



# PENNSYLVANIA SERS

REAL ESTATE QUARTERLY  
PERFORMANCE REVIEW

FIRST QUARTER 2022



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# 1. REAL ESTATE QUARTERLY PERFORMANCE REPORT

As of March 31, 2022



# 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 March 31, 2022, along with select benchmarks

- **The policy benchmark is the NCREIF ODCE Index, which is comprised of open-end core real estate funds; we also show two additional real estate benchmarks and the S&P 500**
  - The NCREIF Property Index, a benchmark of unlevered core real estate returns
  - The CJA Non-Core Real Estate benchmark consists of non-core (value-add and opportunistic) closed-end real estate funds
- **The total real estate portfolio generated a total net return of 4.8% for the quarter**
  - The portfolio has generated an annualized return of 11.6% over the trailing three years

Portfolio Performance	Net Asset Value (\$M)	YTD	1 Year	3 Year	5 Year	10 Year	Inception
Pennsylvania SERS: Total Real Estate Portfolio	\$3,012.3	4.8%	21.6%	11.6%	7.5%	8.4%	7.2%
<b>Policy Benchmark: NFI-ODCE Index<sup>1</sup></b>							
		7.1%	27.3%	10.3%	8.9%	9.9%	N/A
<b>NCREIF Property Index<sup>2</sup></b>							
		5.3%	21.9%	9.6%	8.5%	9.6%	N/A
<b>CJA Non-Core Real Estate Index<sup>3</sup></b>							
		4.3%	27.6%	12.7%	11.7%	11.5%	N/A
<b>S&amp;P 500 Index</b>							
		-4.6%	15.7%	18.9%	16.0%	14.6%	N/A

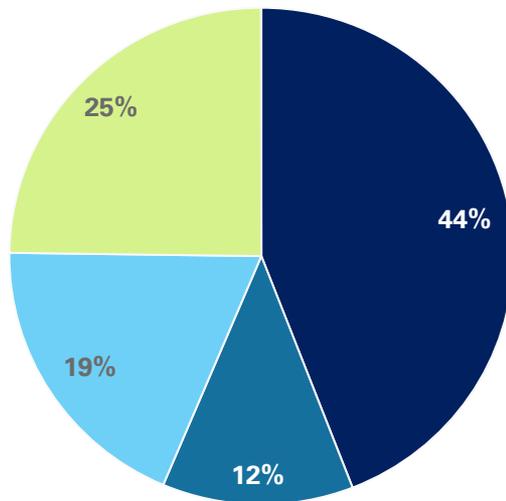
Data as March 31, 2022. Sources include NCREIF, CJA, Manager data, and NEPC.

1. The NFI-ODCE Index represents pooled returns of open-end comingled core funds in the ODCE Index. The ODCE includes the effects of leverage, and returns shown are time-weighted and net of fees.
2. The NCREIF Property Index (NPI) represents property-level returns of institutionally-owned core real estate properties in the United States. The NPI is unlevered, and returns are time-weighted and gross of fees.
3. The CJA Benchmark represents pooled horizon internal rate of return (IRR) calculations, net of fees, across value-add and opportunistic real estate funds.
4. 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.

# PORTFOLIO ALLOCATION OVERVIEW

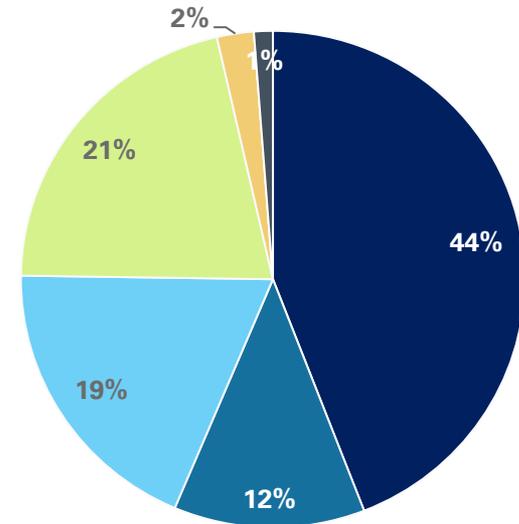
- The charts below show SERS' real estate portfolio broken out by strategy and by investment structure, with closed-end funds further broken out by lifecycle stage
- As shown, approximately 56% of the portfolio is invested in Core, Core-Plus, and REITs
  - We anticipate the Value-Add and Opportunistic strategies to grow over time, in-line with the recently approved new sub-strategy targets

## Allocation by Strategy



- Core & Core-Plus
- REITs
- Value-Add & Opportunistic SMAs
- Value-Add & Opportunistic Funds
- Timber

