

# Discussion Materials

## City of Allentown

Presented by

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Managing Partner

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- I. Cash-Flow Update
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# Cash-Flow Update

# Cash flow projection assumptions\*

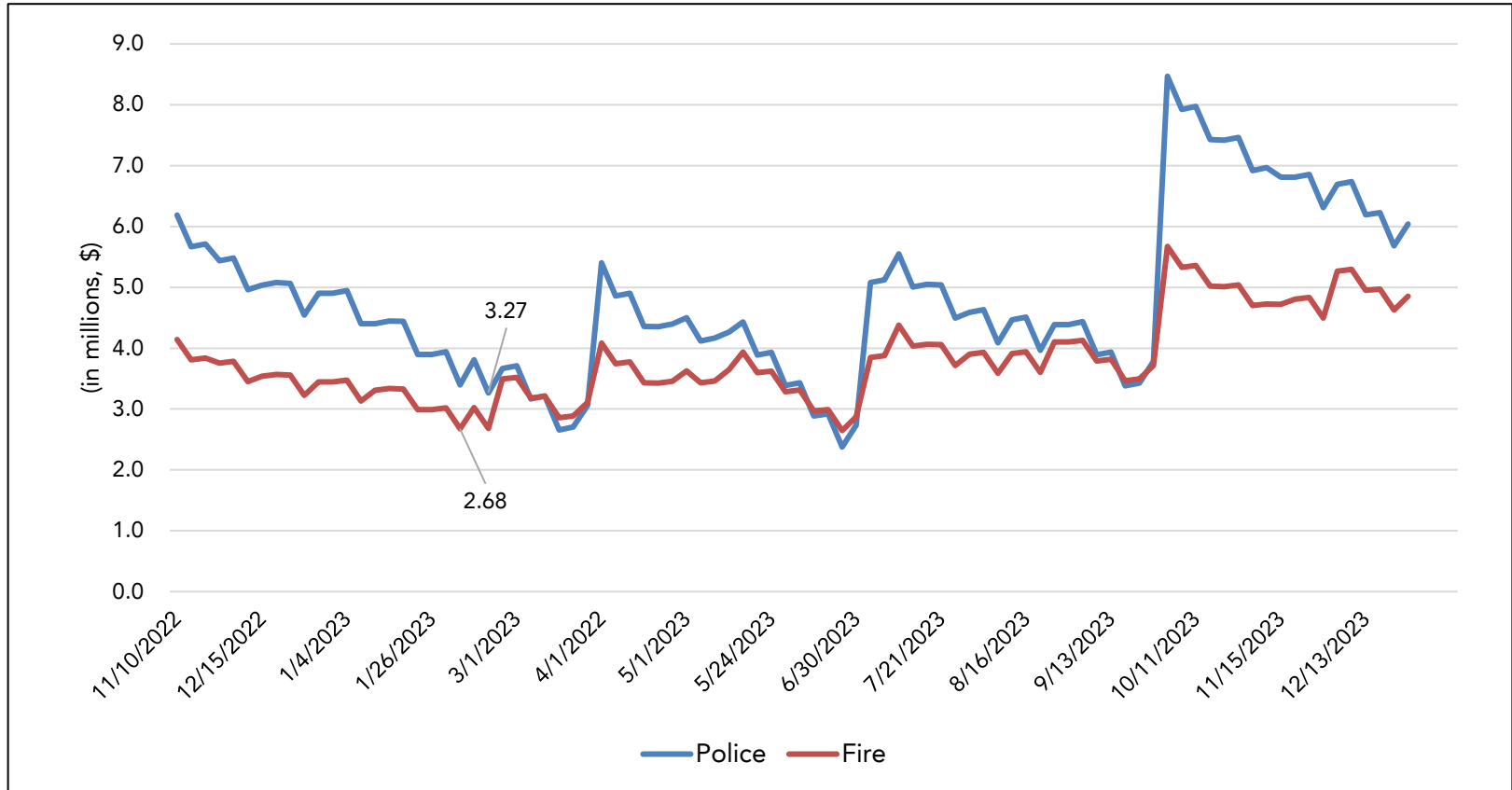
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- Bi-weekly withdrawals
  - Police: \$521,538 in 2022 and \$544,615 in 2023
  - Fire: \$333,462 in 2022 and \$340,769 in 2023
  - Officers & Employees: \$56,538 in 2022 and \$55,385 in 2023
- Bi-weekly contributions
  - Police: \$43,462 in 2022 and \$45,769 in 2023
  - Fire: \$27,308 in 2022 and \$28,462 in 2023
  - Officers & Employees: \$0 in 2022 and \$0 in 2023
- Projected MMO payments\*\*:
  - Police: \$9.37M in 2023
  - Fire: \$3.91M in 2023
  - Officers & Employees: \$230,000 in 2023
- Bond maturities
- Fees are deducted

