# TOWN OF WEST HARTFORD
# PENSION BOARD

## Virtual Special Meeting

Scheduled For

Monday

January 24, 2022

at 7:45 am

**TOWN OF WEST HARTFORD PENSION BOARD**
**VIRTUAL SPECIAL MEETING**
**Monday, January 24, 2022 at 7:45 a.m.**

Members of the public may view the meeting on YouTube and www.whctv.org.

I. Roll Call/Attendance
Guests: Mayor Shari Cantor; Matt Hart, Town Manager; Lee Gold, Town Council; Chris Kachmar, Fiducient Advisors

II. Chair's Opening Comments

III. Chris Kachmar, Investment Review, Fiducient Advisors
- A. 4th Quarter 2021 Pension Trust & POB Pool Performance Updates
- B. Asset Allocation and Portfolio Construction Discussion

IV. Chair Guzman
- A. Introduction of Pension Plan Dashboard (as presented by Al Lebow)

V. Peter Privitera, Director of Finance

VI. Brittany Bermingham, Town Matters

VII. Rick Ledwith, Executive Director of Human Resources
- A. Meeting schedule for 2022

VIII. Formal Actions
- A. Minutes
  1. Approval of the minutes for the virtual regular meeting held on Monday, November 15, 2021.

  ***"Motion to approve the minutes for the virtual regular meeting held on Monday, November 15, 2021."***
  2. Presentation of the previously approved, amended minutes for the virtual regular meeting held on Monday, October 18, 2021.
- B. Pension Administration
  1. Memberships
  2. Terminations and Refunds
  3. Applications for Approval
     - a. Normal retirement applications
     - b. Survivor applications

  ***"Motion to approve Pension Administration."***
- C. Invoices for Consideration
  1. Milliman
     Review of the requested supporting documentation for the Milliman invoice submitted and approved at the November 15, 2021 meeting for actuarial services in the amount of $6,107.50 (for additional projection scenarios requested by the Pension Board). Invoice date 6/14/2021.
  2. Fiducient Advisors
     Consideration of invoice for payment for consultation services for the period from 7/1/2021 – 9/30/2021 in the amount of $12,500. Invoice date 10/4/2021.
  3. Wells Fargo
     Consideration of invoice for payment for administrative and reporting services for the period from 7/1/2021 – 9/30/2021 in the amount of $10,348.24. Invoice date 10/7/2021.
  4. Pier Capital LLC
     Consideration of invoice for payment for management fees for the 3rd quarter 2021 in the amount of $13,283.47. Invoice date 10/8/2021.
  5. Pier Capital LLC

Consideration of invoice for payment for management fees for the 4th quarter 2021 and the incentive fee for 2021 in the amount of $173,028.31. Invoice date 1/10/2022.

6. GHG Corporation

Consideration of invoice for payment for maintenance, support, and upgrades of purchased CLOCKWISE Software license (eEMS paystub service provided to pensioners) in the amount of $1,785.00. Invoice date 12/1/2021.

***"Motion to approve for payment the items under Invoices for Consideration."***

IX. Adjournment

A. **"Motion to adjourn."**

Pension Board Meeting January 24, 2022

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**ITEM** **SECTION**

**Lori Kearney**

**From:** alan[redacted]
**Sent:** Friday, November 12, 2021 9:03 PM
**To:** Lori Kearney
**Cc:** ethan[redacted]
**Subject:** [EXTERNAL SENDER] FW: Pension tracking File
**Attachments:** Pension Tracking File.xlsx

Lori,

If there is time, please forward this to Lazaro and include it in the Pension Board meeting. Otherwise, we will save it for next time.

Lazaro,

Here is a draft proposal from Ethan and me for monitoring the pension results going forward. On the first tab, we have captured the "Flat 6.25 Average" scenario. The intent is to fill in the cells in the "Actual" columns with the actual values as they materialize. In addition, we would reproject the cells which are still in the future in the "Actual" columns based on what has materialized. While the "Actual" cells are all blank in this draft, we would fill them with the same numbers as are in the "Expected" columns for the initial report and then update the "Actual" columns every year.

Tabs two and three are intended to provide detail, with respect to assets and liabilities, as to what caused the current year results to materialize as they did. There is plenty of room for discussion about the detail, but the intent is to get an understanding of the drivers of results on an annual basis.

Al

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IV–A

## Town of West Hartford Pension Plan

**Deterministic projections based on July 1, 2020 Valuation (in $ millions) - 6.25% asset return scenario**

| Valuation 7/1 | for FYE | Return in Year Starting on Valuation Date | | Accrued Liability | | Actuarial Value of Assets | | Unfunded Accrued Liability | | Funded Ratio | | Actuarially Determined Contribution | | Reserve fund Balance | | ADC Paid from Reserve Fund | | POB Debt Service | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Actual | Expected | Actual | Expected | Actual | Expected | Actual | Expected | Actual | Expected | Actual | Expected | Actual | Expected | Actual | Expected | Actual | Expected |
| 2019 | 2021 | | 4.83% | | 510.8 | | 209.1 | | 301.7 | | 41% | | 25.439 | | - | | - | | - |
| 2020 | 2022 | | 6.25% | | 531.0 | | 215.8 | | 315.2 | | 41% | | 26.919 | | - | | - | | - |
| 2021 | 2023 | | 6.25% | | 584.1 | | 581.4 | | 2.7 | | 100% | | 7.454 | | 26.919 | | 0.823 | | 20.961 |
| 2022 | 2024 | | 6.25% | | 592.7 | | 581.1 | | 11.6 | | 98% | | 7.963 | | 27.708 | | 0.137 | | 20.961 |
| 2023 | 2025 | | 6.25% | | 600.8 | | 587.6 | | 13.2 | | 98% | | 8.087 | | 27.673 | | - | | 20.961 |
| 2024 | 2026 | | 6.25% | | 608.4 | | 594.3 | | 14.1 | | 98% | | 8.164 | | 28.343 | | - | | 20.961 |
| 2025 | 2027 | | 6.25% | | 615.7 | | 600.9 | | 14.8 | | 98% | | 8.260 | | 29.173 | | - | | 20.961 |
| 2026 | 2028 | | 6.25% | | 622.7 | | 607.3 | | 15.4 | | 98% | | 8.378 | | 30.028 | | - | | 20.961 |
| 2027 | 2029 | | 6.25% | | 629.2 | | 613.4 | | 15.8 | | 97% | | 8.465 | | 30.908 | | - | | 20.961 |
| 2028 | 2030 | | 6.25% | | 635.5 | | 619.5 | | 16.0 | | 97% | | 8.590 | | 31.813 | | - | | 20.961 |
| 2029 | 2031 | | 6.25% | | 641.8 | | 625.6 | | 16.2 | | 97% | | 8.731 | | 32.745 | | - | | 20.961 |
| 2030 | 2032 | | 6.25% | | 647.9 | | 631.7 | | 16.2 | | 97% | | 8.885 | | 33.705 | | - | | 20.961 |
| 2031 | 2033 | | 6.25% | | 654.1 | | 638.0 | | 16.1 | | 98% | | 9.047 | | 34.692 | | - | | 20.961 |
| 2032 | 2034 | | 6.25% | | 660.5 | | 644.5 | | 16.0 | | 98% | | 9.180 | | 35.709 | | - | | 20.961 |
| 2033 | 2035 | | 6.25% | | 666.9 | | 651.3 | | 15.6 | | 98% | | 9.322 | | 36.755 | | - | | 20.961 |
| 2034 | 2036 | | 6.25% | | 673.3 | | 658.1 | | 15.2 | | 98% | | 9.457 | | 37.832 | | - | | 20.961 |
| 2035 | 2037 | | 6.25% | | 679.9 | | 665.3 | | 14.6 | | 98% | | 9.598 | | 38.940 | | - | | 20.961 |
| 2036 | 2038 | | 6.25% | | 686.8 | | 672.8 | | 14.0 | | 98% | | 9.748 | | 40.081 | | - | | 20.961 |
| 2037 | 2039 | | 6.25% | | 693.9 | | 680.7 | | 13.2 | | 98% | | 9.886 | | 41.256 | | - | | 20.961 |
| 2038 | 2040 | | 6.25% | | 701.3 | | 689.0 | | 12.3 | | 98% | | 10.034 | | 42.465 | | - | | 20.961 |
| 2039 | 2041 | | 6.25% | | 709.0 | | 697.7 | | 11.3 | | 98% | | 10.178 | | 43.709 | | - | | 20.961 |
| 2040 | 2042 | | 6.25% | | 717.0 | | 706.8 | | 10.2 | | 99% | | 10.355 | | 44.990 | | - | | 20.961 |
| 2041 | 2043 | | 6.25% | | 725.3 | | 716.3 | | 9.0 | | 99% | | 10.519 | | 46.308 | | - | | 20.961 |
| 2042 | 2044 | | 6.25% | | 733.9 | | 726.3 | | 7.6 | | 99% | | 10.697 | | 47.665 | | - | | 20.961 |
| 2043 | 2045 | | 6.25% | | 742.8 | | 736.8 | | 6.0 | | 99% | | 10.881 | | 49.061 | | - | | 20.961 |
| 2044 | 2046 | | 6.25% | | 752.1 | | 747.7 | | 4.4 | | 99% | | 11.047 | | 50.499 | | - | | 20.961 |
| 2045 | 2047 | | 6.25% | | 761.6 | | 759.0 | | 2.6 | | 100% | | 11.256 | | 51.987 | | - | | 20.961 |
| 2046 | 2048 | | 6.25% | | 771.3 | | 770.8 | | 0.5 | | 100% | | 11.470 | | 53.501 | | - | | - |
| 2047 | 2049 | | 6.25% | | 781.5 | | 783.1 | | (1.6) | | 100% | | 9.842 | | 55.069 | | - | | - |
| 2048 | 2050 | | 6.25% | | 791.9 | | 795.9 | | (4.0) | | 101% | | 10.075 | | 56.682 | | - | | - |
| 2049 | 2051 | | 6.25% | | 802.6 | | 807.3 | | (4.7) | | 101% | | 10.318 | | 58.343 | | - | | - |
| 2050 | 2052 | | 6.25% | | 813.9 | | 819.3 | | (5.4) | | 101% | | 10.567 | | 60.052 | | - | | - |