## Allocation by Structure & Lifecycle Stage



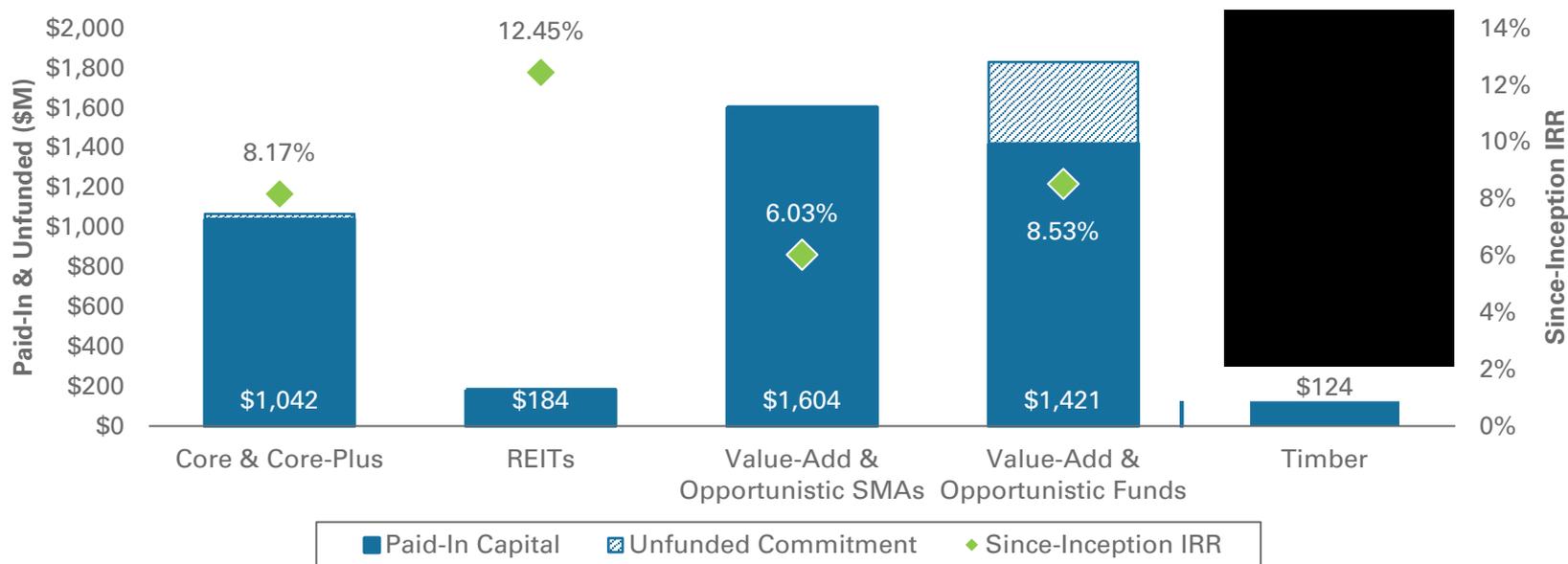
- Open-End Private Funds
- Public Securities
- Private SMAs
- Investing (Closed-End Funds)
- Harvesting (Closed-End Funds)
- Liquidating (Closed-End Funds)

Data as of March 31, 2022.



# PERFORMANCE BY STRATEGY

- The chart and table below shows the performance by strategy for all current (active, non-liquidated) investments in the SERS real estate portfolio



Investment Strategy	Commitment	Paid-In Capital	Additional Fees	Unfunded Commitment	Cumulative Distributions	Valuation	Total Value	Net Benefit	Call Ratio	DPI Ratio	TVPI Ratio	IRR
Core & Core-Plus	1,066,541,355	1,042,208,334	1,635,357	24,333,021	297,725,385	1,328,574,174	1,626,299,559	582,455,868	98%	0.29x	1.56x	8.17%
REITs	183,616,773	183,616,773	0	0	36,168,336	369,380,300	405,548,636	221,931,863	100%	0.20x	2.21x	12.45%
Value-Add & Opportunistic SMAs	1,604,441,782	1,603,847,572		594,210	2,187,940,174				100%			6.03%
Value-Add & Opportunistic Funds	1,831,281,839	1,421,075,840	36,353,877	410,205,999	1,341,058,716	746,189,969	2,087,248,684	629,818,968	78%	0.92x	1.43x	8.53%
Timber	124,231,969	124,231,969		0	247,882,576				100%			
<b>Total (Active Investments)</b>	<b>4,810,113,717</b>	<b>4,374,980,487</b>		<b>435,133,231</b>	<b>4,110,775,187</b>				<b>91%</b>	<b>0.93x</b>		<b>6.66%</b>