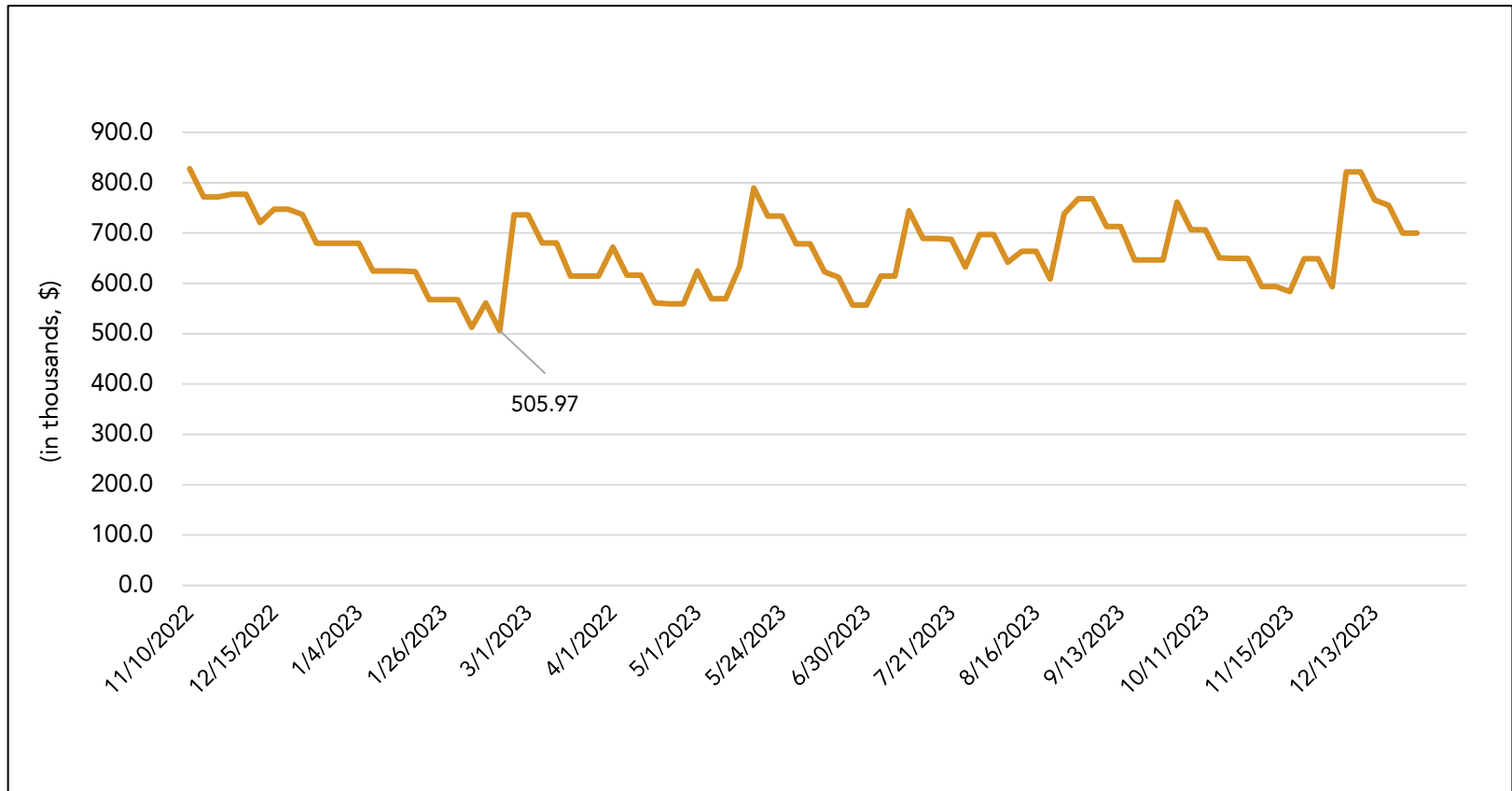
\*Employee contribution, benefit payment and MMO estimates provided by Cheiron.

\*\*Like past years, assumes deposits are made in April and July, while Q3 and Q4 MMOs are deposited together in October.

# Police & Fire: cash projections



# Officers & Employees: cash projections



# Current yields

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1. Money Market yield: 3.41%
2. Core fixed income current yield: 4.73%

## Treasury Yield Curve

	6 Mo.	1 Yr.	2 Yr.	3 Yr.
05/12/22	1.44	1.96	2.56	2.73
08/11/22	3.08	3.25	3.23	3.16
11/10/22	4.52	4.59	4.34	4.17

Source: Refinitiv.

# Police projections<sup>1</sup>

Year	Benefit Payments	Expenses	Employee Contributions	MMO	Net Cash Flow	Bond Maturities
2022	13,560,000	110,000	1,130,000	9,320,000	(3,220,000)	322,000
2023	14,160,000	110,000	1,190,000	9,370,000	(3,710,000)	3,380,000
2024	14,850,000	120,000	1,240,000	8,690,000	(5,040,000)	5,062,000
2025	15,520,000	120,000	1,290,000	8,830,000	(5,520,000)	-
2026	16,100,000	130,000	1,350,000	7,830,000	(7,050,000)	-

<sup>1</sup>Provided by Cheiron.



