	0.06
3/31/2022	HILTON WORLDWIDE HLDGS INC	hlt	43300A203	6456	486663.21	75.38	6/16/2017	151.74	979633.44	0.11
3/31/2022	HOLOGIC INC COM	holx	436440101	5884	234551.5	39.86	4/8/2016	76.82	452008.88	0.05
3/31/2022	HOME DEPOT INC COM	hd	437076102	24105	2657817.39	110.26	12/31/1992	299.33	7215349.73	0.81
3/31/2022	HONEYWELL INTL INC COM STK	hon	438516106	15847	1420278.98	89.62	12/31/1992	194.58	3083509.26	0.35
3/31/2022	HORMEL FOODS CORP COM	hrl	440452100	6544	147720.91	22.57	3/17/2009	51.54	337277.76	0.04
3/31/2022	HOST HOTELS & RESORTS INC REIT	hst	44107P104	16562	266854.07	16.11	3/21/2007	19.43	321799.66	0.04
3/31/2022	HP INC COM	hpq	40434L105	26672	411865.18	15.44	12/31/1992	36.3	968193.6	0.11
3/31/2022	HUMANA INC COM	hum	444859102	2974	420453.31	141.38	12/8/1995	435.17	1294195.58	0.15
3/31/2022	HUNT J B TRANS SVCS INC COM	jbht	445658107	1948	168240.62	86.37	7/8/2015	200.79	391138.92	0.04
3/31/2022	HUNTINGTON BANCSHARES INC COM	hban	446150104	33578	360627.66	10.74	10/1/1997	14.62	490910.36	0.06
3/31/2022	HUNTINGTON INGALLS INDS INC COM	hii	446413106	929	209182.93	225.17	1/3/2018	199.44	185279.76	0.02
3/31/2022	IDEX CORP COM	iex	45167R104	1765	286660.82	162.41	8/8/2019	191.73	338403.45	0.04

3/31/2022	IDEXX LABORATORIES INC	idxx	45168D104	1964	311690.79	158.7	1/11/2017	547.06	1074425.84	0.12
3/31/2022	ILL TOOL WKS INC COM	itw	452308109	6616	535160.41	80.89	12/31/1992	209.4	1385390.4	0.16
3/31/2022	ILLUMINA INC COM	ilmn	452327109	3621	814904.88	225.05	11/20/2015	349.4	1265177.4	0.14
3/31/2022	INCYTE CORP COM	incy	45337C102	4359	509986.88	117	3/1/2017	79.42	346191.78	0.04
3/31/2022	INGERSOLL-RAND INC	ir	45687V106	9224	224149.71	24.3	11/17/2010	50.35	464428.4	0.05
3/31/2022	INTEL CORP COM	intc	458140100	94210	3037370.64	32.24	12/31/1992	49.56	4669047.6	0.53
3/31/2022	INTERCONTINENTAL EXCHANGE INC COM	ice	45866F104	13032	705821.5	54.16	10/12/2007	132.12	1721787.84	0.19
3/31/2022	INTERNATIONAL BUSINESS MACHS CORP COM	ibm	459200101	20663	2559160.75	123.85	12/31/1992	130.02	2686603.26	0.3
3/31/2022	INTERPUBLIC GROUP COMPANIES INC COM	ipg	460690100	9133	136226.09	14.92	1/31/1994	35.45	323764.85	0.04
3/31/2022	INTL FLAVORS & FRAGRANCES INC COM	iff	459506101	5903	661837.12	112.12	1/28/1994	131.33	775240.99	0.09
3/31/2022	INTL PAPER CO COM	ip	460146103	8990	278254.07	30.95	1/28/1994	46.15	414888.5	0.05
3/31/2022	INTUIT COM	intu	461202103	6560	1016117.99	154.9	2/2/2001	480.84	3154310.4	0.36
3/31/2022	INTUITIVE SURGICAL INC COM NEW	isrg	46120E602	8257	774099.33	93.75	6/6/2008	301.68	2490971.76	0.28
3/31/2022	INVESCO LTD F	ivz	g491bt108	7810	185741.92	23.78	9/3/2008	23.06	180098.6	0.02
3/31/2022	IPG PHOTONICS CORP	ipgp	44980x109	828	182288.99	220.16	3/16/2018	109.76	90881.28	0.01
3/31/2022	IQVIA HOLDINGS INC.	iqv	46266C105	4425	586811.12	121.72	9/1/2017	131.21	1023104.25	0.12
3/31/2022	IRON MTN INC NEW COM	irm	46284V101	6716	203659.54	30.32	1/15/2009	55.41	372133.56	0.04
3/31/2022	ISHARES CORE S&P 500 ETF	ivv	464287200	4584	2052279.72	447.7	3/18/2022	453.69	2079714.96	0.23
3/31/2022	JACK HENRY & ASSOC INC COM	jkhy	426281101	1719	247071.09	143.73	11/12/2018	197.05	338728.95	0.04
3/31/2022	JACOBS ENGINEERING	j	469814107	3026	210819.64	69.67	11/1/2007	137.81	417013.06	0.05
3/31/2022	JOHNSON & JOHNSON COM USD1	jnj	478160104	60852	5742013.29	94.36	2/2/1994	177.23	10784799.96	1.22
3/31/2022	JOHNSON CONTROLS INTERNATIONAL PLC	jci	G51502105	16438	633417.77	38.53	9/6/2016	65.57	1077839.66	0.12
3/31/2022	JPMORGAN CHASE & CO COM	jpm	46625H100	67602	4519906.45	66.86	12/31/1992	136.32	9215504.64	1.04
3/31/2022	JUNIPER NETWORKS INC COM	jnpr	48203R104	7542	163305.73	21.65	6/22/2006	37.16	280260.72	0.03
3/31/2022	KELLOGG CO COM USD0.25	k	487836108	5918	307998.11	52.04	2/3/1994	64.49	381651.82	0.04
3/31/2022	KEYCORP NEW COM	key	493267108	21613	267715.15	12.39	3/2/1994	22.38	483698.94	0.05
3/31/2022	KEYSIGHT TECH INC	keys	493381103	4276	290542.29	67.95	11/8/2018	157.97	675479.72	0.08
3/31/2022	KIMBERLY-CLARK CORP COM	kmb	494368103	7793	692250.14	88.83	1/28/1994	123.16	959785.88	0.11
3/31/2022	KIMCO RLTY CORP COM	kim	49446R109	14135	284978.78	20.16	3/31/2006	24.7	349134.5	0.04
3/31/2022	KINDER MORGAN INC DEL COM	kmi	49456B101	45267	1347811.16	29.77	12/31/1992	18.91	855998.97	0.1
3/31/2022	KLA CORP	klac	482480100	3512	243534.88	69.34	10/1/1997	366.06	1285602.72	0.14
3/31/2022	KRAFT HEINZ CO COM	khc	500754106	16400	612033.29	37.32	12/31/1992	39.39	645996	0.07
3/31/2022	KROGER CO COM	kr	501044101	15668	264589.67	16.89	12/31/1992	57.37	898873.16	0.1
3/31/2022	L3HARRIS TECHNOLOGIES INC	lhx	502431109	4545	432381.8	95.13	10/9/2008	248.47	1129296.15	0.13
3/31/2022	LAB CO OF AMER HLDG	lh	50540r409	2220	226151.06	101.87	11/4/2004	263.66	585325.2	0.07
3/31/2022	LAM RESH CORP COM	lrcx	512807108	3262	364583.64	111.77	7/3/2000	537.61	1753683.82	0.2
3/31/2022	LAMB WESTON HOLDINGS INC	lw	513272104	3388	247558.4	73.07	11/30/2018	59.91	202975.08	0.02
3/31/2022	LAS VEGAS SANDS CORP COM STK	lvs	517834107	7777	438493.12	56.38	10/2/2019	38.87	302291.99	0.03
3/31/2022	LEIDOS HLDGS INC COM	ldos	525327102	3187	268406.03	84.22	8/8/2019	108.02	344259.74	0.04
3/31/2022	LENNAR CORP CL A CL A	len	526057104	6211	285942.77	46.04	10/27/2005	81.17	504146.87	0.06
3/31/2022	LINCOLN NATL CORP COM	lnc	534187109	3843	130878.46	34.06	12/31/1992	65.36	251178.48	0.03
3/31/2022	LINDE PLC	lin	G5494J103	11773	1681403.78	142.82	12/31/1992	319.43	3760649.39	0.42
3/31/2022	LIVE NATION ENTMT	lyv	538034109	3100	221820.5	71.55	12/20/2019	117.64	364684	0.04
3/31/2022	LKQ CORP COM	lkq	501889208	6225	189779.19	30.49	5/20/2016	45.41	282677.25	0.03
3/31/2022	LOCKHEED MARTIN CORP COM	lmt	539830109	5617	1039980.96	185.15	12/31/1992	441.4	2479343.8	0.28
3/31/2022	LOEWS CORP COM	l	540424108	4646	161075.55	34.67	7/10/1995	64.82	301153.72	0.03
3/31/2022	LOWES COS INC COM	low	548661107	15427	833752.37	55.34	12/31/1992	202.19	3119185.13	0.35
3/31/2022	LUMEN TECHNOLOGIES INC	lumn	550241103	21392	537871.07	25.14	3/31/1999	11.27	241087.84	0.03
3/31/2022	LYONDELBASELL INDUSTRIES N V SHS A	lyb	N53745100	5997	411428.1	68.61	9/13/2012	102.82	616611.54	0.07
3/31/2022	M & T BK CORP COM	mtb	55261F104	2888	326761.96	113.14	2/26/2004	169.5	489515.97	0.06
3/31/2022	MARATHON OIL CORP COM	mro	565849106	17940	351496.78	19.59	12/31/1992	25.11	450473.4	0.05
3/31/2022	MARATHON PETE CORP COM	mpc	56585A102	13277	389219.18	29.32	12/31/1992	85.5	1135183.5	0.13
3/31/2022	MARKETAXESS HOLDINGS INC	mktx	57060D108	882	290020.52	328.82	7/1/2019	340.2	300056.4	0.03
3/31/2022	MARRIOTT INTL INC NEW COM STK CL A	mar	571903202	6341	401665.64	63.34	10/1/1993	175.75	1114430.75	0.13
3/31/2022	MARSH & MCLENNAN CO'S INC COM	mmc	571748102	11603	634842.74	54.71	12/31/1992	170.42	1977383.26	0.22
3/31/2022	MARTIN MARIETTA MATLS INC COM	mlm	573284106	1449	237509.01	163.91	7/22/2014	384.89	557705.61	0.06
3/31/2022	MASCO CORP COM	mas	574599106	5666	126155.17	22.27	12/31/1992	51	288966	0.03
3/31/2022	MASTERCARD INC CL A	ma	57636Q104	19985	2442220.13	122.2	8/5/2008	357.38	7142239.3	0.81
3/31/2022	MATCH GROUP INC COM	mtch	57667L107	6557	1024039.29	156.17	9/17/2021	108.74	713008.18	0.08
3/31/2022	MC CORMICK & CO INC COM NON-VTG	mck	579780206	5789	219346.23	37.89	3/31/2003	99.8	577742.2	0.07
3/31/2022	MC DONALDS CORP COM	mcd	580135101	16892	1871223.64	110.78	12/31/1992	247.28	4177053.76	0.47
3/31/2022	MCKESSON CORP	mck	58155Q103	3458	352973.68	102.07	11/24/1997	306.13	1058597.54	0.12
3/31/2022	MEDTRONIC PLC SHS	mdt	G5960L103	30957	2175905.02	70.29	12/31/1992	110.95	3434679.15	0.39
3/31/2022	MERCK & CO INC NEW COM	mrk	58933Y105	58307	3090009.79	53	12/31/1992	82.05	4784089.35	0.54