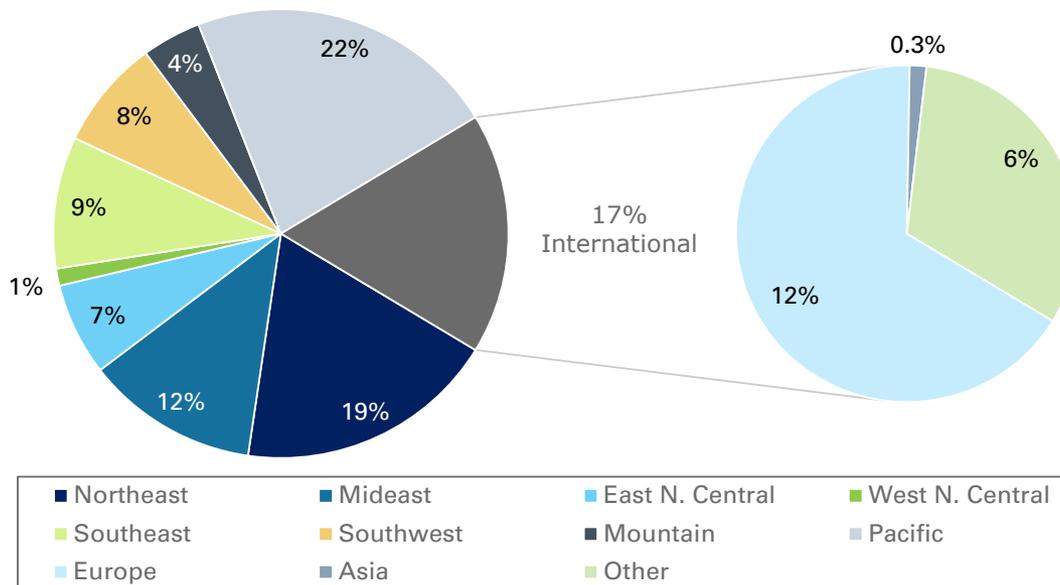


Data as of March 31, 2022. Liquidated investments not shown. Returns shown do not take into account risk/volatility of underlying strategies.

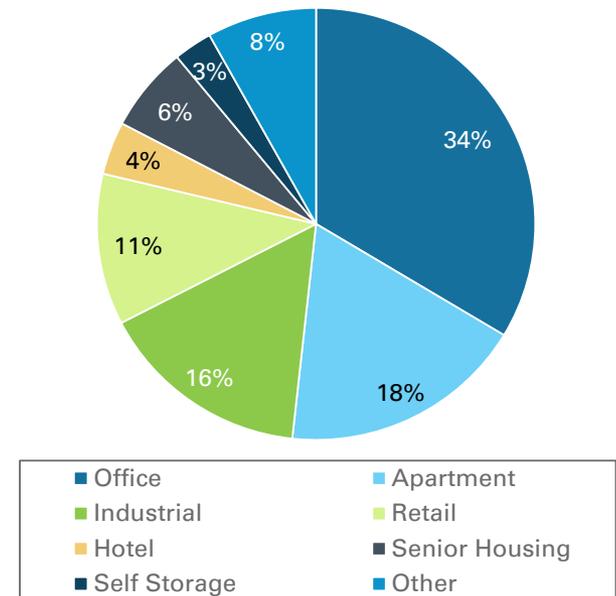
# PORTFOLIO DIVERSIFICATION

- The Pennsylvania SERS real estate portfolio is broadly diversified by property type and geography within the U.S.
- 17% of the portfolio is now invested outside the US, primarily in Europe

## Geography



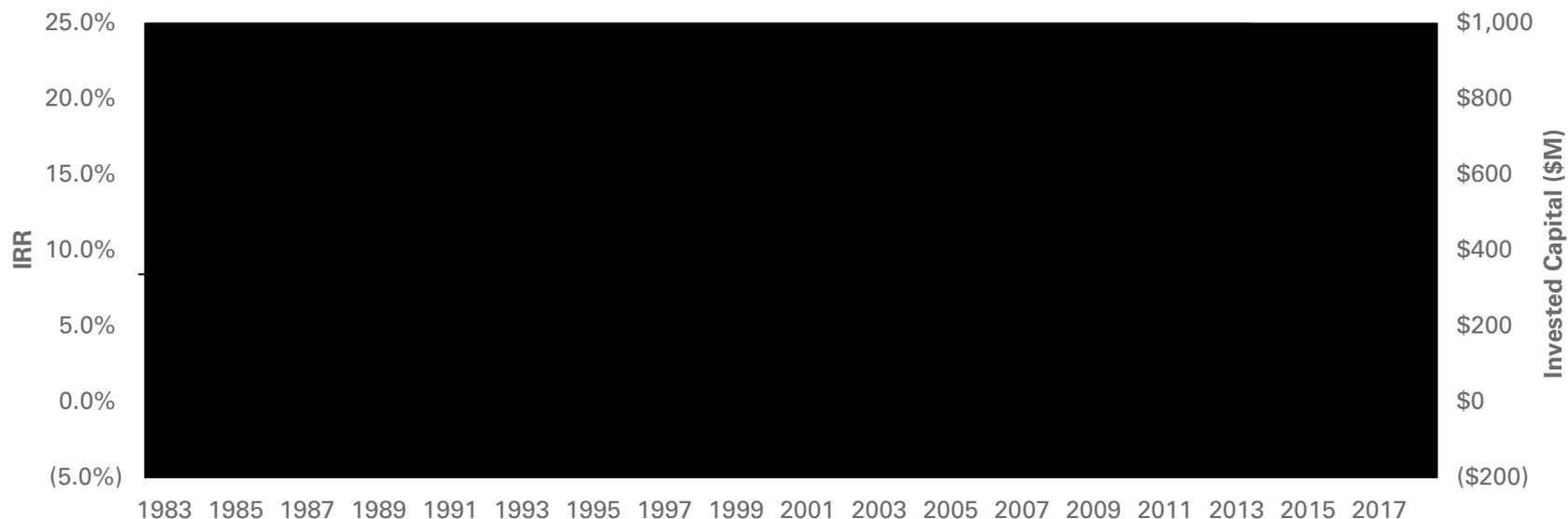
## Property Type



# HISTORICAL PERFORMANCE BY VINTAGE

- **The following chart illustrates capital invested and inception-to-date performance by vintage year as of March 31, 2022**
  - 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**