# Police rebalancing proposal

	TICKER	TOTAL ASSETS	ALLOCATIONS	REBALANCING	TOTAL ASSETS	ALLOCATIONS	TARGET
Police Pension Plan		200,534,249	100.0%	0	200,534,249	100.0%	100.0%
U.S. Equity							
Vanguard Equity Income Fund Admiral	VEIRX	12,473,285	6.2%	0	12,473,285	6.2%	6.0%
Vanguard Mid Cap Index	VMCIX	5,830,586	2.9%	0	5,830,586	2.9%	3.0%
Vanguard Total Stock Market Index	VITSX	54,168,409	27.0%	0	54,168,409	27.0%	41.0%
Vanguard Total Stock Market Index ETF	VTI	23,922,631	11.9%	0	23,922,631	11.9%	
Total U.S. Equity		96,394,911	48.1%	0	96,394,911	48.1%	50.0%
Global Equity							
Dodge & Cox Global	DODWX	8,577,943	4.3%	0	8,577,943	4.3%	4.0%
Total Global Equity		8,577,943	4.3%	0	8,577,943	4.3%	4.0%
Non-U.S. Equity							
American Funds Int'l Growth & Income	RIGGX	10,984,626	5.5%	0	10,984,626	5.5%	6.0%
MFS Int'l Intrinsic Value Equity	MINJX	11,171,174	5.6%	0	11,171,174	5.6%	6.0%
Total Non-U.S. Equity		22,155,800	11.0%	0	22,155,800	11.0%	12.0%
Real Estate							
Morgan Stanley PRIME Property Fund (as of 9/30/22)	-	27,350,243	13.6%	0	27,350,243	13.6%	10.0%
Total Real Estate		27,350,243	13.6%	0	27,350,243	13.6%	10.0%
U.S. Fixed Income							
Vanguard Total Bond Market Index Inst	VBTIX	25,598,936	12.8%	0	25,598,936	12.8%	14.0%
Baird Core Plus Bond Fund	BCOIX	5,782,463	2.9%	0	5,782,463	2.9%	3.0%
BB&T Inst'l Investment Advisers - Short-Term Bonds	-	8,484,964	4.2%	2,000,000	10,484,964	5.2%	6.0%
Total U.S. Fixed Income		39,866,363	19.9%	2,000,000	41,866,363	20.9%	23.0%
Cash & Equivalents							
Federated Govt. Obligations MM Fund	GOIXX	6,188,989	3.1%	(2,000,000)	4,188,989	2.1%	1.0%
Total Cash & Equivalents		6,188,989	3.1%	(2,000,000)	4,188,989	2.1%	1.0%

Market Values as of November 10, 2022.

	Pre-Rebalancing Allocations				Post-Rebalancing Allocations		
	Portfolio	Target	Difference		Portfolio	Target	Difference
U.S. Equity	50.42%	52.0%	-1.58%	U.S. Equity	50.42%	52.0%	-1.58%
Non-U.S. Equity	12.97%	14.0%	-1.03%	Non-U.S. Equity	12.97%	14.0%	-1.03%
Real Estate	13.64%	10.0%	3.64%	Real Estate	13.64%	10.0%	3.64%
Fixed Income	19.88%	23.0%	-3.12%	Fixed Income	20.88%	23.0%	-2.12%
Cash	3.09%	1.0%	2.09%	Cash	2.09%	1.0%	1.09%
Total	100.00%	100.0%	-	Total	100.00%	100.0%	-

# Fire projections<sup>1</sup>

Year	Benefit Payments	Expenses	Employee Contributions	MMO	Net Cash Flow	Bond Maturities
2022	8,670,000	80,000	710,000	3,840,000	(4,200,000)	342,000
2023	8,860,000	90,000	740,000	3,910,000	(4,300,000)	4,798,000
2024	9,090,000	90,000	770,000	2,950,000	(5,460,000)	4,937,000
2025	9,360,000	90,000	810,000	3,020,000	(5,620,000)	-
2026	9,670,000	90,000	840,000	2,120,000	(6,800,000)	-

<sup>1</sup>Provided by Cheiron.

# Fire rebalancing proposal

	TICKER	TOTAL ASSETS	ALLOCATIONS	REBALANCING	TOTAL ASSETS	ALLOCATIONS	TARGET
<b>Firemen Pension Plan</b>							
		124,501,286	100.0%	0	124,501,286	100.0%	100.0%
<b>U.S. Equity</b>							
Vanguard Equity Income Fund Admiral	VEIRX	7,833,417	6.3%	0	7,833,417	6.3%	6.0%
Vanguard Mid Cap Index	VMCIX	3,699,729	3.0%	0	3,699,729	3.0%	3.0%
Vanguard Total Stock Market Index	VITSX	33,874,614	27.2%	0	33,874,614	27.2%	41.0%
Vanguard Total Stock Market Index ETF	VTI	14,290,451	11.5%	0	14,290,451	11.5%	
<b>Total U.S. Equity</b>		<b>59,698,211</b>	<b>47.9%</b>	<b>0</b>	<b>59,698,211</b>	<b>47.9%</b>	<b>50.0%</b>
<b>Global Equity</b>							
Dodge & Cox Global	DODWX	5,462,891	4.4%	0	5,462,891	4.4%	4.0%
<b>Total Global Equity</b>		<b>5,462,891</b>	<b>4.4%</b>	<b>0</b>	<b>5,462,891</b>	<b>4.4%</b>	<b>4.0%</b>
<b>Non-U.S. Equity</b>							
American Funds Int'l Growth & Income	RIGGX	6,962,025	5.6%	0	6,962,025	5.6%	6.0%
MFS Int'l Intrinsic Value Equity	MINJX	7,184,325	5.8%	0	7,184,325	5.8%	6.0%
<b>Total Non-U.S. Equity</b>		<b>14,146,350</b>	<b>11.4%</b>	<b>0</b>	<b>14,146,350</b>	<b>11.4%</b>	<b>12.0%</b>
<b>Real Estate</b>							
Morgan Stanley PRIME Property Fund (as of 9/30/22)	-	17,188,791	13.8%	0	17,188,791	13.8%	10.0%
<b>Total Real Estate</b>		<b>17,188,791</b>	<b>13.8%</b>	<b>0</b>	<b>17,188,791</b>	<b>13.8%</b>	<b>10.0%</b>
<b>U.S. Fixed Income</b>							
Vanguard Total Bond Market Index Inst	VBTIX	10,437,546	8.4%	0	10,437,546	8.4%	9.0%
Baird Core Plus Bond Fund	BCOIX	3,619,393	2.9%	0	3,619,393	2.9%	3.0%
BB&T Inst'l Investment Advisers - Short-Term Bonds	-	9,803,738	7.9%	1,500,000	11,303,738	9.1%	11.0%
<b>Total U.S. Fixed Income</b>		<b>23,860,677</b>	<b>19.2%</b>	<b>1,500,000</b>	<b>25,360,677</b>	<b>20.4%</b>	<b>23.0%</b>
<b>Cash &amp; Equivalents</b>							
Federated Govt. Obligations MM Fund	GOIXX	4,144,367	3.3%	(1,500,000)	2,644,367	2.1%	1.0%
<b>Total Cash &amp; Equivalents</b>		<b>4,144,367</b>	<b>3.3%</b>	<b>(1,500,000)</b>	<b>2,644,367</b>	<b>2.1%</b>	<b>1.0%</b>