3/31/2022	META PLATFORMS INC	fb	30303M102	53300	6564383.08	123.16	12/20/2013	222.36	11851788	1.34	
3/31/2022	METLIFE INC COM STK USDO.01	met	59156R108	16562	632967.4	38.22	1/4/2001	70.28	1163977.36	0.13	
3/31/2022	METTLER-TOLEDO INTERNATIONAL INC	mtd	592688105	533	257356.48	482.85	9/9/2016	1373.19	731910.27	0.08	
3/31/2022	MGM RESORTS INTERNATIONAL COM	mgm	552953101	9035	293405.94	32.47	7/25/2017	41.94	378927.9	0.04	
3/31/2022	MICROCHIP TECHNOLOGY INC COM	mchp	595017104	12855	377863.09	29.39	9/10/2007	75.14	965924.7	0.11	
3/31/2022	MICRON TECHNOLOGY	mu	595112103	25899	650855.57	25.13	1/4/1995	77.89	2017273.11	0.23	
3/31/2022	MICROSOFT CORP COM	msft	594918104	172761	13304126.65	77.01	6/6/1994	308.31	53263943.91	6.01	
3/31/2022	MID-AMER APT CMNTYS INC COM	maa	595221103	2673	263334.76	98.52	12/7/2016	209.45	559859.85	0.06	
3/31/2022	MODERNA INC	mrna	60770K107	8182	2638549.62	322.48	7/20/2021	172.26	1409431.32	0.16	
3/31/2022	MOHAWK INDUSTRIES	mhk	608190104	1274	183535.36	144.06	12/20/2013	124.2	158230.8	0.02	
3/31/2022	MOLINA HEALTHCARE INC	moh	60855R100	1352	421682.04	311.89	3/1/2022	333.59	451013.68	0.05	
3/31/2022	MOLSON COORS BEVERAGE CO	tap	60871R209	4370	242875.83	55.58	1/4/1995	53.38	233270.6	0.03	
3/31/2022	MONDELEZ INTL INC COM	mdlz	609207105	32228	1022469.3	31.73	12/31/1992	62.78	2023273.84	0.23	
3/31/2022	MONOLITHIC PWR SYS INC COM	mpwr	609839105	1005	386603.41	384.68	2/11/2021	485.68	488108.4	0.06	
3/31/2022	MONSTER BEVERAGE CORP NEW COM	mnst	61174X109	8714	322852.25	37.05	7/9/2012	79.9	696248.6	0.08	
3/31/2022	MOODYS CORP COM	mco	615369105	3749	324222.08	86.48	12/31/1992	337.41	1264950.09	0.14	
3/31/2022	MORGAN STANLEY COM STK USDO.01	ms	617446448	32518	1201786.93	36.96	7/20/1993	87.4	2842073.2	0.32	
3/31/2022	MOSAIC CO/THE	mos	61945C103	8610	373571.18	43.39	10/17/2011	66.5	572565	0.06	
3/31/2022	MOTOROLA SOLUTIONS INC	msi	620076307	3919	319100.03	81.42	12/31/1992	242.2	949181.8	0.11	
3/31/2022	MSCI INC COMMON	msci	55354G100	1908	329326.43	172.6	4/3/2018	502.88	959495.04	0.11	
3/31/2022	NASDAQ INC	ndaq	631103108	2715	136473.71	50.27	11/21/2008	178.2	483813	0.05	
3/31/2022	NETAPP INC COM STK	ntap	64110D104	5187	166118.03	32.03	7/19/1999	83	430521	0.05	
3/31/2022	NETFLIX INC COM	nflx	64110L106	10261	1651957.78	160.99	12/17/2010	374.59	3843667.99	0.43	
3/31/2022	NEWELL BRANDS INC COM	nwl	651229106	8781	251385.56	28.63	12/31/1992	21.41	188001.21	0.02	
3/31/2022	NEWMONT CORP	nem	651639106	18455	701743.51	38.02	12/31/1992	79.45	1466249.75	0.17	
3/31/2022	NEWS CORP NEW CL A CL A	nwsa	65249B109	9109	88188.82	9.68	12/17/2004	22.15	201764.35	0.02	
3/31/2022	NEWS CORP NEW CL B CL B	nws	65249B208	2693	39679.16	14.73	10/23/2015	22.52	60646.36	0.01	
3/31/2022	NEXTERA ENERGY INC COM	nee	65339F101	45452	1430314.29	31.47	12/31/1992	84.71	3850238.92	0.43	
3/31/2022	NIELSEN HOLDINGS PLC F	nlsn	66518L108	8311	288627.82	34.73	7/9/2013	27.24	226391.64	0.03	
3/31/2022	NIKE INC CL B	nke	654106103	29461	1362790.59	46.26	12/31/1992	134.56	3964272.16	0.45	
3/31/2022	NISOURCE INC COM	ni	65473P105	9002	147036.24	16.33	12/31/1992	31.8	286263.6	0.03	
3/31/2022	NORDSON CORP COM	ndsn	655663102	1236	274540.32	222.12	2/14/2022	227.08	280670.88	0.03	
3/31/2022	NORFOLK SOUTHN CORP COM	nsc	655844108	5637	491967.23	87.27	12/31/1992	285.22	1607785.14	0.18	
3/31/2022	NORTHERN TR CORP COM	ntrs	665859104	4821	323406.67	67.08	2/19/1998	116.45	561405.45	0.06	
3/31/2022	NORTHROP GRUMMAN CORP COM	noc	666807102	3452	506973.51	146.86	12/31/1992	447.22	1543803.44	0.17	
3/31/2022	NORTONLIFELOCK INC	nlok	668771108	13493	311189.14	23.06	3/31/2003	26.52	357834.36	0.04	
3/31/2022	NORWEGIAN CRUISE LIN F	nclh	666721104	8582	360074.09	41.96	10/16/2017	21.88	187774.16	0.02	
3/31/2022	NRG ENERGY INC COM NEW	nrg	629377508	5679	141048.51	24.84	2/12/2010	38.36	217846.44	0.02	
3/31/2022	NUCOR CORP COM	nue	670346105	6520	265897.71	40.78	12/31/1992	148.65	969198	0.11	
3/31/2022	VIDIA CORP COM	nvda	67066G104	57708	1791002.81	31.04	12/3/2001	272.86	15746204.88	1.78	
3/31/2022	NVR INC	nvr	62944T105	76	271428.33	3571.43	9/25/2019	4467.27	339512.52	0.04	
3/31/2022	NXP SEMICONDUCTORS NV COM	nxpi	N6596X109	6136	1239748.12	202.04	3/19/2021	185.08	1135650.88	0.13	
3/31/2022	O'REILLY AUTOMOTIVE INC NEW COM	orly	67103H107	1561	242397.78	155.28	4/17/2009	684.96	1069222.56	0.12	
3/31/2022	OCCIDENTAL PETROLEUM CORP	oxy	674599105	20549	1040097.59	50.62	12/31/1992	56.74	1165950.26	0.13	
3/31/2022	OLD DOMINION FREIGHT	odfl	679580100	2160	267619.43	123.9	12/6/2019	298.68	645148.8	0.07	
3/31/2022	OMNICOM GROUP INC COM	omc	681919106	4834	247031.81	51.1	1/2/1998	84.88	410309.92	0.05	
3/31/2022	ONEOK INC COM STK	oke	682680103	10352	474916.8	45.88	3/23/2010	70.63	731161.76	0.08	
3/31/2022	ORACLE CORP COM	orcl	68389X105	37242	1341064.63	36.01	12/31/1992	82.73	3081030.66	0.35	
3/31/2022	ORGANON & CO	ogn	68622V106	5881	149080.89	25.35	12/31/1992	34.93	205423.33	0.02	
3/31/2022	OTIS WORLDWIDE CORP	otis	68902V107	9834	531353.17	54.03	2/3/1994	76.95	756726.3	0.09	
3/31/2022	PACCAR INC COM	pcar	69371R108	8059	365055.71	45.3	12/31/1992	88.07	709756.13	0.08	
3/31/2022	PACKAGING CORP AMER COM ISIN	US	pkgt	695156109	2205	236287.89	107.16	7/25/2017	156.11	344222.55	0.04
3/31/2022	PARAMOUNT GLOBAL	para	92556H206	13985	605787.72	43.32	9/30/1994	37.81	528772.85	0.06	
3/31/2022	PARKER-HANNIFIN CORP COM	ph	701094104	2987	258771.58	86.63	1/28/1994	283.76	847591.12	0.1	
3/31/2022	PAYCHEX INC COM	payx	704326107	7411	339112.1	45.76	11/2/1998	136.47	1011379.17	0.11	
3/31/2022	PAYCOM SOFTWARE INC COM	payc	70432V102	1113	374483.98	312.2	1/27/2020	346.38	385520.94	0.04	
3/31/2022	PAYPAL HLDGS INC COM	pypl	70450Y103	27116	1661251.75	61.26	7/19/2002	115.65	3135965.4	0.35	
3/31/2022	PENN NATL GAMING INC COM	penn	707569109	3559	417737.63	117.38	3/19/2021	42.42	150972.78	0.02	
3/31/2022	PENTAIR PLC F	pnr	G7500T104	3842	123038.38	32.02	8/26/2010	54.21	208274.82	0.02	
3/31/2022	PEOPLES UTD FINL INC COM	pbct	712704105	9927	163808.38	16.5	12/15/2008	19.99	198440.73	0.02	
3/31/2022	PEPSICO INC COM	pep	713448108	31402	2735745.86	87.12	12/31/1992	167.38	5256066.76	0.59	
3/31/2022	PERKINELMER INC COM	pki	714046109	2930	166113.99	56.69	1/9/1995	174.46	511167.8	0.06	
3/31/2022	PFIZER INC COM	pfe	717081103	129954	3530799	27.17	1/28/1994	51.77	6727718.58	0.76	
3/31/2022	PHILIP MORRIS INTL COM STK NPV	pm	718172109	35774	2381053.22	66.56	12/31/1992	93.94	3360609.56	0.38	