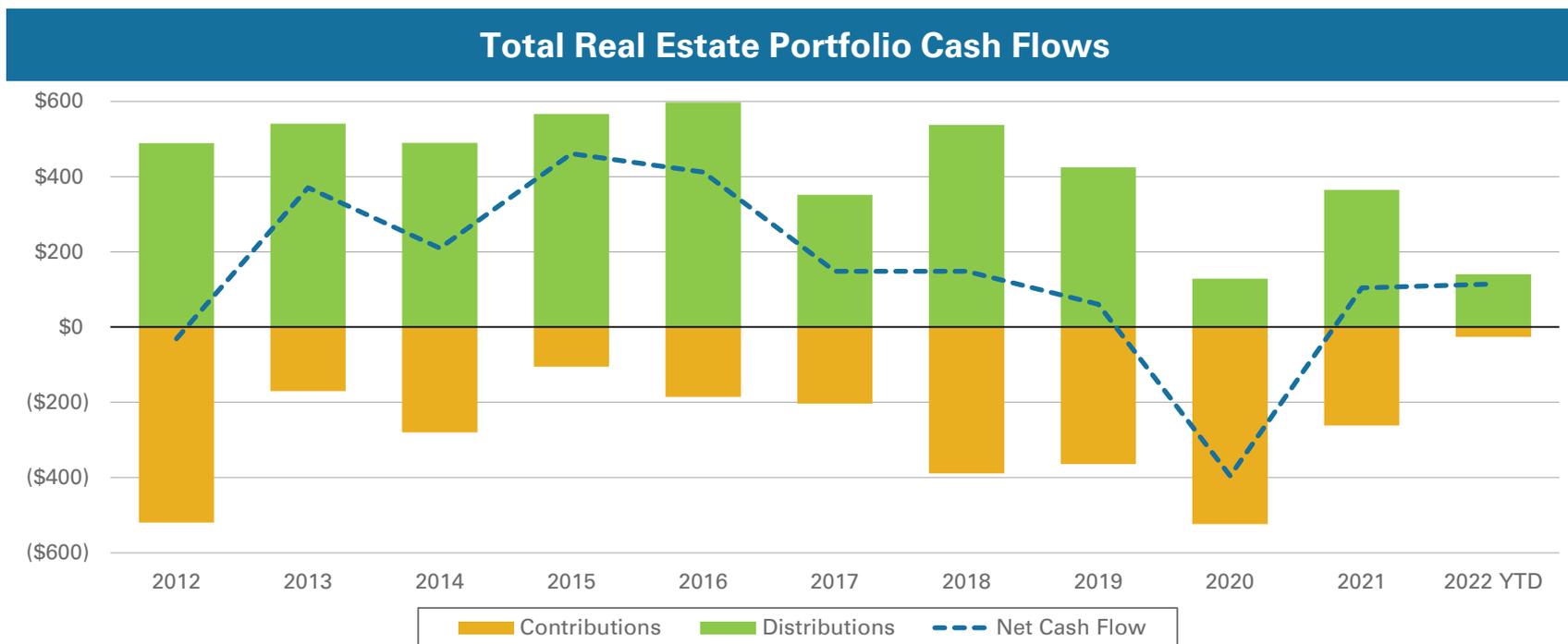


Data as of March 31, 2022. Offsetting cash flows have been excluded, such as assets that were transferred from one account to another.



# 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
  - The portfolio was cash flow positive in eight of the last 10 full years, including in 2021
  - Through the first quarter of 2022, distributions increased while contributions (i.e., capital calls) were muted



Data as of March 31, 2022. Offsetting cash flows have been excluded, such as assets that were transferred from one account to another.

## 2. REAL ESTATE MARKET & PORTFOLIO UPDATE



# REAL ESTATE MARKET UPDATE

- **Private core real estate saw returns moderate from all-time highs but has continued to experience strong absolute returns**
  - The ODCE posted a 4.8% gross return for Q2 (vs. long-term average of 2.2%)
- **Industrial and apartment properties continue to be the strongest performers, driven by continued demand growth and resulting rent growth**
- **REITs (public real estate) meanwhile followed the broader equity markets lower in the 2<sup>nd</sup> quarter, and are down nearly 20% for the first half of the year**
  - This divergence between public and private real estate is not uncommon over shorter time periods, and is one benefit of pairing the two in a portfolio
- **Real estate transaction volume has slowed as investors digest rising interest rates and other macro trends and economic data**
  - Rising interest rates increase the cost of financing real estate investments and also provide some pressure on pricing/valuations as real estate is commonly valued based on a cap rate or yield basis
- **NEPC continues to believe that it is important to not try and time the market**
  - Closed-end funds are long-term investments with multi-year investment periods
  - A consistent annual investment pace is the best way to mitigate market timing risk

# LOOKING FORWARD

- **Changes to the sub-strategy target allocations within the real estate portfolio were approved at the April Investment Committee meeting:**