Market Values as of November 10, 2022.

	Pre-Rebalancing Allocations			Post-Rebalancing Allocations		
	Portfolio	Target	Difference	Portfolio	Target	Difference
U.S. Equity	50.36%	52.0%	-1.64%	50.36%	52.0%	-1.64%
Non-U.S. Equity	13.34%	14.0%	-0.66%	13.34%	14.0%	-0.66%
Real Estate	13.81%	10.0%	3.81%	13.81%	10.0%	3.81%
Fixed Income	19.17%	23.0%	-3.83%	20.37%	23.0%	-2.63%
Cash	3.33%	1.0%	2.33%	2.12%	1.0%	1.12%
<b>Total</b>	<b>100.00%</b>	<b>100.0%</b>	<b>-</b>	<b>100.00%</b>	<b>100.0%</b>	<b>-</b>

# O&E Projections<sup>1</sup>

Year	Benefit Payments	Expenses	Employee Contributions	MMO	Net Cash Flow	Bond Maturities
2022	1,470,000	60,000	0	230,000	(1,300,000)	89,000
2023	1,440,000	60,000	0	230,000	(1,270,000)	1,279,000
2024	1,320,000	50,000	0	190,000	(1,180,000)	1,232,000
2025	1,220,000	50,000	0	180,000	(1,090,000)	861,000
2026	1,110,000	40,000	0	110,000	(1,040,000)	-

<sup>1</sup>Provided by Cheiron.

# O&E rebalancing proposal

	TICKER	TOTAL ASSETS	ALLOCATIONS	REBALANCING	TOTAL ASSETS	ALLOCATIONS	TARGET
<b>Officers &amp; Employee Pension Plan</b>							
		7,767,337	100.0%	0	7,767,337	100.0%	100.0%
<b>U.S. Equity</b>							
Vanguard Equity Income Fund Admiral	VEIRX	336,831	4.3%	(25,000)	311,831	4.0%	4.0%
Vanguard Mid Cap Index	VMCIX	155,043	2.0%	0	155,043	2.0%	2.0%
Vanguard Total Stock Market Index	VITSX	2,116,342	27.2%	0	2,116,342	27.2%	27.5%
<b>Total U.S. Equity</b>		<b>2,608,216</b>	<b>33.6%</b>	<b>(25,000)</b>	<b>2,583,216</b>	<b>33.3%</b>	<b>33.5%</b>
<b>Global Equity</b>							
Dodge & Cox Global	DODWX	245,903	3.2%	0	245,903	3.2%	3.0%
<b>Total Global Equity</b>		<b>245,903</b>	<b>3.2%</b>	<b>0</b>	<b>245,903</b>	<b>3.2%</b>	<b>3.0%</b>
<b>Non-U.S. Equity</b>							
American Funds Int'l Growth & Income	RIGGX	374,525	4.8%	0	374,525	4.8%	5.0%
MFS Int'l Intrinsic Value Equity	MINJX	380,395	4.9%	(15,000)	365,395	4.7%	4.5%
<b>Total Non-U.S. Equity</b>		<b>754,920</b>	<b>9.7%</b>	<b>(15,000)</b>	<b>739,920</b>	<b>9.5%</b>	<b>9.5%</b>
<b>U.S. Fixed Income</b>							
BB&T Inst'l Investment Advisers - Short-Term Bonds	-	3,330,295	42.9%	340,000	3,670,295	47.3%	52.0%
<b>Total U.S. Fixed Income</b>		<b>3,330,295</b>	<b>42.9%</b>	<b>340,000</b>	<b>3,670,295</b>	<b>47.3%</b>	<b>52.0%</b>
<b>Cash &amp; Equivalents</b>							
Federated Govt. Obligations MM Fund	GOIXX	828,004	10.7%	(300,000)	528,004	6.8%	2.0%
<b>Total Cash &amp; Equivalents</b>		<b>828,004</b>	<b>10.7%</b>	<b>(300,000)</b>	<b>528,004</b>	<b>6.8%</b>	<b>2.0%</b>

Market Values as of November 10, 2022.

