



PENNSYLVANIA STATE EMPLOYEES' RETIREMENT SYSTEM

REAL ESTATE QUARTERLY
PERFORMANCE REVIEW

FOURTH QUARTER 2023



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1. REAL ESTATE QUARTERLY PERFORMANCE REPORT

As of December 31, 2023



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 December 31, 2023 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 has generated a total net return of –13.9% year to date**
 - The portfolio has generated an annualized return of 3.0% over the trailing five years

Portfolio Performance	YTD	1 Year	3 Year	5 Year	10 Year	Inception
Pennsylvania SERS: Total Real Estate Portfolio	-13.9%	-13.9%	1.0%	3.0%	4.2%	6.8%
<i>Policy Benchmark: NFI-ODCE Index¹</i>	<i>-12.7%</i>	<i>-12.7%</i>	<i>4.0%</i>	<i>3.3%</i>	<i>6.3%</i>	<i>N/A</i>
<i>NCREIF Property Index²</i>	<i>-7.9%</i>	<i>-7.9%</i>	<i>4.6%</i>	<i>4.3%</i>	<i>6.8%</i>	<i>N/A</i>
<i>CJA Non-Core Real Estate Index³</i>	<i>-3.4%</i>	<i>-3.4%</i>	<i>9.7%</i>	<i>8.2%</i>	<i>9.2%</i>	<i>N/A</i>
<i>S&P 500 Index</i>	<i>26.3%</i>	<i>26.3%</i>	<i>10.0%</i>	<i>15.7%</i>	<i>12.0%</i>	<i>N/A</i>

Data as of December 31, 2023. Sources include NCREIF, CJA, Manager data, and NEPC.

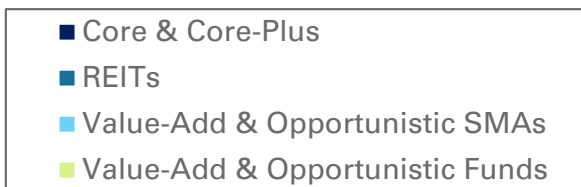
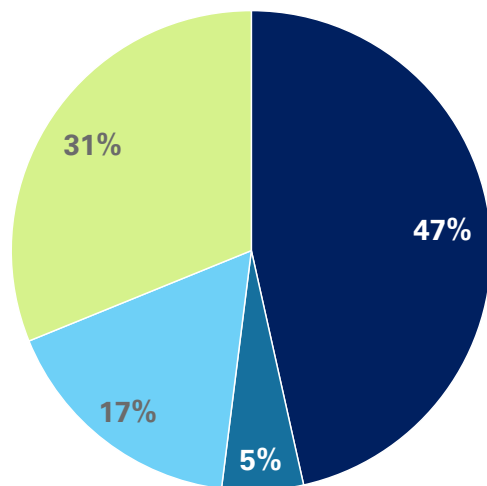
1. The NFI-ODCE Index represents pooled returns of open-end comingled core funds in the ODCE Index. The ODCE includes the effects of leverage, and returns shown are time-weighted and net of fees.
2. The NCREIF Property Index (NPI) represents property-level returns of institutionally-owned core real estate properties in the United States. The NPI is unlevered, and returns are time-weighted and gross of fees.
3. The CJA Benchmark data is preliminary, and 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.



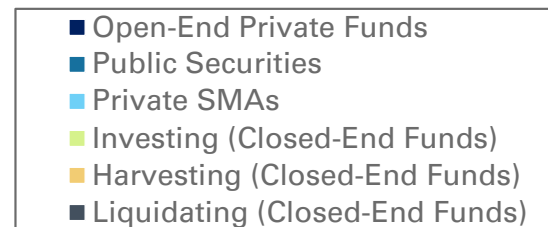
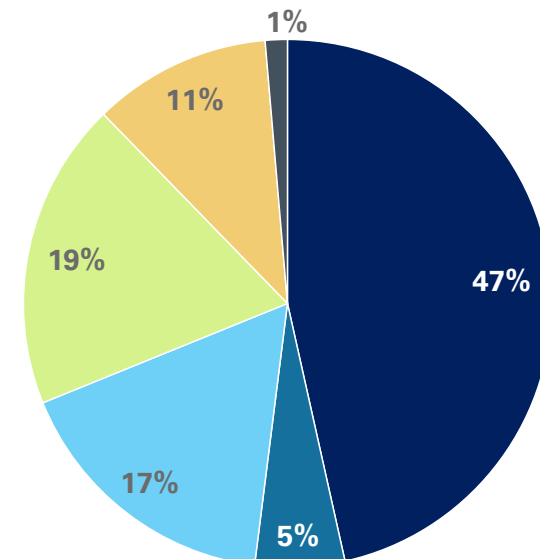
PORTFOLIO ALLOCATION OVERVIEW

- The charts below show PA 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 52% 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



