



PENNSYLVANIA SERS

REAL ESTATE SEMI-ANNUAL
PERFORMANCE REVIEW – Q2 2021

DECEMBER 7, 2021



TABLE OF CONTENTS

Presentation

- **Real Estate Semi-Annual Performance Report** 3
- **Real Estate Portfolio Construction Update** 10

Appendix

- **Investment Level Performance** 15
- **Disclaimers & Disclosures** 20

1. REAL ESTATE SEMI-ANNUAL PERFORMANCE REPORT

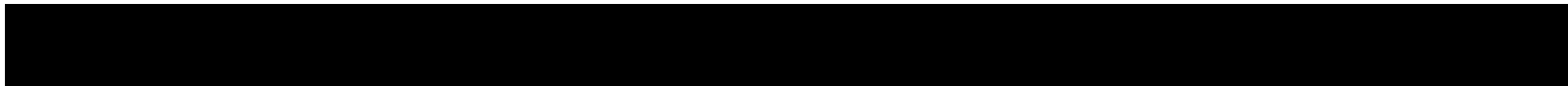
As of June 30, 2021



PORTFOLIO PERFORMANCE SUMMARY

The table below displays trailing time period performance for the Pennsylvania State Employees Retirement System (“PA SERS”) Real Estate Portfolio as of June 30, 2021, along with select benchmarks

- **The real estate portfolio has seen a strong recovery, generating a 15.7% return over the trailing one-year period, after experiencing the effects of the COVID-19 pandemic**
 - This return is higher than the returns generated by core real estate (the NFI-ODCE Index) but lower than returns generated by value-add and opportunistic real estate (the C|A Real Estate Index)
- **The portfolio has also generated a strong trailing three-year return of 8.8%, outperforming both the core and value-add and opportunistic benchmarks**



Portfolio Performance	YTD	1 Year	3 Year	5 Year	10 Year	Inception
Total Pennsylvania State Employees Retirement System	8.5%	15.7%	8.8%	4.3%	7.5%	6.3%



<i>NFI-ODCE Index¹</i>	<i>5.6%</i>	<i>7.1%</i>	<i>4.6%</i>	<i>5.6%</i>	<i>8.6%</i>	<i>N/A</i>
<i>C A Non-Core Real Estate Index²</i>	<i>8.9%</i>	<i>18.1%</i>	<i>7.6%</i>	<i>9.0%</i>	<i>10.0%</i>	<i>N/A</i>
<i>S&P 500 Index</i>	<i>15.2%</i>	<i>40.8%</i>	<i>18.7%</i>	<i>17.7%</i>	<i>14.8%</i>	<i>N/A</i>

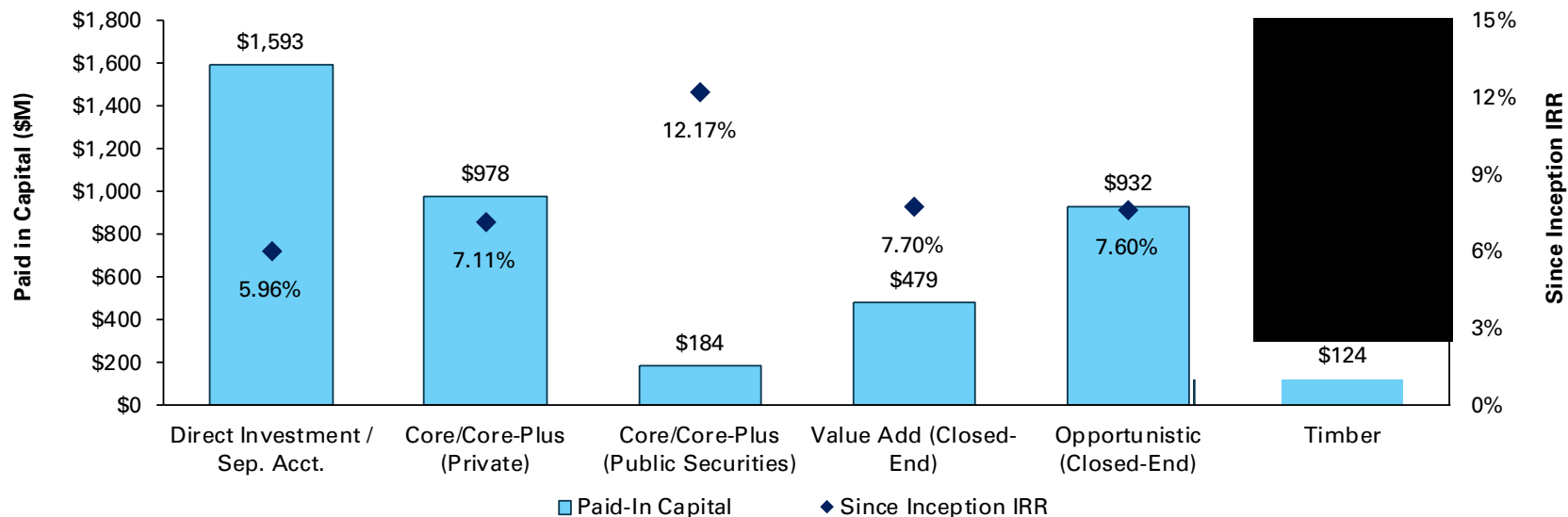
Data as of June 30, 2021. Sources include NCREIF, C|A, Manager data, and NEPC. Additional notes:

1. NFI-ODCE Index represents pooled returns of open-end comingled core funds in the ODCE Index; returns shown are time-weighted, net of fees.
2. C|A Benchmark represents pooled horizon internal rate of return (IRR) calculations, net of fees, across 1,207 real estate funds (including value-add/opportunistic).
3. The timing and magnitude of fund cash flows are integral to the IRR performance. Benchmark indices that are time weighted measures should not be directly compared to dollar-weighted IRR calculations. Index data is continuously updated and is therefore subject to change.
4. Returns shown do not take into account risk/volatility of underlying strategies.