	Pre-Rebalancing Allocations			Post-Rebalancing Allocations		
	Portfolio	Target	Difference	Portfolio	Target	Difference
U.S. Equity	35.32%	35.0%	0.32%	35.00%	35.0%	0.00%
Non-U.S. Equity	11.14%	11.0%	0.14%	10.95%	11.0%	-0.05%
Fixed Income	42.88%	52.0%	-9.12%	47.25%	52.0%	-4.75%
Cash	10.66%	2.0%	8.66%	6.80%	2.0%	4.80%
<b>Total</b>	<b>100.00%</b>	<b>100.0%</b>	<b>-</b>	<b>100.00%</b>	<b>100.0%</b>	<b>-</b>

# U.S./Non-U.S. Equity Allocation

# Background

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- In August, we reviewed an Asset Allocation Study with a focus on the U.S. equity vs. non-U.S. equity split
  - Based on relative valuations, we believe non-U.S. equities are poised to outperform U.S. equities over the intermediate term (e.g., next ten years)
- Today, we'll review potential implementation

# Asset allocation mixes

The following pages compare risk and return characteristics for the below asset allocation mixes

## Portfolio Options

Asset Class	Current	Option A	Option B	Option C
Broad Fixed Income	17.0%	17.0%	17.0%	17.0%
Short Govt	6.0%	6.0%	6.0%	6.0%
91 Day T-Bills	1.0%	1.0%	1.0%	1.0%
<b>Total Fixed Income</b>	<b>24.0%</b>	<b>24.0%</b>	<b>24.0%</b>	<b>24.0%</b>
Broad U.S. Equity (All Cap Core)	52.0%	50.0%	48.0%	46.0%
<b>Total U.S. Equity</b>	<b>52.0%</b>	<b>↓ 50.0%</b>	<b>↓ 48.0%</b>	<b>↓ 46.0%</b>
Developed Large-Cap	11.5%	13.0%	14.5%	16.0%
Emerging Market	2.5%	3.0%	3.5%	4.0%
<b>Total Non-U.S. Equity</b>	<b>14.0%</b>	<b>↑ 16.0%</b>	<b>↑ 18.0%</b>	<b>↑ 20.0%</b>
Real Estate - Core	10.0%	10.0%	10.0%	10.0%
<b>Total Real Assets</b>	<b>10.0%</b>	<b>10.0%</b>	<b>10.0%</b>	<b>10.0%</b>

Source: Marquette Associates Asset Allocation Software – June 30, 2022.



# Summary of portfolio characteristics

The base-case outlook is subdued relative to history, given low interest rates and overvaluation within equities

## Summary of Portfolio Characteristics

	Current	Option A	Option B	Option C
Avg. Annualized 10 Yr. Return	6.27%	6.30%	6.33%	6.36%
Avg. Annualized 10 Yr. Volatility	10.60%	10.64%	10.68%	10.72%
Avg. Return/Avg. Volatility	0.59	0.59	0.59	0.59

Source: Marquette Associates Asset Allocation Software – June 30, 2022.

# Distribution of returns

**Our analysis shows the range of outcomes stays relatively the same, but the distribution shifts in the Funds' favor**

Distribution of Average Annualized 10 Year Returns

Percentile	Current	Option A	Option B	Option C
Average (Mean)	6.3%	6.3%	6.3%	6.4%
5%	0.3%	0.4%	0.5%	0.5%
25%	4.0%	4.0%	4.0%	4.1%
50%	6.5%	6.5%	6.5%	6.5%
75%	8.7%	8.8%	8.8%	8.8%
95%	11.8%	11.9%	12.0%	12.1%

Source: Marquette Associates Asset Allocation Software – June 30, 2022.

# Manager Targets (P&F)

<u>Asset Class</u>	<u>Manager</u>	<u>Current</u>	<u>Option A</u>	<u>Option B</u>	<u>Option C</u>
U.S. Broad Market	Vanguard Total Stock	41.0%	39.5%	38.0%	36.5%
U.S. Large Value	Vanguard Equity Income	6.0%	5.5%	5.5%	5.0%
U.S. Mid Cap	Vanguard Mid Cap Index	3.0%	3.0%	2.5%	2.5%
Global Value	Dodge & Cox	4.0%	4.0%	4.0%	4.0%
Non-U.S. Core	American Funds Int'l G&I	6.0%	5.0%	5.0%	5.0%
Non-U.S. Core	MFS International Intrinsic Value	6.0%	5.0%	5.0%	5.0%
Non-U.S. Core	<i>New Int'l Equity Index</i>	-	4.0%	6.0%	8.0%