3/31/2022	PHILLIPS 66 COM	psx	718546104	10150	534879.03	52.7	8/23/1999	86.39	876858.5	0.1
3/31/2022	PINNACLE W. CAP CORP COM	pnw	723484101	2616	148171.58	56.64	12/7/1999	78.1	204309.6	0.02
3/31/2022	PIONEER NAT RES CO COM STK	pxd	727387107	5251	581624.75	110.76	10/9/2008	250.03	1312907.53	0.15
3/31/2022	PNC FINANCIAL SERVICES GROUP COM STK	pnc	693475105	9252	777334.66	84.02	12/31/1992	184.45	1706531.4	0.19
3/31/2022	POOL CORP COM STK	pool	73278L105	931	305391.27	328.02	10/6/2020	422.85	393673.35	0.04
3/31/2022	PPG IND INC COM	ppg	693506107	5499	360429.09	65.54	12/31/1992	131.07	720753.93	0.08
3/31/2022	PPL CORP COM ISIN US69351T1060	ppl	69351T106	17427	495587.07	28.44	12/7/1995	28.56	497715.12	0.06
3/31/2022	PRINCIPAL FINL GROUP INC COM STK	pfq	74251V102	5623	205959.02	36.63	7/19/2002	73.41	412784.43	0.05
3/31/2022	PROCTER & GAMBLE COM NPV	pg	742718109	55332	4433571.06	80.13	12/31/1992	152.8	8454729.6	0.95
3/31/2022	PROGRESSIVE CORP OH COM	pgr	743315103	13552	518414.97	38.25	9/24/1997	113.99	1544792.48	0.17
3/31/2022	PROLOGIS INC COM	pld	74340W103	17017	1054823.84	61.99	8/14/2003	161.48	2747905.16	0.31
3/31/2022	PRUDENTIAL FINL INC COM	pru	744320102	8656	534116.6	61.7	7/19/2002	118.17	1022879.52	0.12
3/31/2022	PTC INC	ptc	69370c100	2450	342546.75	139.81	4/19/2021	107.72	263914	0.03
3/31/2022	PUB SERVICE ENTERPRISE GROUP INC COM	peg	744573106	11738	449063.91	38.26	12/31/1992	70	821660	0.09
3/31/2022	PUB STORAGE COM	psa	74460D109	3528	546214.97	154.82	9/16/2005	390.28	1376907.84	0.16
3/31/2022	PULTE GROUP INC	phm	745867101	5877	125608.63	21.37	12/31/1992	41.9	246246.3	0.03
3/31/2022	PVH CORP COM USD1	pvh	693656100	1648	183318.26	111.24	2/22/2013	76.61	126253.28	0.01
3/31/2022	QORVO INC	qrvo	74736k101	2559	206964.83	80.88	6/19/2015	124.1	317571.9	0.04
3/31/2022	QUALCOMM INC COM	qcom	747525103	25944	1542896.73	59.47	8/23/1999	152.82	3964762.08	0.45
3/31/2022	QUANTA SERVICES INC	pwr	74762e102	3305	93000.79	28.14	7/10/2009	131.61	434971.05	0.05
3/31/2022	QUEST DIAGNOSTICS INC COM	dgx	74834L100	2828	184806.08	65.35	1/2/2003	136.86	387040.08	0.04
3/31/2022	RALPH LAUREN CORP CL A CL A	rl	751212101	1131	107497.34	95.05	2/21/2007	113.44	128300.64	0.01
3/31/2022	RAYMOND JAMES FNCL INC COM STK	rjf	754730109	4295	222765.53	51.87	3/17/2017	109.91	472063.45	0.05
3/31/2022	RAYTHEON TECHNOLOGIES CORP	rtx	75513E101	34448	1372594.55	39.85	2/3/1994	99.07	3412763.36	0.38
3/31/2022	REGENCY CTRS CORP COM	reg	758849103	3577	233640.16	65.32	3/1/2017	71.34	255183.18	0.03
3/31/2022	REGENERON PHARMACEUTICALS COM	regn	75886F107	2449	968077.27	395.29	5/2/2013	698.42	1710430.58	0.19
3/31/2022	REGIONS FINL CORP NEW COM	rf	7591EP100	22129	256099.89	11.57	9/30/1998	22.26	492591.54	0.06
3/31/2022	REPUBLIC SVCS INC COM	rsg	760759100	4859	208990.92	43.01	9/1/1999	132.5	643817.5	0.07
3/31/2022	RESMED INC COM	rmd	761152107	3368	317273.97	94.2	7/25/2017	242.51	816773.68	0.09
3/31/2022	RLTY INC CORP COM	o	756109104	13105	842260.73	64.27	4/21/2015	69.3	908176.5	0.1
3/31/2022	ROBERT HALF INTL INC COM	rhi	770323103	2585	96155.97	37.2	12/5/2000	114.18	295155.3	0.03
3/31/2022	ROCKWELL AUTOMATION	rok	773903109	2685	228663.83	85.16	1/28/1994	280.03	751880.55	0.08
3/31/2022	ROLLINS INC COM	rol	775711104	5178	133203.59	25.72	10/16/2018	35.05	181488.9	0.02
3/31/2022	ROPER TECHNOLOGIES	rop	776696106	2440	408142.02	167.27	1/21/2010	472.23	1152241.2	0.13
3/31/2022	ROSS STORES INC COM	rost	778296103	8232	356593.59	43.32	12/21/2009	90.46	744666.72	0.08
3/31/2022	ROYAL CARIBBEAN CRUI F	rcl	v7780t103	5200	461175.72	88.69	12/19/2014	83.78	435656	0.05
3/31/2022	S&P GLOBAL INC COM	spgi	78409V104	8204	1125175.81	137.15	12/31/1992	410.18	3365116.72	0.38
3/31/2022	S.W. AIRL CO COM	luv	844741108	13741	358659.83	26.1	7/13/1994	45.8	629337.8	0.07
3/31/2022	SALESFORCE INC COM	crm	79466L302	22678	2521613.77	111.19	10/9/2008	212.32	4814992.96	0.54
3/31/2022	SBA COMMUNICATIONS CORP CLASS A	sbac	78410G104	2520	439449.66	174.38	9/1/2017	344.1	867132	0.1
3/31/2022	SCHLEIN HENRY INC COM	hsic	806407102	3216	188566.51	58.63	3/20/2015	87.19	280403.04	0.03
3/31/2022	SCHLUMBERGER LTD COM COM	slb	806857108	32300	1737653.15	53.8	1/31/1994	41.31	1334313	0.15
3/31/2022	SCHWAB CHARLES CORP COM NEW	schw	808513105	34487	991446.63	28.75	6/10/1997	84.31	2907598.97	0.33
3/31/2022	SEAGATE TECHNOLOGY PLC SHS	stx	G7997R103	4750	157567.33	33.17	7/9/2012	89.9	427025	0.05
3/31/2022	SEALED AIR CORP NEW COM STK	see	81211K100	3439	103940.29	30.22	12/31/1992	66.96	230275.44	0.03
3/31/2022	SEMPRA ENERGY INC COM STK	sre	816851109	7397	684492.33	92.54	12/31/1992	168.12	1243583.64	0.14
3/31/2022	SERVICENOW INC COM	now	81762P102	4608	1367406.7	296.75	11/20/2019	556.89	2566149.12	0.29
3/31/2022	SHERWIN-WILLIAMS CO COM	shw	824348106	5591	408069.2	72.99	12/31/1992	249.62	1395625.42	0.16
3/31/2022	SIGNATURE BANK	sbny	82669g104	1408	427292.8	303.47	12/17/2021	293.49	413233.92	0.05
3/31/2022	SIMON PROPERTY GROUP INC COM	spg	828806109	7505	887124.1	118.2	7/1/2002	131.56	987357.8	0.11
3/31/2022	SKYWORKS SOLUTIONS INC COM	swks	83088M102	3834	348980.54	91.02	3/13/2015	133.28	510995.52	0.06
3/31/2022	SMITH A O CORP COM	aos	831865209	3092	163760.42	52.96	7/25/2017	63.89	197547.88	0.02
3/31/2022	SMUCKER J M CO COM NEW	sjm	832696405	2516	202853.43	80.63	11/21/2008	135.41	340691.56	0.04
3/31/2022	SNAP ON INC	sna	833034101	1247	102997.03	82.6	12/31/1992	205.48	256233.56	0.03
3/31/2022	SOLAREDDGE TECHNOLOGIES INC	sedg	83417M104	1220	352403.1	288.85	12/17/2021	322.37	393291.4	0.04
3/31/2022	SOUTHERN CO COM STK	so	842587107	24549	1062838.12	43.29	12/31/1992	72.51	1780047.99	0.2
3/31/2022	STANLEY BLACK & DECKER INC COM	swk	854502101	3685	303147.17	82.27	12/31/1992	139.79	515126.15	0.06
3/31/2022	STARBUCKS CORP COM	sbux	855244109	27320	1127500.37	41.27	7/3/2000	90.97	2485300.4	0.28
3/31/2022	STATE STR CORP COM	stt	857477103	8369	505427.69	60.39	9/24/1997	87.12	729107.28	0.08
3/31/2022	STERIS PLC	ste	G8473T100	2317	358191.42	154.59	12/20/2019	241.77	560181.09	0.06
3/31/2022	STRYKER CORP	syk	863667101	7677	861455.82	112.21	1/4/2001	267.35	2052445.95	0.23
3/31/2022	SVB FINANCIAL GROUP	sivb	78486q101	1360	344091.38	253.01	3/16/2018	559.45	760852	0.09
3/31/2022	SYNCHRONY FINL COM	syf	87165B103	12708	405130.5	31.88	11/20/2015	34.81	442365.48	0.05
3/31/2022	SYNOPSIS INC	snpa	871607107	3531	316756.09	89.71	3/17/2017	333.27	1176776.37	0.13