# Town of West Hartford Pension Plan

**Liability Attribution**

| Attribution | Actual | Expected | Rx Gain/Loss | Reasons |
|---|---|---|---|---|
| **Beginning Value** | 301.700 | 301.700 | | |
| **Contributions** | 25.500 | 25.000 | (0.500) | Roll-forward of reserves related to contributions |
| **Claims & WDs** | (35.000) | (34.500) | 0.500 | Roll-forward of reserves due to payment of claims and withdrawals |
| **Valuation Interest** | 21.089 | 21.089 | - | Interest income inherent in the reserve |
| **Retirements** | 7.000 | 4.911 | (2.089) | Increase in reserve due to retirements |
| **Mortality** | 0.600 | (3.000) | (3.600) | Decrease in reserve due to deaths |
| **Assumption Changes** | 5.900 | - | (5.900) | Change in reserve due to changes in assumptions |
| **Other** | 1.211 | - | (1.211) | Other changes in reserve |
| **Ending Value** | 328.000 | 315.200 | (12.800) | |

# Town of West Hartford Pension Plan

## Asset Attribution

| Attribution | Actual | Expected | Reasons |
|---|---|---|---|
| Beginning | 209.100 | 209.100 | |
| Yield | 6.900 | 13.592 | Market returns less than originally expected and actual returns below proxy returns |
| Net Cash flow | 6.990 | 6.891 | More retirements than expected (see Liability Attribuition) |
| Ending | 209.010 | 215.801 | |

| | Proxy Funds | | | | | | Total | $millions | |
|---|---|---|---|---|---|---|---|---|---|
| Class | US Core Fixed Income | US Large & Mid Cap Equity | US Small Cap Equity | Foreign Developed Equity | Emerging Markets Equity | Private Real Estate Property | | | |
| Index | Bloomberg Barclays Aggregate | Russell 1000 | Russell 2000 | MSCI EAFE NR | MSCI EM NR | NCREIF Property | | | |
| Ticker | AGG | RUI | RUT | EFA | EEM | NPI | %age | | |
| | | | Returns | | | | 3.3% | $ 6.900 | Actual realized return |
| Actual | 1.0% | 6.0% | 3.0% | 4.0% | 3.0% | 2.0% | 3.5% | $ 7.339 | Return based on actual proxies and mix |
| Expected | 3.0% | 8.0% | 8.0% | 8.0% | 8.0% | 8.0% | 6.5% | $ 13.592 | Expected return |
| | | | Mix | | | | | | |
| Actual | 28.0% | 33.0% | 12.0% | 11.0% | 13.0% | 3.0% | 100.0% | | |
| Expected | 30.0% | 30.0% | 15.0% | 10.0% | 10.0% | 5.0% | 100.0% | | |

TO: Pension Board

FROM: Richard Ledwith, Executive Director Human Resources

DATE: January 24, 2022

SUBJECT: **2022 Pension Board Meeting Dates**

The Pension Board meetings are planned for Mondays at 7:45 a.m. They will be conducted virtually through April.

January 24, 2022 (Special Meeting)
February 28, 2022
May 16, 2022
September 19, 2022
October 17, 2022
November 14, 2022

**A virtual regular meeting of the Town of West Hartford Pension Board was held on Monday, November 15, 2021 at 7:45 a.m.**

**This meeting was made available live on West Hartford Community Interactive: Comcast Channel 5, Frontier TV Channel 6098, YouTube, and www.whctv.org.**

**The meeting was called to order at 7:46 a.m.**

I. Roll Call/Attendance

**Pension Board Members:** Chair Lazaro Guzman, Commissioners Alan Lebow, Ethan Goldman, Perry Salonia, Brittany MacGilpin, and Peter Privitera, Director of Financial Services.

**Participants/Guests:** Mayor Shari Cantor, Rick Ledwith, Executive Director of Human Resources, Chris Kachmar, Fiducient Advisors, Lori Kearney, Clerk of the Board, and Paula Knake, Pension Benefits Coordinator.

**Absent:** Matt Hart, Town Manager; Lee Gold, Town Council.

II. Chair's Opening Comments

A. Review of rules of decorum and procedure for the virtual meeting in accordance with Governor Lamont's Executive Order #7B permitting municipalities to conduct public meetings virtually during the COVID-19 pandemic.

III. Peter Privitera, Director of Finance

A. No items to report. Will discuss Milliman invoices during review of Formal Actions.

IV. Chris Kachmar, Investment Review, Fiducient Advisors

A. 3rd quarter investment review

1. Two of six dollar cost averaging exercises completed.
2. Asset allocations in line with targets specified in investment policy statement.
3. Pension fund balance at $321,789,416 as of September 30, 2021.
4. Two manager strategies in elevated status: Metropolitan West Total Return Bond PI elevated to "discuss" in 3Q 2021 and Harbor Diversified International All Cap Ret elevated to "watch" in 2Q 2021. No action needed by the Pension Board at this time.
5. Portfolio is down approximately 40 basis points for the quarter and up 9% YTD through September.

B. POB fund performance

1. Asset allocation of POB portion of portfolio to target.
2. Performance data for POB account is limited – only a couple of months of history available.

V. Brittany Birmingham, Town Matters

1. No items to report

VI. Rick Ledwith, Executive Director of Human Resources

A. Proposed meeting schedule for 2022

VII. Formal Actions

A. Minutes

1. Approval of the minutes for the virtual regular meeting held on Monday, October 18, 2021.
   a. Chair Guzman requested an amendment to the minutes under Section VIII (New Business) item 2: change "invest in" to "issue."

**Motion by Chair Guzman for approval of the minutes for the virtual regular meeting held on Monday, October 18, 2021 with amendment as noted. No objections were raised. Peter Privitera abstained.**

**It was unanimously voted to approve the amended minutes for the virtual regular meeting held on Monday, October 18, 2021.**

B. Pension Administration

**Motion by Chair Guzman for approval of the items under Pension Administration. No objections were raised.**

1. Memberships
   **It was unanimously voted to approve membership for:**
   **BOE – Carolyn Barbaresi, Jomar Diaz, Melissa Harhay, Xiolmara Isaac, and Nelson Pavao.**
   **Town – Daniel Loos, Rebecca Sears, and Thomas Wallace.**
2. Terminations and Refunds
   **It was unanimously voted to approve terminations and refunds for:**
   **Town – Matthew Wilson.**
3. Applications for Approval
   a. Vested Interest applications
      **It was unanimously voted to approve a vested interest for:**
      **BOE – Mary Coons**
      **Town – Irene-Lee Klein**
   b. Normal retirement applications
      **It was unanimously voted to approve a Normal retirement application for:**
      **BOE – Izeth Dennis**