PERFORMANCE BY INVESTMENT STRATEGY

- In aggregate, current (active) investments in the portfolio, which are not fully liquidated, can be summarized in the following:



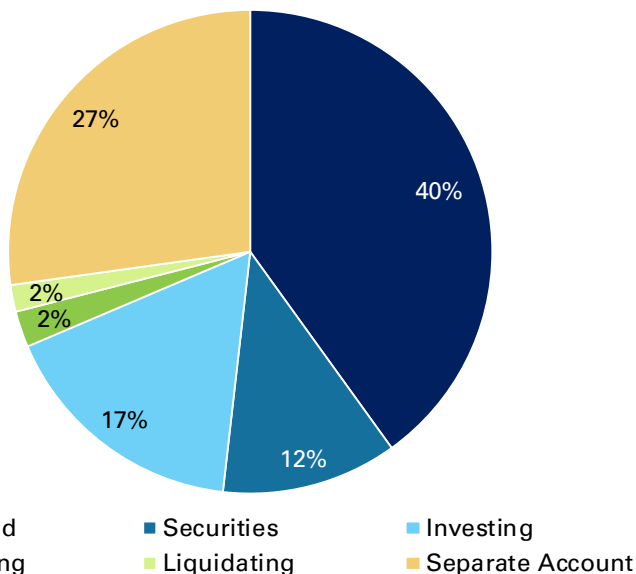
Investment Strategy	Commitment Amount	Paid-In Capital	Capital to be Funded	Cumulative Distributions	Current Valuation	Total Value	Net Gain / (Loss)	Call Ratio	DPI Ratio	TVPI Ratio	IRR (SI)
Direct Investment / Sep. Acct.	1,592,855,941	1,592,855,941	0	1,928,893,152	756,713,618	2,685,606,770	1,073,346,977	100%	1.20	1.67	5.96%
Core/Core-Plus (Private)	1,058,834,449	977,849,833	80,984,616	237,038,606				92%	0.24		7.11%
Core/Core-Plus (Public Securities)	183,616,773	183,616,773	0	36,168,336	328,752,967	364,921,303	181,304,530	100%	0.20	1.99	12.17%
Value Add (Closed-End)	550,277,783	455,166,500	95,111,283	404,972,339	202,038,907	607,011,246	135,452,411	83%	0.86	1.29	7.22%
Opportunistic (Closed-End)	1,255,077,622	906,783,275	348,294,347	913,426,786	385,791,188	1,299,217,974	373,775,004	72%	0.99	1.40	7.36%
Timber	124,231,969	124,231,969	0	242,967,376				100%			
Total (Active Funds)	4,764,894,536	4,240,504,291	524,390,245	3,763,466,596				89%	0.88		6.29%



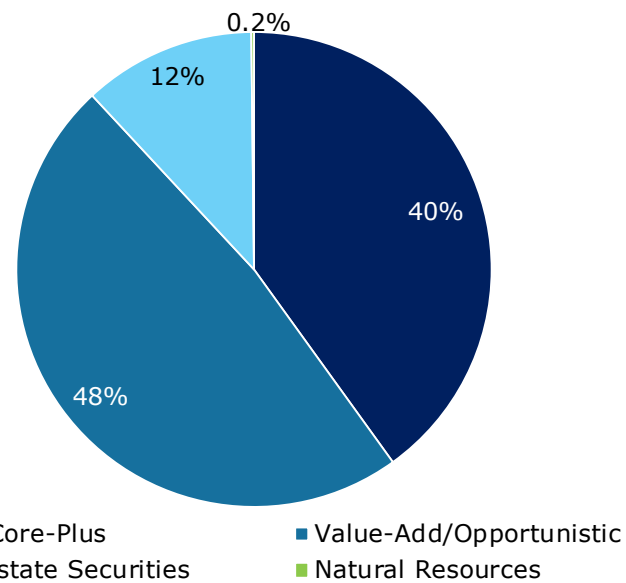
Data as of June 30, 2021. Liquidated investments not shown. Returns shown do not take into account risk/volatility of underlying strategies.

PORTFOLIO COMPOSITION

Allocation by Structure & Lifecycle



Allocation by Strategy



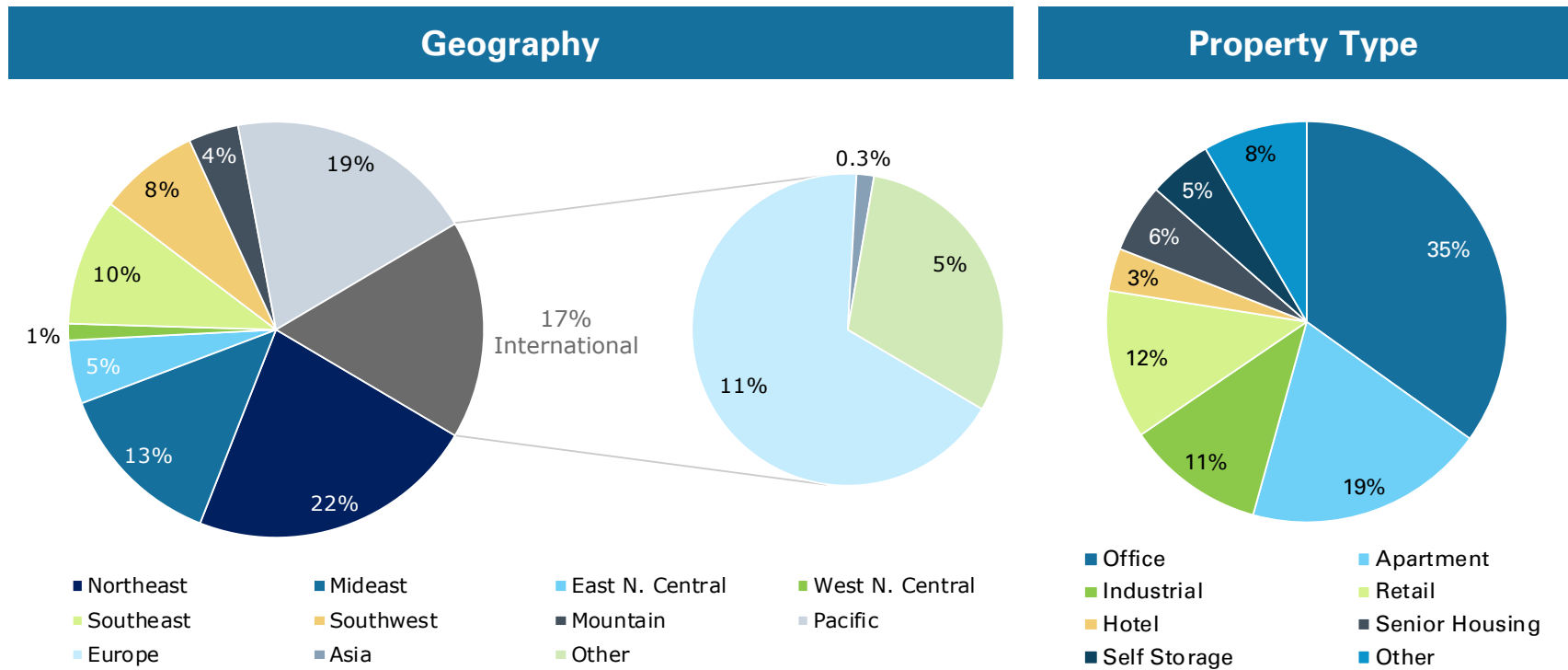
Investment Structure / Lifecycle Stage	Commitment Amount	Paid-In Capital	Capital to be Funded	Cumulative Distributions	Current Valuation	Total Value	Net Gain / (Loss)	Call Ratio	DPI Ratio	TVPI Ratio	IRR (SI)
Open-End	1,058,834,449	977,849,833	80,984,616	237,038,606				92%	0.24		7.11%
Securities	183,616,773	183,616,773	0	36,168,336	328,752,967	364,921,303	181,304,530	100%	0.20	1.99	12.17%
Investing	873,745,500	467,684,401	406,061,099	122,966,266	470,081,030	593,047,296	118,759,511	54%	0.26	1.25	12.11%
Harvesting	139,663,402	128,999,170	10,664,233	146,838,577	67,717,624	214,556,201	83,292,209	92%	1.12	1.63	12.32%
Liquidating	791,946,503	765,266,205	26,680,298	1,048,594,282	50,031,441	1,098,625,723	307,175,695	97%	1.32	1.39	6.28%
Separate Account	1,717,087,910	1,717,087,910	0	2,171,860,528	761,818,958	2,933,679,486	1,197,187,724	100%	1.25	1.69	5.96%
Total (Active Funds)	4,764,894,536	4,240,504,291	524,390,245	3,763,466,596				89%	0.88		6.29%



