



# Portfolio Analysis

Retirement Plan for  
Employees of the Town of  
Wilton, Connecticut

August 2022

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# Executive Summary

**93.5%**

**Estimated funded ratio as of June 30, 2022**

- Based on market value of assets using a 6.875% actuarial discount rate

**7.32%<sup>1</sup>**

**30-year expected return**

- Aon's assumption for the Current Target policy as of June 30, 2022

**Up to +46bps**

**Potential increase in expected return**

- Additional diversification with private equity, liquid alternatives, and real assets can potentially improve expected return with less downside risk

**Up to \$590,000<sup>1,2</sup>**

**Potential annual cost savings**

- Potential increase in expected return from additional diversification

<sup>1</sup> Expected returns are using AIUSA Q3 2022 30-Year Capital Market Assumptions (CMAs) as of June 30, 2022, which are projections about the future returns of asset classes. For asset classes that can be implemented passively, which includes most public assets, alpha and active management fees are not included in the return expectations. For asset classes that can only be implemented actively, such as hedge funds and private assets, we assume alpha and higher active manager fees. Expected returns are geometric (long-term compounded). Expected returns presented are models and do not represent the returns of an actual client account. Your actual returns will be reduced by your advisory fees and other expenses you may incur as a client. AIUSA's advisory fees are described in Part 2A of AIUSA's Form ADV. Not a guarantee of future results. See appendix for capital market assumptions disclosure pages.

<sup>2</sup> Increased dollars determined by market value of assets as of June 30, 2022 (\$128.1M)

# Current State Asset-Liability Profile (As of June 30, 2022)

## Wilton Projects To Have a Hurdle Rate Shortfall

Asset-Liability Snapshot				
	As of 7/1/2021		As of 6/30/2022	
Metric (\$, Millions)	Value	Fund %	Value	Fund %
Market Value of Assets	\$151.7	114.9%	\$128.1	93.5%
Actuarial Value of Assets	\$135.4	102.6%		
Liability Metrics				
Actuarial Liability (AL) – Funding <sup>1</sup>	\$132.0		\$137.0	

Asset-Liability Growth Metrics				
Metric (\$, Millions)	Value	% Liability	% Assets	
AL Discount Cost	\$9.42	6.88%	7.35%	
AL Normal Cost	\$2.72	1.98%	2.12%	
<b>Total Liability Hurdle Rate</b>	<b>\$12.14</b>	<b>8.86%</b>	<b>9.47%</b>	
Expected Return on Assets <sup>2</sup>	\$9.38	6.85%	7.32%	
Total Contributions	\$2.51	1.83%	1.96%	
<b>Total Exp. Asset Growth</b>	<b>\$11.89</b>	<b>8.68%</b>	<b>9.28%</b>	
<b>Hurdle Rate (Shortfall)/Surplus</b>	<b>-\$0.25</b>	<b>-0.18%</b>	<b>-0.19%</b>	
Est. Benefit Payments	\$6.75	4.92%	5.27%	

### Key Takeaways:

- Pension plan is estimated to be **93.5%** funded on a market value of assets basis as of June 30, 2022
- Asset hurdle rate of **9.47%**, via cash funding and investment returns, needed to maintain or improve funded status
- The Liability Hurdle Rate exceeds the Total Expected Asset Growth rate (EROA plus Contributions) by **19 bps** which is expected to reduce the Plan's funded ratio

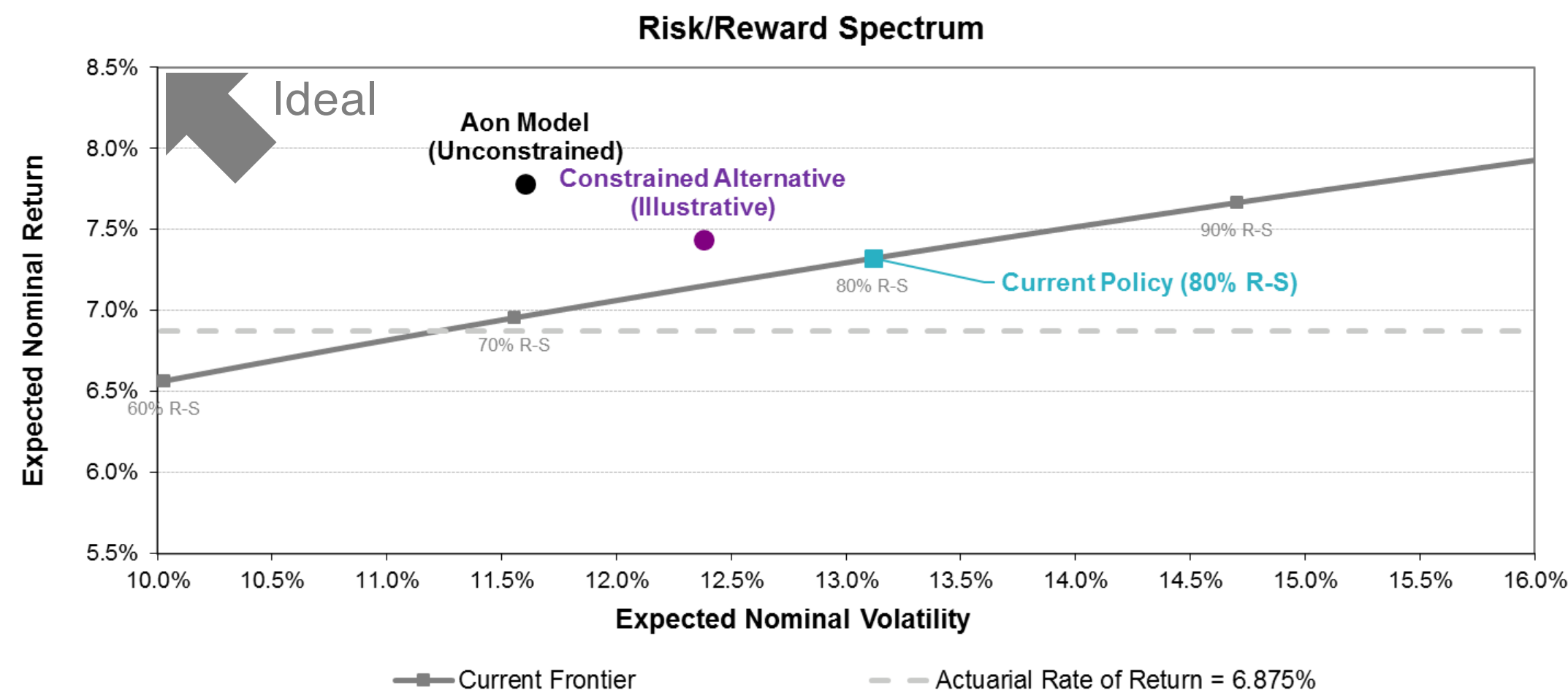
Target Asset Allocation as of 6/30/2022		
Metric (\$, Millions)	Value	Alloc %
<b>Return-Seeking</b>		
- Public Equity	\$76.9	60%
- Liquid Return-Seeking Fixed Income	\$12.8	10%
- Illiquid Return-Seeking Fixed Income	\$6.4	5%
- Closed-End Real Assets	\$6.4	5%
- Total	\$102.5	80%
<b>Risk-Reducing</b>		
- Core Bonds	\$25.6	20%
- Total	\$25.6	20%
<b>Total</b>	<b>\$128.1</b>	<b>100%</b>