3/31/2022	SYSCO CORP COM	syy	871829107	11775	498348.7	42.32	12/31/1992	81.65	961428.75	0.11
3/31/2022	T MOBILE US INC COM	tmus	872590104	13574	1235691.32	91.03	7/12/2019	128.35	1742222.9	0.2
3/31/2022	T ROWE PRICE GROUP INC	trow	74144T108	5213	344490.34	66.08	12/7/1999	151.19	788153.47	0.09
3/31/2022	TAKE-TWO INTERACTIVE SOFTWARE COM	ttwo	874054109	2677	294750.68	110.1	3/16/2018	153.74	411561.98	0.05
3/31/2022	TAPESTRY INC	tpr	876030107	6389	201979.9	31.61	9/1/2004	37.15	237351.35	0.03
3/31/2022	TARGET CORP COM STK	tgt	87612E106	10988	667821.61	60.78	12/31/1992	212.22	2331873.36	0.26
3/31/2022	TE CONNECTIVITY LTD REG SHS	tel	H84989104	7515	396322.77	52.74	10/17/2011	130.98	984314.7	0.11
3/31/2022	TELEDYNE TECHNOLOGIES INC	tdy	879360105	1084	325812.49	300.57	6/19/2020	472.63	512330.92	0.06
3/31/2022	TELEFLEX INC COM	tfx	879369106	1087	298348.54	274.47	1/17/2019	354.83	385700.21	0.04
3/31/2022	TERADYNE INC COM	ter	880770102	3784	289003	76.37	9/18/2020	118.23	447382.32	0.05
3/31/2022	TESLA INC	tsla	88160R101	19317	13583010.86	703.16	12/18/2020	1077.6	20815999.2	2.35
3/31/2022	TEXAS INSTRUMENTS INC COM	txn	882508104	20862	1241435.34	59.51	12/31/1992	183.48	3827759.76	0.43
3/31/2022	TEXTRON INC COM	txt	883203101	5117	143798.42	28.1	12/31/1992	74.38	380602.46	0.04
3/31/2022	THERMO FISHER CORP	tmo	883556102	9040	1362595.76	150.73	2/6/1997	590.65	5339476	0.6
3/31/2022	TIX COS INC COM NEW	tjx	872540109	27873	705632.09	25.32	12/31/1992	60.58	1688546.34	0.19
3/31/2022	TRACTOR SUPPLY CO COM	tsco	892356106	2642	214724.93	81.27	1/24/2014	233.37	616563.54	0.07
3/31/2022	TRANE TECHNOLOGIES PLC	tt	868994E103	5499	247829.36	45.07	11/17/2010	152.7	839697.3	0.09
3/31/2022	TRANSDIGM GROUP INC COM	tdg	893641100	1212	405989.3	334.97	6/17/2016	651.54	789666.48	0.09
3/31/2022	TRAVELERS COS INC COM STK	trv	89417E109	5598	445186.18	79.53	12/31/1992	182.73	1022922.54	0.12
3/31/2022	TRIMBLE INC	trmb	896239100	5827	416251.74	71.43	1/20/2021	72.14	420359.78	0.05
3/31/2022	TRUIST FINANCIAL CORP	tfc	89832Q109	30774	1030416.9	33.48	1/2/1998	56.7	1744885.8	0.2
3/31/2022	TWITTER INC	twtr	90184I102	18498	713611.9	38.58	6/6/2018	38.69	715687.62	0.08
3/31/2022	TYLER TECHNOLOGIES INC	tyl	902252105	952	317220.68	333.22	6/19/2020	444.89	423535.28	0.05
3/31/2022	TYSON FOODS INC CL A COM (DELAWARE)	tsn	902494103	6617	274742.13	41.52	9/16/2005	89.63	593081.71	0.07
3/31/2022	UDR INC COM STK	udr	902653104	6755	276476.83	40.93	3/18/2016	57.37	387534.35	0.04
3/31/2022	ULTA BEAUTY INC	ulta	90384S303	1262	291625.46	231.08	4/20/2016	398.22	502553.64	0.06
3/31/2022	UNDER ARMOUR INC CL A	uaa	904311107	4375	218584.31	49.96	5/9/2014	17.02	74462.5	0.01
3/31/2022	UNDER ARMOUR INC CL C	ua	904311206	4907	32667.84	6.66	5/9/2014	15.56	76352.92	0.01
3/31/2022	UNION PAC CORP COM	unp	907818108	14379	1217377.62	84.66	12/31/1992	273.21	3928486.59	0.44
3/31/2022	UNITED AIRLINES HOLDINGS INC	ual	910047109	7410	426879.99	57.61	9/21/2015	46.36	343527.6	0.04
3/31/2022	UNITED PARCEL SVC INC CL B	ups	911312106	16791	1509082.27	89.87	7/19/2002	214.46	3600997.86	0.41
3/31/2022	UNITED RENTALS INC	uri	911363109	1681	199067	118.42	9/19/2014	355.21	597108.01	0.07
3/31/2022	UNITEDHEALTH GROUP INC COM	unh	91324P102	21707	2836703.34	130.68	1/4/1995	509.97	11069918.79	1.25
3/31/2022	UNVL HEALTH SERVICES INC CL B COM	uhs	913903100	1698	200918.53	118.33	9/19/2014	144.95	246125.1	0.03
3/31/2022	US BANCORP	usb	902973304	31091	1061469.13	34.14	2/25/1999	53.15	1652486.65	0.19
3/31/2022	V F CORP COM	vfc	918204108	7561	317667.27	42.01	12/31/1992	56.86	429918.46	0.05
3/31/2022	VALERO ENERGY CORP COM STK NEW	vlo	91913Y100	9370	431454.16	46.05	5/3/2004	101.54	951429.8	0.11
3/31/2022	VENTAS INC REIT	vtr	921276F100	9278	491383.29	52.96	3/17/2009	61.76	573009.28	0.06
3/31/2022	VERISIGN INC COM	vrsn	92343E102	2244	210820.52	93.95	3/16/2006	222.46	499200.24	0.06
3/31/2022	VERISK ANALYTICS INC COM	vrsk	92345Y106	3734	375567.83	100.58	10/23/2015	214.63	801428.42	0.09
3/31/2022	VERIZON COMMUNICATIONS COM	vz	92343V104	95857	4472717.83	46.66	12/31/1992	50.94	4882955.58	0.55
3/31/2022	VERTEX PHARMACEUTICALS INC COM	vrtx	92532F100	5890	719608.46	122.17	9/20/2013	260.97	1537113.3	0.17
3/31/2022	VIATRIS INC	vtrs	92556V106	28083	524210.41	18.67	1/28/1994	10.88	305543.04	0.03
3/31/2022	VISA INC COM CL A STK	v	92826C839	37879	3139670.79	82.89	12/21/2009	221.77	8400425.83	0.95
3/31/2022	VORNADO RLTY TR COM	vno	929042109	3692	217673.23	58.96	8/15/2005	45.32	167321.44	0.02
3/31/2022	VULCAN MATERIALS CO COM	vmc	929160109	3081	247881.84	80.45	7/19/1999	183.7	565979.7	0.06
3/31/2022	WABTEC CORP COM	wab	929740108	4211	245680.57	58.34	12/31/1992	96.17	404971.87	0.05
3/31/2022	WALGREENS BOOTS ALLIANCE INC COM	wba	931427108	16613	791741.34	47.66	12/31/1992	44.77	743764.01	0.08
3/31/2022	WALMART INC	wmt	931142103	32654	2503456.82	76.67	12/31/1992	148.92	4862833.68	0.55
3/31/2022	WALT DISNEY CO	dis	254687106	41616	3232307.72	77.67	12/31/1992	137.16	5708050.56	0.64
3/31/2022	WASTE MGMT INC DEL COM STK	wm	94106L109	8359	492535.92	58.92	12/31/1992	158.5	1324901.5	0.15
3/31/2022	WATERS CORP COM	wat	941848103	1417	121338.19	85.63	1/2/2002	310.39	439822.63	0.05
3/31/2022	WEC ENERGY GROUP INC COM	wec	92939U106	7323	358370.27	48.94	11/21/2008	99.81	730908.63	0.08
3/31/2022	WELLS FARGO & CO NEW COM STK	wfc	949746101	91343	3358112.29	36.76	12/31/1992	48.46	4426481.78	0.5
3/31/2022	WELLTOWER INC COM	well	95040Q104	9956	630805.65	63.36	2/24/2009	96.14	957169.84	0.11
3/31/2022	WEST PHARMACEUTICAL SVCS INC COM	wst	955306105	1720	362980.2	211.03	5/21/2020	410.71	706421.2	0.08
3/31/2022	WESTN DIGITAL CORP COM	wdc	958102105	7228	344227.72	47.62	7/10/2009	49.65	358870.2	0.04
3/31/2022	WESTROCK CO COM	wrk	96145D105	6193	246051.18	39.73	12/31/1992	47.03	291256.79	0.03
3/31/2022	WEYERHAEUSER CO COM	wy	962166104	17388	434343.75	24.98	12/31/1992	37.9	659005.2	0.07
3/31/2022	WHIRLPOOL CORP COM	whr	963320106	1410	141986.2	100.7	12/31/1992	172.78	243619.8	0.03
3/31/2022	WILLIAMS CO INC COM	wmb	969457100	28104	763763.71	27.18	12/31/1992	33.41	938954.64	0.11
3/31/2022	WILLIS TOWERS WATSON PLC	wtw	G96629103	2893	395642.82	136.76	1/22/2016	236.22	683384.46	0.08
3/31/2022	WYNN RESORTS LTD COM	wynn	983134107	2441	230446.93	94.41	11/21/2008	79.74	194645.34	0.02
3/31/2022	XCEL ENERGY INC COM	xel	98389B100	12467	457442.07	36.69	3/31/1999	72.17	899743.39	0.1

3/31/2022		XYLEM INC COM	xyl	98419M100	4186	167214.85	39.95	12/31/1992	85.26	356898.36	0.04
3/31/2022		YUM BRANDS INC COM	yum	988498101	6799	356876.35	52.49	12/31/1992	118.53	805885.47	0.09
3/31/2022		ZEBRA TECHNOLOGIES CLASS A	zbra	989207105	1241	314172.33	253.16	12/20/2019	413.7	513401.7	0.06
3/31/2022		ZIMMER BIOMET HLDGS INC COM	zbh	98956P102	4850	414926.2	85.55	1/28/1994	127.9	620315	0.07
3/31/2022		ZIONS BANCORP COM	zion	989701107	3632	126478.82	34.82	7/3/2001	65.56	238113.92	0.03
3/31/2022		ZOETIS INC COM USD0.01 CL 'A'	zts	98978V103	10854	684710.11	63.08	7/9/2013	188.59	2046955.86	0.23
						405764734.4				885841892.8	99.88
CASH AND EQUIVALENTS - US											
	3/31/2022	Dividend Accrual Account	divacc			551194.15				551194.15	0.06
	3/31/2022	short-term account @ State Street Bank	ssbstif			500215.16				500215.16	0.06
						1051409.31				1051409.31	0.12
TOTAL PORTFOLIO						406816143.7				886893302.1	100

RhumbLine Advisers
 PORTFOLIO APPRAISAL
RhumbLine TIPS Trust
Bloomberg US TIPS Index
 State Street Acct# L865

31-Mar-22

<u>Report Date</u>	<u>Security</u>	<u>Security Symbol</u>	<u>Cusip</u>	<u>Quantity</u>	<u>Total Cost</u>	<u>Unit Adjusted Cost</u>	<u>Date</u>	<u>Price</u>	<u>Market Value</u>	<u>Pct Assets</u>
COMMON STOCK										
3/31/2022	ISHARES TIPS BOND ETF	tip	464287176	15195	1933851.88	127.27	10/1/2019	124.57	1892841.15	0.66
CASH AND EQUIVALENTS - US										
3/31/2022	Short Term Cash Account	stif			97745.01				97745.01	0.03
3/31/2022	short-term account @ State Street Bank	ssbstif			-58695.29				-58695.29	-0.02
					39049.72				39049.72	0.01
TREASURY INFLATION BOND										
3/31/2022	TII 0 3/8 07/15/27 TSY INFL IX N/B 0.375% Due 07-15-27	9128282L3	9128282L3	7906407.42	7507809.48	94.96	4/4/2019	106.173	8394469.95	2.91
3/31/2022	TSY INFL IX N/B TII 0 5/8 01/15/26 0.625% Due 01-15-26	912828N71	912828N71	7643964.48	7275226.59	95.18	4/4/2019	106.397	8132948.89	2.82
3/31/2022	TSY INFL IX N/B TII 0 1/8 07/15/30 0.125% Due 07-15-30	912828ZZ6	912828ZZ6	8888476.16	9272083.58	104.32	8/4/2020	105.976	9419651.5	3.26
3/31/2022	U.S TIPS 0.125 07/15/2031 0.125% Due 07-15-31	91282CCM1	91282CCM1	9432007.97	10208303.4	108.23	7/27/2021	106.316	10027733.59	3.47
3/31/2022	U.S. TIPS 0.125 01/15/2025 0.125% Due 10-15-25	91282CAQ4	91282CAQ4	8106034.93	8275134.52	102.09	1/27/2021	104.653	8483208.74	2.94
3/31/2022	U.S. TIPS 0.125 01/15/2030 0.125% Due 01-15-30	912828Z37	912828Z37	6287108.17	6295762.17	100.14	4/14/2020	105.293	6619884.81	2.29
3/31/2022	U.S. TIPS 0.125 01/15/2031 0.125% Due 01-15-31	91282CBF7	91282CBF7	9179865.34	9576363.46	104.32	1/27/2021	105.861	9717897.25	3.36
3/31/2022	U.S. TIPS 0.125 01/15/2032 0.125% Due 01-15-32	91282CDX6	91282CDX6	3812490.2	4070306.17	106.76	1/25/2022	106.366	4055193.33	1.4
3/31/2022	U.S. TIPS 0.125 02/15/2051 0.125% Due 02-15-51	912810SV1	912810SV1	3577761.88	3617409.47	101.11	2/24/2021	102.67	3673288.12	1.27
3/31/2022	U.S. TIPS 0.125 02/15/2052 0.125% Due 02-15-52	912810TE8	912810TE8	1926488.92	1929729.78	100.17	2/23/2022	103.892	2001467.87	0.69
3/31/2022	U.S. TIPS 0.125 04/15/2025 0.125% Due 04-15-25	912828ZJ2	912828ZJ2	6709594.86	6863488.19	102.29	8/4/2020	104.298	6997973.25	2.42
3/31/2022	U.S. TIPS 0.125 04/15/2026 0.125% Due 04-15-26	91282CCA7	91282CCA7	6326659.3	6670914.57	105.44	5/5/2021	104.297	6598515.85	2.28
3/31/2022	U.S. TIPS 0.125 07/15/2026 0.125% Due 07-15-26	912828S50	912828S50	7756683.7	7263799.52	93.65	4/4/2019	104.838	8131952.06	2.81