Data as of June 30, 2021. Liquidated investments not shown. Returns shown do not take into account risk/volatility of underlying strategies.

PORTFOLIO DIVERSIFICATION

- The Pennsylvania SERS real estate portfolio is broadly diversified by property type and geography within the U.S.
- Staff and NEPC have intentionally expanded the portfolio's international diversification in recent years
 - 17% of the portfolio is now invested outside the US, primarily in Europe

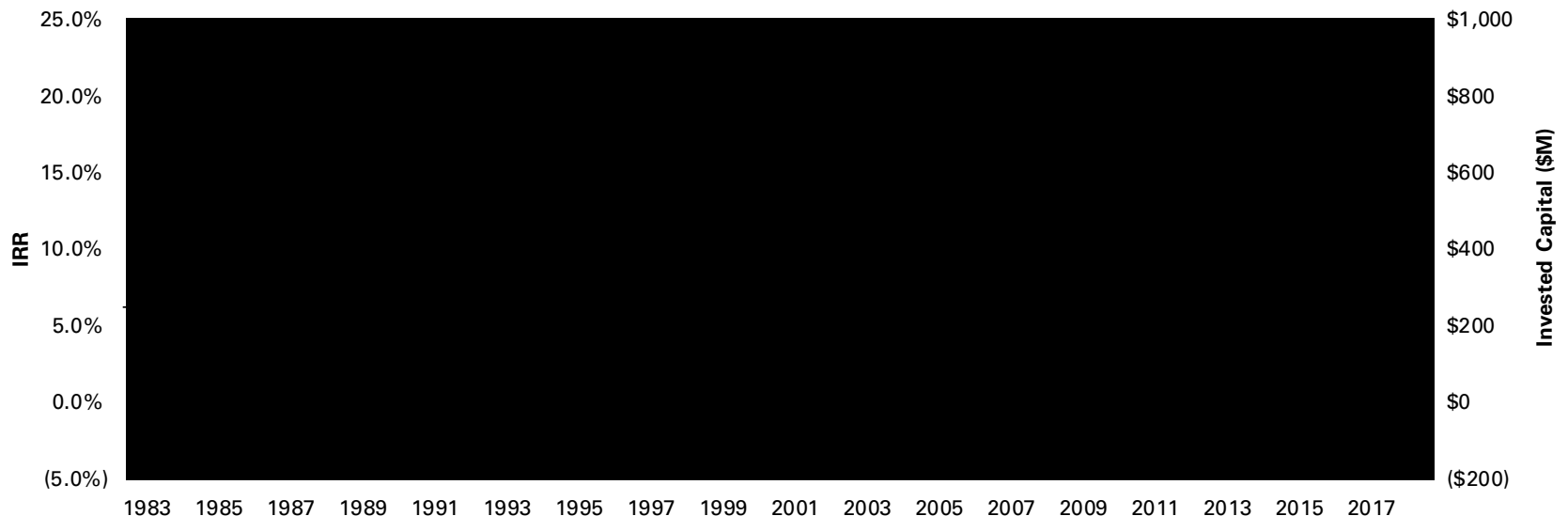


Data as of June 30, 2021. Underlying diversification data provided by Managers.

HISTORICAL PERFORMANCE BY VINTAGE

- **The following chart illustrates capital invested and inception-to-date performance by vintage year as of June 30, 2021**
 - Inconsistent pacing has negatively impacted portfolio performance
 - Staff and NEPC are focused on maintaining a consistent investment pacing schedule to mitigate the risk of heavy capital investments in poor vintage years