<sup>1</sup> Based on a 6.875% discount rate consistent with the July 1, 2021 draft valuation results, assuming no assumption changes

<sup>2</sup> Expected returns are using AIUSA Q3 2022 30-Year Capital Market Assumptions (CMAs) as of June 30, 2022, which are projections about the future returns of asset classes. For asset classes that can be implemented passively, which includes most public assets, alpha and active management fees are not included in the return expectations. For asset classes that can only be implemented actively, such as hedge funds and private assets, we assume alpha and higher active manager fees. Expected returns are geometric (long-term compounded). Expected returns presented are models and do not represent the returns of an actual client account. Your actual returns will be reduced by your advisory fees and other expenses you may incur as a client. AIUSA's advisory fees are described in Part 2A of AIUSA's Form ADV. Not a guarantee of future results. See appendix for capital market assumptions disclosure pages. Percentages may not sum to 100% due to rounding.

# Portfolio Analysis | Risk/Reward Spectrum

## Illustrative Alternative to Consider



### Key Takeaways:

- Additional diversification can potentially improve expected return with less downside risk
- Illustrative Alternative starts with the existing target allocation and makes the following adjustments:
  - 5% from Public Equity to Private Equity
  - 5% from Public Equity to Liquid Alternatives
  - 5% from Liquid R-S Fixed Income to Open-End Real Assets

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<sup>2</sup> Increased dollars determined by market value of assets as of June 30, 2022 (\$128.1M)

Asset Class	Current Policy (80% R-S)	Constrained Alternative (Illustrative)	Aon Model (Unconstr.)
<b>Equity</b>			
- Public Equity	60%	50%	35%
- Private Equity	0%	5%	15%
- Subtotal	60%	55%	50%
<b>Liquid Alternatives</b>			
- Subtotal	0%	5%	8%
<b>Return-Seeking Fixed Income</b>			
- Liquid R-S Fixed Income	10%	5%	5%
- Illiquid R-S Fixed Income	5%	5%	5%
- Subtotal	15%	10%	10%
<b>Real Assets</b>			
- Open-End Real Assets	0%	5%	5%
- Closed-End Real Assets	5%	5%	8%
- Subtotal	5%	10%	13%
<b>Risk-Reducing</b>			
- Core / Core Plus Fixed Income	20%	20%	20%
- Subtotal	20%	20%	20%
<b>Expected Return<sup>1</sup></b>	<b>7.32%</b>	<b>7.43%</b>	<b>7.78%</b>
<b>Expected Risk<sup>1</sup></b>	13.12%	12.38%	11.60%
<b>Sharpe Ratio</b>	0.337	0.366	0.421
<b>Increase in Expected Return (%)</b>	0.00%	0.11%	0.46%
<b>Increase in Expected Return (\$ millions)<sup>2</sup></b>	\$0.00	\$0.15	\$0.59

# Portfolio Analysis | Range of Nominal Returns<sup>1</sup>

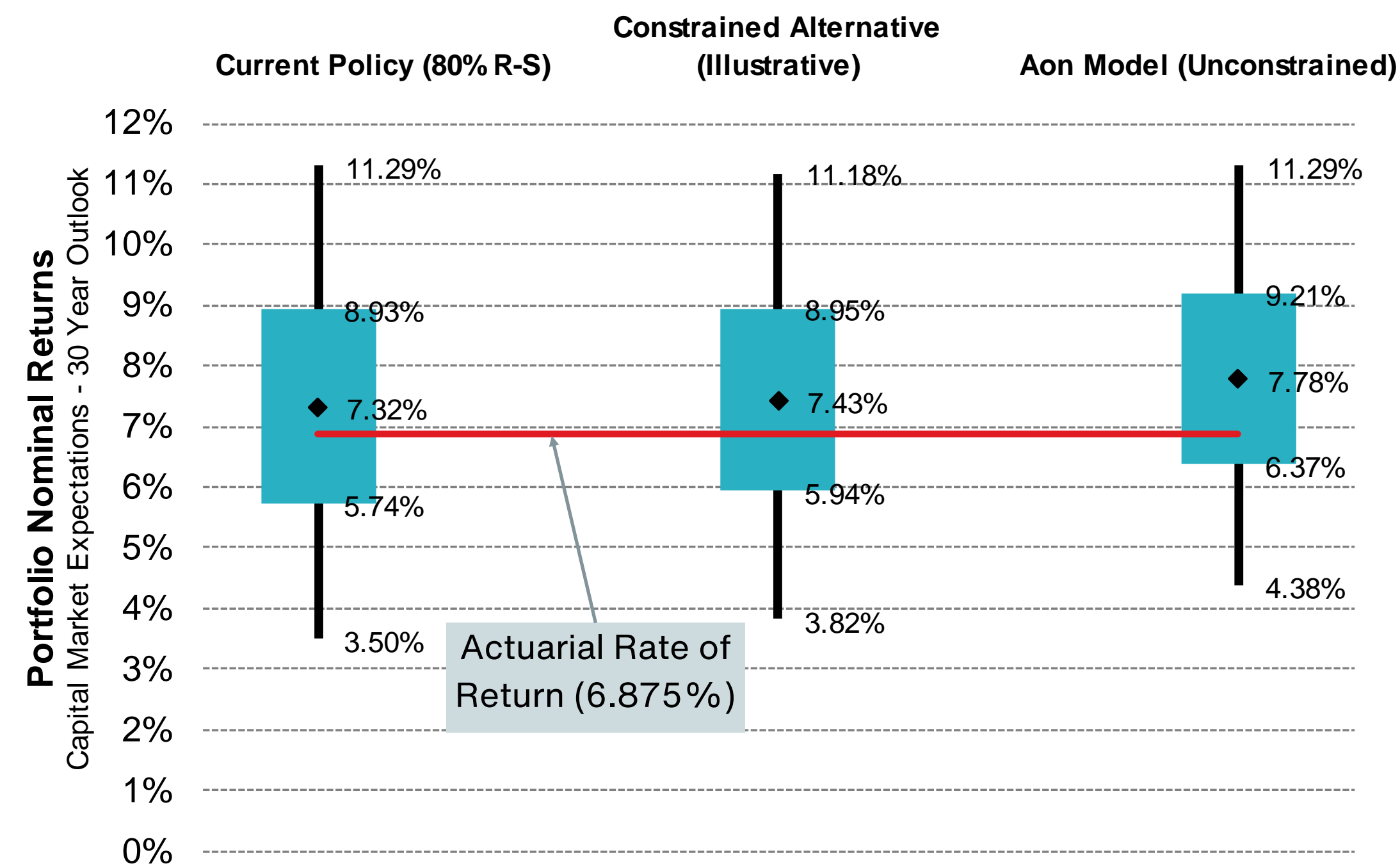
## Portfolio Adjustments Can Increase the Likelihood of Achieving Actuarial Return