C. Invoices for Consideration

1. Silvercrest
   Invoice for payment for management fees for quarter ending 9/30/2021 in the amount of $22,230. Invoice date 7/8/2021.
2. Silvercrest
   Invoice for payment for management fees for quarter ending 12/31/2021 in the amount of $30,359.00. Invoice date 10/6/2021.
   ***These Silvercrest invoices represent management fee charges only (no incentive fee). Silvercrest bills on a forward/in advance basis.***
   **Motion by Chair Guzman to approve payment of the Silvercrest invoices. No objections were raised. It was unanimously voted to approve the payment of the Silvercrest invoices.**
3. Milliman
   Invoice for payment for actuarial services rendered through 12/2020 in the amount of $18,747.50 (projected retirement benefits and POBs). Invoice date 2/5/2021.
   ***Rick Ledwith stated that the charges for consultation related to the Town Manager's projected retirement benefits ($4,762.50) on the 2/5/2021 invoice will be charged to a Risk Management fund. This leaves the balance of $13,985 (for POB related consultation) for Pension Board approval.***

4. Milliman
   Invoice for payment for actuarial services rendered through 2/2021in the amount of $9,395 (stochastic forecast model and POBs). Invoice date 4/12/2021.
5. Milliman
   Invoice for payment for actuarial services rendered through 4/2021 in the amount of $9,320 (projection scenarios). Invoice date 6/14/2021.
   ***Al Lebow requested that back up detail be obtained from Milliman for the 6/14/2021 invoice. If there is a discrepancy noted after the review of the back up detail, the Town can request a credit from a future invoice.***
6. Milliman
   Invoice for payment for actuarial services rendered through 7/2021 in the amount of $6,185 (stochastic forecast model, POBs, QDRO, contingent annuity factors). Invoice date 9/2/2021.
7. Milliman
   Invoice for payment for actuarial services rendered through 9/2021 in the amount of $7,165 (GASB basic services, special services – illustration of proposed actuarial equivalence basis, contingent annuity factor). Invoice date 11/1/2021.
   ***Due to a change in Milliman's billing practices, several invoices issued to the Town were missed and became past due. It is anticipated that the Town will not incur late fees associated with those invoices.***
   **Motion by Chair Guzman to approve payment of the Milliman invoices (including the 2/5/2021 invoice as amended and in advance of a review of back up detail for the 6/14/2021 invoice). No objections were raised. It was unanimously voted to approve the payment of the Milliman invoices.**

VIII. New Business

A. Pension Dashboard

1. A work group consisting of Al Lebow and Ethan Goldman was established to develop ideas for a pension dashboard. The Pension Board will review the dashboard metrics at the January meeting.
2. The work group has been limited to two individuals due to FOIA requirements.

IX. Adjournment

**Motion by Chair Guzman to adjourn the meeting at 9:14 a.m. No objections were raised. It was unanimously voted to adjourn.**

Attest:

Lori Kearney

Lori Kearney, Clerk of the Board

**AMENDED MINUTES (Section VIII, item 2)**

**A virtual regular meeting of the Town of West Hartford Pension Board was held on Monday, October 18, 2021 at 7:45 a.m.**

**This meeting was made available live on West Hartford Community Interactive: Comcast Channel 5, Frontier TV Channel 6098, YouTube, and www.whctv.org.**

**The meeting was called to order at 7:45 a.m.**

I. Roll Call/Attendance

**Pension Board Members:** Chair Lazaro Guzman, Commissioners Alan Lebow, Ethan Goldman, Perry Salonia, and Brittany Birmingham.

**Participants/Guests:** Mayor Shari Cantor, Matt Hart, Town Manager, Rick Ledwith, Executive Director of Human Resources, Chris Kachmar, Fiducient Advisors, Becky Sielman, Milliman, Lori Kearney, Clerk of the Board, and Paula Knake, Pension Benefits Coordinator.

**Absent:** Peter Privitera, Director of Financial Services and Lee Gold, Town Council.

II. Chair's Opening Comments

A. Review of rules of decorum and procedure for the virtual meeting in accordance with Governor Lamont's Executive Order #7B permitting municipalities to conduct public meetings virtually during the COVID-19 pandemic.

III. Peter Privitera, Director of Finance

A. Absent – no report

IV. Chris Kachmar, Investment Review, Fiducient Advisors

A. September flash reporting

1. Asset allocation as of 9/30/2021, $321,181,831.
2. DCA phase 1 of $54 million went into the portfolio and an additional injection was just completed representing phase 2 of the 6 phase effort to deploy the POB funds.
3. Two manager status updates: MetWest Total Return Bond on "discuss" status and Harbor Diversified International All Cap on "watch" status. No action immediately required by the Board. Remainder of the managers on "maintain."
4. Pension plan portfolio down 2.7% for September and up 8.8% year to date.
5. Underweight in real estate allocation – a catch up contribution was made and Barings Core Property Fund is closer to target now.

B. Investment Policy Statement

1. Fiducient Advisors considers IPS in good working order and has no recommendations for the Pension Board.
2. Discussion on Section VIII Proxy Voting. Fiducient Advisors' research team gathers this data annually.

**Motion by Chair Guzman to reaffirm the Investment Policy Statement.**
**No objections were raised. It was unanimously voted to reaffirm the Investment Policy Statement.**

C. Pension obligation bond dashboard discussion with Milliman

1. Becky Sielman provided an example of a dashboard format and requested feedback on what the Pension Board wants to achieve.

2. Chair Guzman suggested establishing a work group to determine the dashboard metrics the Board wants to track.
3. Becky made recommendations related to monitoring the Town's liabilities.
   a. Conduct a full valuation every year. Currently, the Town conducts full valuations every other year (resulting in a 2 year gap).
   b. Conduct an experience study (retirement patterns, turnover patterns, payment options selected at retirement, disabilities).
   c. Track mortality of retirees' contingent annuitants. When the status of the contingent annuitant is unknown, the valuation assumes the beneficiary is living and will receive a pension. Knowing a contingent annuitant has died means the valuation could be based on a benefit payable only for the remainder of the retiree's life and this would reduce liability.
   d. Modernize the administrative infrastructure related to how the Town calculates pension benefits.

V. Brittany Birmingham, Town Matters
   1. No updates to report

VI. Rick Ledwith, Executive Director of Human Resources
   A. Meeting schedule for 2021
      1. Last meeting of the year on 11/15/2021.
      2. A 2022 schedule will be presented for review on 11/15/2021.

VII. Formal Actions
   A. Minutes
      1. Approval of the minutes for the virtual regular meeting held on Monday, September 13, 2021.

      **Motion by Chair Guzman for approval of the minutes for the virtual regular meeting held on Monday, September 13, 2021. No objections were raised.**
      **It was unanimously voted to approve the minutes for the virtual regular meeting held on Monday, September 13, 2021.**
   B. Pension Administration

      **Motion by Chair Guzman for approval of the items under Pension Administration. No objections were raised.**
      1. Memberships

      **It was unanimously voted to approve membership for:**
      **BOE – Leslier Adler, Muradiye Akcay, Osheia Blomquist, Daniella Davis, Vincenza Flynn, Alex Hasselberger, Ashley Key, Cady Kurpaska, Kaila Louw, Amelia Pingue, Wanda Rodriguez, Cynthia Sanchez, Anna Williams, and Mary Willis.**
      **Town – Zachary Berbereia, Mohammed Hossain, Hunter Humble, Samantha Inniss, Kevin Kaselouskas, Joseph Milton, Jack Paulus, Christine Pettit, Ashleigh Prucker, Yeraida Reinheimer, and Evan Riley.**
      2. Terminations and Refunds

      **It was unanimously voted to approve terminations and refunds for:**
      **BOE – Christopher Shea, Dawn Flanagan, Bianca Burns, and Caitlyn Campagna.**
      **Town – Joshua Motulski.**
      3. Applications for Approval
         a. Early retirement applications

         **It was unanimously voted to approve an Early retirement application for Lois Benedetto, BOE, and Kathleen Looney, BOE Nutrition Services.**

b. Normal retirement applications
**It was unanimously voted to approve a Normal retirement application for:**
**BOE – Eileen Flaherty, Doreen Nadeau, Angela Tokarz, and Adrienne Wuertz.**
**Town – Laura Cashman, Karen Clen, Shane McAvay, and Sandra Mickewicz.**

VIII. New Business

1. Chair Guzman will contact Corporation Counsel to discuss establishing a work group and any FOIA parameters to comply with and report back to the Board.
2. Perry Salonia requested guidance on determining the responsibilities of the Pension Board versus the responsibilities of Town Finance. Regarding the POBs, Chair Guzman explained that the decision to issue POBs was outside the scope of the Pension Board. The Pension Board's responsibility is to manage those POB assets and to adjust those investments as needed to achieve the Town's goals.