Commitments & Performance by Vintage Year

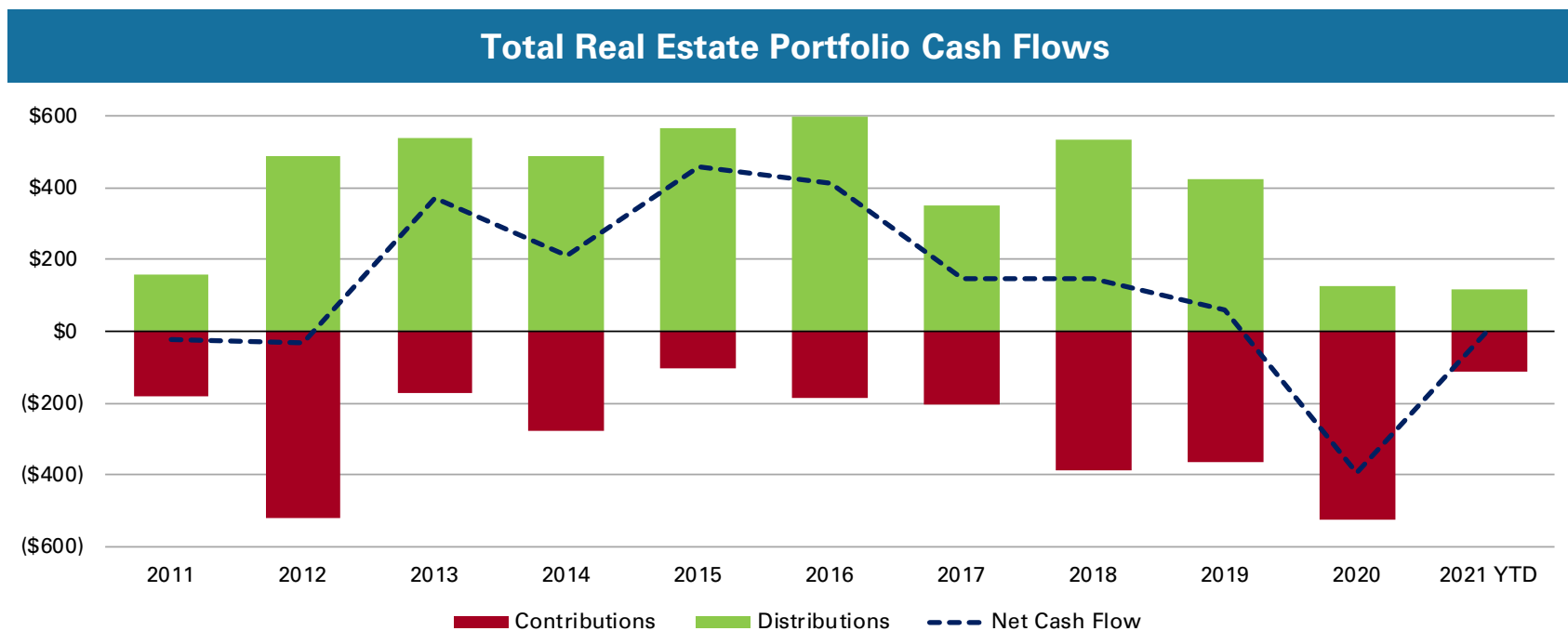


Data as of June 30, 2021. Notes: Vintage years 2019 and later are excluded as data is less meaningful. For separate accounts, the date of initial commitment or investment is used as the vintage year.



10-YEAR CASH FLOWS

- The chart below illustrates the capital invested, distributed, and net cash flows for the real estate portfolio over the past 10 calendar years and 2021 YTD
 - The portfolio was cash flow positive from 2013 through 2019
 - Distributions slowed in 2020, likely due in part to market disruptions arising from the COVID-19 pandemic, while capital calls continued
 - Cash flow activity has been more balanced in 2021 thus far



Data as of June 30, 2021. Offsetting cash flows have been excluded, such as assets that were transferred from one account to another.

2. REAL ESTATE PORTFOLIO CONSTRUCTION UPDATE



2021 REAL ESTATE PORTFOLIO UPDATE

- **There have not been any new commitments within the real estate portfolio during 2021**
 - Asset allocation changes in 2019 and 2021 reduced the target allocation to real estate, thereby decreasing the expected annual commitment pace
 - The real estate pacing plan calls for \$75 million of commitments to non-core (value-add and opportunistic) real estate for 2021
 - An investment recommendation is expected to be made at the December Investment Committee meeting which, if approved, would satisfy the allocation for the year
 - Much of the activity in prior years was focused on core-plus strategies which are open-ended and therefore do not require regular annual commitments
- **After experiencing some pandemic-driven challenges and uncertainty during 2020, the real estate portfolio has experienced strong performance over the past year**
- **NEPC and Staff will continue to evaluate both re-ups with existing strategic partners and potential new relationships**
 - With well-established core/core-plus and REIT portions of the portfolio, we remain focused on value-add and opportunistic strategies
 - Exposures to core, core-plus, and REITs will be monitored and rebalanced (as necessary)