Allocation by Structure & Lifecycle Stage

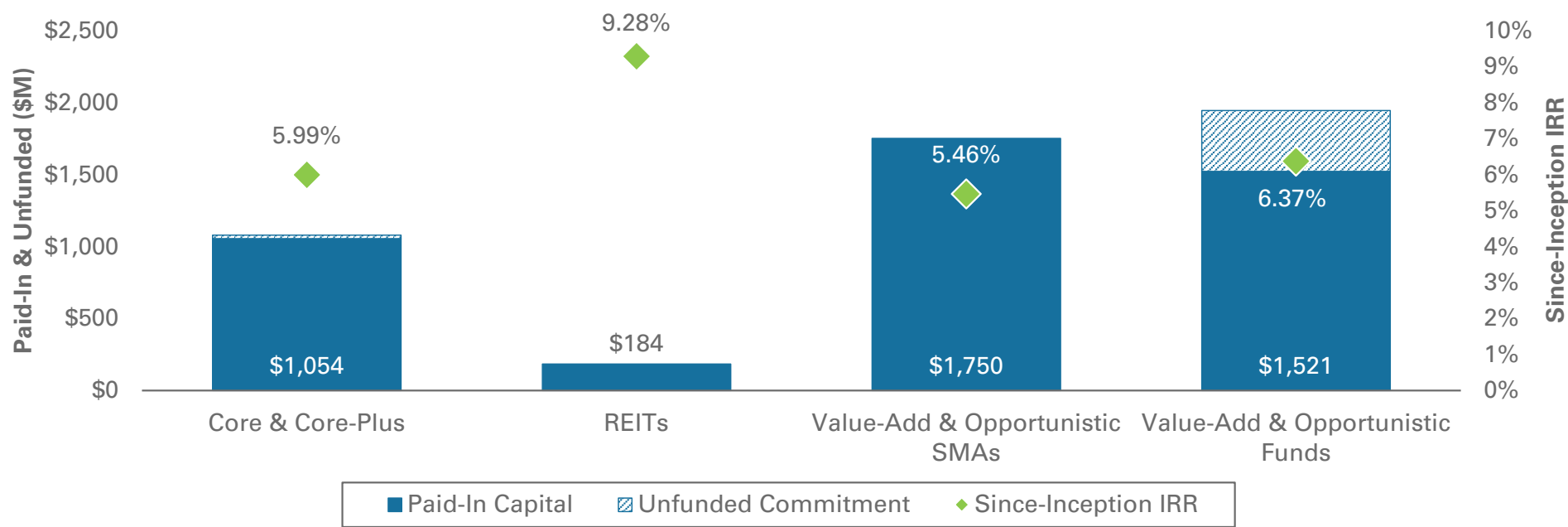


Data as of December 31, 2023.



PERFORMANCE BY STRATEGY

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



Investment Strategy	Commitment	Paid-In Capital	Unfunded Commitment	Cumulative Distributions	Valuation	Total Value	Net Benefit	Call Ratio	DPI Ratio	TVPI Ratio	IRR
Core & Core-Plus	1,078,327,900	1,054,169,834	24,158,066	382,076,708	1,108,900,534	1,490,977,241	436,807,408	98%	0.36x	1.41x	5.99%
REITs	183,616,773	183,616,773	0	211,168,336	130,913,380	342,081,716	158,464,943	100%	1.15x	1.86x	9.28%
Value-Add & Opportunistic SMAs	1,735,586,136	1,750,289,468	0	2,239,457,174				101%			5.46%
Value-Add & Opportunistic Funds	1,908,894,390	1,520,800,839	422,975,972	1,206,929,967	741,588,907	1,948,518,873	427,718,035	80%	0.79x	1.28x	6.37%
Total (Active Investments)	4,906,425,198	4,508,876,913	447,134,038	4,039,632,185				92%	0.90x		5.79%

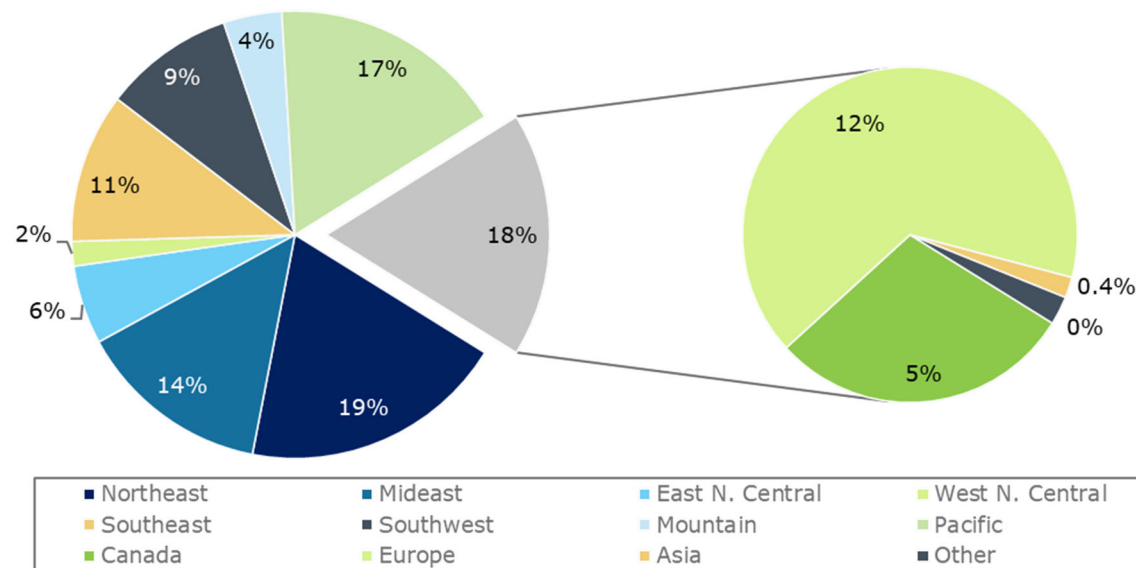


Data as of December 31, 2023. Liquidated investments not shown. Returns shown do not take into account risk/volatility of underlying strategies. Note that, due to rounding, there may be slight differences between the summed figures, totals, and amounts shown elsewhere in this presentation.

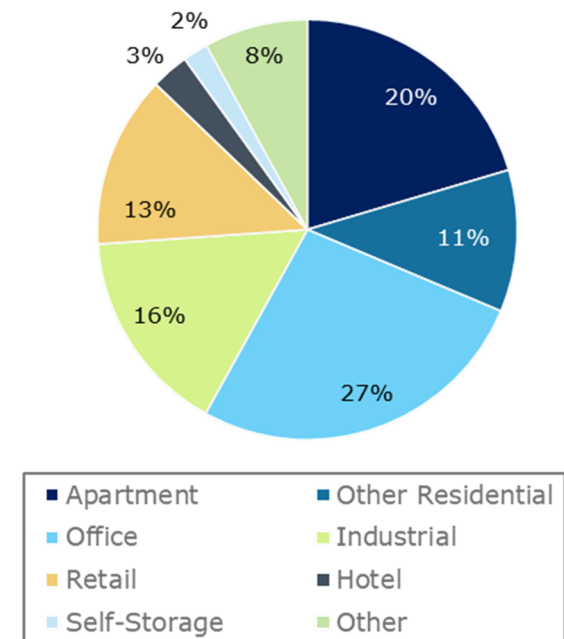
PORTFOLIO DIVERSIFICATION

- The PA SERS real estate portfolio is broadly diversified by property type and geography within the U.S.
- 18% of the portfolio is invested outside the U.S., primarily in Europe