# Manager Targets (O&E)

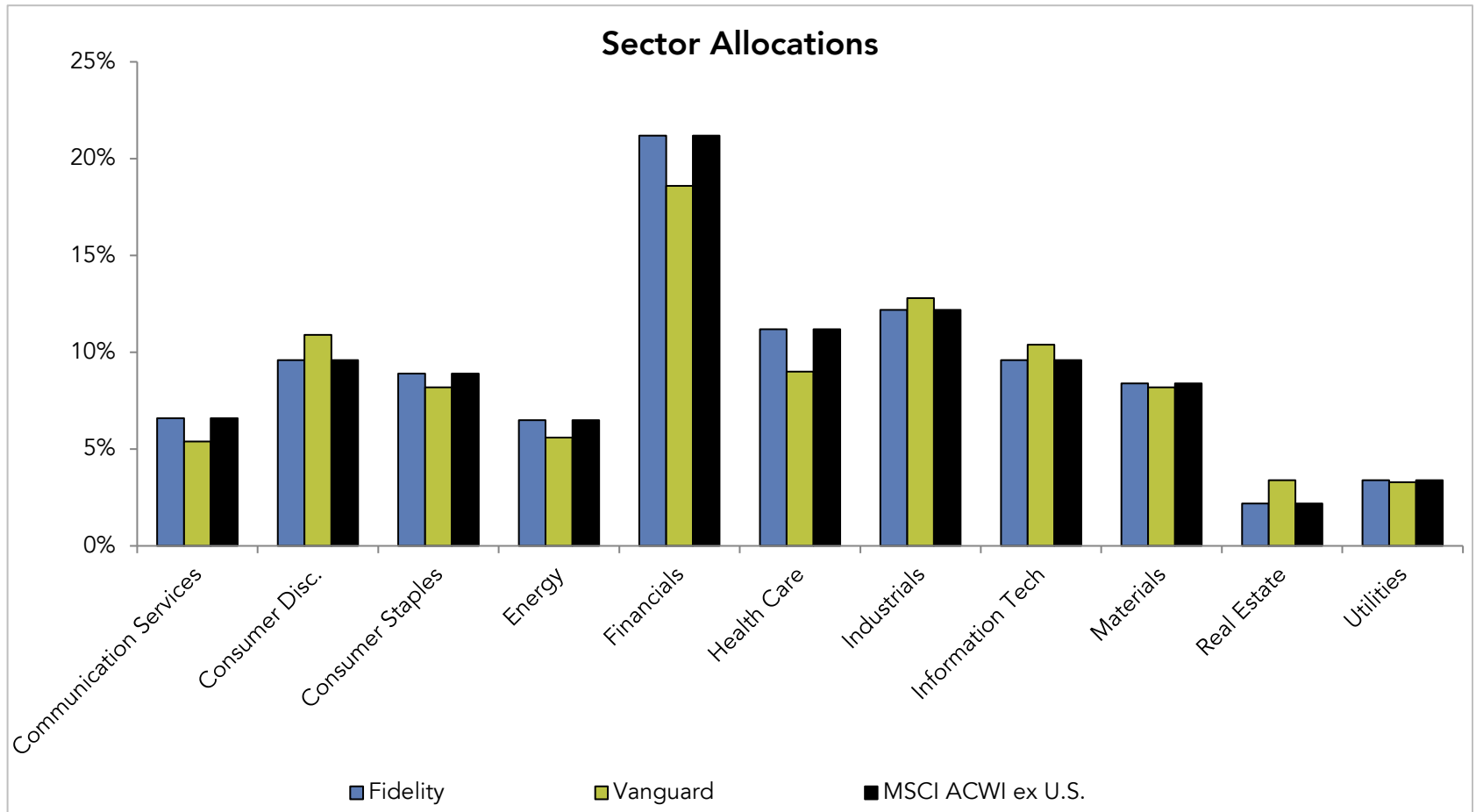
<u>Asset Class</u>	<u>Manager</u>	<u>Current</u>	<u>Option A</u>	<u>Option B</u>	<u>Option C</u>
U.S. Broad Market	Vanguard Total Stock	27.5%	26.5%	25.5%	24.5%
U.S. Large Value	Vanguard Equity Income	4.0%	3.5%	3.5%	3.0%
U.S. Mid Cap	Vanguard Mid Cap Index	2.0%	2.0%	1.5%	1.5%
Global Value	Dodge & Cox	3.0%	3.0%	3.0%	3.0%
Non-U.S. Core	American Funds Int'l G&I	5.0%	4.5%	4.5%	4.5%
Non-U.S. Core	MFS International Intrinsic Value	4.5%	4.0%	4.0%	4.0%
Non-U.S. Core	<i>New Int'l Equity Index</i>	-	3.5%	5.0%	6.5%

# Non-U.S. Equity index fund comparison

	Fidelity Global ex U.S. Index Fund	Vanguard Total International Stock Index Fund
Strategy Inception	2011	2010
Strategy Assets (\$B)	7.2	308.5
Ticker	FSGGX	VTSNX
Weighted Avg. Market Cap (\$B)	69.3	60.1
Expense Ratio	0.055%	0.08%
Benchmark	MSCI ACWI ex U.S. Index	FTSE Global All Cap ex US Index