Median expected return for the Current Policy (7.32%) is projected to exceed the actuarial assumed rate of return (6.875%).

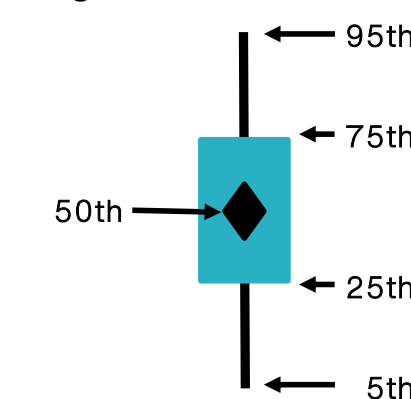
Adjustments to the portfolio composition are expected to increase the likelihood of meeting/exceeding the actuarial return assumption:

### Probably of Meeting/Exceeding Actuarial Rate of Return (6.875%) Over 30 Years

• Current Policy	58%
• Constrained Alternative (Illustrative)	60%
• Aon Model (Unconstrained)	67%



Legend: Distribution of Outcomes



<sup>1</sup> Expected returns are using AIUSA Q3 2022 30-Year Capital Market Assumptions (CMAs), which are projections about the future returns of asset classes. For asset classes that can be implemented passively, which includes most public assets, alpha and active management fees are not included in the return expectations. For asset classes that can only be implemented actively, such as hedge funds and private assets, we assume alpha and higher active manager fees. Expected returns are geometric (long-term compounded). Expected returns presented are models and do not represent the returns of an actual client account. Your actual returns will be reduced by your advisory fees and other expenses you may incur as a client. AIUSA's advisory fees are described in Part 2A of AIUSA's Form ADV. Not a guarantee of future results. See appendix for capital market assumptions disclosure pages.

# Summary and Conclusions

- Additional diversification with private equity, liquid alternatives, and real assets can potentially improve expected return with less downside risk
  - Up to 46bps increase in expected return
  - Up to 152bps decrease in expected volatility
  - Increased likelihood of achieving the actuarial return assumption (6.875%)

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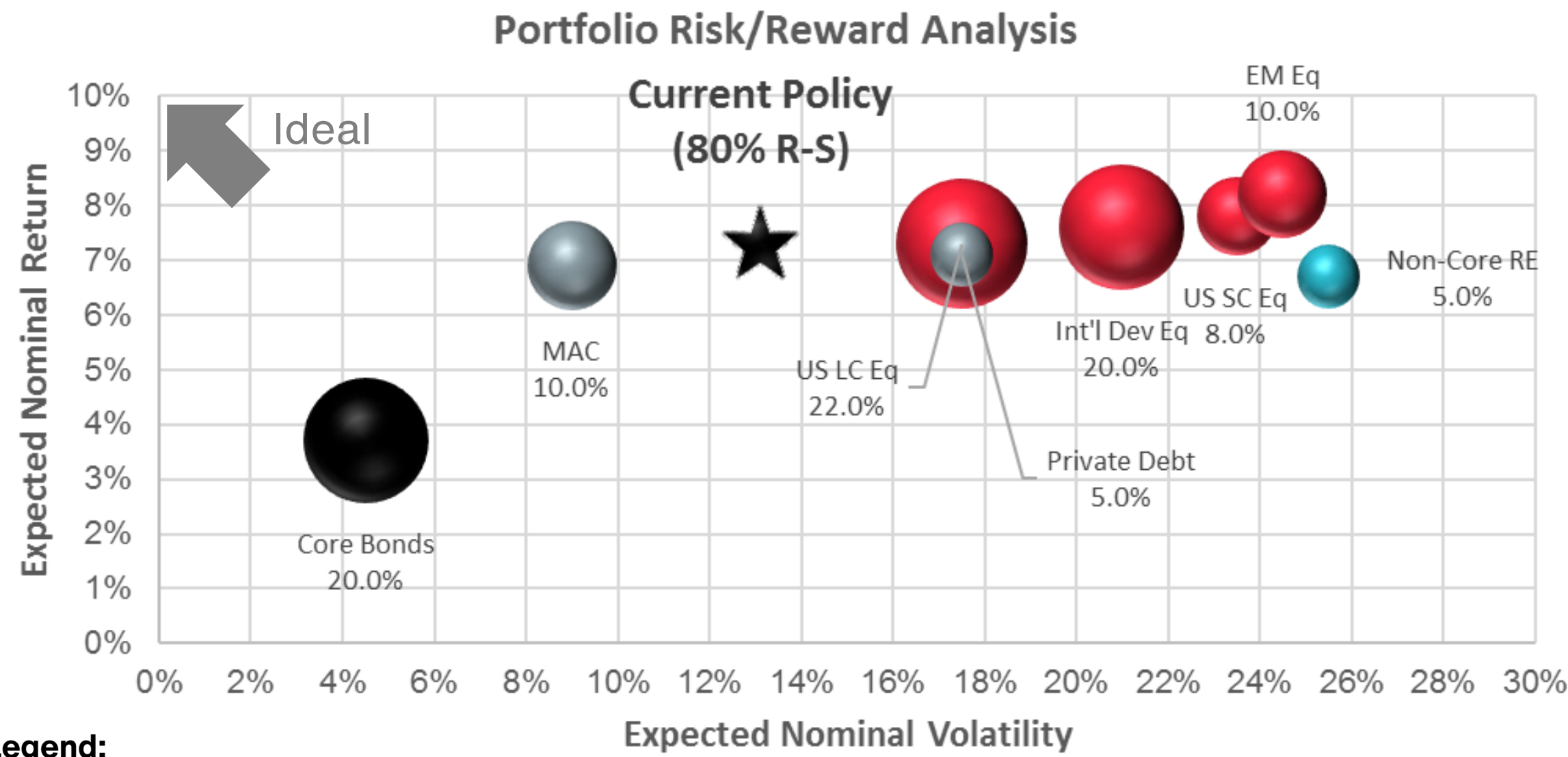
# Appendices