Geography



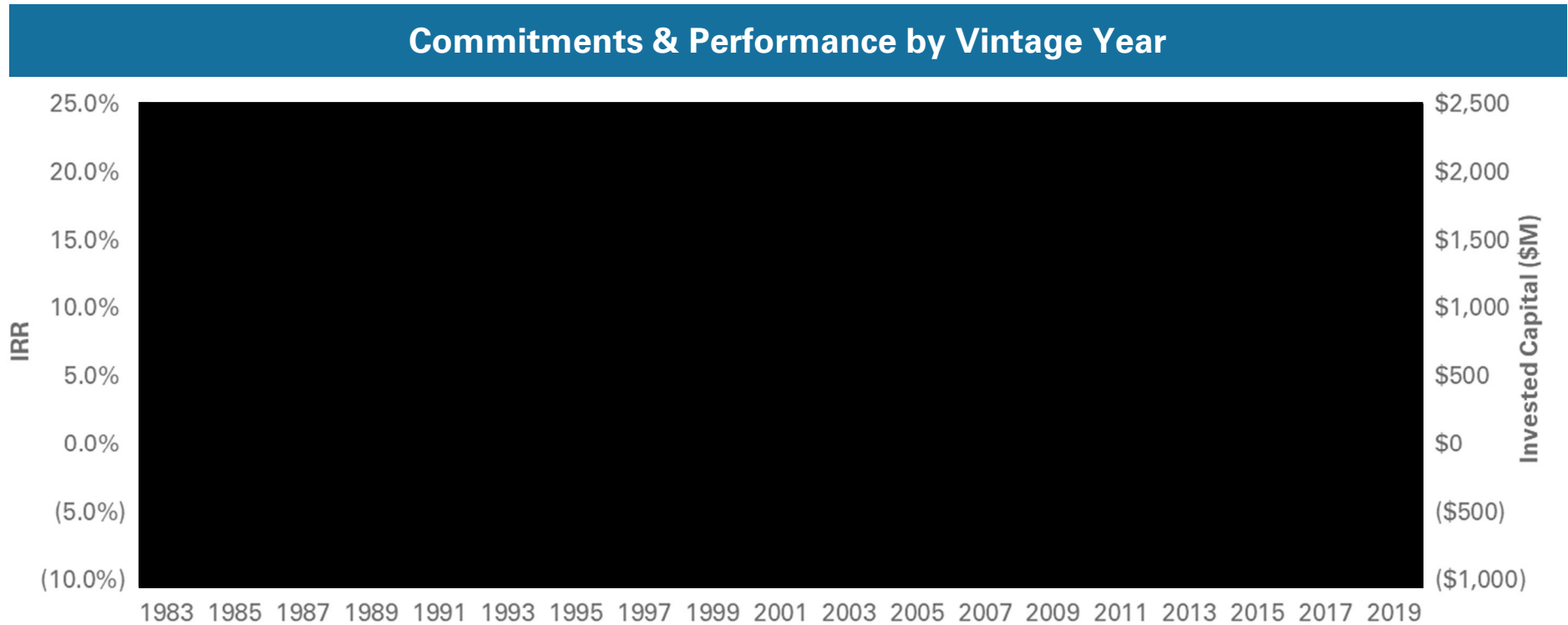
Property Type



Data as of December 31, 2023. Underlying diversification data provided by the investment managers.

HISTORICAL PERFORMANCE BY VINTAGE

- **The following chart illustrates capital invested and inception-to-date performance by vintage year as of December 31, 2023**
 - Inconsistent pacing has negatively impacted portfolio performance
 - The PA SERS Investment Office and NEPC are focused on maintaining a consistent investment pacing schedule to mitigate the risk of heavy capital investments in poor vintage years