3/31/2022	U.S. TIPS 0.125 07/15/24 0.125% Due 07-15-24	912828WU0	912828WU0	8996348.34	8495812.85	94.44	4/4/2019	104.761	9424664.48	3.26
3/31/2022	U.S. TIPS 0.125 10/15/2024 0.125% Due 10-15-24	912828YL8	912828YL8	6429607.27	6170254.85	95.97	4/14/2020	104.449	6715660.5	2.32
3/31/2022	U.S. TIPS 0.125 10/15/2026 0.125% Due 10-15-26	91282CDC2	91282CDC2	7152884.96	7573553.83	105.88	12/6/2021	104.842	7499227.65	2.6
3/31/2022	U.S. TIPS 0.250 01/15/2025 0.250% Due 01-15-25	912828H45	912828H45	8489580.39	7891345.78	92.95	4/4/2019	104.725	8890713.06	3.08
3/31/2022	U.S. TIPS 0.250 02/15/2050 0.250% Due 02-15-50	912810SM1	912810SM1	3353028.5	3565873.1	106.35	4/14/2020	105.164	3526178.89	1.22
3/31/2022	U.S. TIPS 0.250 07/15/2029 0.250% Due 07-15-29	9128287D6	9128287D6	7115959.22	7028396.8	98.77	9/25/2019	106.492	7577927.29	2.62
3/31/2022	U.S. TIPS 0.375 01/15/2027 0.375% Due 01-15-27	912828V49	912828V49	7268884.85	6892781.17	94.83	4/4/2019	105.689	7682411.71	2.66
3/31/2022	U.S. TIPS 0.375 07/15/2023 0.375% Due 07-15-23	912828VM9	912828VM9	10560828.58	9890019.88	93.65	4/4/2019	104.871	11075246.54	3.83
3/31/2022	U.S. TIPS 0.375 07/15/2025 0.375% Due 07-15-25	912828XL9	912828XL9	9276874.35	8782708.41	94.67	4/4/2019	105.623	9798512.99	3.39
3/31/2022	U.S. TIPS 0.500 01/15/2028 0.500% Due 01-15-28	9128283R9	9128283R9	8049357.48	8023615.79	99.68	4/4/2019	106.628	8582868.89	2.97
3/31/2022	U.S. TIPS 0.500 04/15/2024 0.500% Due 04-15-24	9128286N5	9128286N5	5470786.02	5095491.1	93.14	6/20/2019	104.929	5740441.06	1.99
3/31/2022	U.S. TIPS 0.625 01/15/2024 0.625% Due 01-15-24	912828B25	912828B25	10154862.8	9604213.64	94.58	4/4/2019	105.046	10667277.18	3.69
3/31/2022	U.S. TIPS 0.625 02/15/2043 0.625% Due 02-15-43	912810RA8	912810RA8	3140680.23	3189925.02	101.57	4/4/2019	111.614	3505438.83	1.21
3/31/2022	U.S. TIPS 0.625 04/15/2023 0.625% Due 04-15-23	9128284H0	9128284H0	9354689.62	8783569.76	93.89	4/4/2019	104.162	9744031.8	3.37
3/31/2022	U.S. TIPS 0.75 02/15/2042 0.750% Due 02-15-42	912810QV3	912810QV3	4363601.2	4319567.08	98.99	4/4/2019	114.247	4985283.46	1.73
3/31/2022	U.S. TIPS 0.750 02/15/2045 0.750% Due 02-15-45	912810RL4	912810RL4	5163557.55	5289181.64	102.43	4/4/2019	114.697	5922445.6	2.05
3/31/2022	U.S. TIPS 0.750 07/15/2028 0.750% Due 07-15-28	912828Y38	912828Y38	7018531.28	6856757.37	97.7	4/4/2019	109.153	7660937.45	2.65
3/31/2022	U.S. TIPS 0.875 02/15/2047 0.875% Due 02-15-47	912810RW0	912810RW0	3263757.68	3385149.51	103.72	4/4/2019	119.67	3905738.82	1.35
3/31/2022	U.S. TIPS 0.875 04/15/2017 0.875% Due 01-15-29	9128285W6	9128285W6	6006557.48	5946794.81	99.01	4/4/2019	110.094	6612859.39	2.29
3/31/2022	U.S. TIPS 1.00 02/15/2046 1.000% Due 02-15-46	912810RR1	912810RR1	2657178.25	2858258.37	107.57	4/4/2019	121.789	3236150.82	1.12
3/31/2022	U.S. TIPS 1.00 02/15/2048 1.000% Due 02-15-48	912810SB5	912810SB5	2373084.79	2465863.08	103.91	4/4/2019	124.08	2944523.61	1.02
3/31/2022	U.S. TIPS 1.000 02/15/2049 1.000% Due 02-15-49	912810SG4	912810SG4	2214971.92	2495757.2	112.68	4/4/2019	125.101	2770952.02	0.96
3/31/2022	U.S. TIPS 1.375 02/15/2044 1.375% Due 02-15-44	912810RF7	912810RF7	4500830.08	5072372.77	112.7	4/4/2019	128.25	5772314.58	2
3/31/2022	U.S. TIPS 1.750 01/15/2028 1.750% Due 01-15-28	912810PV4	912810PV4	3347442.03	3478182.11	103.91	4/4/2019	114.116	3819966.95	1.32
3/31/2022	U.S. TIPS 2 01/15/2026 2.000% Due 01-15-26	912810FS2	912810FS2	3704622.95	3815493.69	102.99	4/4/2019	111.807	4142027.78	1.43

3/31/2022	U.S. TIPS 2.125 02/15/2040 2.125% Due 02-15-40	912810QF8	912810QF8	1919420.04	2386816.16	124.35	4/4/2019	140.967	2705748.85	0.94
3/31/2022	U.S. TIPS 2.125 02/15/2041 2.125% Due 02-15-41	912810QP6	912810QP6	2764637.46	3543091.47	128.16	4/4/2019	141.51	3912238.47	1.35
3/31/2022	U.S. TIPS 2.375 01/15/2025 2.375% Due 01-15-25	912810FR4	912810FR4	5691643.8	5941781.69	104.39	4/4/2019	110.843	6308788.74	2.18
3/31/2022	U.S. TIPS 2.375 01/15/2027 2.375% Due 01-15-27	912810PS1	912810PS1	3066272.66	3276854.82	106.87	4/4/2019	115.689	3547340.18	1.23
3/31/2022	U.S. TIPS 2.500 01/15/2029 2.500% Due 01-15-29	912810PZ5	912810PZ5	3149791.14	3494572.38	110.95	4/4/2019	121.482	3826429.27	1.32
3/31/2022	U.S. TIPS 3.375 04/15/2032 3.375% Due 04-15-32	912810FQ6	912810FQ6	1417242.4	2023376.85	142.77	4/4/2019	140.85	1996185.92	0.69
3/31/2022	U.S. TIPS 3.625 04/15/2028 3.625% Due 04-15-28	912810FD5	912810FD5	3541637.2	4225105.86	119.3	4/4/2019	126.443	4478152.32	1.55
3/31/2022	U.S. TIPS 3.875 04/15/2029 3.875% Due 04-15-29	912810FH6	912810FH6	3999129.49	5085026.46	127.15	4/4/2019	132.085	5282250.19	1.83
									449662.82	0.16
					265773896.2				286964783.3	99.33
TOTAL PORTFOLIO					267746797.8				288896674.2	100

Diversity, Equity & Inclusion Policy Summary

RhumbLine Advisers

April 6, 2022

RhumbLine Advisers was founded by a minority, and its ownership structure has always reflected its tradition of diversity. Cultivating, promoting, supporting, and placing value in diversity is part of our corporate culture. Equality and inclusion are fundamental to our corporate philosophy and evident in our corporate structure as a Massachusetts Limited Partnership. We are 100% owned by active employees at all levels of the organization; 32% women-owned and 24% minority-owned. Collectively, RhumbLine is 56% minority- and women-owned.

Our diversity is our business strength. Our differences in race, gender, ethnicity, nationality, religion, sexual identity, physical and mental abilities, age, and familial and socioeconomic status enrich our working environment, provide diversity of thought and foster our firm's growth. Our unique backgrounds, perspectives and experiences together reflect our broad client base and empower us to better serve each client's specific needs.

We promote diversity, equality, and inclusivity through:

- **Our corporate structure** - Every employee - regardless of their position – has the potential to become an owner based on their tenure, job performance and overall contributions to the firm's success.
- **Our work environment** - RhumbLine promotes and supports diversity in all its corporate practices and policies including, but not limited to recruitment, hiring, compensation, benefits, promotions, professional development and training. As an independent female/minority-owned firm, the professionals at RhumbLine make concerted efforts to seek and attract women and minorities as employees of the firm at all levels. This is evidenced by the fact that our ownership is 32% women and 24% minority. We also promote women and minorities as evidenced by our C-level employees being 33% women and 17% minority¹. Our work environment emphasizes:
 - Respectful and inclusive communication and cooperation among all employees and teams.
 - Work/life balance through flexible work schedules to accommodate employees' varying needs.
 - Employee and firm contributions to the communities we serve to promote a greater understanding and respect for diversity.
- **Ongoing education** - We provide mandatory and ongoing employee education and training around diversity and inclusion, sexual harassment, and other related topics, such as unconscious bias. Employees are expected to demonstrate their understanding of these values in all aspects of their conduct and work activities. Any employee exhibiting inappropriate conduct or behavior against others may be subject to disciplinary action.
- **Diverse service providers** - Our commitment to encouraging equality and inclusivity goes beyond our own employee base. We seek these important values among our firm's vendors and service providers. Our firm has developed and maintained diverse supplier relationships in trading, clearing, legal, accounting, and tax services. In fact, our current approved broker list includes approximately 14 firms, six of which are minority-, women- or disabled veteran-owned companies². In 2021, nearly 40% of RhumbLine's total domestic equity trading was conducted with MWBV brokers.

¹ As of 3/31/22

² As of 3/31/22

- **Mentoring & Internships** – Our firm provides mentoring, internship and development opportunities targeted toward diverse talent (e.g., minorities, women, LGBT, etc.)
- **Charitable Giving & Community Outreach** – We provide philanthropic grants and scholarships and make other financial contributions to organizations which promote minorities and/or women. Our firm supports community development and civic infrastructure programs in communities we serve, as well as those in need, both directly and through our employees’ requests and participation. Following are some of the many organizations that RhumbLine Advisers has supported (either directly or through its employees):
 - Robert Toigo Fellowship Program (for minority professionals committed to careers in finance)
 - Nelson Fellowship Program (an educational summer program for public school students in Boston and Springfield, MA)
 - CARE
 - Africa Inland Mission
 - Big Brother Big Sister
 - American Cancer Society
 - Special Olympics
 - Samaritans Hope
 - ARC of Plymouth
 - Minuteman ARC
 - Urban Nutcracker
 - Boston Relief Association
 - Boston Food Bank

Employees or persons who believe they have been subjected to any kind of discrimination that conflicts with our firm’s diversity policy and/or initiatives should seek assistance from Denise D’Entremont, President, who is responsible for the enforcement of the above policy.

Please note that RhumbLine Advisers also has established a separate Equal Opportunity and Affirmative Action Policy, which prohibits employment discrimination against employees and applicants due to race, color, religion, sex (including sexual harassment), national origin, disability, age (40 years old or more), military status, or veteran status. This policy is also available upon request.

MONTHLY PERFORMANCE REPORT

**MWRA EMPLOYEES' RETIREMENT
SYSTEM**

MARCH 31, 2022



GOALS & OBJECTIVES

Investment Return Objective

“Its primary goal is to provide promised benefits to participants and beneficiaries of the MWRA Employees’ Retirement system. Plan assets should be equal to or greater than the present value of the projected benefit obligations (“fully funded”). When Plan assets are less than the present value of projected benefit obligations, a schedule will be established and a plan will be in place to meet a fully funded status. When achieving return objectives required to fully fund the system, the Board is intent on controlling risk. Consistency of returns and risk of loss are primary considerations. The Board has also determined that the annual performance of plan assets should not vary substantially from returns achieved by other public pension funds with similar goals and objectives.”

Return Expectations

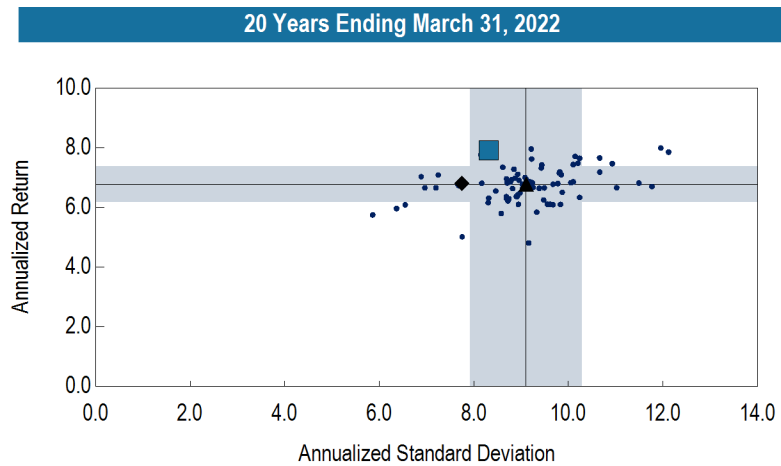
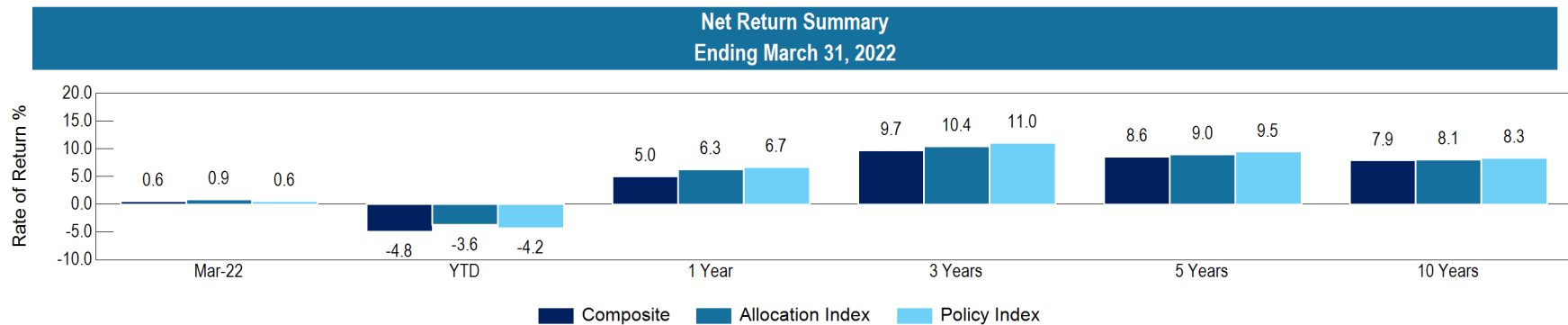
The investment growth should be maintained in such a manner that the minimum nominal rate of return does not cause a negative real rate of return over a full market cycle:

- **Time Horizon:** Return assumptions will be based on a ten-year time horizon with a detailed review and analysis to be made at least annually to monitor allocations and assumptions. Should a manager deviate from proscribed mandate or expected risk and return profile by a consequential degree, that manager may be reevaluated at any time.
- **Liquidity Needs:** Presently contributions exceed plan withdrawals to provide benefits, payouts, and/or plan expenses. Portfolio liquidity will be managed based on the cash flow needs of the System.
- **Regulatory Considerations:** Assets of this Fund shall be invested in a manner consistent with the fiduciary standards established under Code of Massachusetts Regulations 840 (“840 CMR”). The Board shall also use as precedent the Employee Retirement Income Security Act (ERISA).