- Additional Portfolio Analysis
- Assumptions and Methods



# Portfolio Analysis | Current Portfolio

Current Diversification Results in an Expected Return of 7.32%<sup>1</sup>



**Legend:**

- Bubble size proportional to current asset allocation (i.e., larger bubbles = larger allocations); Asset classes are color coded:
  - Equities (red), Real Assets (blue), Return-Seeking Fixed Income (gray), Safety (black)

**Key Observation:**

- Current portfolio diversification results in an expected return assumption of 7.32%

	Expected Real Return <sup>1</sup>	Expected Nominal Return <sup>1</sup>	Expected Nominal Volatility
<b>Equity</b>			
Large Cap U.S. Equity	4.8%	7.3%	17.5%
Small Cap U.S. Equity	5.3%	7.8%	23.5%
International Equity (Developed)	5.1%	7.6%	21.0%
Emerging Markets Equity	5.7%	8.2%	24.5%
<b>Fixed Income</b>			
Core Fixed Income	1.3%	3.7%	4.5%
Multi-Asset Credit <sup>2</sup>	4.4%	6.9%	9.0%
<b>Alternatives</b>			
Non-Core Real Estate	4.2%	6.7%	25.5%
Private Debt	4.6%	7.1%	17.5%
<b>Inflation</b>			
Inflation	0.0%	2.4%	2.0%
<b>Portfolio Metrics (30-Year Assumptions)</b>			
<b>Total Fund</b>	<b>4.83%</b>	<b>7.32%</b>	<b>13.12%</b>

<sup>1</sup> Expected returns are using AIUSA Q3 2022 30-Year Capital Market Assumptions (CMAs), which are projections about the future returns of asset classes. For asset classes that can be implemented passively, which includes most public assets, alpha and active management fees are not included in the return expectations. For asset classes that can only be implemented actively, such as hedge funds and private assets, we assume alpha and higher active manager fees. Expected returns are geometric (long-term compounded). Expected returns presented are models and do not represent the returns of an actual client account. Your actual returns will be reduced by your advisory fees and other expenses you may incur as a client. AIUSA's advisory fees are described in Part 2A of AIUSA's Form ADV. Not a guarantee of future results. See appendix for capital market assumptions disclosure pages.



# Portfolio Analysis | Spectrum of Our Model Portfolios

Reflects Our Best Ideas for a Typical Pension Plan

Aon’s Model Portfolios reflect Aon’s best ideas for a typical total return defined benefit plan across a range of circumstances noted below

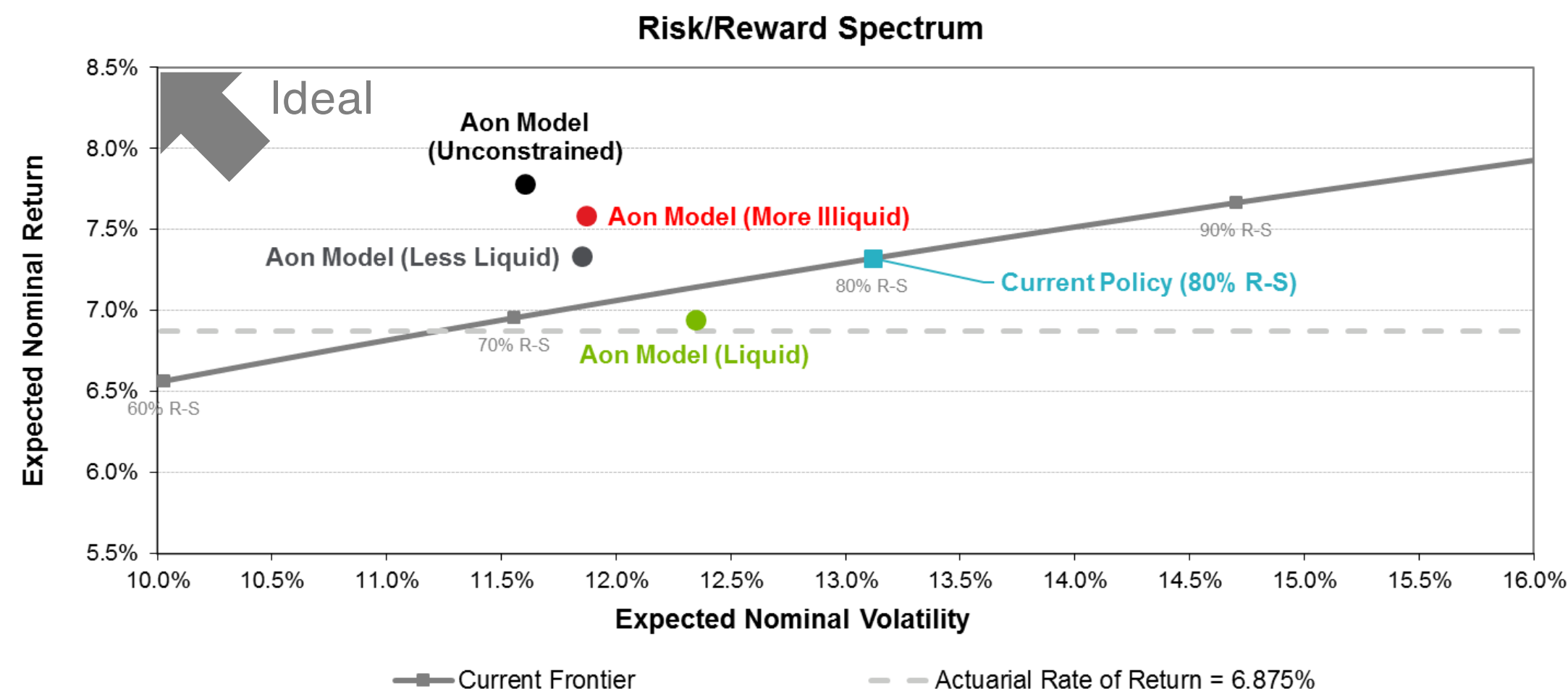
- Intended as a **starting point** for asset allocation analysis and decision-making and to be customized based on client-specific needs and circumstances