Sub-Strategy	Current Allocation	Old Target	New Target
Core / Core-Plus	44%	35%	25%
Value-Add & Opportunistic	44%	55%	70%
REITs	12%	10%	5%

- **NEPC believes that these changes should increase the total expected/targeted return for real estate portfolio while still maintaining strategic allocations to Core, Core-Plus, and REIT strategies**
- **NEPC and Staff will work together to provide an updated pacing and implementation plan incorporating these new targets**
- **NEPC and Staff will also continue to evaluate both re-ups with existing strategic partners and potential new relationships as we look toward 2023 allocations**
  - Exposures to core, core-plus, and REITs will be monitored and rebalanced (as necessary)



# APPENDIX 1:

Investment Level  
Performance  
as of March 31, 2022

# ACTIVE INVESTMENTS

Investments			Trailing Period Returns (IRR) %							
Investment Name	Vintage Year	Commitment	QTD	YTD	1 Yr	3 Yrs	5 Yrs	7 Yrs	10 Yrs	SI IRR
Activum SG Fund VI L.P.	2019	50,000,000	NM	NM	NM	NM	NM	NM	NM	NM
Activum SG Fund VI Pennsylvania Side-Car L.P.	2019	50,000,000	NM	NM	NM	NM	NM	NM	NM	NM
AG Asia Realty Fund, L.P.	2007	25,000,000								
Blackstone Property Partners, L.P.	2017	300,000,000	9.51%	9.51%	27.11%	10.87%				10.04%
Blackstone Real Estate Partners IV, L.P.	2003	25,000,000	-6.62%	-6.62%	49.95%	97.34%	11.27%	0.08%	6.82%	11.98%
Blackstone Real Estate Partners V, L.P.	2006	50,000,000	1.87%	1.87%	81.30%	16.49%	7.96%	5.75%	14.20%	10.73%
Blackstone Real Estate Partners VI, L.P.	2007	75,000,000	13.19%	13.19%	22.84%	12.79%	17.43%	2.98%	17.29%	12.73%
Blackstone Real Estate Partners VII, L.P.	2011	75,000,000	5.59%	5.59%	43.84%	7.56%	9.37%	9.47%	15.19%	15.42%
Blue Moon Senior Housing II Sidecar L.P.	2019	50,000,000	NM	NM	NM	NM	NM	NM	NM	NM
Blue Moon Senior Housing II, L.P.	2019	50,000,000	NM	NM	NM	NM	NM	NM	NM	NM
BPG Investment Partnership IX, L.P.	2012	25,000,000								
BPG Investment Partnership V, L.P.	1999	25,000,000								
BPG Investment Partnership VI, L.P.	2002	25,000,000								
BPG Investment Partnership VII, L.P.	2005	25,000,000								
C-III Recovery Fund III, L.P.	2017	100,000,000								
CenterSquare Real Estate Securities	2002	183,616,773	-3.03%	-3.03%	25.38%	12.37%	12.75%	11.43%	12.29%	12.45%
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	NM	NM	NM	NM	NM	NM	NM	NM
HotelAVE Separate Account	2018	63,048,685	0.60%	0.60%	24.40%	-5.57%				-2.01%
LaSalle Separate Account	1994	455,498,003	0.53%	0.53%	3.74%	-2.03%	4.86%	6.12%	12.32%	9.35%
LaSalle Takeover Account	2018	272,260,055	5.45%	5.45%	19.16%	18.55%				20.24%
LEM Multifamily Fund VI, L.P.	2022	75,000,000	NM	NM	NM	NM	NM	NM	NM	NM
Lubert-Adler Real Estate Fund VII, L.P.	2014	25,000,000	4.91%	4.91%	11.76%	-3.19%	3.44%	3.75%		3.24%



Data as of March 31, 2022. Performance metrics calculated by NEPC based on data provided by the investment managers.

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
Mesirow Financial Real Estate Value Fund III, L.P.	2018	25,000,000	1.08%	1.08%	40.19%	20.85%				18.60%
Oak Street Real Estate Capital Fund IV, L.P.	2017	100,000,000	13.07%	13.07%	28.37%	25.96%				23.32%
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	309,743,743	4.44%	4.44%	23.33%	19.15%				18.77%
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	-1.59%	-1.59%	194.55%	134.07%	42.16%	11.88%	17.61%	15.41%
Scout Fund II-A, L.P.	2016	30,000,000	3.77%	3.77%	5.37%	3.67%	6.70%			4.28%
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	7.08%	7.08%	21.49%	2.71%	4.47%	5.89%	7.42%	6.90%
ValStone Opportunity Fund V, LLC	2014	14,663,402	4.45%	4.45%	9.44%	7.25%	7.56%	8.20%		8.29%
Westbrook Real Estate Fund V, L.P.	2004	25,000,000	-0.04%	-0.04%	-13.09%	23.20%	8.85%	16.98%	21.61%	43.55%
Westbrook Real Estate Fund VI, L.P.	2006	35,000,000	-0.11%	-0.11%	-0.55%	-2.20%	0.87%	-0.40%	11.83%	0.23%
Westbrook Real Estate Fund VII, L.P.	2007	50,000,000	-0.03%	-0.03%	1.13%	-6.35%	-3.00%	1.28%	9.60%	2.22%
Westbrook Real Estate Fund VIII, L.P.	2009	50,000,000	-0.28%	-0.28%	-1.32%	-11.20%	-4.69%	-1.92%	7.48%	9.74%
<b>Total</b>			<b>4.81%</b>	<b>4.81%</b>	<b>21.63%</b>	<b>11.68%</b>	<b>10.60%</b>	<b>9.76%</b>	<b>11.46%</b>	<b>6.66%</b>



Data as of March 31, 2022. Performance metrics calculated by NEPC based on data provided by the investment managers.