MWRA Employees' Retirement System

EXECUTIVE SUMMARY



Performance

- The Composite had a return of 0.6% (net) for the month, trailing the Allocation Index (0.9%) and matching the Policy Index (0.6%).
- The S&P 500 Index posted its first monthly gain in 2022, rising 3.7%. Non-U.S. developed equities were also in the black with the MSCI EAFE Index up 0.6% last month. Market sentiment weakened due to geopolitical uncertainty, resulting in the MSCI Emerging Market Index falling 2.3%. The portfolio's Domestic Equity composite returned 2.2% (net) while the Non-US Equity composite was down -2.0% (net) for the month.
- In fixed income, the U.S. Treasury yield curve shifted higher with the two- and 10-year yields rising 86 and 49 basis points, respectively. The Fixed Income composite fell -1.9% (net) in March while the Bloomberg Agg and Bloomberg US HY fell -2.8% and -1.1%, respectively.
- This brings the total plan return for the trailing one-year period to 5.0% (net), while the Allocation and Policy Index returned 6.3% and 6.7%, respectively.

Statistics Summary			
	Anlzd Ret	Anlzd Std Dev	Rank
Composite	8.0%	8.3%	2
Allocation Index	6.9%	7.7%	72
Policy Index	7.3%	8.4%	37
InvMetrics Public DB Gross Median	7.1%	9.0%	--

20 years Risk/Return is as of 03/31/2022. Chart reflects universe data on quarter end months only. Returns for 20 years Risk/Return and Statistics Summary are gross of fees.

Since inception return is 8.6% gross of fees. Prior to 1999, performance history does not capture separate net and gross returns.



MWRA Employees' Retirement System

TOTAL FUND PERFORMANCE DETAIL (NET)

	Market Value (\$)	% of Portfolio	Policy %	1 Mo (%)	YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
Composite	687,695,649	100.0	100.0	0.6	-4.8	5.0	9.7	8.6	7.9	7.0	Jan-86
Allocation Index				0.9	-3.6	6.3	10.4	9.0	8.1	--	Jan-86
Policy Index				0.6	-4.2	6.7	11.0	9.5	8.3	--	Jan-86
Total Balanced	5,359,043	0.8		1.6	-2.4	12.3	11.0	7.8	5.9	5.6	Dec-10
PRIT Core Fund	5,359,043	0.8		1.6	-2.4	12.3	12.8	10.8	9.5	7.4	Apr-99
60% S&P 500 / 40% Bloomberg Aggregate				1.1	-5.1	7.5	12.1	10.6	9.8	6.6	Apr-99
Total Domestic Equity	221,642,019	32.2	31.0	2.2	-6.7	8.1	16.6	15.0	13.4	8.1	May-99
Russell 3000				3.2	-5.3	11.9	18.2	15.4	14.3	7.8	May-99
Large Cap	173,435,735	25.2	24.0	3.0	-6.4	10.9	17.6	16.2	14.0	14.1	Dec-10
Rhumblin Advisors S&P 500 Index Fund	70,668,502	10.3	10.0	3.7	-4.6	15.6	18.9	15.9	14.5	9.5	Apr-97
S&P 500				3.7	-4.6	15.6	18.9	16.0	14.6	9.4	Apr-97
Coho Relative Value Equity	54,788,446	8.0	7.0	3.2	-2.0	9.6	13.7	12.5	--	12.4	Mar-16
Russell 1000 Value				2.8	-0.7	11.7	13.0	10.3	11.7	12.8	Mar-16
Polen Focused Growth	47,978,788	7.0	7.0	1.9	-13.4	5.4	19.1	20.0	--	18.5	Feb-16
Russell 1000 Growth				3.9	-9.0	15.0	23.6	20.9	17.0	20.7	Feb-16
Small Cap	48,206,284	7.0	7.0	-0.6	-7.6	-1.0	13.5	11.8	12.0	12.4	Dec-10
Boston Partners Small Cap Value	25,468,492	3.7	3.5	-1.0	-2.0	4.4	13.6	8.6	10.4	10.7	Feb-97
Russell 2000 Value				2.0	-2.4	3.3	12.7	8.6	10.5	9.3	Feb-97
Loomis Sayles Small Cap Growth	22,737,792	3.3	3.5	-0.3	-13.1	-6.8	12.6	14.4	13.2	7.2	Jan-97
Russell 2000 Growth				0.5	-12.6	-14.3	9.9	10.3	11.2	7.2	Jan-97
Total Non-US Equity	115,575,460	16.8	19.0	-2.0	-11.6	-9.9	4.5	5.4	4.9	4.3	Mar-99
International Equity	76,151,883	11.1	12.0	-2.0	-12.0	-9.6	5.9	6.5	5.5	3.9	Sep-05
SEG Baxter Street	32,003,338	4.7	5.0	-2.6	-11.5	-9.4	5.6	7.9	--	8.4	May-16
MSCI ACWI ex USA				0.2	-5.4	-1.5	7.5	6.8	5.6	7.4	May-16
Schroder International Alpha Trust Class 1	29,189,883	4.2	4.0	-0.1	-7.1	-0.3	12.3	10.5	7.8	7.7	Mar-12
MSCI ACWI ex USA				0.2	-5.4	-1.5	7.5	6.8	5.6	5.4	Mar-12
Baillie Gifford International Growth Fund Class K	14,958,662	2.2	3.0	-4.4	-21.8	-27.2	--	--	--	-9.8	Oct-20
MSCI ACWI ex USA				0.2	-5.4	-1.5	7.5	6.8	5.6	12.5	Oct-20

Since inception return is 8.8% gross of fees. Prior to 1999, performance history does not capture separate net and gross returns. In November 2019, Loomis Sayles and Schroders transitioned from a mutual fund to a CIT structure. Performance prior to transitioning to the CIT investment vehicle is linked to mutual fund performance history. SEG Baxter Street is preliminary as of 03/31/2022, and is subject to change once finalized.



MWRA Employees' Retirement System

TOTAL FUND PERFORMANCE DETAIL (NET)

	Market Value (\$)	% of Portfolio	Policy %	1 Mo (%)	YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
Emerging Markets Equity	39,423,578	5.7	7.0	-2.0	-10.6	-13.5	--	--	--	-15.1	Mar-21
Axiom Emerging Markets Trust Class 2	19,269,482	2.8	7.0	-1.7	-11.1	-14.4	--	--	--	-16.0	Mar-21
<i>MSCI Emerging Markets</i>				-2.3	-7.0	-11.4	4.9	6.0	3.4	-11.8	Mar-21
ABS Emerging Markets MA Fund	20,154,096	2.9		-2.3	-10.0	--	--	--	--	-8.1	Dec-21
<i>MSCI Emerging Markets</i>				-2.3	-7.0	-11.4	4.9	6.0	3.4	-5.2	Dec-21
Total Fixed Income	155,238,117	22.6	20.0	-1.9	-4.6	-2.0	3.6	3.3	3.9	6.1	Mar-99
Garcia Hamilton Fixed Income Aggregate	37,202,045	5.4	6.0	-1.9	-4.3	-3.3	1.7	--	--	2.3	Apr-18
<i>Bloomberg US Aggregate TR</i>				-2.8	-5.9	-4.2	1.7	2.1	2.2	2.4	Apr-18
Lord Abbett Core Fixed Income	36,220,431	5.3	4.0	-2.9	-5.6	-3.8	2.2	--	--	2.7	Apr-18
<i>Bloomberg US Aggregate TR</i>				-2.8	-5.9	-4.2	1.7	2.1	2.2	2.4	Apr-18
Rhumbline TIPS	13,879,613	2.0		-1.9	-3.0	4.2	6.2	4.4	--	4.0	Jun-16
<i>Bloomberg US TIPS TR</i>				-1.9	-3.0	4.3	6.2	4.4	2.7	4.1	Jun-16
Loomis Sayles Multisector Full Discretion Trust	53,694,877	7.8	8.0	-1.8	-5.6	-3.1	4.5	4.2	4.7	7.3	Mar-99
<i>Bloomberg US Aggregate TR</i>				-2.8	-5.9	-4.2	1.7	2.1	2.2	4.3	Mar-99
<i>Bloomberg US High Yield TR</i>				-1.1	-4.8	-0.7	4.6	4.7	5.7	6.6	Mar-99
Octagon Senior Secured Credit Cayman Fund Ltd. - Class L Acc, Series 1	14,186,024	2.1	2.0	0.0	-0.4	2.3	--	--	--	3.6	Aug-19
<i>Credit Suisse Leveraged Loan</i>				0.0	-0.1	3.2	4.1	4.1	4.5	3.7	Aug-19
Invesco Mortgage Recovery Loans Feeder Fund	55,127	0.0		0.0	0.0	1.1	-1.9	2.4	5.9	10.6	Apr-10
<i>Bloomberg US Aggregate TR</i>				-2.8	-5.9	-4.2	1.7	2.1	2.2	2.9	Apr-10
Total Hedge Fund	43,055,316	6.3	6.0	0.7	-0.8	4.6	6.4	4.7	4.4	3.7	Oct-06
PRIM Portfolio Completion Strategies	15,477,548	2.3		1.8	0.9	5.0	5.3	4.6	5.0	4.1	Oct-06
Corbin Pinehurst Partners	13,550,451	2.0		-0.1	-4.1	2.8	7.9	--	--	7.5	Nov-18
<i>HFRI Fund of Funds Composite Index</i>				0.6	-2.6	1.3	5.9	4.6	3.9	5.9	Nov-18
UBS Neutral Alpha Strategies	13,286,273	1.9		0.4	0.6	6.5	7.3	--	--	6.4	Nov-18
<i>HFRI Fund of Funds Composite Index</i>				0.6	-2.6	1.3	5.9	4.6	3.9	5.9	Nov-18
Entrust Peru Wind Down	741,044	0.1		-0.1	-0.5	-1.1	-2.7	--	--	-3.3	Dec-17
<i>HFRI Fund of Funds Composite Index</i>				0.6	-2.6	1.3	5.9	4.6	3.9	4.4	Dec-17
Other	4,888,132	0.7		0.0	0.0	0.0	0.9	1.2	0.7	0.6	Dec-10
Cash Account	4,888,132	0.7		0.0	0.0	0.0	0.9	1.2	0.7	1.7	Feb-00
<i>91 Day T-Bills</i>				0.0	0.0	0.1	0.7	1.1	0.6	1.5	Feb-00

Importantly, all returns in this report, including those of the private real estate managers, are based on a time weighted return calculation and not based on IRRs, which can result in return differences. Corbin Pinehurst Partners, UBS Neutral Alpha Strategies, and Entrust Peru Wind Down are preliminary as of 03/31/2022 and are subject to change once finalized.