	Liquid	Less Liquid	More Illiquid	Unconstrained
<b>Complexity</b>	Simple			Complex
<b>Costs</b>	Low Cost			Higher Cost
<b>Resources</b>	Light Resources			Deep Resources
<b>Governance</b>	Modest Governance			Strong Governance
<b>Liquidity</b>	More Liquid			Less Liquid

- As a general statement, moving from left-to-right on the above spectrum increases both investment portfolio return potential and risk-adjusted return potential, based on our capital markets modelling
  - It also increases the reliance on “alpha” (manager skill) and reduces the emphasis on market “beta” (market risk premiums); alpha is not guaranteed

# Portfolio Analysis | Risk/Reward Spectrum

## Aon Model Portfolios



### Key Takeaways:

- Current portfolio has an expected return of **7.32%**
- Potential to increase expected return and/or reduce expected volatility depending on degree of additional diversification

<sup>1</sup> Expected returns are using AIUSA Q3 2022 30-Year Capital Market Assumptions (CMAs), which are projections about the future returns of asset classes. For asset classes that can be implemented passively, which includes most public assets, alpha and active management fees are not included in the return expectations. For asset classes that can only be implemented actively, such as hedge funds and private assets, we assume alpha and higher active manager fees. Expected returns are geometric (long-term compounded). Expected returns presented are models and do not represent the returns of an actual client account. Your actual returns will be reduced by your advisory fees and other expenses you may incur as a client. AIUSA's advisory fees are described in Part 2A of AIUSA's Form ADV. Not a guarantee of future results. See appendix for capital market assumptions disclosure pages.

<sup>2</sup> Increased dollars determined by market value of assets as of June 30, 2022 (\$128.1M)

Asset Class	Current Policy (80% R-S)	Aon Model (Liquid)	Aon Model (Less Liquid)	Aon Model (More Illiquid)	Aon Model (Unconstr.)
<b>Equity</b>					
- Public Equity	60%	60%	50%	45%	35%
- Private Equity	0%	0%	5%	10%	15%
- Subtotal	60%	60%	55%	55%	50%
<b>Liquid Alternatives</b>					
- Subtotal	0%	0%	5%	8%	8%
<b>Return-Seeking Fixed Income</b>					
- Liquid R-S Fixed Income	10%	8%	8%	5%	5%
- Illiquid R-S Fixed Income	5%	0%	0%	3%	5%
- Subtotal	15%	8%	8%	8%	10%
<b>Real Assets</b>					
- Open-End Real Assets	0%	13%	8%	5%	5%
- Closed-End Real Assets	5%	0%	5%	5%	8%
- Subtotal	5%	13%	13%	10%	13%
<b>Risk-Reducing</b>					
- Core / Core Plus Fixed Income	20%	20%	20%	20%	20%
- Subtotal	20%	20%	20%	20%	20%
<b>Expected Return<sup>1</sup></b>	<b>7.32%</b>	<b>6.94%</b>	<b>7.34%</b>	<b>7.59%</b>	<b>7.78%</b>
Expected Risk <sup>1</sup>	13.12%	12.35%	11.85%	11.87%	11.60%
Sharpe Ratio	0.337	0.328	0.374	0.395	0.421
<b>Increase in Expected Return (%)</b>	<b>0.00%</b>	<b>-0.38%</b>	<b>0.02%</b>	<b>0.27%</b>	<b>0.46%</b>
<b>Increase in Expected Return (\$ millions)<sup>2</sup></b>	<b>\$0.00</b>	<b>-\$0.49</b>	<b>\$0.03</b>	<b>\$0.35</b>	<b>\$0.59</b>

# Portfolio Analysis | Return-Seeking Portfolio Construction

## New Asset Classes for Wilton to Consider?

Consider (Y/N)?	Asset Class	Description	Objective/Role	Liquidity	Typical Fees <sup>1</sup>
<b>Equity</b>					
✓	–Public Equity	Active or passive, including all geographical style and capitalization mandates	Primary source of excess return	Liquid	0.1%-0.8%
_____	–Private Equity	Close-ended illiquid investments in buyouts, venture capital, distressed and mezzanine debt	Capture illiquidity premium	>10 years	2%+20%
<b>Liquid Alternatives</b>					
_____	–Hedge Funds	Diversifying strategies including equity and credit long/short, structured credit, systematic macro, event driven, and volatility arbitrage	Absolute return and provides downside protection versus equity beta	Quasi-Liquid	1.6%+20%
<b>Return-Seeking Fixed Income</b>					
✓	–Liquid R-S Fixed Income	Typically non-investment grade fixed income including high yield, emerging markets, and bank loans	Diversify, provide credit spread duration and additional yield	Liquid	0.7%
✓	–Illiquid R-S Fixed Income	Illiquid and/or private debt investments to capitalize on risk premia not available in liquid markets		5-10 years	1.6%+15%
<b>Real Assets</b>					
_____	–Open-Ended Real Assets	Core real estate and core infrastructure	Diversify, provide income and some inflation protection	Quasi-Liquid	1.0%
✓	–Close-Ended Real Assets	Non-core (value-added or opportunistic) investments including real estate, infrastructure, timberland, and farmland		5-10 years	1.4%+18%
_____	<b>Opportunity<sup>2</sup></b>	Broad range of investments that do not fit within traditional asset classes, or share characteristics of more than one asset class. May be truly “opportunistic” and short-term	Add flexibility	Varies	Varies

✓ = Current Investment

<sup>1</sup>Based on the average active total fees of underlying asset classes. Fee structure consisting of active management fee and incentive fee for the performance over certain hurdle rates. For example, Private Equity typically has active management fee at 2%, and 20% incentive fee for performance over 8%

<sup>2</sup>An Opportunity Allocation is a risk-controlled “go anywhere” bucket to create flexibility within the investment policy. Its goals are to enhance returns, reduce risks, generate alpha, and diversify the portfolio.