PORTFOLIO ACTIVITY SUMMARY

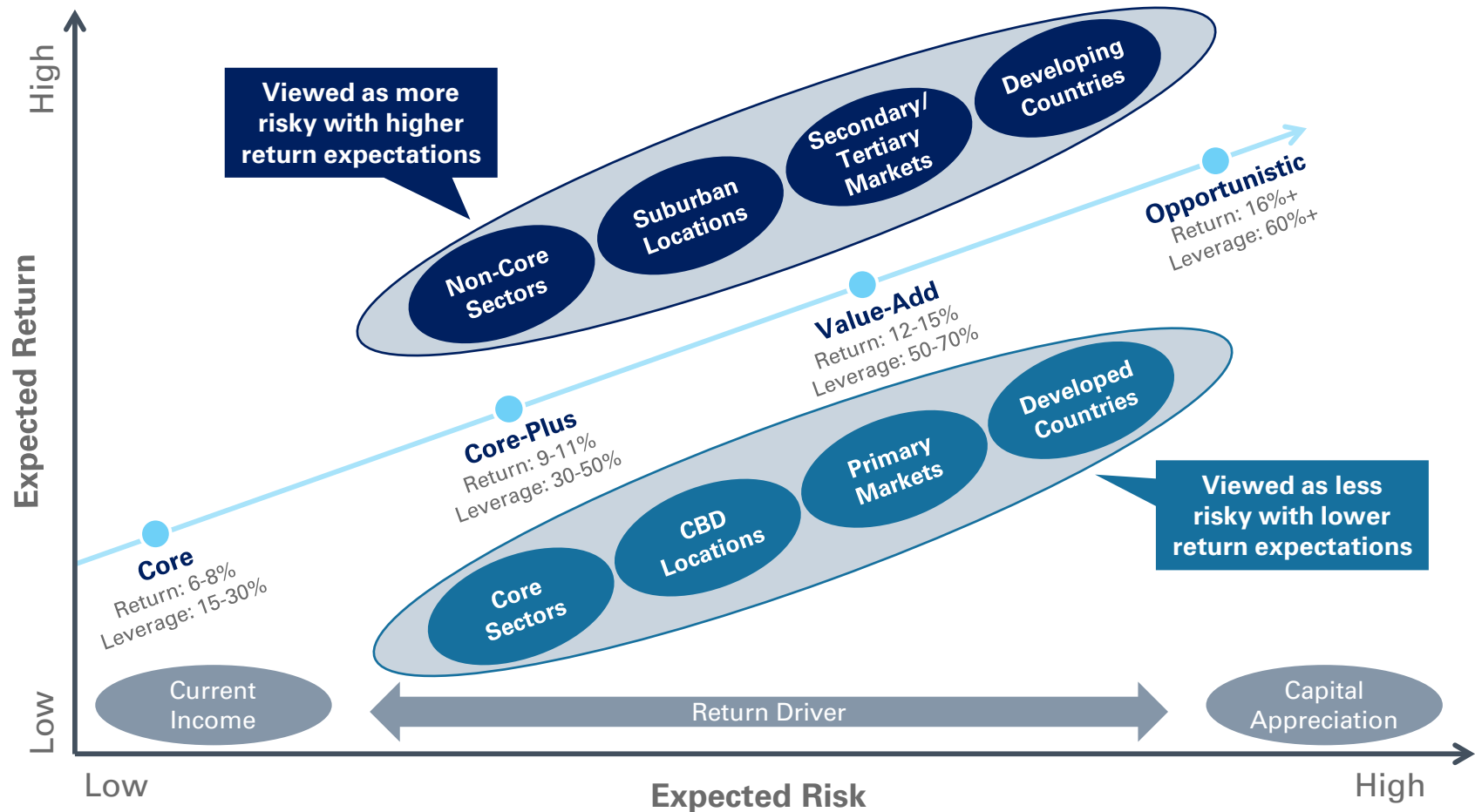
Real Assets Portfolio Sub-Strategy	Core/Core Plus	Value-Add/ Opportunistic	Real Estate Securities	Real Assets (Timber, Infrastructure, etc.)
Return Profile	Income Driven	Income + Capital Appreciation	Income + Capital Markets	Various
Current Exposure (NAV) (as of 6/30/21)	40%	48%	12%	< 1%
Current Target Allocation	35% +/- 20%	55% +/- 15%	10% +/- 10%	0-20%
2021 YTD Activity	Maintained allocation Capital calls continue for recent commitments	Recommendation anticipated at December Investment Committee	Maintained allocation	Timber portfolio liquidation continued
Anticipated 2021-22 Activity	Staff and NEPC will evaluate the current portfolio and consider rebalancing as necessary	Staff and NEPC will continue to evaluate existing strategic relationships and potential new managers	Maintain allocation, rebalance if necessary	Removed from real estate asset class; liquidation continues

SPECTRUM OF REAL ESTATE INVESTMENT STRATEGIES

	Real Estate Investment Style / Overview	Investment Strategy	Portfolio Role	Considerations
Core Strategies	Core / Core-Plus <ul style="list-style-type: none"> Return driver: income Primary vehicle: open-end funds Historical avg. returns: 7-8% / 8%-10% Leverage: 15-40% / 40%-50% Hold period: long-term 	Stabilized income producing assets	<ul style="list-style-type: none"> Current income Broad exposure to commercial real estate (asset class beta) Inflation protection 	<ul style="list-style-type: none"> Vehicles are semi-liquid (entrance/exit queues) Limited alpha producing opportunities
	RE Securities <ul style="list-style-type: none"> Return driver: income Primary vehicle: REIT funds Historical avg. returns: 7-9% Leverage: 30-50% Hold period: long-term 	Stabilized income producing assets	<ul style="list-style-type: none"> Current income (dividends) Long-term exposure to commercial real estate (beta) Long-term inflation protection 	<ul style="list-style-type: none"> Volatility Equity correlation
Non-Core Strategies	Value-Add <ul style="list-style-type: none"> Return driver: income/appreciation Primary vehicle: varies Historical avg returns: 8-10% Leverage: 40-70% Hold period: 3-5 years 	Properties requiring lease-up, repositioning, renovation or rehabilitation	<ul style="list-style-type: none"> Provides part current income and capital appreciation Some inflation protection 	<ul style="list-style-type: none"> Vehicles are semi-liquid or illiquid Vintage year is important Higher leverage vs core Poor benchmarks
	Opportunistic <ul style="list-style-type: none"> Return driver: appreciation Primary vehicle: closed-end funds Historical avg. returns: 10-12% Leverage: 60%+ Hold period: varies 	Distressed investments, recapitalizations, development, etc.	<ul style="list-style-type: none"> Real estate alpha through capital appreciation with minimal current income 	<ul style="list-style-type: none"> Vehicles are illiquid Vintage year is important High leverage Poor benchmarks

RELATIVE EXPECTED RISK RETURN PROFILE

ILLUSTRATIVE RISK / RETURN PROFILE





APPENDIX 1:

Investment Level
Performance
as of June 30, 2021

ACTIVE INVESTMENTS

Investments		
Investment Name	Vintage Year	Commitment
Activum SG Fund VI L.P.	2019	50,000,000
Activum SG Fund VI Pennsylvania Side-Car L.P.	2019	50,000,000
AG Asia Realty Fund, L.P.	2007	25,000,000
Blackstone Property Partners, L.P.	2017	300,000,000
Blackstone Real Estate Partners IV, L.P.	2003	25,000,000
Blackstone Real Estate Partners V, L.P.	2006	50,000,000
Blackstone Real Estate Partners VI, L.P.	2007	75,000,000
Blackstone Real Estate Partners VII, L.P.	2011	75,000,000
Blue Moon Senior Housing II Sidecar L.P.	2019	50,000,000
Blue Moon Senior Housing II, L.P.	2019	50,000,000
BPG Investment Partnership IX, L.P.	2012	25,000,000
BPG Investment Partnership VI, L.P.	2002	25,000,000
BPG Investment Partnership VII, L.P.	2005	25,000,000
BPG Investment Partnership VIII, L.P.	2007	15,588,238
C-III Recovery Fund III, L.P.	2017	100,000,000
CenterSquare Real Estate Securities	2002	183,616,773
Clerestory Small Cap Real Estate Fund I - TE, L.P.	2010	18,000,000
Colony Investors VIII, L.P.	2007	22,500,000
Forest Separate Account	1992	124,231,969
Heitman America Real Estate Trust, L.P.	2007	100,000,000
Heitman Separate Account	1988	813,635,039
Henderson Park Enhanced Income Fund, SCSp	2019	300,000,000
HotelAVE Separate Account	2018	61,548,685
LaSalle Separate Account	1994	453,932,701
Lasalle Takeover Account	2018	263,739,516
Lubert-Adler Real Estate Fund VII, L.P.	2014	25,000,000
Mesirow Financial Real Estate Value Fund III, L.P.	2018	25,000,000
Oak Street Real Estate Capital Fund IV, L.P.	2017	100,000,000