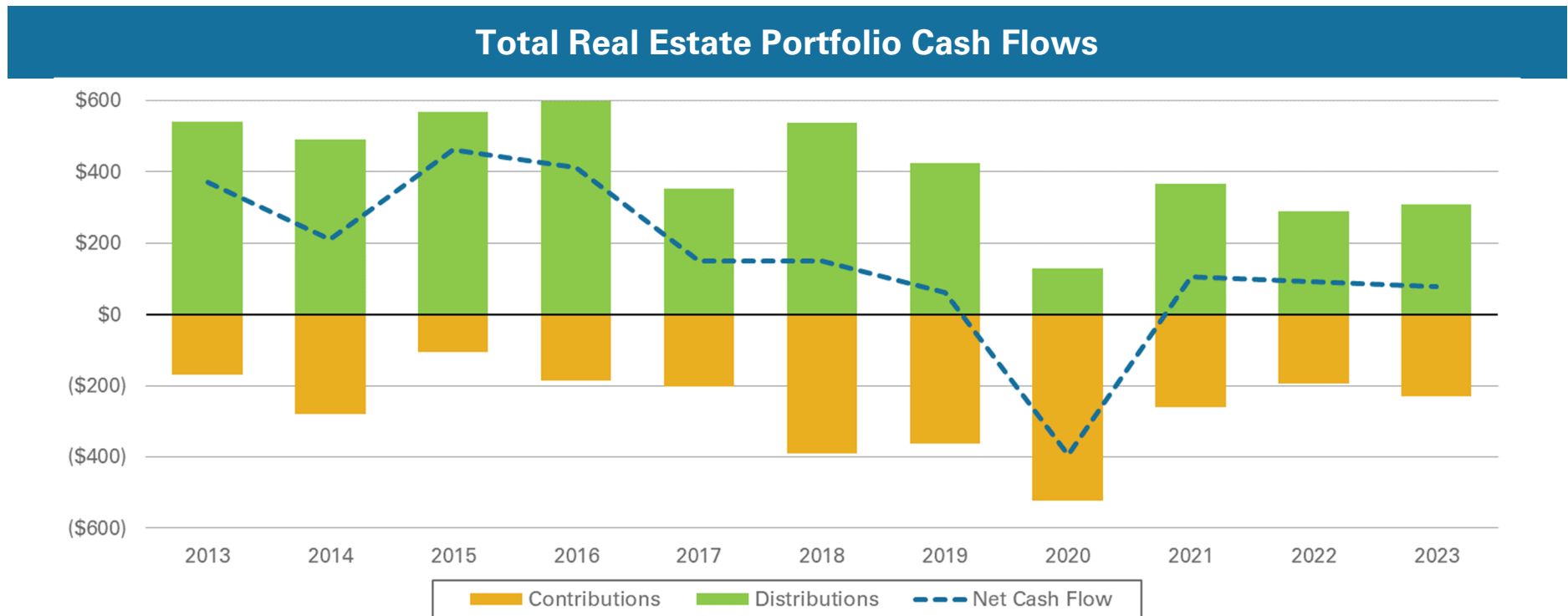


Data as of December 31, 2023. Notes: Vintage years 2020 and later are excluded as data is less meaningful. For separate accounts, the date of initial commitment or investment is used as the vintage year.



10-YEAR CASH FLOWS

- The chart below illustrates the capital invested, distributed, and net cash flows for the real estate portfolio YTD and over the prior 10 full calendar years**
 - The portfolio was cash flow positive in nine of the last 10 years, including in 2023
 - The portfolio is cash flow positive YTD as there was an uptick in distributions in the third quarter



Data as of December 31, 2023. Offsetting cash flows have been excluded, such as assets that were transferred from one account to another.

ACTIVE DIVERSE-LED INVESTMENTS

- The table below displays the since-inception performance of active (non-liquidated) investments managed by diverse-owned and diverse-led investment management firms in the PA SERS real estate portfolio

Investment Name	Vintage Year	Commitment	Paid-In Capital	Unfunded Commitment	Cumulative Distributions	Valuation	Total Value	Net Benefit	DPI Ratio	TVPI Ratio	IRR
Blue Moon Senior Housing II Sidecar L.P.	2019	50,000,000	47,968,832	8,562,589	0	48,095,372	48,095,372	126,540	0.00x	1.00x	0.12%
Blue Moon Senior Housing II, L.P.	2019	50,000,000	48,051,089	8,708,818	0	44,021,291	44,021,291	(4,029,798)	0.00x	0.92x	(4.08%)
HotelAVE Separate Account	2018	95,994,432	95,994,432	0	57,691,396	21,278,551	78,969,947	(17,024,485)	0.60x	0.82x	(8.13%)
Rubicon First Ascent Sidecar	2021	20,000,000	13,085,754	14,752,611	0	NM	NM	NM	NM	NM	NM
Rubicon First Ascent, L.P.	2021	30,000,000	15,116,446	24,320,449	0	NM	NM	NM	NM	NM	NM
Scout Fund II-A, L.P.	2016	30,000,000	30,000,000	0	1,533,154	14,844,533	16,377,687	(13,622,313)	0.05x	0.55x	(9.44%)
Total		275,994,432	250,216,553	56,344,467	59,224,550	152,403,466	211,628,016	(38,588,537)	0.24x	0.85x	(6.49%)

NM - Not Meaningful

Data as of December 31, 2023. NEPC defines “diverse-owned” as a firm that’s at least 50% owned by an under-represented group and “diverse-led” as a firm that’s 33% to 50% owned by an under-represented group. The funds listed on this page are those which NEPC has identified as diverse-owned or diverse-led as of December 31, 2023. Therefore, it is possible that a firm may have been diverse-owned or diverse-led at the time of PA SERS commitment but is no longer, and therefore is excluded from this list. While NEPC has exercised reasonable professional care in preparing this information, we cannot guarantee the accuracy of all source information. Note that, due to rounding, there may be slight differences between the summed figures and the totals.