# Actuarial Assumptions and Methods

## Data

- Actuarial information was taken from the preliminary July 1, 2021 actuarial valuation results, assuming no assumption changes

## Actuarial assumptions:

- Valuation Rate of Interest = 6.875%
- Value of Assets: Equal to a 5-year smoothed value of Plan assets

## Contribution Policy

- Normal Cost plus an amortization of the unfunded actuarial liability (UAL)
- Amortization of Unfunded Actuarial Liability uses an open, 20-year amortization period

# Our Capital Market Assumptions

## As of June 30, 2022 (30 Years)

	Expected Real Return <sup>1</sup>	Expected Nominal Return <sup>1</sup>	Expected Nominal Volatility
<b>Equity</b>			
1 Large Cap U.S. Equity	4.8%	7.3%	17.5%
2 Small Cap U.S. Equity	5.3%	7.8%	23.5%
3 International Equity (Developed)	5.1%	7.6%	21.0%
4 Emerging Markets Equity	5.7%	8.2%	24.5%
<b>Fixed Income</b>			
5 Cash (Gov't)	0.5%	2.9%	2.0%
6 Core Fixed Income	1.3%	3.7%	4.5%
7 Core Plus Fixed Income	1.7%	4.1%	5.0%
8 Multi-Asset Credit <sup>3</sup>	4.4%	6.9%	9.0%
<b>Alternatives</b>			
9 Direct Hedge Funds <sup>2,3</sup>	4.8%	7.3%	9.0%
10 Core Real Estate	2.6%	5.1%	15.5%
11 Non-Core Real Estate	4.2%	6.7%	25.5%
12 Private Equity	7.6%	10.2%	25.5%
13 Infrastructure	5.2%	7.7%	15.0%
14 Closed-End Real Assets	5.5%	8.0%	16.0%
15 Private Debt	4.6%	7.1%	17.5%
<b>Inflation</b>			
16 Inflation	0.0%	2.4%	2.0%

<sup>1</sup> Expected returns are using Aon Investments Q3 2022 30-Year Capital Market Assumptions. Assumptions do not include fees/expenses. All expected returns are geometric (long-term compounded; rounded to the nearest decimal) and net of investment fees. Expected returns presented are models and do not represent the returns of an actual client account. Not a guarantee of future results.

<sup>2</sup> Alpha incorporated in Expected Nominal Return

<sup>3</sup> Represents diversified portfolio of Direct hedge fund investments.

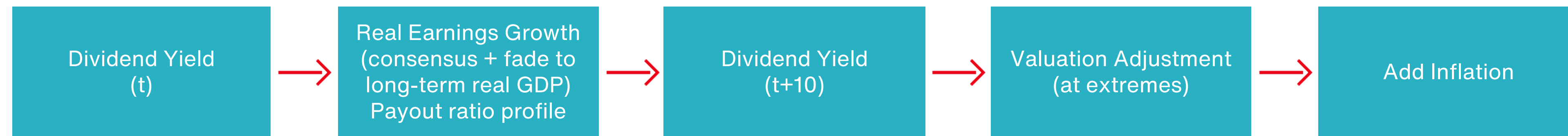
# Our Capital Market Assumptions

As of June 30, 2022

	Nominal Correlations	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
<b>1</b>	Large Cap U.S. Equity	<b>1.00</b>	0.93	0.81	0.73	0.07	0.02	0.08	0.61	0.53	0.34	0.45	0.62	0.34	0.52	0.38	0.07
<b>2</b>	Small Cap U.S. Equity	0.93	<b>1.00</b>	0.75	0.68	0.06	0.02	0.07	0.57	0.49	0.32	0.43	0.60	0.34	0.50	0.36	0.07
<b>3</b>	International Equity (Developed)	0.81	0.75	<b>1.00</b>	0.76	0.03	0.01	0.07	0.62	0.45	0.34	0.44	0.56	0.31	0.50	0.38	0.10
<b>4</b>	Emerging Markets Equity	0.73	0.68	0.76	<b>1.00</b>	0.06	0.03	0.08	0.64	0.36	0.32	0.41	0.53	0.29	0.46	0.40	0.07
<b>5</b>	Cash (Gov't)	0.07	0.06	0.03	0.06	<b>1.00</b>	0.41	0.36	0.04	-0.02	0.13	0.12	0.07	0.11	0.14	-0.17	0.29
<b>6</b>	Core Fixed Income	0.02	0.02	0.01	0.03	0.41	<b>1.00</b>	0.98	0.25	0.04	0.05	0.04	0.03	0.05	0.05	0.07	-0.02
<b>7</b>	Core Plus Fixed Income	0.08	0.07	0.07	0.08	0.36	0.98	<b>1.00</b>	0.39	0.14	0.07	0.07	0.08	0.07	0.09	0.23	-0.02
<b>8</b>	Multi-Asset Credit	0.61	0.57	0.62	0.64	0.04	0.25	0.39	<b>1.00</b>	0.54	0.22	0.30	0.40	0.22	0.34	0.68	0.09
<b>9</b>	Direct Hedge Funds	0.53	0.49	0.45	0.36	-0.02	0.04	0.14	0.54	<b>1.00</b>	0.17	0.23	0.33	0.18	0.27	0.44	0.03
<b>10</b>	Core Real Estate	0.34	0.32	0.34	0.32	0.13	0.05	0.07	0.22	0.17	<b>1.00</b>	0.97	0.32	0.18	0.85	0.15	0.06
<b>11</b>	Non-Core Real Estate	0.45	0.43	0.44	0.41	0.12	0.04	0.07	0.30	0.23	0.97	<b>1.00</b>	0.37	0.22	0.89	0.19	0.07
<b>12</b>	Private Equity	0.62	0.60	0.56	0.53	0.07	0.03	0.08	0.40	0.33	0.32	0.37	<b>1.00</b>	0.32	0.45	0.30	0.06
<b>13</b>	Infrastructure	0.34	0.34	0.31	0.29	0.11	0.05	0.07	0.22	0.18	0.18	0.22	0.32	<b>1.00</b>	0.64	0.15	0.06
<b>14</b>	Closed-End Real Assets	0.52	0.50	0.50	0.46	0.14	0.05	0.09	0.34	0.27	0.85	0.89	0.45	0.64	<b>1.00</b>	0.22	0.08
<b>15</b>	Private Debt	0.38	0.36	0.38	0.40	-0.17	0.07	0.23	0.68	0.44	0.15	0.19	0.30	0.15	0.22	<b>1.00</b>	0.01
<b>16</b>	Inflation	0.07	0.07	0.10	0.07	0.29	-0.02	-0.02	0.09	0.03	0.06	0.07	0.06	0.06	0.08	0.01	<b>1.00</b>