IX. Adjournment
**Motion by Chair Guzman to adjourn the meeting at 8:51 a.m. No objections were raised. It was unanimously voted to adjourn.**

Attest:

Lori Kearney, Clerk of the Board

TO: Pension Board

FROM: Lori Kearney, Human Resources Specialist, Pension Division

DATE: January 24, 2022

SUBJECT: Pension Plan Membership

In accordance with the definition of employee as stated in Section 30-8 of the Pension Ordinance, I recommend that the following employees of the Town of West Hartford be accepted into the Pension Plan as of the dates listed below:

| NEW MEMBERS – PENSION BOARD | | | | |
|---|---|---|---|---|
| **NAME** | **POSITION** | **DOH** | **DOE** | **DEPT** |
| Alvarez, Briana Yatzia | Paraprofessional | 10/18/2021 | 1/18/2022 | BOE |
| Argiro, Patrick | Equipment Mechanic | 12/6/2021 | 3/6/2022 | Grounds |
| Bailly-Simao, Juliana | Behavioral Therapist | 10/18/2021 | 1/18/2022 | BOE |
| Bigelow, Diane | Paraprofessional | 9/1/2021 | 12/1/2021 | BOE |
| Brazel, Kara | Behavioral Therapist | 11/1/2021 | 2/1/2022 | BOE |
| Centino, Nina | Paraprofessional | 10/18/2021 | 1/18/2022 | BOE |
| Clark, Kelly | Paraprofessional | 10/14/2021 | 1/14/2022 | BOE |
| Cruz, Daisy | Paraprofessional | 9/27/2021 | 12/27/2021 | BOE |
| Farooque, Mohammad Faisal | Paraprofessional | 9/1/2021 | 12/1/2021 | BOE |
| Flower, Abigail | Behavioral Therapist | 10/25/2021 | 1/25/2022 | BOE |
| Glidden, Erik | IT Systems Analyst | 12/30/2021 | 3/30/2022 | BOE |
| Golino, Andrea | Legal Staff Asst. | 12/6/2021 | 3/6/2022 | Corp Couns |
| Khan, Nadia | Asst. Town Clerk | 11/15/2021 | 2/15/2022 | Town Clerk |
| Kirkwood, Manasseh | Paraprofessional | 9/27/2021 | 12/27/2021 | BOE |
| LeBeau, Nicholas | Mechanic | 11/8/2021 | 2/8/2022 | Streets |
| Martindale, Burke | Paraprofessional | 9/1/2021 | 12/1/2021 | BOE |
| McCabe, Jason | Civil Engineer II | 11/8/2021 | 2/8/2022 | Engineer |
| Nascimento, Matthew | Mechanic | 11/8/2021 | 2/8/2022 | Public Wks |
| Procaccini, Kevin | Streets Maintainer | 11/8/2021 | 2/8/2022 | Streets |
| Richards, Christopher | Paraprofessional | 9/17/2021 | 12/17/2021 | BOE |
| Rivard, Alexandria | Reg Behavior Therap | 12/15/2021 | 3/15/2022 | BOE |
| Rivera, Tiana | Paraprofessional | 9/20/2021 | 12/20/2021 | BOE |
| Veretto, Lily | Behavioral Therapist | 11/29/2021 | 2/28/2022 | BOE |

TO: Pension Board

FROM: Lori Kearney, Human Resources Specialist, Pension Division

DATE: January 24, 2022

SUBJECT: Withdrawals and Terminations

## NON-VESTED WITHDRAWALS and TERMINATIONS

Reaffirmation of termination for employees with non-vested rights in accordance with Section 30-28 of the Pension Ordinance:

| Name | Hire Date | Termination Date | Gross Refund | Department | Plan |
|---|---|---|---|---|---|
| Collen Corrigan | 10/29/2018 | 1/10/2020 | $667.33 | BOE | E |
| Patricia Munroe | 2/22/2021 | 10/1/2021 | $885.23 | Town Clerk's Office | E |
| Paige Eshou | 3/23/2015 | 6/30/2021 | $5,596.84 | BOE | E |
| Keyvin Lewis | 8/22/2019 | 4/11/2020 | $1,896.10 | Fire | C |

## VESTED WITHDRAWALS and TERMINATIONS

Reaffirmation of termination for employees with vested rights in accordance with Section 30-28 of the Pension Ordinance.

| Name | Hire Date | Termination Date | Gross Refund | Department | Plan |
|---|---|---|---|---|---|
| Maria Cordeiro (beneficiary of Agostinho Cordeiro) | n/a | n/a | $12,550.37 | BOE | B |
| | | | | | |

## ADDITIONAL RETIREMENT CREDIT

Reaffirmation of refund for additional retirement credit in accordance with Section 30-52 of the Pension Ordinance.

| Name | Hire Date | Termination Date | Gross Refund | Department | Plan |
|---|---|---|---|---|---|
| Eric Rocheleau | 11/8/1998 | n/a | $11,033.98 | Police | D |

VIII–B(3)(a)

# Normal Retirements - For Approval - Pension Board Meeting January 24, 2022 - CHART #1

| Name | | Date of Normal | Years of Svs. | Dept. | Benefit - Before 62/65 | After 62/65 | Status | Plan |
|---|---|---|---|---|---|---|---|---|
| CENTENO | HUMBERTO | 1/3/2022 | 16 YRS. 4 MOS. | BOE SECURITY | | $1,620.02 | LA | B |
| DUFRESNE | JEFFREY | 12/31/2021 | 23 YRS. 4 MOS. | FIRE | | $8,980.71 | LA | C |
| FREDSBO | SCOTT | 12/31/2021 | 23 YRS. 1 MO. | FIRE | | $7,379.77 | LA | C |
| GREENE | CAREY | 10/24/2021 | | 50% CA JUDITH | | $177.70 | LA | B |
| NILAND | LAWRENCE | 1/3/2022 | 31 YRS. 9 MOS. | IT - POLICE | | $6,279.51 | CA | B |
| OUELLETTE | DARREN | 1/3/2022 | 17 YRS. 8 MOS. | BOE SECURITY | | $1,992.92 | LA | B |
| REALE | ADELE | 10/24/2021 | | 50%CA OF JOSEPH | | $863.44 | LA | B |
| REALE | KAREN | 12/1/2021 | 8 yr 8 mo | BOE | | $615.83 | LA | B |
| ROBIDOUX | JOSEPH | 12/31/2021 | 23 YRS. 4 MOS. | FIRE | | $8,930.39 | LA | C |
| SADOWSKI | FRANCISZZKA | 12/16/2021 | | CA OF ZBIGNIEW | | $366.67 | LA | B |
| SINSIGALLI | MICHAEL | 1/3/2022 | 23 YRS. 2 MOS. | FIRE | | $5,902.19 | LA | B |
| VEILLEUX | LARRY | 11/10/2021 | 15 YRS. 4 MOS. | STREETS | | $1,947.08 | LA | B |

## Survivorship Benefits - For Approval - Pension Board Meeting January 24, 2022 - CHART #2

| Name | | Date of Benefit | Survivor / CA of: | Benefit | Plan |
|---|---|---|---|---|---|
| REBICK | IRENE | 12/1/2021 | JOHN REBICK | $1,104.75 | C |

**Lori Kearney**

**From:** Becky Sielman <becky.sielman@milliman.com>
**Sent:** Monday, November 15, 2021 4:22 PM
**To:** Peter Privitera
**Cc:** Lazaro Guzman; Lori Kearney
**Subject:** [EXTERNAL SENDER] RE: Invoice Detail

Pete -

We estimated that it would cost about $5,000 to run the scenarios Al requested. I talked with Al at length about the scenarios on 2/18/21. We provided the results of his scenarios on 3/19/21, and then some additional requested scenarios on 3/23/21. This work involved 6.5 hours of my time at $475/hour plus 6.5 hours of Yelena's time at $355/hour.

I also attended a Pension Board meeting on 4/5/21; we included the time for this along with the time for Al's scenarios on the invoice because both were for work we performed at the Pension Boar's request.

Please let me know what additional information would be helpful.