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
<b>Core/Core-Plus</b>												
Blackstone Property Partners, L.P.	2017	\$300,000,000	\$0	\$300,000,000	\$0	\$4,222,512	\$432,247,287	\$436,469,799	\$136,469,799	0.01	1.45	10.04%
Heitman America Real Estate Trust, L.P.	2007	\$100,000,000	\$0	\$100,000,000		\$91,613,354						
Henderson Park Enhanced Income Fund, SCSp	2019	\$331,239,087	\$24,333,021	\$306,906,066	NM	\$60,241,563	NM	NM	NM	NM	NM	NM
Oak Street Real Estate Capital Net Lease Property Fund, L.P.	2018	\$309,743,743	\$0	\$309,743,743	\$0	\$19,301,968	\$372,712,817	\$392,014,785	\$82,271,042	0.06	1.27	18.77%
Trumbull Property Fund, L.P.	1988	\$25,558,525	\$0	\$25,558,525	\$0	\$122,345,988	\$26,435,958	\$148,781,946	\$123,223,421	4.79	5.82	6.90%
<b>Total Core/Core-Plus</b>		<b>\$1,066,541,355</b>	<b>\$24,333,021</b>	<b>\$1,042,208,334</b>	<b>\$1,635,357</b>	<b>\$297,725,385</b>	<b>\$1,328,574,174</b>	<b>\$1,626,299,559</b>	<b>\$582,455,868</b>	<b>0.29</b>	<b>1.56</b>	<b>8.17%</b>
<b>Value-Add &amp; Opportunistic SMAs</b>												
Heitman Separate Account	1988	\$813,635,039	\$0	\$813,635,039		\$1,216,459,873						
HotelAVE Separate Account	2018	\$63,048,685	\$0	\$63,048,685		\$20,191,396	\$39,471,203	\$59,662,599		0.32	0.95	-2.01%
LaSalle Separate Account	1994	\$455,498,003	\$594,210	\$454,903,793		\$778,848,456	\$172,333,643	\$951,182,099		1.70	2.08	9.35%
LaSalle Takeover Account	2018	\$272,260,055	\$0	\$272,260,055		\$172,440,449	\$316,153,010	\$488,593,459		0.63	1.79	20.24%
<b>Total Value-Add &amp; Opportunistic SMAs</b>		<b>\$1,604,441,782</b>	<b>\$594,210</b>	<b>\$1,603,847,572</b>		<b>\$2,187,940,174</b>						<b>6.03%</b>
<b>REIT</b>												
CenterSquare Real Estate Securities	2002	\$183,616,773	\$0	\$183,616,773	\$0	\$36,168,336	\$369,380,300	\$405,548,636	\$221,931,863	0.20	2.21	12.45%
<b>Total REIT</b>		<b>\$183,616,773</b>	<b>\$0</b>	<b>\$183,616,773</b>	<b>\$0</b>	<b>\$36,168,336</b>	<b>\$369,380,300</b>	<b>\$405,548,636</b>	<b>\$221,931,863</b>	<b>0.20</b>	<b>2.21</b>	<b>12.45%</b>
<b>Timber</b>												
Forest Separate Account	1992	\$124,231,969	\$0	\$124,231,969		\$247,882,576						
<b>Total Timber</b>		<b>\$124,231,969</b>	<b>\$0</b>	<b>\$124,231,969</b>		<b>\$247,882,576</b>						
<b>Value Add/Opportunistic</b>												
Activum SG Fund VI L.P.	2019	\$57,419,413	\$20,828,051	\$36,591,362	NM	\$0	NM	NM	NM	NM	NM	NM
Activum SG Fund VI Pennsylvania Side-Car L.P.	2019	\$57,071,618	\$30,618,649	\$26,452,969	NM	\$0	NM	NM	NM	NM	NM	NM
AG Asia Realty Fund, L.P.	2007	\$25,000,000	\$1,500,000	\$23,500,000		\$27,487,500				1.17		
Blackstone Real Estate Partners IV, L.P.	2003	\$25,000,000	\$0	\$25,000,000	\$0	\$40,994,391	\$350,998	\$41,345,389	\$16,345,389	1.64	1.65	11.98%
Blackstone Real Estate Partners V, L.P.	2006	\$50,000,000	\$2,087,026	\$47,912,974	\$0	\$100,160,231	\$109,133	\$100,269,364	\$52,356,390	2.09	2.09	10.73%
Blackstone Real Estate Partners VI, L.P.	2007	\$75,000,000	\$3,680,925	\$71,319,075	\$281,339	\$152,784,574	\$2,357,109	\$155,141,683	\$83,541,269	2.13	2.17	12.73%
Blackstone Real Estate Partners VII, L.P.	2011	\$75,000,000	\$8,348,387	\$66,651,613	\$2,657,055	\$98,762,207	\$38,564,533	\$137,326,740	\$68,018,072	1.42	1.98	15.42%
Blue Moon Senior Housing II Sidecar L.P.	2019	\$50,000,000	\$20,712,589	\$29,287,411	NM	\$0	NM	NM	NM	NM	NM	NM
Blue Moon Senior Housing II, L.P.	2019	\$50,000,000	\$22,189,358	\$27,810,642	NM	\$0	NM	NM	NM	NM	NM	NM
BPG Investment Partnership IX, L.P.	2012	\$25,000,000	\$696,591	\$24,303,409		\$40,087,976						
BPG Investment Partnership V, L.P.	1999	\$24,136,964	\$0	\$24,136,964		\$43,951,033						
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		\$17,460,295						
C-III Recovery Fund III, L.P.	2017	\$100,000,000	\$20,780,663	\$79,219,337		\$3,388,775						
Clerestory Small Cap Real Estate Fund I - TE, L.P.	2010	\$18,000,000	\$2,771,044	\$15,228,956		\$15,184,892						