MWRA Employees' Retirement System

TOTAL FUND PERFORMANCE DETAIL (NET)

	Market Value (\$)	% of Portfolio	Policy %	1 Mo (%)	YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
Total Real Estate	62,392,035	9.1	12.0	6.5	6.5	29.6	12.4	11.0	11.9	8.6	Apr-99
Morgan Stanley Prime Property (\$2.8m commitment in '95)	26,193,378	3.8		7.0	7.0	27.6	11.3	10.0	11.6	9.0	Sep-95
TA Realty Core Property Fund, LP (\$15m commitment in '19)	27,472,990	4.0		8.4	8.4	37.2	--	--	--	16.6	Jun-19
Invesco Mortgage Recovery II (\$3M commitment in '15)	980,203	0.1		0.0	0.0	7.1	-16.6	-5.0	--	-1.2	Oct-15
Landmark VI (\$2m commitment in '11)	93,801	0.0		0.0	0.0	14.8	-5.2	-4.9	3.1	4.1	Jul-11
Landmark VIII (\$4m commitment in '17)	1,654,367	0.2		0.0	0.0	33.7	12.8	--	--	18.5	Nov-17
StepStone Real Estate Fund II (\$2m commitment in '11)	184,188	0.0		0.0	0.0	3.6	-2.7	0.2	--	2.5	May-12
Cerberus Institutional Real Estate Partners III (\$1.5m commitment in '12)	649,585	0.1		0.0	0.0	76.4	26.3	17.4	--	17.3	May-13
TA Realty Fund X LP (\$3.5m commitment in '12)	2,823	0.0		0.0	0.0	-1.0	2.0	6.8	--	7.9	May-13
TerraCap Partners III, LP (\$2.6m commitment in '15)	1,496,857	0.2		0.0	0.0	1.8	2.7	5.0	--	9.1	Jul-15
TerraCap Partners IV, LP (\$4m commitment in '17)	3,663,842	0.5		0.0	0.0	12.2	11.6	--	--	11.2	Nov-17
Total Private Equity	79,545,528	11.6	12.0	0.5	0.8	27.9	19.7	17.2	14.8	10.7	Apr-99
CJA US All PE				0.0	0.0	25.9	22.2	19.1	15.8	13.7	Apr-99
NASDAQ W/O Income				3.4	-9.1	7.4	22.5	19.2	16.5	7.9	Apr-99
PRIM Vintage Year 2008 (\$3m commitment in '08)	870,389	0.1		5.3	5.9	38.6	20.1	20.7	20.2	10.8	Jun-08
PRIM Vintage Year 2009 (\$1m commitment in '09)	141,824	0.0		9.1	10.3	64.3	53.5	41.0	29.6	17.3	Nov-09
PRIM Vintage Year 2010 (\$1m commitment in '10)	698,751	0.1		-17.3	-18.9	61.0	37.3	29.8	23.4	14.9	Jun-10
PRIM Vintage Year 2011 (\$1.5m commitment in '11)	1,061,603	0.2		4.3	7.2	95.9	40.5	31.3	22.9	11.9	May-11
PRIM Vintage Year 2012 (\$1m commitment in '12)	692,346	0.1		-2.9	-3.4	21.2	30.1	24.4	--	-7.5	Jun-12
PRIM Vintage Year 2014 (\$2m commitment in '14)	2,551,415	0.4		7.8	7.7	50.4	34.5	30.1	--	10.5	Jun-14
PRIM Vintage Year 2017 (\$2m commitment in '17)	2,661,443	0.4		3.8	7.3	43.2	30.0	--	--	19.6	May-17
PRIM Vintage Year 2020 (\$5m commitment in '20)	3,077,158	0.4		4.7	10.0	38.0	--	--	--	26.1	Mar-20
PRIM Vintage Year 2021 (\$5m commitment in '21)	2,110,196	0.3		1.2	2.2	5.8	--	--	--	4.4	Dec-20
PRIM Vintage Year 2022 (\$7.5m commitment in '22)	110,821	0.0		-2.6	--	--	--	--	--	-2.6	Mar-22
Alcentra European DLF (\$5m commitment in '14)	177,096	0.0		0.0	0.0	54.8	16.4	10.7	--	10.1	Jan-15
Ascent Fund IV (\$2m commitment in '04)	900	0.0		0.0	0.0	-15.5	-8.6	-38.4	-31.9	-21.0	Jul-04
Ascent Fund IV-B (\$1m commitment in '16)	53,007	0.0		0.0	0.0	-56.7	-39.4	-27.6	--	-24.0	Jul-16
Ascent Fund V (\$2m commitment in '08)	1,669,821	0.2		0.0	0.0	19.2	4.3	1.0	6.9	5.3	Oct-08
Ascent VI (\$3m commitment in '15)	3,366,212	0.5		0.0	0.0	11.8	1.2	4.9	--	2.2	Dec-15
CVI Credit Value Fund IV A LP (\$6m commitment in '17)	6,707,826	1.0		0.0	0.0	7.9	6.5	--	--	6.2	Dec-17
Invesco Fund VI (\$5m commitment in '13)	1,489,373	0.2		0.0	0.0	18.2	35.9	27.5	--	21.3	Jul-13

Importantly, all returns in this report, including those of the private markets managers, are based on a time weighted return calculation and not based on IRRs, which can result in return differences.



MWRA Employees' Retirement System

TOTAL FUND PERFORMANCE DETAIL (NET)

	Market Value (\$)	% of Portfolio	Policy %	1 Mo (%)	YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
Kayne Energy Fund VII (\$5m commitment in '15)	2,075,064	0.3		0.0	0.0	32.7	-30.6	-15.1	--	-8.6	Jan-16
Foundry 2007 (\$3m commitment in '07)	533,967	0.1		0.0	0.0	14.2	20.1	5.5	9.7	21.3	Dec-07
Foundry 2010 (\$3m commitment in '10)	6,096,181	0.9		0.0	0.0	90.3	33.3	26.9	16.9	15.4	Jan-11
Foundry 2010 Annex (\$0.4m commitment in '15)	1,114,912	0.2		0.0	0.0	200.2	106.6	71.6	--	48.0	Sep-15
Pinebridge PEP V (\$6m commitment in '07)	516,786	0.1		0.0	0.0	3.3	9.8	5.9	9.5	--	Mar-08
Landmark XV (\$3m commitment in '13)	1,199,414	0.2		0.0	0.0	14.7	16.0	14.1	--	14.1	Nov-13
JFL Equity Investors IV, L.P. (\$6m commitment in '16)	2,309,974	0.3		0.0	0.0	38.2	44.7	44.2	--	41.2	Jan-17
Private Advisors Small Co. Coinvestment Fund, LP (\$4m commitment in '17)	5,133,914	0.7		0.0	0.0	14.7	23.5	21.4	--	21.2	Feb-17
Park Square Credit Opportunities III (\$3m commitment in '17)	2,822,936	0.4		0.0	0.0	6.5	8.2	--	--	7.0	Feb-18
Ironsides Constitution Opportunities (\$3m commitment in '18)	2,268,057	0.3		0.0	0.0	10.7	13.5	--	--	12.8	Oct-18
HarbourVest Dover Street X (\$9m commitment in '20)	5,774,507	0.8		0.0	0.0	41.9	--	--	--	83.6	Jun-20
Hamilton Lane Secondary Fund V LP (\$9m commitment in '20)	6,449,365	0.9		0.0	0.0	31.0	--	--	--	42.1	Jul-20
Constitution Ironsides Co-Investment Fund VI (\$12m commitment in '21)	10,771,012	1.6		0.0	--	--	--	--	--	0.0	Feb-22
JFL Equity Investors V, L.P. (\$9m commitment in '20)	5,039,257	0.7		0.0	0.0	5.7	--	--	--	-4.9	Sep-20
<i>Private Equity Benchmark (1 Qtr. Lag)</i>				5.4	5.4	38.7	24.2	20.0	16.4	48.4	Sep-20

Importantly, all returns in this report, including those of the private markets managers, are based on a time weighted return calculation and not based on IRRs, which can result in return differences.



MWRA Employees' Retirement System

ESTIMATED FEE SCHEDULE

Account	Fee Schedule	Market Value As of 3/31/2022	% of Portfolio	Estimated Annual Fee (\$)	Estimated Annual Fee (%)
PRIT Core Fund	0.49% of Assets	\$5,359,043	0.8%	\$26,259	0.49%
Rhumblin Advisors S&P 500 Index Fund	0.05% of Assets	\$70,668,502	10.3%	\$35,334	0.05%
Coho Relative Value Equity	0.50% of First 75.0 Mil, 0.40% of Next 75.0 Mil, 0.35% Thereafter	\$54,788,446	8.0%	\$273,942	0.50%
Polen Focused Growth	0.65% of Assets	\$47,978,788	7.0%	\$311,862	0.65%
Boston Partners Small Cap Value	1.00% of Assets	\$25,468,492	3.7%	\$254,685	1.00%
Loomis Sayles Small Cap Growth	0.45% of Assets	\$22,737,792	3.3%	\$102,320	0.45%
SEG Baxter Street	1.00% of Assets	\$32,003,338	4.7%	\$320,033	1.00%
Schroder International Alpha Trust Class 1	0.55% of Assets	\$29,189,883	4.2%	\$160,544	0.55%
Baillie Gifford International Growth Fund Class K	0.60% of Assets	\$14,958,662	2.2%	\$89,752	0.60%
Axiom Emerging Markets Trust Class 2	0.73% of Assets	\$19,269,482	2.8%	\$140,667	0.73%
ABS Emerging Markets MA Fund	0.75% of Assets	\$20,154,096	2.9%	\$151,156	0.75%
Garcia Hamilton Fixed Income Aggregate	Performance-based 0.13 and 15.00	\$37,202,045	5.4%	\$46,503	0.13%
Lord Abbett Core Fixed Income	0.19% of Assets	\$36,220,431	5.3%	\$68,819	0.19%
Rhumblin TIPS Pooled Index Fund	0.04% of Assets	\$13,879,613	2.0%	\$5,552	0.04%
Loomis Sayles Multisector Full Discretion Trust	0.50% of First 20.0 Mil, 0.40% of Next 20.0 Mil, 0.30% Thereafter	\$53,694,877	7.8%	\$221,085	0.41%
Octagon Senior Secured Credit Cayman Fund Ltd. - Class L Acc, Series 1	0.40% of Assets	\$14,186,024	2.1%	\$56,744	0.40%
Invesco Mortgage Recovery Loans Feeder Fund	No Fee	\$55,127	0.0%	--	--
PRIM Portfolio Completion Strategies	No Fee	\$15,477,548	2.3%	--	--
Corbin Pinehurst Partners	0.85% of Assets	\$13,550,451	2.0%	\$115,179	0.85%
UBS Neutral Alpha Strategies	0.90% of Assets	\$13,286,273	1.9%	\$119,576	0.90%
Entrust Peru Wind Down	0.50% of Assets	\$741,044	0.1%	\$3,705	0.50%
Cash Account	No Fee	\$4,888,132	0.7%	--	--
Morgan Stanley Prime Property (\$2.8m commitment in '95)	No Fee	\$26,193,378	3.8%	--	--
TA Realty Core Property Fund, LP (\$15m commitment in '19)	No Fee	\$27,472,990	4.0%	--	--
Invesco Mortgage Recovery II (\$3M commitment in '15)	No Fee	\$980,203	0.1%	--	--
Landmark VI (\$2m commitment in '11)	No Fee	\$93,801	0.0%	--	--