Becky

**Rebecca A. Sielman,** FSA
Principal and Consulting Actuary
Pronouns: She/Her

**Milliman**
(860) 331-0714 Mobile
(860) 687-0125 Office

-----Original Message-----
From: Peter Privitera <Peter.Privitera@WestHartfordCT.gov>
Sent: Monday, November 15, 2021 3:26 PM
To: Becky Sielman <becky.sielman@milliman.com>
Cc: Lazaro Guzman [redacted] Lori Kearney <Lori.Kearney@WestHartfordCT.gov>
Subject: Invoice Detail

CAUTION: This email originated from outside of Milliman. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Hi Becky,
At the Pension Board meeting this morning, Al Lebow requested billing detail for invoice 0054WHF 0521 for $6,107.50. I believe this is related to his request for a number of POB scenarios. I think the expectation was that the cost would be considerably much less. Call me if you want to discuss.

Thanks,
Pete

Sent from my iPhone

FIDUCIENT
Advisors

HOME OFFICE
CHICAGO
500 West Madison St. Ste 1700
Chicago, IL 60661
312.853.1000

HARTFORD, CT ~ WASHINGTON DC ~ BOSTON, MA ~ PORTLAND, ME ~ AUSTIN, TX ~ LOS ANGELES, CA

www.fiducient.com

# INVOICE

Town of West Hartford
50 South Main Street
West Hartford, CT 06107

Date:October 04, 2021
Invoice #: 35_032021

VIII-C(2)

**Invoice for:** West Hartford, Town of - Pension
**Billing Period:** July 01, 2021 to September 30, 2021
**Quarter Ending/Valuation Date:** September 30, 2021

**Total Amount Due:** **$12,500.00**

---

**Schedule**

Annual Consulting Cost $50,000

---

Invoice sent to: Peter F. Privitera

**ACH/Wire**
Wells Fargo Bank
420 Montgomery Street
San Francisco, CA 94104
ABA # 121000248
Account # 4677401630
Swift Code WBIUS6S

**Check Payments**
Mail to LockBox
Fiducient Advisors LLC
PO Box 856577
Minneapolis, MN 55485-6577

EIN 36-4001764

If you have any questions, please contact your consultant or the Finance Team at FinanceTeam@fiducient.com.

***Thank you for your business.***

WELLS FARGO

***Wells Fargo Bank, N.A.***

| | |
|---|---|
| **Fee Invoice:** | **13548738** |
| *Account Number:* | 9541684070 |
| *For Period:* | 07/01/2021 - 09/30/2021 |
| *Invoice Date:* | 10/07/2021 |

Account Name: TOWN OF WEST HARTFORD PENSION
Contact: Joseph DePalma 0044482

| Services | Value / Quantity | | Rate | Frequency | | Amount |
|---|---|---|---|---|---|---|
| **Administration** | | | | | | |
| Market Value | 13,211,121.26 | @ | 0.0000137498 | | | 181.65 |
| | | | | **Total Administration** | | **$181.65** |
| **Other Services** | | | | | | |
| Account Reporting | 1.00 | @ | 500.00 | x | 1/4 | 125.00 |
| | | | | **Total Other Services** | | **$125.00** |
| **Transaction** | | | | | | |
| Domestic Depository Settlements | 250.00 | @ | 5.00 | | | 1,250.00 |
| | | | | **Total Transaction** | | **$1,250.00** |
| | | | | **Total** | | **$1,556.65** |

WELLS FARGO

**Wells Fargo Bank, N.A.**

| | |
|---|---|
| **Fee Invoice:** | **13548738** |
| *Account Number:* | 9541684070 |
| *For Period:* | 07/01/2021 - 09/30/2021 |
| *Invoice Date:* | 10/07/2021 |

Account Name: Whartfordpen - FDS
Contact: Joseph DePalma 0044482

| Services | Value / Quantity | | Rate | Frequency | Amount |
|---|---|---|---|---|---|
| **Administration** | | | | | |
| Market Value | 288,712,731.33 | @ | 0.00001375 | | 3,969.80 |
| | | | | **Total Administration** | **$3,969.80** |
| **Other Services** | | | | | |
| Account Reporting | 1.00 | @ | 500.00 | x 1/4 | 125.00 |
| | | | | **Total Other Services** | **$125.00** |
| **Transaction** | | | | | |
| Non Proprietary Fund Buy Sell Delivery Receipt | 7.00 | @ | 10.00 | | 70.00 |
| | | | | **Total Transaction** | **$70.00** |
| | | | | **Total** | **$4,164.80** |

WELLS FARGO

*Wells Fargo Bank, N.A.*

| | |
|---|---|
| **Fee Invoice:** | **13548738** |
| *Account Number:* | 9541684070 |
| *For Period:* | 07/01/2021 - 09/30/2021 |
| *Invoice Date:* | 10/07/2021 |

Account Name: Whartfordpen Silvercrest
Contact: Joseph DePalma 0044482

| Services | Value / Quantity | | Rate | Frequency | Amount |
|---|---|---|---|---|---|
| **Administration** | | | | | |
| Market Value | 13,014,515.91 | @ | 0.00001375 | | 178.95 |
| | | | | **Total Administration** | **$178.95** |
| **Other Services** | | | | | |
| Account Reporting | 1.00 | @ | 500.00 | x 1/4 | 125.00 |
| | | | | **Total Other Services** | **$125.00** |
| **Transaction** | | | | | |
| Domestic Depository Settlements | 86.00 | @ | 5.00 | | 430.00 |
| | | | | **Total Transaction** | **$430.00** |
| | | | | **Total** | **$733.95** |

WELLS FARGO

**Wells Fargo Bank, N.A.**

| | |
|---|---|
| **Fee Invoice:** | **13548738** |
| *Account Number:* | 9541684070 |
| *For Period:* | 07/01/2021 - 09/30/2021 |
| *Invoice Date:* | 10/07/2021 |

Account Name: Whartfordpen Pob Proceeds
Contact: Joseph DePalma 0044482

| Services | Value / Quantity | | Rate | Frequency | Amount |
|---|---|---|---|---|---|
| **Administration** | | | | | |
| Market Value | 268,933,950.09 | @ | 0.00001375 | | 3,697.84 |
| | | | | **Total Administration** | **$3,697.84** |
| **Other Services** | | | | | |
| Account Reporting | 1.00 | @ | 500.00 | x 1/4 | 125.00 |
| | | | | **Total Other Services** | **$125.00** |
| **Transaction** | | | | | |
| Non Proprietary Fund Buy Sell Delivery Receipt | 7.00 | @ | 10.00 | | 70.00 |
| | | | | **Total Transaction** | **$70.00** |
| | | | | **Total** | **$3,892.84** |

**Summary**

| | |
|---|---|
| **Total Charged to Account** | **$0.00** |
| **Total Billed** | **$10,348.24** |
| **Payment Due** | **$10,348.24** |

WELLS FARGO

**Wells Fargo Bank, N.A.**

| | |
|---|---|
| **Fee Invoice:** | **13548738** |
| *Account Number:* | 9541684070 |
| *For Period:* | 07/01/2021 - 09/30/2021 |
| *Invoice Date:* | 10/07/2021 |

Account Name: TOWN OF WEST HARTFORD PENSION
Contact: Joseph DePalma 0044482

| Account Number | Account Name | Charged | Billed | Total |
|---|---|---|---|---|
| 24129801 | Whartfordpen Silvercrest | | $733.95 | $733.95 |
| 24129802 | Whartfordpen Pob Proceeds | | $3,892.84 | $3,892.84 |
| 9541684070 | TOWN OF WEST HARTFORD PENSION | | $1,556.65 | $1,556.65 |
| 9546683935 | Whartfordpen - FDS | | $4,164.80 | $4,164.80 |
| **Total** | | | $10,348.24 | $10,348.24 |

WELLS FARGO

*Wells Fargo Bank, N.A.*

| | |
|---|---|
| **Fee Invoice:** | **13548738** |
| *Account Number:* | 9541684070 |
| *For Period:* | 07/01/2021 - 09/30/2021 |
| *Invoice Date:* | 10/07/2021 |

TOWN OF WEST HARTFORD PENSION
Peter Privitera
Director of Financial Services
Town of West Hartford
50 South Main Street
West Hartford CT 06107

Return To:
Wells Fargo Bank, N.A.
Trust Services Group
NW 5159
P.O. Box 1450
Minneapolis, MN 55485-5159

$10,348.24

**PAYMENT DUE UPON RECEIPT**

Account Name: TOWN OF WEST HARTFORD PENSION
Contact: Joseph DePalma 0044482

Fold Here

| **Summary of Current Period Fees** | **Charged** | **Billed** | **Total** |
|---|---|---|---|
| Administration | | $8,028.24 | $8,028.24 |
| Other Services | | $500.00 | $500.00 |
| Transaction | | $1,820.00 | $1,820.00 |
| **Total Current Period Fees** | | $10,348.24 | $10,348.24 |