2. REAL ESTATE MARKET & PORTFOLIO UPDATE

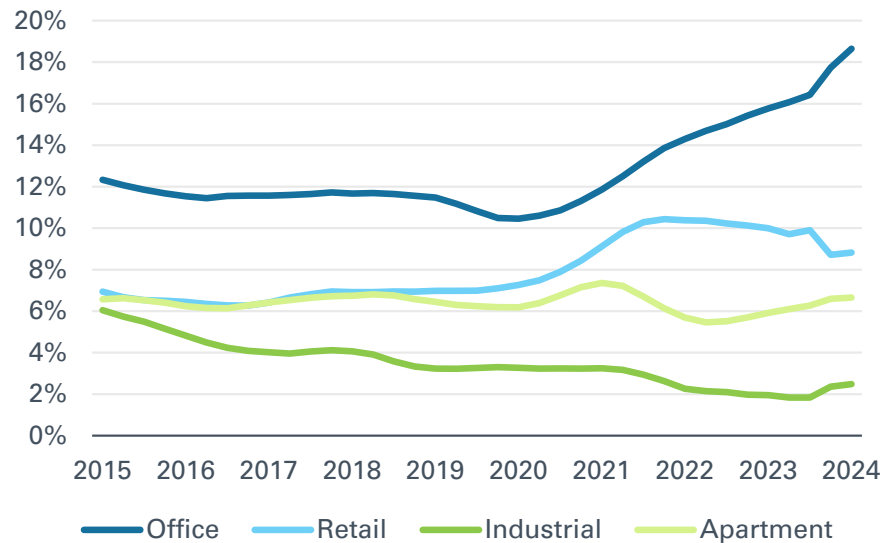


REAL ESTATE MARKET UPDATE

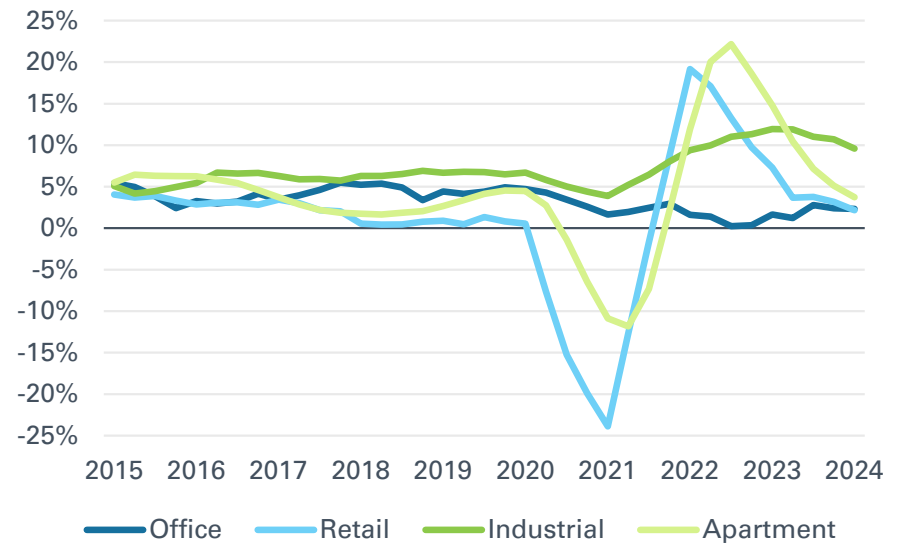
- **Private real estate markets continue to seek a bottoming in valuations**
 - Market participants lack agreement on timing, but consensus is that we are nearing a bottom
- **After posting a -12.7% gross of fee return for 2023, the ODCE reported a -2.4% gross return in the first quarter**
 - This represents a slow-down in the negative appreciation, but still positions the ODCE far behind the 8.1% average annual return it generated over the prior 20 years
- **Uncertainty in the future path of interest rates remains the biggest challenge and question for investors**
 - Furthermore, the longer these higher interest rates persist, the more impactful it will be to asset owners (as more debt will need to be refinanced at higher rates)
- **Despite these challenges, NEPC continues to believe that there are attractive investment themes in 2024**
 - Sector specialists focused on property types with strong fundamentals and growth tailwinds
 - Debt and opportunistic strategies can capitalize on market dislocation
 - Potential for distressed opportunities and providing rescue capital
 - Secondaries strategies may also see increased deal flow and attractive pricing as funds approach end of term and investors seek liquidity

PROPERTY SECTOR ALLOCATION MATTERS

Vacancy Rate Disparity Among Property Sectors Widen



NOI Growth is Moderating to Historical Norms



- **Fundamentals for most property types remain stable and healthy, though NOI growth has slowed modestly**
 - Strong industrial demand continue to drive low vacancy and healthy relative NOI growth, which has been partially offsetting cap rate expansion
 - Apartments continue to benefit from a shortage of affordable housing and strong long-term demand, while new supply is negatively impacting certain markets and greater dispersion among markets
 - Retail has largely recovered from pandemic-related stress and found solid footing
- **Office remains the outlier as hybrid work drags on demand**



Sources: Data from NCREIF, as of March 31, 2024. NOI Growth shown is the seasonally-adjusted annual rate (SAAR).

LOOKING FORWARD

- **NEPC will continue to work with the PA SERS Investment Office to implement the strategic investment plan for the real estate portfolio, including:**
 - Shifting the underlying strategy mix to the new targets approved in 2022, a process which we anticipate occurring over several years
 - Identifying potential investment opportunities for future value-add and opportunistic commitments in 2024
 - We will seek strategies that will both complement the PA SERS portfolio and capitalize on the current market environment
- **Best practices for private market investments include maintaining annual commitment pacing, even through periods of uncertainty**
 - It is the manager’s job to navigate the market and identify attractive investment opportunities

Sub-Strategy	Current Allocation	Target Allocation
Core / Core-Plus	47%	25%
Value-Add & Opportunistic	48%	70%
REITs	5%	5%



APPENDIX 1:

Investment Level
Performance
as of December 31, 2023

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								
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								
Ares PA Opportunities Fund, L.P. - Opportunistic Real Estate	2023	100,000,000	NM	NM	NM	NM	NM	NM	NM	NM
Blackstone Property Partners, L.P.	2017	300,000,000	-6.31%	-9.79%	-9.79%	3.85%	3.70%			4.15%
Blackstone Real Estate Partners IV, L.P.	2003	25,000,000	27.14%	20.30%	20.30%	24.56%	55.12%	9.30%	3.71%	11.97%
Blackstone Real Estate Partners V, L.P.	2006	50,000,000	-0.27%	33.54%	33.54%	77.11%	18.60%	7.63%	14.36%	10.73%
Blackstone Real Estate Partners VI, L.P.	2007	75,000,000	16.77%	4.52%	4.52%	1.55%	7.69%	14.98%	11.40%	12.69%
Blackstone Real Estate Partners VII, L.P.	2011	75,000,000	-10.44%	-27.52%	-27.52%	13.81%	3.86%	7.35%	11.31%	14.46%
Blackstone Real Estate Partners X, L.P.	2022	75,000,000	NM	NM	NM	NM	NM	NM	NM	NM
Blue Moon Senior Housing II Sidecar L.P.	2019	50,000,000	-1.48%	3.70%	3.70%	0.91%				0.12%
Blue Moon Senior Housing II, L.P.	2019	50,000,000	-3.62%	-2.92%	-2.92%	-2.33%				-4.08%
Blue Owl Real Estate Capital Fund IV, L.P.	2017	100,000,000	-5.17%	-1.82%	-1.82%	19.08%	20.54%			19.46%
Blue Owl Real Estate Capital Fund V, L.P.	2020	50,000,000	2.77%	6.34%	6.34%	17.90%				18.07%
Blue Owl Real Estate Capital Fund VI, L.P.	2022	75,000,000	NM	NM	NM	NM	NM	NM	NM	NM
Blue Owl Real Estate Capital Net Lease Property Fund, L.P.	2018	309,743,743	-0.83%	3.12%	3.12%	12.53%				12.48%
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								
C-III Recovery Fund III, L.P.	2017	100,000,000								
CenterSquare Real Estate Securities	2002	183,616,773	16.26%	8.13%	8.13%	4.56%	6.95%	5.47%	6.77%	9.28%
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	95,994,432	-0.73%	-25.25%	-25.25%	-7.51%	-10.18%			-8.13%

NM - Not Meaningful



Data as of December 31, 2023. Performance metrics calculated by NEPC based on data provided by the investment managers.