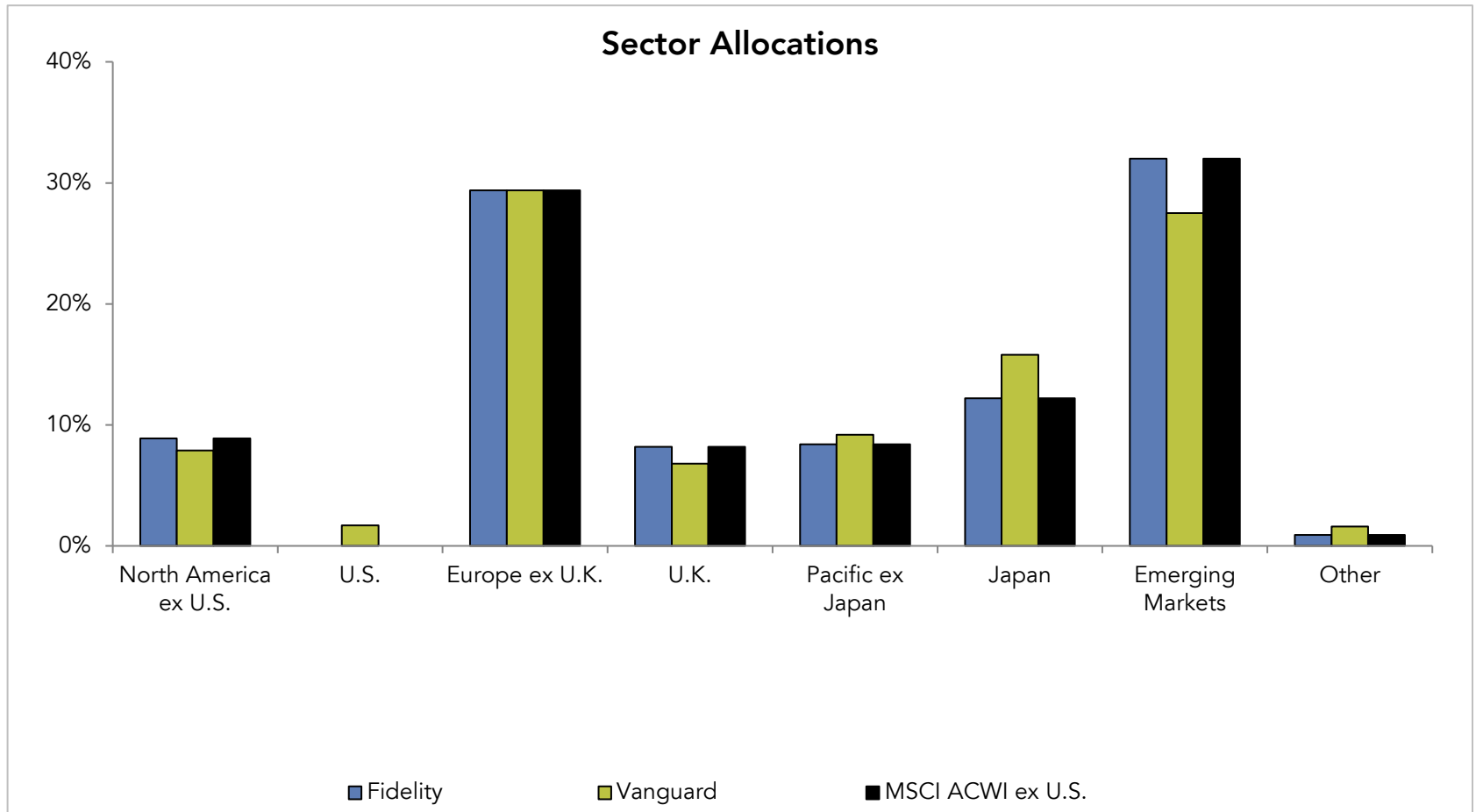
Data are as of September 30, 2022.

# Sector comparison



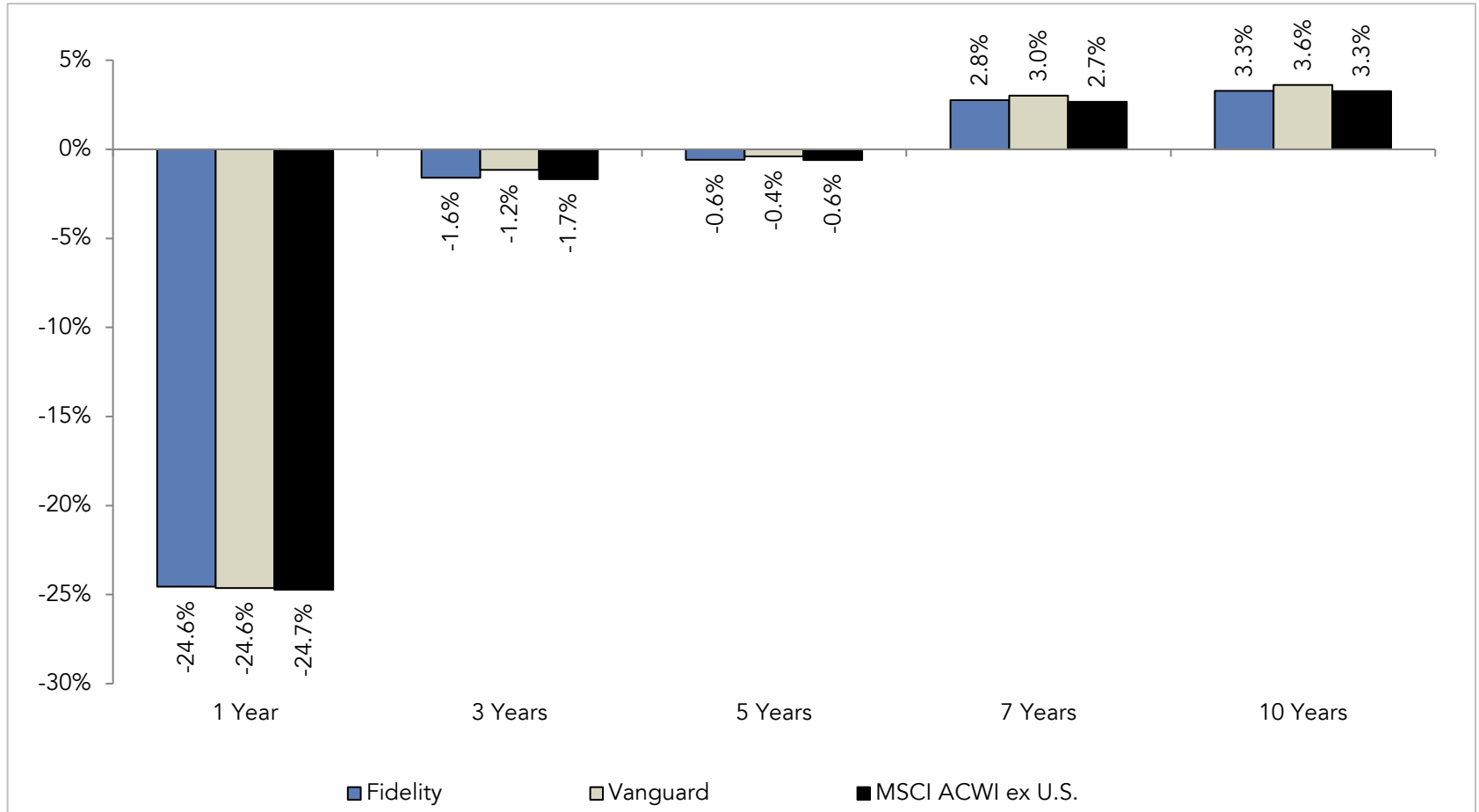
Data are as of September 30, 2022

# Regional comparison



Data are as of September 30, 2022

# Performance



Data are as of October 31, 2022.