MWRA Employees' Retirement System

ESTIMATED FEE SCHEDULE

Account	Fee Schedule	Market Value As of 3/31/2022	% of Portfolio	Estimated Annual Fee (\$)	Estimated Annual Fee (%)
Landmark VIII (\$4m commitment in '17)	No Fee	\$1,654,367	0.2%	--	--
StepStone Real Estate Fund II (\$2m commitment in '11)	No Fee	\$184,188	0.0%	--	--
Cerberus Institutional Real Estate Partners III (\$1.5m commitment in '12)	No Fee	\$649,585	0.1%	--	--
TA Realty Fund X LP (\$3.5m commitment in '12)	No Fee	\$2,823	0.0%	--	--
TerraCap Partners III, LP (\$2.6m commitment in '15)	No Fee	\$1,496,857	0.2%	--	--
TerraCap Partners IV, LP (\$4m commitment in '17)	No Fee	\$3,663,842	0.5%	--	--
PRIM Vintage Year 2008 (\$3m commitment in '08)	No Fee	\$870,389	0.1%	--	--
PRIM Vintage Year 2009 (\$1m commitment in '09)	No Fee	\$141,824	0.0%	--	--
PRIM Vintage Year 2010 (\$1m commitment in '10)	No Fee	\$698,751	0.1%	--	--
PRIM Vintage Year 2011 (\$1.5m commitment in '11)	No Fee	\$1,061,603	0.2%	--	--
PRIM Vintage Year 2012 (\$1m commitment in '12)	No Fee	\$692,346	0.1%	--	--
PRIM Vintage Year 2014 (\$2m commitment in '14)	No Fee	\$2,551,415	0.4%	--	--
PRIM Vintage Year 2017 (\$2m commitment in '17)	No Fee	\$2,661,443	0.4%	--	--
PRIM Vintage Year 2020 (\$5m commitment in '20)	No Fee	\$3,077,158	0.4%	--	--
PRIM Vintage Year 2021 (\$5m commitment in '21)	No Fee	\$2,110,196	0.3%	--	--
PRIM Vintage Year 2022 (\$7.5m commitment in '22)	No Fee	\$110,821	0.0%	--	--
Alcentra European DLF (\$5m commitment in '14)	No Fee	\$177,096	0.0%	--	--
Ascent Fund IV (\$2m commitment in '04)	No Fee	\$900	0.0%	--	--
Ascent Fund IV-B (\$1m commitment in '16)	No Fee	\$53,007	0.0%	--	--
Ascent Fund V (\$2m commitment in '08)	No Fee	\$1,669,821	0.2%	--	--
Ascent VI (\$3m commitment in '15)	No Fee	\$3,366,212	0.5%	--	--
CVI Credit Value Fund IV A LP (\$6m commitment in '17)	No Fee	\$6,707,826	1.0%	--	--
Invesco Fund VI (\$5m commitment in '13)	No Fee	\$1,489,373	0.2%	--	--
Kayne Energy Fund VII (\$5m commitment in '15)	No Fee	\$2,075,064	0.3%	--	--
Foundry 2007 (\$3m commitment in '07)	No Fee	\$533,967	0.1%	--	--
Foundry 2010 (\$3m commitment in '10)	No Fee	\$6,096,181	0.9%	--	--
Foundry 2010 Annex (\$0.4m commitment in '15)	No Fee	\$1,114,912	0.2%	--	--
Pinebridge (AIG) PEP V Asia (\$6m commitment in '07)	No Fee	\$40,070	0.0%	--	--
Pinebridge (AIG) PEP V Co-Investment (\$6m commitment in '07)	No Fee	\$84,527	0.0%	--	--



MWRA Employees' Retirement System

ESTIMATED FEE SCHEDULE

Account	Fee Schedule	Market Value As of 3/31/2022	% of Portfolio	Estimated Annual Fee (\$)	Estimated Annual Fee (%)
Pinebridge (AIG) PEP V Europe (\$6m commitment in '07)	No Fee	\$22,533	0.0%	--	--
Pinebridge (AIG) PEP V Large Market US Buyout (\$6m commitment in '07)	No Fee	\$91,895	0.0%	--	--
Pinebridge (AIG) PEP V Preferred Participation Fund (\$6m commitment in '07)	No Fee	\$106,747	0.0%	--	--
Pinebridge (AIG) PEP V Secondary (\$6m commitment in '07)	No Fee	\$33,880	0.0%	--	--
Pinebridge (AIG) PEP V Small-Mid Market US Buyout (\$6m commitment in '07)	No Fee	\$92,082	0.0%	--	--
Pinebridge (AIG) PEP V US Venture (\$6m commitment in '07)	No Fee	\$45,052	0.0%	--	--
Landmark XV (\$3m commitment in '13)	No Fee	\$1,199,414	0.2%	--	--
JFL Equity Investors IV, L.P. (\$6m commitment in '16)	No Fee	\$2,309,974	0.3%	--	--
Private Advisors Small Co. Coinvestment Fund, LP (\$4m commitment in '17)	No Fee	\$5,133,914	0.7%	--	--
Park Square Credit Opportunities III (\$3m commitment in '17)	No Fee	\$2,822,936	0.4%	--	--
Ironsides Constitution Opportunities (\$3m commitment in '18)	No Fee	\$2,268,057	0.3%	--	--
HarbourVest Dover Street X (\$9m commitment in '20)	No Fee	\$5,774,507	0.8%	--	--
Hamilton Lane Secondary Fund V LP (\$9m commitment in '20)	No Fee	\$6,449,365	0.9%	--	--
Constitution Ironsides Co-Investment Fund VI (\$12m commitment in '21)	No Fee	\$10,771,012	1.6%	--	--
JFL Equity Investors V, L.P. (\$9m commitment in '20)	No Fee	\$5,039,257	0.7%	--	--
Investment Management Fee		\$687,695,649	100.0%	\$2,503,718	0.36%

Note:
 Estimate fee for privates are ~\$1,556,212 annually, which brings the total expense ratio for privates to ~22 bps. This brings the total estimated expense ratio for MWRA to ~ 58bps.



MWRA Employees' Retirement System

NOTES

- 1 - Results for periods longer than one year are annualized.
- 2 - Total Balances, Large Cap, Small Cap, and Other Composite performance starts 12/1/2010.
- 3 - Preliminary Total Composite net of fee since inception return is 7.0% for the current month.
- 4 - Preliminary Total Composite gross of fee since inception return is 8.6% for the current month.
- 5 - Targets, Allocation Index, and Policy Index have been updated to reflect new allocation of 06/01/2020.
- 6 - Policy Index changed from Nasdaq to Cambridge All PE to reflect as of 5/1/2012.
- 7 - Policy Index Consists of: 24% S&P 500, 7% Russell 2000, 12% MSCI ACWI IMI, 7% MSCI Emerging Markets, 12% Bloomberg US Aggregate TR, 8% Bloomberg US Universal TR, 6% HFRI Fund of Funds Composite Index, 12% NCREIF Property Index, 12% CJA US All PE
- 8 - Allocation index consists of: Weighted index of underlying managers to their respective benchmark.



DISCLAIMERS & DISCLOSURES

Past performance is no guarantee of future results.

Returns for pooled funds, e.g. mutual funds and collective investment trusts, are collected from third parties; they are not generally calculated by NEPC. Returns for separate accounts, with some exceptions, are calculated by NEPC. Returns are reported net of manager fees unless otherwise noted.

A “since inception” return, if reported, begins with the first full month after funding, although actual inception dates (e.g. the middle of a month) and the timing of cash flows are taken into account in Composite return calculations.

NEPC’s preferred data source is the plan’s custodian bank or record-keeper. If data cannot be obtained from one of the preferred data sources, data provided by investment managers may be used. Information on market indices and security characteristics is received from additional providers. While NEPC has exercised reasonable professional care in preparing this report, we cannot guarantee the accuracy of all source information contained within. In addition, some index returns displayed in this report or used in calculation of a policy index, allocation index or other custom benchmark may be preliminary and subject to change.

All investments carry some level of risk. Diversification and other asset allocation techniques are not guaranteed to ensure profit or protect against losses.

The opinions presented herein represent the good faith views of NEPC as of the date of this presentation and are subject to change at any time. Neither fund performance nor universe rankings contained in this report should be considered a recommendation by NEPC.

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Source of private fund performance benchmark data: Cambridge Associates, via Refinitiv



Asset Allocation Rebalance Summary

April 21, 2022

	Market Value	Weight in Fund	Target Weight	Recommendation	New Market Value	New Weight
Composite	\$678,792,574	100.0%	100.0%	\$0	\$678,792,574	100.0%
Total Balanced	\$5,366,382	0.8%	0.0%	\$0	\$5,366,382	0.8%
PRIT Core Fund	\$5,366,382	0.8%	0.0%	\$0	\$5,366,382	0.8%
Total Domestic Equity	\$218,441,757	32.2%	31.0%	-\$7,000,000	\$211,441,757	31.1%
Rhumblin Advisors S&P 500 Index Fund	\$68,385,174	10.1%	10.0%	-\$2,000,000	\$66,385,174	9.8%
Coho Relative Value	\$56,317,634	8.3%	7.0%	-\$5,000,000	\$51,317,634	7.6%
Polen Focused Growth	\$46,762,007	6.9%	7.0%	\$0	\$46,762,007	6.9%
Robeco Boston Partners Small Cap Value	\$24,296,843	3.6%	3.5%	\$0	\$24,296,843	3.6%
Loomis Sayles Small Cap Growth	\$22,680,099	3.3%	3.5%	\$0	\$22,680,099	3.3%
Total International Equity	\$114,005,487	16.8%	19.0%	\$0	\$114,005,487	16.8%
SEG - Baxter Street Fund	\$32,003,338	4.7%	5.0%	\$0	\$32,003,338	4.7%
Schroders International Alpha	\$28,101,100	4.1%	4.0%	\$0	\$28,101,100	4.1%
Baillie Gifford	\$14,153,886	2.1%	3.0%	\$0	\$14,153,886	2.1%
Axiom Emerging Markets	\$19,593,067	2.9%	3.5%	\$0	\$19,593,067	2.9%
ABS Emerging Markets Strategic Portfolio	\$20,154,096	3.0%	3.5%	\$0	\$20,154,096	3.0%
Total Equity	\$332,447,244	49.0%	50.0%	-\$7,000,000	\$325,447,244	47.9%
Total Fixed Income	\$151,505,367	22.3%	20.0%	-\$6,000,000	\$145,505,367	21.4%
Garcia Hamilton	\$35,968,836	5.3%	6.0%	\$0	\$35,968,836	5.3%
Lord Abbett	\$35,068,621	5.2%	6.0%	\$0	\$35,068,621	5.2%
Loomis Sayles Multi Sector Bonds	\$52,551,176	7.7%	7.0%	\$0	\$52,551,176	7.7%
Rhumblin TIPS	\$13,675,583	2.0%	0.0%	-\$6,000,000	\$7,675,583	1.1%
Octagon Senior Secured Loans	\$14,186,024	2.1%	1.0%	\$0	\$14,186,024	2.1%
Invesco Mortgage Recovery	\$55,127	0.0%	0.0%	\$0	\$55,127	0.0%
Total Hedge Fund	\$43,022,643	6.3%	6.0%	\$0	\$43,022,643	6.3%
PRIM Absolute Return Fund	\$15,444,065	2.3%		\$0	\$15,444,065	2.3%
Corbin Pinehurst Partners	\$13,549,716	2.0%		\$0	\$13,549,716	2.0%
UBS Neutral Alpha Strategies	\$13,286,273	2.0%		\$0	\$13,286,273	2.0%
Entrust Peru Winddown	\$742,589	0.1%		\$0	\$742,589	0.1%
Total Real Estate	\$62,579,765	9.2%	12.0%	\$8,459,501	\$71,039,266	10.5%
Terra Cap V	\$0	0.0%		\$8,459,501	\$8,459,501	1.2%
TA Realty Core	\$26,631,797	3.9%		\$0	\$26,631,797	3.9%
Morgan Stanley PPF	\$26,193,646	3.9%		\$0	\$26,193,646	3.9%
Total Private Equity	\$74,922,041	11.0%	12.0%	\$0	\$74,922,041	11.0%
Cash	\$8,949,132	1.3%	0.0%	\$4,540,499	\$13,489,631	2.0%
Peoples United Cash	\$8,949,132	1.3%	0.0%	\$4,540,499	\$13,489,631	2.0%