**PLEASE RETURN THIS PAGE WITH PAYMENT**

# PIER CAPITAL LLC

INSTITUTIONAL EQUITY MANAGEMENT

October 8, 2021

***Town of West Hartford***
***Pension Department***
**Town Hall**
**50 South Main Street**
**W. Hartford, CT 06107**

## STATEMENT OF MANAGEMENT FEES

| | |
|---|---|
| For The Period 3rd Quarter 2021 | |
| Portfolio Valuation as of 09-30-21 | 13,283,474.20 |
| 13,283,474 @ 0.4000% per annum | 13,283.47 |
| Quarterly Management Fee | 13,283.47 |
| **TOTAL DUE AND PAYABLE** | **13,283.47** |

**Please Note:** Pier Capital encourages payment by ACH or Bank Wire for security reasons.

**PAYMENT BY WIRE OR ACH**

| | |
|---|---|
| Bank Name: | Webster Bank |
| Bank Address: | 145 Bank Street, Waterbury, CT 06720 |
| Bank Tel. Number: | 800-482-2220 |
| ABA Number: | 211170101 |
| Beneficiary Name: | Pier Capital, LLC |
| Beneficiary Account Number: | 10 0010975996 |

**PAYMENT BY MAIL**

Please make checks payable to:

Pier Capital, LLC
600 Summer Street, Suite 203
Stamford, CT 06901

# PIER CAPITAL LLC
INSTITUTIONAL EQUITY MANAGEMENT

**January 10, 2022**

***Town of West Hartford***
***Pension Department***
**Town Hall**
**50 South Main Street**
**W. Hartford, CT 06107**

## STATEMENT OF MANAGEMENT FEES

| | |
|---|---|
| For The Period 4th Quarter 2021 | |
| Portfolio Valuation with Accrued Interest as of 12-31-21 | $ 14,675,308.92 |
| 14,675,309 @ 0.4000% per annum | 14,675.31 |
| Quarterly Management Fee | 14,675.31 |
| Incentive Fee For 2021 (calculation attached) | |
| 791,766 @ 20 % per annum | $ 158,353.00 |
| **TOTAL DUE AND PAYABLE** | **$ 173,028.31** |

**Please Note:** Pier Capital encourages payment by ACH or Bank Wire for security reasons.

**PAYMENT BY WIRE OR ACH**

| | |
|---|---|
| Bank Name: | Webster Bank |
| Bank Address: | 145 Bank Street, Waterbury, CT 06720 |
| Bank Tel. Number: | 800-482-2220 |
| ABA Number: | 211170101 |
| Beneficiary Name: | Pier Capital, LLC |
| Beneficiary Account Number: | 10 0010975996 |

**PAYMENT BY MAIL**
Please make checks payable to:

Pier Capital, LLC
600 Summer Street, Suite 203
Stamford, CT 06901

**TOWN OF WEST HARTFORD**

**STATEMENT OF INCENTIVE FEE**
**12/31/2021**
*(return amounts in USD 1,000)*

| | Market Value 30-Sep-21 | Market Value 31-Dec-21 | Portfolio Return (%) Quarter | Portfolio Return (%) YTD |
|---|---|---|---|---|
| **PORTFOLIO RETURN** | $ 13,283.5 | $ 14,675.3 | -0.73% | 10.03% |

| | | Benchmark Return (%) Quarter | Benchmark Return (%) YTD |
|---|---|---|---|
| **BENCHMARK RETURN** | Russell 2000 Growth with Income | 0.01% | 2.83% |

| | Incremental Return ($) Quarter | Incremental Return ($) YTD | Incremental Return (%) Quarter | Incremental Return (%) YTD |
|---|---|---|---|---|
| **INCREMENTAL RETURN** | $ 96.1 | $ 842.0 | -0.74% | 7.20% |

**PERFORMANCE FEE STATUS**
*(amounts in USD)*

| Period | Incremental Return | Flat Fee | Net Incremental Return | Incentive Rate | Incentive Fee |
|---|---|---|---|---|---|
| Q1'21 | $ 240,063 | $ 10,758 | $ 229,304 | 20% | $ 45,861 |
| Q2'21 | $ 316,451 | $ 11,502 | $ 304,949 | 20% | $ 60,990 |
| Q3'21 | $ 381,571 | $ 13,283 | $ 368,288 | 20% | $ 73,658 |
| Q4'21 | $ (96,100) | $ 14,675 | $ (110,775) | 20% | $ (22,155) |
| | $ 841,984 | $ 50,218 | $ 791,766 | | $ 158,353 |

NOTE: *Incentive fee is calculated "net of the flat fee"*
*If the incremental return for the year is negative, amount carried forward will not include flat fee*
*If the incremental return for the year is positive, but after deducting flat fee the amount is negative, no incentive fee shall be charged and no negative amount shall be carried forward*
*Total period may not equal sum of quarters due to rounding*

# Invoice

GHG Corporation
One Software. Endless Solutions.

960 Clear Lake City Blvd.
Webster, TX 77598

Vendor 6254

| Invoice # |
|---|
| 88519 |

| Bill To |
|---|
| Town of West Hartford<br>50 South Main Street<br>West Hartfort, CT 06107 |

| Invoice Date | DUE DATE |
|---|---|
| 12/1/2021 | 12/31/2021 |
| Terms | Net 30 |

| P.O. # | Account # |
|---|---|
| | P10151 |

| ITEM | QUANTITY | DESCRIPTION | RATE | AMOUNT |
|---|---|---|---|---|
| CW An... | 1 | Annual renewal for continued maintenance, support and upgrades of purchased license of CLOCKWISE Software<br><br>Service Dates: 1/1/22 - 12/31/22 | 6,375.00 | 6,375.00 |

16050001 2208 $4,590.00
19030003 2208 $1,785.00

Terms of Cancellation: GHG must receive 30 days advance written notice of cancellation via https://clockwiseghg.typeform.com/to/zo3xM8

As part of our commitment to provide exceptional, reliable and secure services to our customers, Clockwise reserves the right to conduct proactive maintenance to sites and systems each Sunday from 7am-7pm CST.

If we take down your site for non payment there will be a $100 reactivation fee added to your account. All outstanding invoices must be paid before your site will be reinstated.

| | |
|---|---|
| Total | $6,375.00 |
| Payments/Credits | $0.00 |
| Balance Due | $6,375.00 |

find us on Facebook — www.facebook.com/clockwise.net
twitter — @ClockwisebyGHG
@goclockwise
LinkedIn — Clockwise Timekeeping

866-380-4146 960 Clear Lake City Blvd - Webster, Texas 77598 billing@goclockwise.com

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Advisors
Helping Clients Prosper

# Town of West Hartford Pension Plan

## Discussion Materials - January 2022

# Table of Contents

# Asset Allocation Study

# January 2022 Investment Outlook

## Key Observations

- We expect economic recovery to persist in 2022 at a more modest pace as extraordinary pandemic stimulus begins to moderate. Ongoing challenges with a recalibrating global supply chain are expected to continue to lead to persistently higher levels of inflation than we have seen over the last several decades.
- The investing backdrop remains mostly constructive in our view, but investors will likely be served by taking a thoughtful and diversified approach to risk-taking. The global economy is still in transition and pandemic-driven economic uncertainties are ongoing.

## Capital Market Factors

- **Economic Growth:** The Conference Board's 2022 global economic growth forecast is 3.9 percent, a level characterized by the Board as "above potential recovery growth." 2023-2026 annualized growth is expected to moderate to 2.5 percent.
- **Monetary Policy:** The Fed's rotation to a tighter policy stance is expected to slow and then end its $120 billion monthly asset purchase program sometime in 2022 and begin to raise interest rates. At its December 2021 meeting, the Fed indicated an accelerated pace toward the elimination of its bond buying efforts by the middle of next year and a majority of FOMC members now expect at least three interest rate hikes by year-end 2022.
- **Fiscal Policy:** Massive pandemic-relief and infrastructure spending will likely continue to drive short-term deficits, stimulate near-term economic growth and fuel inflationary forces.
- **Inflation:** Current year-over-year inflation is running at a level in excess of 6 percent, which is meaningfully above the Fed's stated target, and is likely to remain high in the immediate future. However, the bond market's expectation is for inflation to gradually moderate back towards 2.5 percent over the next decade.
- **Currency:** The dollar strengthened in 2021 and was supported by a more consistent economic recovery in the U.S. compared to global peers. A more aggressive path to interest rate hikes by the Fed when compared to its peer institutions would support U.S. dollar strength, but volatility is expected as investors continue to digest the implications of Fed tightening in conjunction with actions of other global central banks.