## Next steps

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- If the Board agrees to modify the long-term asset allocation of the Funds, we will prepare Investment Policy Statement Addendums for the February meeting
- As part of our normal recommendations, we will incorporate the necessary rebalancing to implement any approved changes

# Core Real Estate Partial Redemptions

# Current allocations

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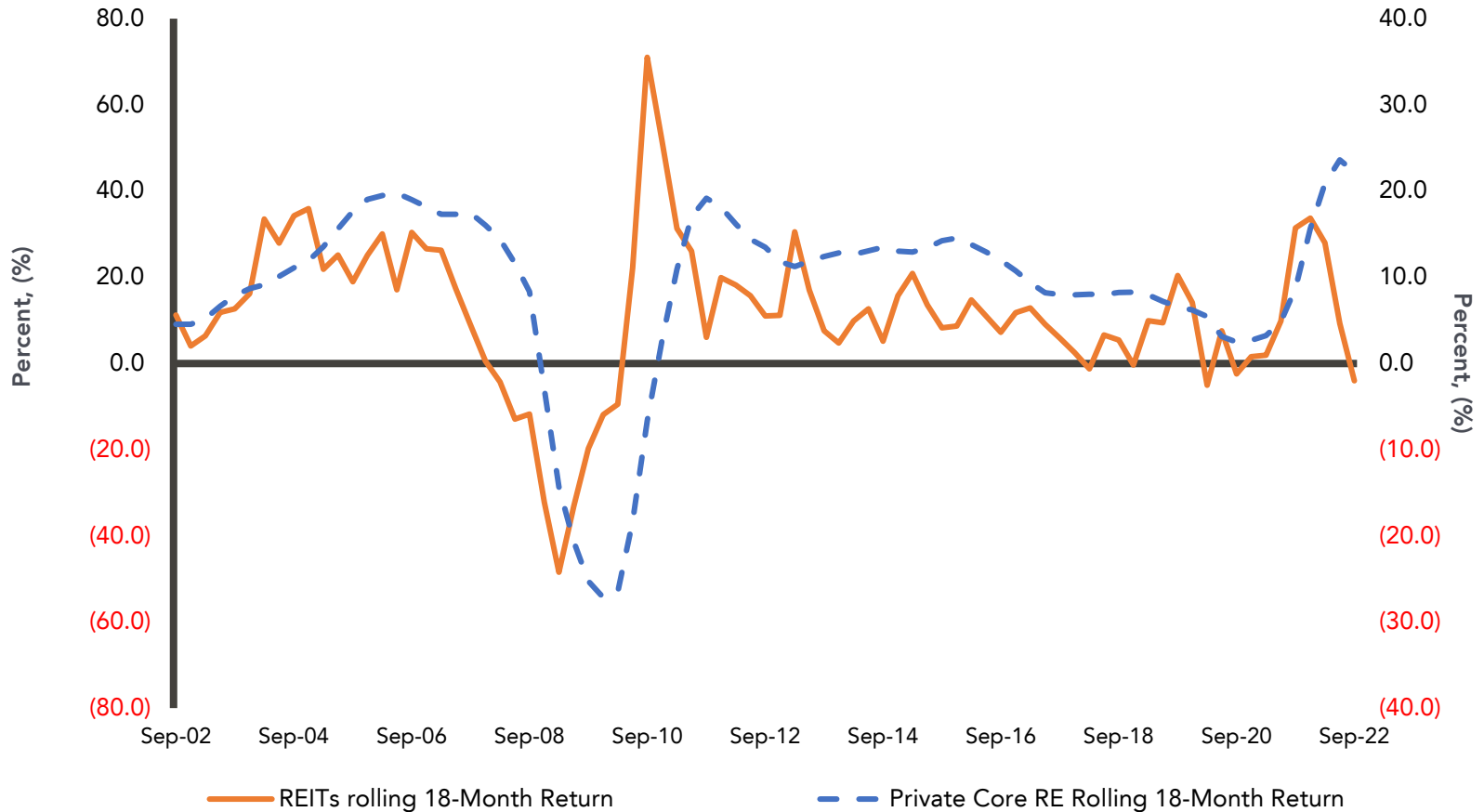
- Given capital markets performance in 2022, the Police and Fire Funds are approximately 3.6 and 3.8 percentage points overweight real estate, respectively
  - In dollars, this equates to an overweight of \$7.3M and \$4.75M, respectively

# Partial redemptions

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- We recommend submitting partial redemptions of \$7.3M and \$4.75M, respectively, for the Police and Fire from Morgan Stanley
- The outlook for Private Real Estate is cloudy
  - Transactions and financing have largely stalled given rising interest rates and economic uncertainty
  - Further, the private markets tend to follow performance of the listed REIT market with a lag, leaving a poor near-term outlook (see page 29)
- Funds would likely be returned over a period of several quarters, starting on 3/31/23
  - Can use for rebalancing, cash needs, or extending the bond ladder, as appropriate

# REITs vs. Private Core Real Estate



Source: Markov Processes International.

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