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
LaSalle Separate Account	1994	498,639,974	-8.34%	-54.38%	-54.38%	-29.43%	-21.15%	-5.94%	2.98%	8.45%
LaSalle Takeover Account	2018	327,316,691	-10.25%	-25.28%	-25.28%	-4.60%	7.64%			8.57%
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	-19.74%	-28.61%	-28.61%	-7.74%	-8.48%	-1.36%		-0.79%
Mesirow Financial Real Estate Value Fund III, L.P.	2018	25,000,000	-5.44%	-2.70%	-2.70%	13.70%	12.35%			11.94%
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 II-A, L.P.	2016	30,000,000	-6.67%	-31.65%	-31.65%	-22.04%	-13.04%	-8.27%		-9.44%
Senior Housing Partners V, L.P.	2015	45,727,881								
Senior Housing Partners VI, L.P.	2019	100,000,000								
SRE Opportunity Fund III Select, L.P.	2018	50,000,000								
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	-4.21%	-15.81%	-15.81%	2.62%	-0.77%	2.61%	5.81%	6.80%
ValStone Opportunity Fund V, LLC	2014	14,663,402	-3.32%	-5.47%	-5.47%	2.50%	4.65%	5.46%		6.58%
Westbrook Real Estate Fund VI, L.P.	2006	35,000,000	-0.12%	-1.05%	-1.05%	-0.42%	-1.33%	1.12%	9.31%	0.23%
Westbrook Real Estate Fund VII, L.P.	2007	50,000,000	3.92%	-26.65%	-26.65%	-11.67%	-10.77%	-6.64%	1.10%	1.49%
Westbrook Real Estate Fund VIII, L.P.	2009	50,000,000	-8.92%	-19.22%	-19.22%	-9.07%	-11.71%	-7.01%	1.21%	8.96%
Total			-4.17%	-13.93%	-13.93%	0.96%	3.02%	4.02%	6.12%	5.79%

NM - Not Meaningful



Data as of December 31, 2023. Performance metrics calculated by NEPC based on data provided by the investment managers.

PERFORMANCE BY STRATEGY

Investments		Commitments		Contributions & Distributions		Valuations			Performance		
Investment Name	Vintage Year	Commitment	Unfunded Commitment	Paid in Capital	Cumulative Distributions	Valuation	Total Value	Net Benefit	DPI	TVPI	IRR
Core/Core-Plus											
Blackstone Property Partners, L.P.	2017	\$300,000,000	\$0	\$300,000,000	\$19,300,123	\$357,653,152	\$376,953,275	\$76,953,275	0.06	1.26	4.15%
Blue Owl Real Estate Capital Net Lease Property Fund, L.P.	2018	\$309,743,743	\$0	\$309,743,743	\$64,175,062	\$373,015,508	\$437,190,570	\$127,446,828	0.21	1.41	12.48%
Heitman America Real Estate Trust, L.P.	2007	\$100,000,000	\$0	\$100,000,000	\$98,730,341						
Henderson Park Enhanced Income Fund, SCSp	2019	\$343,025,632	\$24,158,066	\$318,867,566	\$72,881,431						
Trumbull Property Fund, L.P.	1988	\$25,558,525	\$0	\$25,558,525	\$126,989,750	\$17,906,697	\$144,896,447	\$119,337,922	4.97	5.67	6.80%
Total Core/Core-Plus		\$1,078,327,900	\$24,158,066	\$1,054,169,834	\$382,076,708	\$1,108,900,534	\$1,490,977,241	\$436,807,408	0.36	1.41	5.99%
Value-Add/Oppportunistic SMAs											
Heitman Separate Account	1988	\$813,635,039	\$0	\$825,277,792	\$1,230,476,873						
HotelAVE Separate Account	2018	\$95,994,432	\$0	\$95,994,432	\$57,691,396	\$21,278,551	\$78,969,947	-\$17,024,485	0.60	0.82	-8.13%
LaSalle Separate Account	1994	\$498,639,974	\$0	\$501,700,553	\$778,848,456	\$91,655,366	\$870,503,822	\$368,803,269	1.55	1.74	8.45%
LaSalle Takeover Account	2018	\$327,316,691	\$0	\$327,316,691	\$172,440,449	\$264,190,395	\$436,630,844	\$109,314,154	0.53	1.33	8.57%
Total Value-Add/Oppportunistic SMAs		\$1,735,586,136	\$0	\$1,750,289,468	\$2,239,457,174						5.46%
REIT											
CenterSquare Real Estate Securities	2002	\$183,616,773	\$0	\$183,616,773	\$211,168,336	\$130,913,380	\$342,081,716	\$158,464,943	1.15	1.86	9.28%
Total REIT		\$183,616,773	\$0	\$183,616,773	\$211,168,336	\$130,913,380	\$342,081,716	\$158,464,943	1.15	1.86	9.28%
Value Add/Oppportunistic											
Activum SG Fund VI L.P.	2019	\$57,334,476	\$6,661,591	\$50,664,452	\$2,624,431						
Activum SG Fund VI Pennsylvania Side-Car L.P.	2019	\$56,205,689	\$23,155,818	\$33,049,871	\$325,069	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		
Ares PA Opportunities Fund, L.P. - Opportunistic Real Estate	2023	\$100,000,000	\$100,000,000	\$0	\$0	NM	NM	NM	NM	NM	NM
Blackstone Real Estate Partners IV, L.P.	2003	\$25,000,000	\$0	\$25,000,000	\$41,160,247	\$202,822	\$41,363,069	\$16,363,069	1.65	1.65	11.97%
Blackstone Real Estate Partners V, L.P.	2006	\$50,000,000	\$2,087,026	\$47,912,974	\$100,311,328	\$61,369	\$100,372,697	\$52,459,723	2.09	2.09	10.73%
Blackstone Real Estate Partners VI, L.P.	2007	\$75,000,000	\$3,680,925	\$71,621,919	\$154,015,454	\$818,342	\$154,833,796	\$83,211,877	2.15	2.16	12.69%
Blackstone Real Estate Partners VII, L.P.	2011	\$75,000,000	\$7,154,007	\$70,604,346	\$121,711,335	\$11,418,519	\$133,129,854	\$62,525,508	1.72	1.89	14.46%
Blackstone Real Estate Partners X, L.P.	2022	\$75,000,000	\$71,892,354	\$4,101,487	\$0	NM	NM	NM	NM	NM	NM
Blue Moon Senior Housing II Sidecar L.P.	2019	\$50,000,000	\$2,062,589	\$47,968,832	\$0	\$48,095,372	\$48,095,372	\$126,540	0.00	1.00	0.12%
Blue Moon Senior Housing II, L.P.	2019	\$50,000,000	\$1,948,911	\$48,051,089	\$38,002	\$44,021,291	\$44,021,291	-\$4,029,798	0.00	0.92	-4.08%
Blue Owl Real Estate Capital Fund IV, L.P.	2017	\$100,000,000	\$0	\$100,000,000	\$118,438,002	\$38,476,263	\$156,914,265	\$56,914,265	1.18	1.57	19.46%
Blue Owl Real Estate Capital Fund V, L.P.	2020	\$50,000,000	\$0	\$49,996,863	\$16,403,655	\$46,840,489	\$63,244,144	\$13,247,281	0.33	1.26	18.07%
Blue Owl Real Estate Capital Fund VI, L.P.	2022	\$75,000,000	\$66,098,499	\$8,802,654	\$255,173	NM	NM	NM	NM	NM	NM