Trailing Period Returns (IRR) %							
(QTD)	(YTD)	(1 Yr)	(3 Yrs)	(5 Yrs)	(7 Yrs)	(10 Yrs)	SI IRR
NM	NM	NM	NM	NM	NM	NM	NM
NM	NM	NM	NM	NM	NM	NM	NM
							5.28%
							11.96%
							10.68%
							12.72%
							14.59%
NM	NM	NM	NM	NM	NM	NM	NM
NM	NM	NM	NM	NM	NM	NM	NM
NM	NM	NM	NM	NM	NM	NM	NM
11.59%	21.02%	37.22%	12.91%	10.42%	11.26%	11.77%	12.17%
NM	NM	NM	NM	NM	NM	NM	NM
NM	NM	NM	NM	NM	NM	NM	NM
0.79%	-1.24%	-3.30%	1.98%	5.63%	8.61%	12.03%	9.39%
NM	NM	NM	NM	NM	NM	NM	NM
0.39%	1.16%	-6.01%	-3.13%	2.26%			2.04%
0.59%	1.50%	9.87%	8.90%				7.61%



Data as of June 30, 2021.

NM - Not Meaningful

ACTIVE INVESTMENTS (CONTINUED)

Investments			Trailing Period Returns (IRR) %							
Investment Name	Vintage Year	Commitment	(QTD)	(YTD)	(1 Yr)	(3 Yrs)	(5 Yrs)	(7 Yrs)	(10 Yrs)	SI IRR
Oak Street Real Estate Capital Fund V, L.P.	2020	50,000,000	NM	NM	NM	NM	NM	NM	NM	NM
Oak Street Real Estate Capital Net Lease Property Fund, L.P.	2018	300,000,000	NM	NM	NM	NM	NM	NM	NM	NM
PLA Residential Fund III, L.P.	2008	29,654,968								
PLA Retail Fund I, L.P.	2006	25,000,000								
Rockpoint Finance Fund I, L.P.	2007	50,000,000								
Rockpoint Real Estate Fund II, L.P.	2005	35,000,000								
Rockpoint Real Estate Fund III, L.P.	2007	50,000,000								
Rockpoint Real Estate Fund V, L.P.	2015	50,000,000								
Rubicon First Ascent Sidecar	2021	20,000,000	NM	NM	NM	NM	NM	NM	NM	NM
Rubicon First Ascent, L.P.	2021	30,000,000	NM	NM	NM	NM	NM	NM	NM	NM
Scout Fund I-A, L.P.	2009	75,000,000	-10.42%	-6.71%	-19.51%	63.52%	-3.12%	1.12%	16.12%	15.30%
Scout Fund II-A, L.P.	2016	30,000,000	1.80%	3.55%	13.01%	4.77%				4.20%
Senior Housing Partners IV, L.P.	2011	25,000,000								
Senior Housing Partners V, L.P.	2015	50,000,000								
Senior Housing Partners VI, L.P.	2019	100,000,000	NM	NM	NM	NM	NM	NM	NM	NM
SRE Opportunity Fund III Select, L.P.	2018	50,000,000	NM	NM	NM	NM	NM	NM	NM	NM
SRE Opportunity Fund III, L.P.	2018	50,000,000								
Starwood Global Opportunity Fund VII-A, L.P.	2006	35,000,000								
Starwood Global Opportunity Fund VIII, L.P.	2009	50,000,000								
Starwood Opportunity Fund VI, L.P.	2001	50,000,000								
Trumbull Property Fund, L.P.	1988	25,558,525	2.64%	3.68%	0.95%	0.03%	3.25%	5.96%	7.45%	6.84%
ValStone Opportunity Fund V, LLC	2014	14,663,402	1.26%	2.99%	4.06%	7.43%	5.56%			8.03%
Westbrook Real Estate Fund V, L.P.	2004	25,000,000	-10.53%	-15.49%	3.67%	14.68%	7.10%	29.74%	20.47%	43.55%
Westbrook Real Estate Fund VI, L.P.	2006	35,000,000	-0.16%	-0.22%	-0.38%	-0.96%	-0.65%	0.70%	9.76%	0.23%
Westbrook Real Estate Fund VII, L.P.	2007	50,000,000	0.29%	0.79%	-5.94%	-6.15%	-2.94%	2.05%	11.68%	2.24%
Westbrook Real Estate Fund VIII, L.P.	2009	50,000,000	-0.23%	-0.52%	-12.17%	-10.51%	-4.50%	1.06%	9.32%	9.92%
Total			5.24%	8.48%	15.65%	8.87%	8.16%	8.94%	10.04%	6.29%



Data as of June 30, 2021.