NM - Not Meaningful

Data as of March 31, 2022. Performance metrics calculated by NEPC based on data provided by the investment managers. 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
<b>Value Add/Opportunistic (Continued)</b>												
Colony Investors VIII, L.P.	2007	\$22,500,000	\$844,200	\$21,655,800		\$8,350,233						
LEM Multifamily Fund VI, L.P.	2022	\$75,000,000	\$75,000,000	\$0	NM	\$0	NM	NM	NM	NM	NM	NM
Lubert-Adler Real Estate Fund VII, L.P.	2014	\$25,000,000	\$625,000	\$24,375,000	\$0	\$12,485,655	\$15,954,131	\$28,439,786	\$4,064,786	0.51	1.17	3.24%
Mesirow Financial Real Estate Value Fund III, L.P.	2018	\$25,647,559	\$0	\$25,647,559	\$211,656	\$6,735,455	\$33,819,380	\$40,554,835	\$14,695,620	0.26	1.57	18.60%
Oak Street Real Estate Capital Fund IV, L.P.	2017	\$100,000,000	\$0	\$100,000,000	\$0	\$85,528,967	\$69,003,335	\$154,532,302	\$54,532,302	0.86	1.55	23.32%
Oak Street Real Estate Capital Fund V, L.P.	2020	\$50,000,000	\$27,140,000	\$22,860,000	NM	\$6,396,806	NM	NM	NM	NM	NM	NM
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		\$31,202,182				0.83		
Rockpoint Real Estate Fund III, L.P.	2007	\$50,632,887	\$4,241,165	\$46,391,722		\$68,151,141				1.34		
Rockpoint Real Estate Fund V, L.P.	2015	\$50,000,000	\$8,663,087	\$41,336,913		\$17,273,148				0.38		
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	\$24,320,449	\$5,679,551	NM	\$0	NM	NM	NM	NM	NM	NM
Scout Fund I-A, L.P.	2009	\$75,000,000	\$0	\$75,000,000	\$0	\$118,686,554	\$177,719	\$118,864,273	\$43,864,273	1.58	1.58	15.41%
Scout Fund II-A, L.P.	2016	\$30,000,000	\$0	\$30,000,000	\$0	\$605,865	\$35,623,760	\$36,229,625	\$6,229,625	0.02	1.21	4.28%
Senior Housing Partners V, L.P.	2015	\$50,000,000	\$8,862,310	\$41,137,690		\$3,216,633	\$52,482,883	\$55,699,516		0.08		
Senior Housing Partners VI, L.P.	2019	\$100,000,000	\$56,566,347	\$43,433,653	NM	\$0	NM	NM	NM	NM	NM	NM
SRE Opportunity Fund III Select, L.P.	2018	\$50,000,000	\$24,900,000	\$25,100,000	NM	\$16,872,933	NM	NM	NM	NM	NM	NM
SRE Opportunity Fund III, L.P.	2018	\$50,000,000	\$20,186,439	\$29,813,561		\$13,863,561						
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		\$71,362,628						
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	\$6,689,834	\$16,562,881	\$23,252,715	\$8,588,938	0.46	1.59	8.29%
Westbrook Real Estate Fund V, L.P.	2004	\$25,000,000	\$0	\$25,000,000	\$2,259,023	\$52,005,779	\$45,320	\$52,051,099	\$24,792,076	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	\$1,410,586	\$38,981,983	\$431,884	0.97	1.01	0.23%
Westbrook Real Estate Fund VII, L.P.	2007	\$50,000,000	\$0	\$50,000,000	\$6,278,781	\$55,818,180	\$8,748,231	\$64,566,411	\$8,287,630	0.99	1.15	2.22%
Westbrook Real Estate Fund VIII, L.P.	2009	\$50,000,000	\$0	\$50,000,000	\$4,272,025	\$63,418,319	\$7,302,477	\$70,720,796	\$16,448,771	1.17	1.30	9.74%
<b>Total Value Add/Opportunistic</b>		<b>\$1,831,281,839</b>	<b>\$410,205,999</b>	<b>\$1,421,075,840</b>	<b>\$36,353,877</b>	<b>\$1,341,058,716</b>	<b>\$746,189,969</b>	<b>\$2,087,248,684</b>	<b>\$629,818,968</b>	<b>0.92</b>	<b>1.43</b>	<b>8.53%</b>
<b>Total</b>		<b>\$4,810,113,717</b>	<b>\$435,133,231</b>	<b>\$4,374,980,487</b>		<b>\$4,110,775,187</b>						<b>6.66%</b>