NM - Not Meaningful



Data as of December 31, 2023. Performance metrics calculated by NEPC based on data provided by the investment managers. Note that, due to rounding, there may be slight differences between the summed figures, subtotals, totals, and amounts shown elsewhere in this presentation.

PERFORMANCE BY STRATEGY (CONTINUED)

Investments		Commitments		Contributions & Distributions		Valuations			Performance		
Investment Name	Vintage Year	Commitment	Unfunded Commitment	Paid in Capital	Cumulative Distributions	Valuation	Total Value	Net Benefit	DPI	TVPI	IRR
Value Add/Oppportunistic (Continued)											
BPG Investment Partnership IX, L.P.	2012	\$25,000,000	\$696,591	\$24,417,362	\$40,376,122						
BPG Investment Partnership VI, L.P.	2002	\$24,543,712	\$0	\$24,543,712	\$44,895,114						
BPG Investment Partnership VII, L.P.	2005	\$25,000,000	\$0	\$24,985,519	\$18,270,069						
C-III Recovery Fund III, L.P.	2017	\$100,000,000	\$7,296,519	\$92,364,039	\$8,471,944						
LEM Multifamily Fund VI, L.P.	2022	\$75,000,000	\$40,125,000	\$34,875,000	\$929,348	NM	NM	NM	NM	NM	NM
Lubert-Adler Real Estate Fund VII, L.P.	2014	\$25,000,000	\$625,000	\$24,375,000	\$14,355,221	\$9,004,653	\$23,359,874	-\$1,015,126	0.59	0.96	-0.79%
Mesirow Financial Real Estate Value Fund III, L.P.	2018	\$25,647,559	\$0	\$25,859,215	\$8,221,475	\$32,392,164	\$40,613,639	\$14,754,424	0.32	1.57	11.94%
Rockpoint Real Estate Fund II, L.P.	2005	\$34,138,784	\$0	\$37,446,828	\$31,565,268				0.84		
Rockpoint Real Estate Fund III, L.P.	2007	\$50,632,887	\$4,241,165	\$50,675,144	\$68,151,141				1.34		
Rockpoint Real Estate Fund V, L.P.	2015	\$50,000,000	\$7,108,485	\$47,947,502	\$25,396,310				0.53		
Rubicon First Ascent Sidecar	2021	\$20,000,000	\$6,914,246	\$13,085,754	\$0	NM	NM	NM	NM	NM	NM
Rubicon First Ascent, L.P.	2021	\$30,000,000	\$14,883,554	\$15,116,446	\$0	NM	NM	NM	NM	NM	NM
Scout Fund II-A, L.P.	2016	\$30,000,000	\$0	\$30,000,000	\$1,533,154	\$14,844,533	\$16,377,687	-\$13,622,313	0.05	0.55	-9.44%
Senior Housing Partners V, L.P.	2015	\$45,727,881	\$4,590,192	\$41,137,690	\$5,258,194	\$42,060,566	\$47,318,760	\$6,181,070	0.13		
Senior Housing Partners VI, L.P.	2019	\$100,000,000	\$18,680,844	\$81,225,114	\$0	\$74,234,252	\$74,234,252	-\$6,990,863	0.00		
SRE Opportunity Fund III Select, L.P.	2018	\$50,000,000	\$20,242,500	\$29,897,486	\$18,629,003						
SRE Opportunity Fund III, L.P.	2018	\$50,000,000	\$6,686,439	\$47,153,386	\$16,863,561						
Starwood Global Opportunity Fund VII-A, L.P.	2006	\$35,000,000	\$0	\$35,000,000	\$27,413,405						
Starwood Global Opportunity Fund VIII, L.P.	2009	\$50,000,000	\$4,643,719	\$45,356,484	\$72,945,260						
Starwood Opportunity Fund VI, L.P.	2001	\$50,000,000	\$0	\$50,153,525	\$51,927,126						
ValStone Opportunity Fund V, LLC	2014	\$14,663,402	\$0	\$14,663,777	\$10,164,834	\$12,391,030	\$22,555,864	\$7,892,087	0.69	1.54	6.58%
Westbrook Real Estate Fund VI, L.P.	2006	\$35,000,000	\$0	\$38,550,099	\$38,837,150	\$144,728	\$38,981,878	\$431,779	1.01	1.01	0.23%
Westbrook Real Estate Fund VII, L.P.	2007	\$50,000,000	\$0	\$56,352,683	\$56,575,755	\$5,103,666	\$61,679,421	\$5,326,738	1.00	1.09	1.49%
Westbrook Real Estate Fund VIII, L.P.	2009	\$50,000,000	\$0	\$54,344,586	\$63,418,319	\$5,650,723	\$69,069,042	\$14,724,456	1.17	1.27	8.96%
Total Value Add/Oppportunistic		\$1,908,894,390	\$422,975,972	\$1,520,800,839	\$1,206,929,967	\$741,588,907	\$1,948,518,873	\$427,718,035	0.79	1.28	6.37%
Total		\$4,906,425,198	\$447,134,038	\$4,508,876,913	\$4,039,632,185				0.90		5.79%