*Sources: The Conference Board, The Federal Reserve Bank of St. Louis*

# 2022-2041 Twenty-Year Outlook

| Asset Class | 2022 Outlook E(R) - 20 Year | 2021 Outlook E(R) - 20 Year | Year Over Year Change |
|---|---|---|---|
| Inflation | 2.5% | 1.8% | 0.7% |
| Cash* | 0.7% | 0.7% | 0.0% |
| TIPS | 2.1% | 1.7% | 0.3% |
| Muni Bond** | 2.1% | 1.6% | 0.5% |
| Muni High Yield** | 5.6% | 7.7% | -2.1% |
| US Bond | 2.5% | 2.1% | 0.3% |
| Dynamic Bonds*** | 2.8% | 2.8% | -0.1% |
| Global Bonds | 2.2% | 1.8% | 0.4% |
| Corp HY Bond | 4.5% | 4.4% | 0.1% |
| Global Equity | 8.1% | 7.7% | 0.5% |
| US Equity (AC) | 6.8% | 6.4% | 0.4% |
| US Equity (LC) | 6.6% | 6.3% | 0.4% |
| US Equity (MC) | 7.0% | 6.6% | 0.4% |
| US Equity (SC) | 7.0% | 6.7% | 0.3% |
| Int'l Dev. Equity | 8.6% | 7.9% | 0.8% |
| EM Equity | 10.5% | 9.4% | 1.2% |
| Real Estate | 6.3% | 6.2% | 0.1% |
| Broad Real Assets**** | 5.6% | 4.8% | 0.9% |
| Marketable Alternatives | 6.8% | 6.3% | 0.5% |
| Private Equity | 9.8% | 9.4% | 0.4% |

**3-month forecast*

***Tax equivalent yield based on highest marginal tax rate (37%)*

****33% Cash, 33% Corp HY, and 34% Global Bonds*

*****20% REITs, 20% Global Infrastructure, 20% Commodities, 20% US Bonds, 15% Corp High Yield, 5% TIPS*

## Investment Themes for 2022-2041

- Nominal return forecasts rose for most asset classes, but rising inflation expectations means most asset classes have declining year-over-year real return expectations.
- Meaningfully negative real returns continues to make cash an expensive opportunity cost for investors.
- Global bond yields generally rose. Despite the increase, most fixed income asset class forward-looking return expectations remain below expected inflation levels.
- Earnings accelerated in 2021 and expanded faster than stock prices. Non-U.S. equities remain more attractive on a valuation basis as U.S. equities have grown to represent 61 percent of the global equity market capitalization compared to 58 percent a year ago.
- With higher inflation expectations, real assets remain an important diversifier. Within real assets, broad real assets return expectations rose meaningfully faster than real estate.
- Alternative asset class return expectations rose modestly.

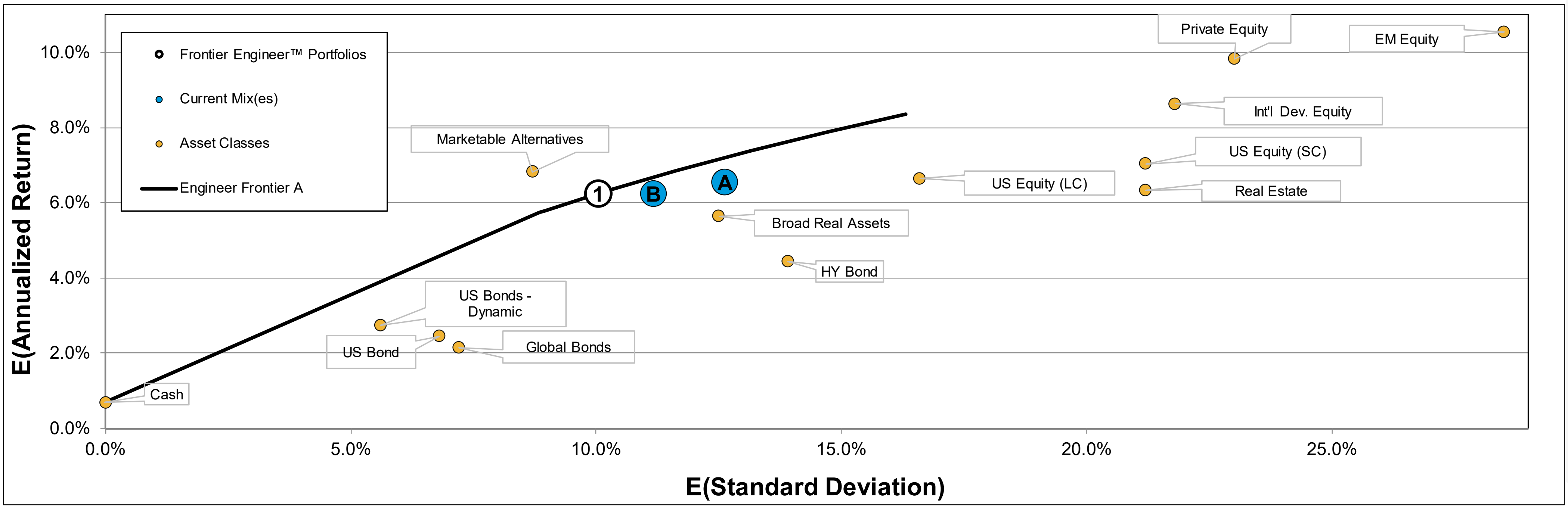
*For additional information on forecast methodologies, please speak with your advisor. Please see Index Proxy Summary slide at the end of this presentation for summary of indexes used to represent each asset class. Past performance does not indicate future performance and there is a possibility of a loss.*

# Asset Allocation Analysis

- We believe **Asset Allocation** is the primary determinant of long-term investment results.
- Our proprietary **Frontier Engineer®** system is the cornerstone of asset allocation decisions.
- Our Capital Markets Group develops **Capital Market Assumptions** (CMAs) for each major asset class at least annually.
  - ✓ The Capital Markets Group considers and analyzes a wide variety of factors that we believe will have the greatest impact on future returns and risks for each asset class studied.
  - ✓ Our CMAs are not intended to predict the future return in any single year, but rather to reflect our median expected outcome over the next ten years.
  - ✓ Our forecasting efforts center on **a ten-year horizon**. Any adjustments made to extend the forecast horizon to **twenty years** or beyond are grounded in our expectation that asset classes ultimately mean revert toward longer term historical averages.
  - ✓ Fiducient Advisors' Capital Markets Team develops our CMAs based on a "building block" approach outlined in our white paper "Capital Market Forecasts". *(Copies are available upon request.)*
- **Correlations** (how asset classes behave in reference to one another) also significantly impact asset allocation analysis.
- **Fat Tails** (non-normal return elements of skewness and kurtosis) also meaningfully impact our asset allocation analysis.
- Given the current market environment, full market cycle (10 year) return assumptions are lower than long term (20 year) assumptions.

# Frontier Engineer® Analysis

| 12/31/2021 | Asset Allocation | | | | | | | | | | | | | | | | | Forecasts | | | | Past (1/88-12/21) | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Fixed Income | Equity | Real Assets | Alternatives | Cash | US Bond | US Bonds - Dynamic | HY Bond | Global Bonds | US Equity (LC) | US Equity (SC) | Int'l Dev. Equity | EM Equity | Real Estate | Broad Real Assets | Marketable Alternatives | Private Equity | Annualized Return | Annualized Volatility | Normal 100 Year Flood* | Non-Normal 100 Year Flood** | Annualized Return | Annualized Volatility |
| Current Target Allocation | 30% | 65% | 5% | | | 30.0% | | | | 29.3% | 14.3% | 19.3% | 2.3% | 5.0% | | | | 6.6% | 12.6% | -22% | -29% | 9.1% | 10.4% |
| Current Asset Classes | 42% | 54% | 4% | | | 41.6% | | | | 23.4% | 7.8% | 15.6% | 7.4% | 4.2% | | | | 6.3% | 11.2% | -19% | -25% | 8.7% | 8.9% |
| Unconstrained 6.25% | 42% | 40% | 7% | 10% | | 23% | 13% | 3% | 4% | 17% | 6% | 12% | 5% | 3% | 4% | 5% | 5% | 6.3% | 10.0% | -17% | -22% | 8.6% | 7.6% |




*The expected one in a hundred worst case calendar year return based on normally distributed capital market assumptions. Greater losses are possible (1% expected likelihood).

**The expected one in a hundred worst case calendar year return based on non-normally distributed capital market assumptions (factoring in skewness & kurtosis). Greater losses are possible (1% expected likelihood).