# How We Set Assumptions

- Our global assumptions are Aon's asset class return, volatility and correlation assumptions. "Best estimate" asset class returns, i.e., 50/50 chance actual returns will be below our assumptions.
- Updated quarterly
- Assumptions are set passively except for private equity and hedge funds. We add manager alpha separately for asset classes.
- Time Horizon – Up to 30 years.
- Return assumptions modelled differently according to asset class attributes.
  - E.g., Equities based on discounted dividend ('cash flow') approach:



# Explanation of Capital Market Assumptions

As of June 30, 2022 (30 Years)

The following capital market assumptions were developed by Aon's Global Asset Allocation Team and represent the long-term capital market outlook (i.e., 30 years) based on data at the end of the second quarter of 2022. The assumptions were developed using a building block approach, reflecting observable inflation and interest rate information available in the fixed income markets as well as Consensus Economics forecasts. Our long-term assumptions for other asset classes are based on historical results, current market characteristics, and our professional judgment.

## **Inflation – Expected Level (2.4%)**

Based on Consensus Economics long-term estimates and our near-term economic outlook, we expect U.S. consumer price inflation to be approximately 2.4% during the next 30 years.

## **Real Returns for Asset Classes**

### ***Fixed Income***

- **Cash (0.5%)** – Over the long run, we expect the real yield on cash and money market instruments to produce a real return of 0.5% in a moderate to low-inflationary environment.
- **TIPS (1.0%)** – We expect intermediate duration Treasury Inflation-Protected Securities to produce a real return of about 0.0%.
- **Core Fixed Income (i.e., Market Duration) (1.3%)** – We expect intermediate duration Treasuries to produce a real return of about 0.5%. We estimate the fair value credit spread (credit risk premium - expected losses from defaults and downgrades) to be 0.8%, resulting in a long-term real return of 1.3%.
- **Core Plus Bonds (1.7%)** – Modeled as 20% 5 duration gov't with real return of 0.5% and 80% 5 duration corporate bonds with real return of 2.0%.
- **Long Duration Bonds – Government and Credit (1.9%)** – We expect Treasuries with a duration comparable to the Long Government Credit Index to produce a real return of 1.1%. We estimate the fair value credit spread (credit risk premium - expected losses from defaults and downgrades) to be 0.8%, resulting in an expected real return of 1.9%.



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- **Long Duration Bonds – Credit (2.4%)** – We expect Treasuries with a duration comparable to the Long Credit Index to produce a real return of 1.1%. We estimate the fair value credit spread (credit risk premium - expected losses from defaults and downgrades) to be 1.3%, resulting in an expected real return of 2.4%.
- **Long Duration Bonds – Government (1.1%)** – We expect Treasuries with a duration of ~12 years to produce a real return of 1.1% during the next 30 years.
- **High Yield Bonds (3.3%)** – We expect intermediate duration Treasuries to produce a real return of about 0.5%. We estimate the fair value credit spread (credit risk premium - expected losses from defaults and downgrades) to be 2.8%, resulting in an expected real return of 3.3%.
- **Bank Loans (3.7%)** – We expect LIBOR to produce a real return of about 1.1%. We estimate the fair value credit spread (credit risk premium - expected losses from defaults) to be 2.6%, resulting in an expected real return of 3.7%.
- **Non-US Developed Bonds: 50% Hedged (0.9%)** – We forecast real returns for non-US developed market bonds to be 0.9% over a 30-year period after adjusting for a 50% currency hedge. We assume a blend of one-third investment grade corporate bonds and two-thirds government bonds. We also produce assumptions for 0% hedged and 100% hedged non-US developed bonds.
- **Emerging Market Bonds (Sovereign; USD) (3.3%)** – We forecast real returns for emerging market sovereign bonds denominated in US dollars to be 3.3% over a 30-year period.
- **Emerging Market Bonds (Corporate; USD) (2.7%)** – We forecast real returns for emerging market corporate bonds denominated in US dollars to be 2.7% over a 30-year period.
- **Emerging Market Bonds (Sovereign; Local) (3.9%)** – We forecast real returns for emerging market sovereign bonds denominated in local currency to be 3.9% over a 30-year period.
- **Multi Asset Credit (MAC) (4.4%)** – We assume real returns from beta exposure to high yield, bank loans and emerging market debt to add 3.6% plus 0.8% from alpha (net of fees) over a 30-year period.

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- **Private Debt-Direct Lending (4.6%)** – The base building block is bank loans 3.7% + spread 0.9% (net of management fees and performance incentives). There is 100% leverage included in the assumption with the nominal cost of financing at LIBOR + 2.5%.

## *Equities*

- **Large Cap U.S. Equity (4.8%)** – This assumption is based on our 30-year outlook for large cap U.S. company dividends and real earnings growth. Adjustments are made for valuations as needed.
- **Small Cap U.S. Equity (5.3%)** – Adding a 0.5% return premium for small cap U.S. equity over large cap U.S. equity results in an expected real return of 5.3%. This return premium is theoretically justified by the higher risk inherent in small cap U.S. equity versus large cap U.S. equity, and is also justified by historical data. In recent years, higher small cap valuations relative large cap equity has reduced the small cap premium.
- **Global Equity (Developed & Emerging Markets) (5.3%)** – We employ a building block process similar to the U.S. equity model using the developed and emerging markets that comprise the MSCI All-Country World Index. Our roll-up model produces an expected real return of 5.3% for global equity.
- **International (Non-U.S.) Equity, Developed Markets (5.1%)** – We employ a building block process similar to the U.S. equity model using the non-U.S. developed equity markets that comprise the MSCI EAFE Index.
- **Emerging Market Stocks (5.7%)** - We employ a building block process similar to the U.S. equity model using the non-U.S. emerging equity markets that comprise the MSCI Emerging Markets Index.
- **Equity Risk Insurance Premium Strategies-High Beta (3.8%)** – We expect real returns from 50% equity + 50% cash beta of 3.0% plus 0.8% insurance risk premium over the next 30 years.