NM - Not Meaningful

Data as of March 31, 2022. Performance metrics calculated by NEPC based on data provided by the investment managers. 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:**

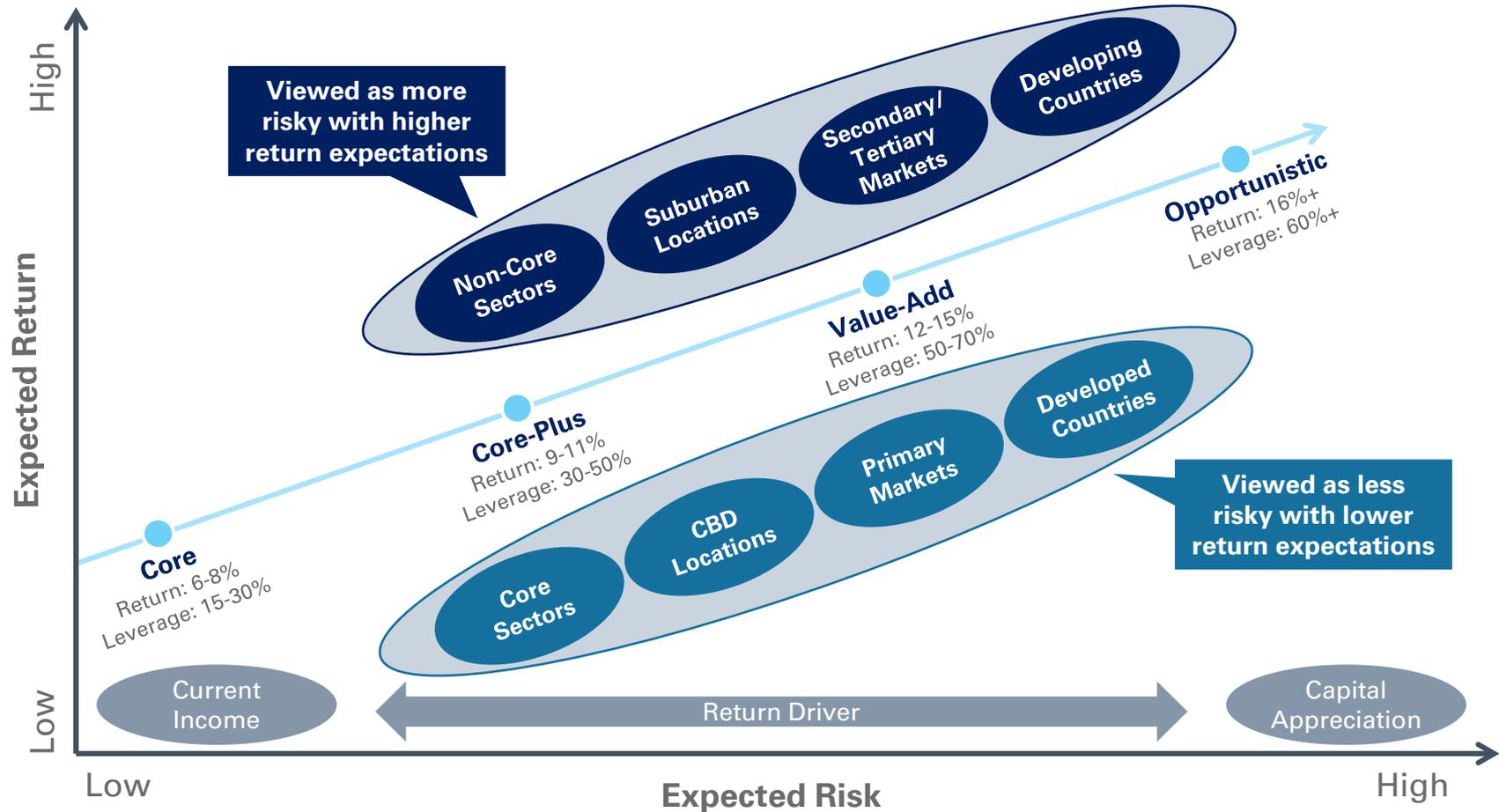
### Real Estate Strategy Summaries

# SPECTRUM OF REAL ESTATE INVESTMENT STRATEGIES

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

# RELATIVE EXPECTED RISK RETURN PROFILE

## ILLUSTRATIVE RISK / RETURN PROFILE





# **APPENDIX 3:**

## 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