NM - Not Meaningful

PERFORMANCE BY STRATEGY

Investments		Commitments		Contributions & Distributions			Valuations			Performance		
Investment Name	Vintage Year	Commitment	Unfunded Commitment	Paid In Capital	Additional Fees	Cumulative Distributions	Valuation	Total Value	Net Benefit	DPI	TVPI	IRR
Core												
Heitman America Real Estate Trust, L.P.	2007	\$100,000,000	\$0	\$100,000,000		\$87,124,742						
Trumbull Property Fund, L.P.	1988	\$25,558,525	\$0	\$25,558,525	\$463,159	\$116,959,976	\$27,741,909	\$144,701,885	\$118,680,201	4.49	5.56	6.84%
Total Core		\$125,558,525	\$0	\$125,558,525		\$204,084,718						
Core Plus												
Blackstone Property Partners, L.P.	2017	\$300,000,000	\$0	\$300,000,000	\$0	\$1,744,007	\$351,368,175	\$353,112,182	\$53,112,182	0.01	1.18	5.28%
Henderson Park Enhanced Income Fund, SCSp	2019	\$333,275,923	\$43,630,620	\$289,645,303	NM	\$16,951,828	NM	NM	NM	NM	NM	NM
Oak Street Real Estate Capital Net Lease Property Fund, L.P.	2018	\$300,000,000	\$37,353,995	\$262,646,005	NM	\$14,258,054	NM	NM	NM	NM	NM	NM
Total Core Plus		\$933,275,923	\$80,984,616	\$852,291,308		\$32,953,888						
Direct Investment												
Heitman Separate Account	1988	\$813,635,039	\$0	\$813,635,039		\$1,095,259,873						
HotelAVE Separate Account	2018	\$61,548,685	\$0	\$61,548,685	NM	\$20,191,396	NM	NM	NM	NM	NM	NM
LaSalle Separate Account	1994	\$453,932,701	\$0	\$453,932,701		\$778,848,456	\$166,472,782	\$945,321,238		1.70	2.07	9.39%
Lasalle Takeover Account	2018	\$263,739,516	\$0	\$263,739,516	NM	\$34,593,427	NM	NM	NM	NM	NM	NM
Total Direct Investment		\$1,592,855,941	\$0	\$1,592,855,941	\$19,403,853	\$1,928,893,152	\$756,713,618	\$2,685,606,770	\$1,073,346,977	1.20	1.67	5.96%
REIT												
CenterSquare Real Estate Securities	2002	\$183,616,773	\$0	\$183,616,773	\$0	\$36,168,336	\$328,752,967	\$364,921,303	\$181,304,530	0.20	1.99	12.17%
Total REIT		\$183,616,773	\$0	\$183,616,773	\$0	\$36,168,336	\$328,752,967	\$364,921,303	\$181,304,530	0.20	1.99	12.17%
Timber												
Forest Separate Account	1992	\$124,231,969	\$0	\$124,231,969		\$242,967,376						
Total Timber		\$124,231,969	\$0	\$124,231,969		\$242,967,376						
Value Add												
Blue Moon Senior Housing II Sidecar L.P.	2019	\$50,000,000	\$29,007,959	\$20,992,041	NM	\$0	NM	NM	NM	NM	NM	NM
Blue Moon Senior Housing II, L.P.	2019	\$50,000,000	\$26,337,684	\$23,662,316	NM	\$0	NM	NM	NM	NM	NM	NM
BPG Investment Partnership IX, L.P.	2012	\$25,000,000	\$696,591	\$24,303,409		\$38,042,815						
BPG Investment Partnership VI, L.P.	2002	\$24,543,712	\$0	\$24,543,712		\$42,799,870						
BPG Investment Partnership VII, L.P.	2005	\$25,000,000	\$0	\$25,000,000		\$14,583,027						
BPG Investment Partnership VIII, L.P.	2007	\$15,588,238	\$676,220	\$14,912,018		\$20,049,072						
Lubert-Adler Real Estate Fund VII, L.P.	2014	\$25,000,000	\$1,554,554	\$23,445,446	\$0	\$8,170,946	\$17,497,430	\$25,668,376	\$2,222,930	0.35	1.09	2.04%
Mesirow Financial Real Estate Value Fund III, L.P.	2018	\$25,145,833	-\$501,725	\$25,647,559	\$211,656	\$1,231,591	\$28,434,935	\$29,666,526	\$3,807,311	0.05	1.15	7.61%
Oak Street Real Estate Capital Fund IV, L.P.	2017	\$100,000,000	\$0	\$100,000,000		\$72,445,136						
Oak Street Real Estate Capital Fund V, L.P.	2020	\$50,000,000	\$37,340,000	\$12,660,000	NM	\$1,866,511	NM	NM	NM	NM	NM	NM
Westbrook Real Estate Fund V, L.P.	2004	\$25,000,000	\$0	\$25,000,000	\$2,259,023	\$52,005,779	\$46,655	\$52,052,434	\$24,793,411	1.91	1.91	43.55%
Westbrook Real Estate Fund VI, L.P.	2006	\$35,000,000	\$0	\$35,000,000	\$3,550,099	\$37,571,397	\$1,416,079	\$38,987,476	\$437,377	0.97	1.01	0.23%
Westbrook Real Estate Fund VII, L.P.	2007	\$50,000,000	\$0	\$50,000,000	\$6,238,817	\$52,787,877	\$11,651,714	\$64,439,591	\$8,200,774	0.94	1.15	2.24%
Westbrook Real Estate Fund VIII, L.P.	2009	\$50,000,000	\$0	\$50,000,000	\$4,232,890	\$63,418,319	\$7,343,917	\$70,762,236	\$16,529,346	1.17	1.30	9.92%
Total Value Add		\$550,277,783	\$95,111,283	\$455,166,500	\$16,392,335	\$404,972,339	\$202,038,907	\$607,011,246	\$135,452,411	0.86	1.29	7.22%

NM - Not Meaningful

Data as of June 30, 2021. Note that "Additional Fees" includes paid-in capital that does *not* reduce the unfunded commitment amount; this may include, among other items, management fees which are paid outside of the fund commitment, taxes, and closing interests paid to LPs in earlier closes. A negative number in this column indicates that SERS received (rather than paid-in) capital; a negative number is typically, though not exclusively, due to SERS receiving closing interests from LPs in later closes.



PERFORMANCE BY STRATEGY (CONTINUED)