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## *Alternative Asset Classes*

- **Hedge Fund-of-Funds Universe (2.1%)** – The generic category “hedge funds” encompasses a wide range of strategies accessed through “fund-of-funds” vehicles. We also assume the *median* manager is selected and also allow for the additional costs associated with Fund-of-Funds management. A top-tier portfolio of funds (hedge fund-of-funds buy-list) could add an additional 1.1% in return at similar volatility based on alpha, lower fees and better risk management.
- **Hedge Fund-of-Funds Buy List (3.2%)** – The generic category of top-tier “hedge funds” encompasses a wide range of strategies accessed through “fund-of-funds” vehicles. We assume additional costs associated with Funds-of-Funds management. To use this category the funds must be buy rated or we advise on manager selection.
- **Broad Hedge Funds Universe (3.5%)** – Represents a diversified portfolio of direct hedge fund investments. This investment will tend to be less diversified than a typical “fund-of-funds” strategy as there will be fewer underlying managers and will not include the extra layer of fees found in a Fund-of-Funds structure.
- **Broad Hedge Funds Buy List (4.8%)** – Represents a diversified portfolio of top-tier direct hedge fund investments. This investment will tend to be less diversified than a typical “fund-of-funds” strategy as there will be fewer underlying managers and will not include the extra layer of fees found in a Fund-of-Funds structure. To use this category the funds must be buy rated or we advise on manager selection.
- **Core Real Estate (2.6%)** -- Our real return assumption for core real estate is based a gross income of about 2.6%, management fees of roughly 1%, 25% leverage and future capital appreciation near the rate of inflation during the next 30 years. We assume a portfolio of equity real estate holdings that is diversified by property and by geographic region.
- **Non-Core Real Estate (4.2%)** -- Core real estate is levered approximately 100% as the base building block for this assumption. We subtract financing costs for the leverage and 2% management costs. We also assume nominal alpha of 3% over core real estate. We assume a 50/50 mix of value-add and opportunistic investments.

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- **U.S. REITs (3.9%)** – Our real return assumption for U.S. REITs is based on income of about 3.9% and future capital appreciation near the rate of inflation during the next 30 years. REITs are a sub-set of U.S. small/mid cap equity universe.
- **Commodities (3.5%)** – Our commodity assumption is for a diversified portfolio of commodity futures contracts. Commodity futures returns are composed of three parts: spot price appreciation, collateral return, and roll return (positive or negative change implied by the shape of the future curve). We believe that spot prices will converge with CPI over the long run (i.e., 2.4%). Collateral is assumed to be LIBOR cash (1.1%). Also, we believe the roll effect will be near zero, resulting in a real return of about 3.5% for commodities.
- **Private Equity (7.6%)** – Our private equity assumption reflects a diversified fund of funds with exposure to buyouts, venture capital, distressed debt, and mezzanine debt.
- **Infrastructure (5.2%)** – Our infrastructure assumption is formulated using a cash flow based approach that projects cash flows (on a diversified portfolio of assets) over a 30-year period. Income and capital growth as well as gearing levels, debt costs and terms, relevant tax and management expenses are all taken into consideration. Our approach produces an expected real return of 5.2% for infrastructure.
- **Equity Risk Insurance Premium Strategies-Low Beta (2.9%)** – We assume real returns from cash of 0.5% + 2.4% from alpha.
- **Alternative Risk Premia (ARP) (5.0%)** – Real return target LIBOR 1.1% plus 3.9% alpha (net of fees)
- **eLDI (2.8%)** – Combination of various long credit strategies (1/6 real estate debt, 1/3 securitized debt, 1/6 CMOs, 1/3 private placements)
- **Closed-End Real Assets (5.5%)** – Modeled as 50% Non-Core Real Estate and 50% Infrastructure

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## Volatility / Correlation Assumptions

Assumed volatilities are formulated with reference to implied volatilities priced into option contracts of various terms, as well as with regard to historical volatility levels. For asset classes which are not marked to market (for example real estate), we “de-smooth” historical returns before calculating volatilities. Importantly, we consider expected volatility trends in the future – in recent years we assumed the re-emergence of an economic cycle and a loss of confidence in central bankers would lead to an increase in volatility. Correlation assumptions are generally similar to actual historical results; however, we do make adjustments to reflect our forward-looking views as well as current market fundamentals.

# About This Material

This material includes a summary of calculations and consulting related to the finances of Town of Wilton, CT (Wilton). The following variables have been addressed:

- Contributions, Funded Ratio, Hurdle Rate

This analysis is intended to assist the Investment Committee with a review of the associated issues and options, and its use may not be appropriate for other purposes. This analysis has been prepared solely for the benefit of the Investment Committee. Any further dissemination of this report is not allowed without the written consent of Aon Investments USA Inc.

Our calculations were generally based on the methodologies identified in the actuary's valuation report for Wilton. We believe the methodology used in these calculations conforms to the applicable standards identified in the report.

Models are used to develop alternative scenarios based on the underlying valuation model and project financial results under those scenarios. The models were developed by experts outside and within Aon. Where outside models were used, the models were reviewed by experts within Aon. The models were selected as appropriate for these projections by the undersigned.

Experience different than anticipated could have a material impact on the ultimate costs of the benefits. In addition, changes in plan provisions or applicable laws could have a significant impact on cost. Actual experience may differ from our modeling assumptions.

Our calculations were based on data provided by the plan actuary. The actuarial assumptions and methods and plan provisions reflected in these projections are the same as those used for the preliminary July 1, 2021 actuarial valuation for Wilton as noted in the actuarial reports, except where noted in this report. Unless specifically noted, our calculations do not reflect any other changes or events after July 1, 2021. Reflecting events after July 1, 2021 would impact the results of the projection.

In conducting these projections, we have relied on plan design, demographic and financial information provided by other parties, including the plan's actuary and plan sponsor. While we cannot verify the accuracy of all of the information, the supplied information was reviewed for consistency and reasonableness. As a result of this review, we have no reason to doubt the substantial accuracy or completeness of the information and believe that it has produced appropriate results.

These projections have been conducted in accordance with generally accepted actuarial principles and practices, including applicable Actuarial Standards of Practice as issued by the Actuarial Standards Board. The undersigned actuary is familiar with the near-term and long-term aspects of pension valuations and meet the Qualification Standards of the American Academy of Actuaries necessary to render the actuarial opinions contained herein. All sections of this report are considered an integral part of the actuarial opinions.

To our knowledge, no colleague of Aon Investments USA Inc. providing services to Wilton has any direct financial interest or indirect material interest in Wilton. Thus, we believe there is no relationship existing that might affect our capacity to prepare and certify this report for Wilton.

Aon Investments USA Inc.



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