NM - Not Meaningful



Data as of December 31, 2023. Performance metrics calculated by NEPC based on data provided by the investment managers. Note that, due to rounding, there may be slight differences between the summed figures, subtotals, totals, and amounts shown elsewhere in this presentation.



APPENDIX 2: Real Estate Strategy Summaries



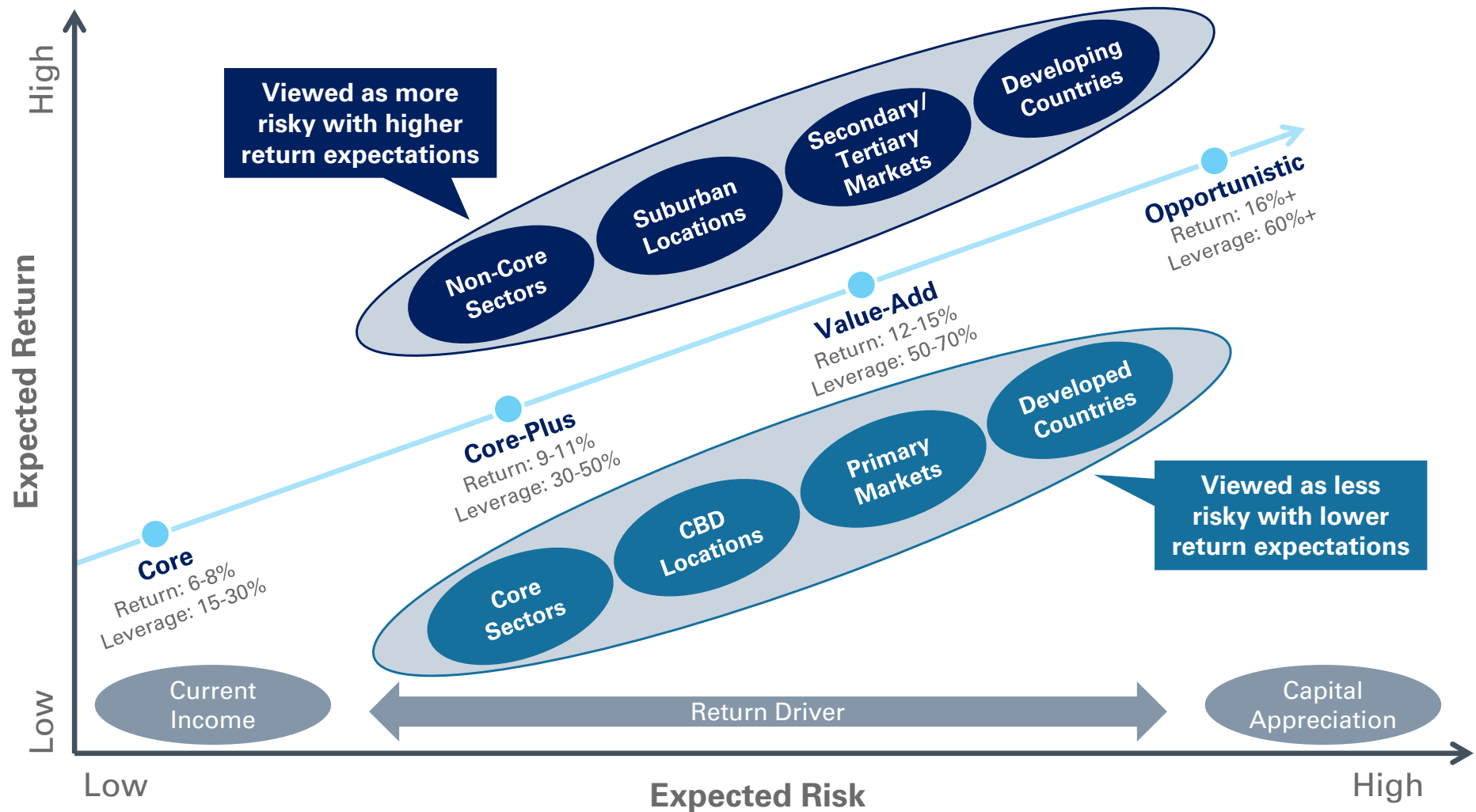
SPECTRUM OF REAL ESTATE INVESTMENT STRATEGIES

	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 3:

Disclaimers & Disclosures

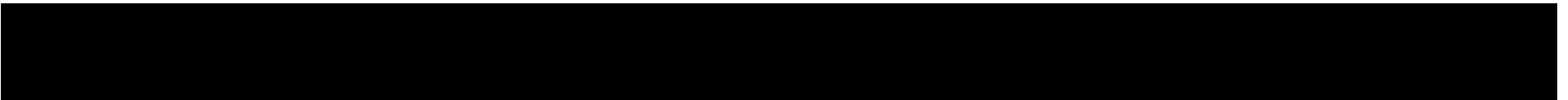


DISCLAIMER

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