Investments		Commitments		Contributions & Distributions			Valuations			Performance		
Investment Name	Vintage Year	Commitment	Unfunded Commitment	Paid In Capital	Additional Fees	Cumulative Distributions	Valuation	Total Value	Net Benefit	DPI	TVPI	IRR
Opportunistic												
Activum SG Fund VI L.P.	2019	\$59,306,279	\$31,647,247	\$27,659,032	NM	\$0	NM	NM	NM	NM	NM	NM
Activum SG Fund VI Pennsylvania Side-Car L.P.	2019	\$59,293,388	\$52,920,788	\$6,372,600	NM	\$0	NM	NM	NM	NM	NM	NM
AG Asia Realty Fund, L.P.	2007	\$25,000,000	\$1,500,000	\$23,500,000		\$25,375,000				1.08		
Blackstone Real Estate Partners IV, L.P.	2003	\$25,000,000	\$0	\$25,000,000	\$0	\$40,652,252	\$562,501	\$41,214,753	\$16,214,753	1.63	1.65	11.96%
Blackstone Real Estate Partners V, L.P.	2006	\$50,000,000	\$2,087,026	\$47,912,974	\$0	\$97,424,423	\$2,065,877	\$99,490,300	\$51,577,326	2.03	2.08	10.68%
Blackstone Real Estate Partners VI, L.P.	2007	\$75,000,000	\$3,680,925	\$71,319,075	\$281,339	\$151,972,489	\$2,907,836	\$154,880,325	\$83,279,911	2.12	2.16	12.72%
Blackstone Real Estate Partners VII, L.P.	2011	\$75,000,000	\$8,413,088	\$66,586,912	\$2,378,400	\$95,614,982	\$30,834,522	\$126,449,504	\$57,484,192	1.39	1.83	14.59%
C-III Recovery Fund III, L.P.	2017	\$100,000,000	\$35,595,480	\$64,404,520	NM	\$0	NM	NM	NM	NM	NM	NM
Clerestory Small Cap Real Estate Fund I - TE, L.P.	2010	\$18,000,000	\$2,771,044	\$15,228,956		\$15,131,513						
Colony Investors VIII, L.P.	2007	\$22,500,000	\$844,200	\$21,655,800		\$7,962,017						
PLA Residential Fund III, L.P.	2008	\$29,654,968	\$4,946,219	\$24,708,749		\$13,444,991	\$228,345	\$13,673,336		0.54		
PLA Retail Fund I, L.P.	2006	\$2,271,117	\$0	\$2,271,117		\$8,466,912	\$0	\$8,466,912		3.73		
Rockpoint Finance Fund I, L.P.	2007	\$2,527,500	\$0	\$2,527,500		\$2,538,994				0.57		
Rockpoint Real Estate Fund II, L.P.	2005	\$34,138,784	\$0	\$34,138,784		\$30,679,156				0.82		
Rockpoint Real Estate Fund III, L.P.	2007	\$50,632,887	\$4,241,165	\$46,391,722		\$67,236,003				1.33		
Rockpoint Real Estate Fund V, L.P.	2015	\$50,000,000	\$9,357,339	\$40,642,661		\$14,060,814				0.32		
Rubicon First Ascent Sidecar	2021	\$20,000,000	\$20,000,000	\$0	NM	\$0	NM	NM	NM	NM	NM	NM
Rubicon First Ascent, L.P.	2021	\$30,000,000	\$28,500,000	\$1,500,000	NM	\$0	NM	NM	NM	NM	NM	NM
Scout Fund I-A, L.P.	2009	\$75,000,000	\$0	\$75,000,000	\$0	\$117,006,454	\$741,020	\$117,747,474	\$42,747,474	1.56	1.57	15.30%
Scout Fund II-A, L.P.	2016	\$30,000,000	\$0	\$30,000,000	\$0	\$605,865	\$34,417,001	\$35,022,866	\$5,022,866	0.02	1.17	4.20%
Senior Housing Partners IV, L.P.	2011	\$22,089,297	\$1,289,781	\$20,799,516		\$37,182,609	\$686,338	\$37,868,948		1.79		
Senior Housing Partners V, L.P.	2015	\$50,000,000	\$8,862,310	\$41,137,690		\$3,216,633	\$51,236,661	\$54,453,294		0.08		
Senior Housing Partners VI, L.P.	2019	\$100,000,000	\$77,744,017	\$22,255,983	NM	\$0	NM	NM	NM	NM	NM	NM
SRE Opportunity Fund III Select, L.P.	2018	\$50,000,000	\$29,250,000	\$20,750,000	NM	\$16,539,717	NM	NM	NM	NM	NM	NM
SRE Opportunity Fund III, L.P.	2018	\$50,000,000	\$20,000,000	\$30,000,000		\$13,000,000						
Starwood Global Opportunity Fund VII-A, L.P.	2006	\$35,000,000	\$0	\$35,000,000		\$27,295,581						
Starwood Global Opportunity Fund VIII, L.P.	2009	\$50,000,000	\$4,643,719	\$45,356,281		\$71,083,420						
Starwood Opportunity Fund VI, L.P.	2001	\$50,000,000	\$0	\$50,000,000		\$51,927,126						
ValStone Opportunity Fund V, LLC	2014	\$14,663,402	\$0	\$14,663,402	\$375	\$5,009,834	\$16,969,255	\$21,979,089	\$7,315,312	0.34	1.50	8.03%
Total Opportunistic		\$1,255,077,622	\$348,294,347	\$906,783,275	\$18,659,695	\$913,426,786	\$385,791,188	\$1,299,217,974	\$373,775,004	0.99	1.40	7.36%
Total		\$4,764,894,536	\$524,390,245	\$4,240,504,291		\$3,763,466,596				0.88		6.29%

NM - Not Meaningful

Data as of June 30, 2021. Note that "Additional Fees" includes paid-in capital that does *not* reduce the unfunded commitment amount; this may include, among other items, management fees which are paid outside of the fund commitment, taxes, and closing interests paid to LPs in earlier closes. A negative number in this column indicates that SERS received (rather than paid-in) capital; a negative number is typically, though not exclusively, due to SERS receiving closing interests from LPs in later closes.





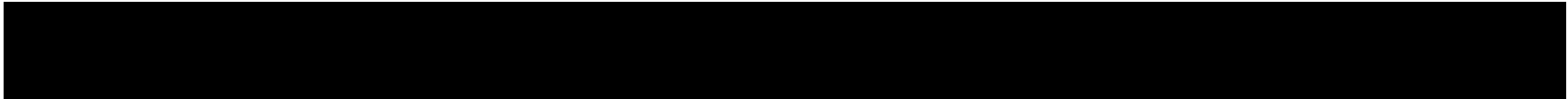
APPENDIX 2: Disclaimers & Disclosures

DISCLAIMER

Past performance is no guarantee of future results.

The opinions presented herein represent the good faith views of NEPC as of the date of this report and are subject to change at any time.

Information used to prepare this report was obtained directly from the investment managers or custodians, and market index data was provided by other external sources. While NEPC has exercised reasonable professional care in preparing this report, we cannot guarantee the accuracy of all source information contained within.



ALTERNATIVE INVESTMENT DISCLOSURES

In addition, it is important that investors understand the following characteristics of non-traditional investment strategies including hedge funds, real estate and private equity:

1. Performance can be volatile and investors could lose all or a substantial portion of their investment
2. Leverage and other speculative practices may increase the risk of loss
3. Past performance may be revised due to the revaluation of investments
4. These investments can be illiquid, and investors may be subject to lock-ups or lengthy redemption terms
5. A secondary market may not be available for all funds, and any sales that occur may take place at a discount to value
6. These funds are not subject to the same regulatory requirements as registered investment vehicles
7. Managers may not be required to provide periodic pricing or valuation information to investors
8. These funds may have complex tax structures and delays in distributing important tax information
9. These funds often charge high fees
10. Investment agreements often give the manager authority to trade in securities, markets or currencies that are not within the manager's realm of expertise or contemplated investment strategy