*Historical Returns and Risk Metrics for each Mix represent back-tested calculations developed with the benefit of hindsight. Return calculations use an asset-weighted methodology based on the target asset allocation of each mix and the total return of index proxies used to represent each asset class and are gross of fees. Historical returns are hypothetical and do not represent returns earned by a client. It is not possible to invest in an index. Please see disclosures at the end of this presentation for additional important information, including index proxies used to represent each asset class. Please ask for a copy of Fiducient Advisor's white paper titled 10-Year Capital Market Forecasts. Past performance does not indicate future performance and it is possible to lose money when investing.*

# Historical Annual Total Return

| Annualized returns as of 12/31/2021 | Fixed Income | Equity | Real Assets | Alternatives | Past 3 Months (Not Annualized) | 1-Year Return | 3-Year Return | 5-Year Return | 7-Year Return | 10-Year Return | 15-Year Return | 20-Year Return | 25-Year Return | 30-Year Return | 34-Year Return |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Current Target Allocation | 30% | 65% | 5% | 0% | 4.8% | 13.8% | 16.1% | 11.3% | 9.2% | 10.2% | 7.3% | 8.0% | 7.9% | 8.5% | 9.1% |
| Current Asset Classes | 42% | 54% | 4% | 0% | 3.7% | 10.1% | 13.8% | 9.9% | 7.9% | 8.6% | 6.7% | 7.5% | 7.4% | 8.0% | 8.7% |
| Unconstrained 6.25% | 42% | 40% | 7% | 10% | 3.0% | 8.7% | 12.5% | 9.2% | 7.5% | 8.1% | 6.5% | 7.4% | 7.4% | 8.0% | 8.6% |
| Cash | 100% | | | | 0.0% | 0.0% | 1.0% | 1.1% | 0.8% | 0.6% | 0.9% | 1.2% | 2.0% | 2.4% | 2.9% |
| TIPS | 100% | | | | 2.4% | 6.0% | 8.4% | 5.3% | 4.2% | 3.1% | 4.7% | 5.3% | 5.4% | 5.7% | 6.4% |
| US Bond | 100% | | | | 0.0% | -1.5% | 4.8% | 3.6% | 3.0% | 2.9% | 4.1% | 4.3% | 4.9% | 5.3% | 6.0% |
| US Bonds - Dynamic | 100% | | | | 0.3% | 1.3% | 4.7% | 3.6% | 3.4% | 3.7% | 4.1% | 4.5% | 4.7% | 5.2% | 5.9% |
| For. Dev. Bond | 100% | | | | -1.0% | -6.0% | 2.6% | 2.9% | 2.3% | 2.2% | 3.3% | 4.3% | 4.3% | 5.1% | 5.4% |
| Global Bonds | 100% | | | | 0.0% | -1.4% | 4.1% | 3.4% | 3.1% | 3.5% | 4.1% | 4.3% | 4.9% | 5.4% | 6.0% |
| HY Bond | 100% | | | | 0.7% | 5.3% | 8.8% | 6.3% | 6.1% | 6.8% | 7.1% | 7.8% | 6.9% | 7.7% | 8.1% |
| EM Bond | 100% | | | | -2.5% | -8.7% | 2.1% | 2.8% | 1.0% | 0.7% | 3.5% | 6.2% | 6.7% | 7.9% | 8.2% |
| Global Equity | | 100% | | | 6.8% | 19.0% | 21.0% | 15.0% | 11.5% | 12.4% | 7.6% | 8.5% | 7.9% | 8.4% | 8.6% |
| US Equity (AC) | | 100% | | | 9.3% | 25.7% | 25.8% | 18.0% | 14.5% | 16.3% | 10.6% | 9.7% | 9.8% | 10.7% | 11.5% |
| US Equity (LC) | | 100% | | | 11.0% | 28.7% | 26.1% | 18.5% | 14.9% | 16.6% | 10.7% | 9.5% | 9.8% | 10.6% | 11.5% |
| US Equity (MC) | | 100% | | | 6.4% | 22.6% | 23.3% | 15.1% | 12.2% | 14.9% | 10.2% | 10.9% | 11.0% | 11.8% | 12.4% |
| US Equity (SC) | | 100% | | | 2.1% | 14.8% | 20.0% | 12.0% | 10.8% | 13.2% | 8.7% | 9.4% | 9.0% | 10.1% | 10.6% |
| Non-US Equity (ACWI) | | 100% | | | 1.9% | 8.3% | 13.7% | 10.1% | 7.1% | 7.8% | 4.2% | 7.3% | 6.0% | 6.4% | 6.3% |
| Int'l Dev. Equity | | 100% | | | 2.7% | 11.8% | 14.1% | 10.1% | 7.3% | 8.5% | 4.1% | 6.8% | 5.7% | 6.1% | 6.0% |
| EM Equity | | 100% | | | -1.2% | -2.2% | 11.3% | 10.3% | 6.5% | 5.9% | 4.8% | 10.0% | 6.6% | 7.6% | 10.5% |
| Real Estate | | | 100% | | 16.2% | 41.3% | 19.9% | 12.5% | 10.5% | 12.2% | 7.5% | 11.2% | 10.2% | 11.3% | 11.1% |
| Broad Real Assets | | | 100% | | 4.8% | 15.4% | 11.0% | 7.4% | 5.2% | 5.9% | 5.5% | 9.1% | 7.9% | 7.9% | 7.1% |
| Marketable Alternatives | | | | 100% | 0.8% | 6.5% | 8.6% | 5.8% | 4.1% | 4.6% | 2.8% | 3.9% | 4.8% | 5.9% | 7.3% |
| Private Equity | | | | 100% | 0.0% | 0.0% | 15.3% | 14.9% | 13.0% | 14.0% | 11.4% | 11.6% | 14.2% | 15.6% | 14.8% |

*[1]The expected one in a hundred worst case calendar year return based on normally distributed capital market assumptions. Greater losses are possible (1% expected likelihood).*

*[2]The expected one in a hundred worst case calendar year return based on non-normally distributed capital market assumptions (factoring in skewness & kurtosis). Greater losses are possible (1% expected likelihood).*

*Historical Returns and Risk Metrics for each Mix represent back-tested calculations developed with the benefit of hindsight. Return calculations use an asset-weighted methodology based on the target asset allocation of each mix and the total return of index proxies used to represent each asset class and are gross of fees. Historical returns are hypothetical and do not represent returns earned by a client. It is not possible to invest in an index. Please see disclosures at the end of this presentation for additional important information, including index proxies used to represent each asset class. Please ask for a copy of Fiducient Advisor's white paper titled 10-Year Capital Market Forecasts. Past performance does not indicate future performance and it is possible to lose money when investing.*

# Calendar Year Total Return

| *Calendar Year Returns* | Fixed Income | Equity | Real Assets | Alternatives | YTD 12/31/2021 | 2020 | 2019 | 2018 | 2017 | 2016 | 2015 | 2014 | 2013 | 2012 | 2011 | 2010 | 2009 | 2008 | 2007 | 2006 | 2005 | 2004 | 2003 | 2002 | 2001 | 2000 | 1999 | 1998 | 1997 | 1996 | 1995 | 1994 | 1993 | 1992 | 1991 | 1990 | 1989 | 1988 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Current Target Allocation | 30% | 65% | 5% | 0% | 14% | 13% | 22% | -6% | 15% | 8% | 0% | 7% | 18% | 13% | 0% | 14% | 23% | -27% | 6% | 16% | 7% | 13% | 26% | -10% | -4% | -2% | 15% | 13% | 17% | 13% | 23% | 1% | 17% | 6% | 26% | -6% | 20% | 18% |
| Current Asset Classes | 42% | 54% | 4% | 0% | 10% | 12% | 19% | -5% | 14% | 7% | -1% | 6% | 12% | 12% | 1% | 13% | 23% | -23% | 8% | 15% | 8% | 12% | 23% | -6% | -2% | -1% | 14% | 11% | 14% | 11% | 20% | 0% | 19% | 6% | 25% | -3% | 22% | 17% |
| Unconstrained 6.25% | 42% | 40% | 7% | 10% | 9% | 12% | 17% | -3% | 13% | 8% | -1% | 6% | 12% | 11% | 1% | 12% | 23% | -22% | 8% | 15% | 8% | 12% | 21% | -4% | -2% | 1% | 18% | 9% | 14% | 12% | 19% | 1% | 18% | 7% | 23% | -2% | 19% | 15% |
| Cash | 100% | | | | 0% | 1% | 2% | 2% | 1% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 2% | 5% | 5% | 3% | 1% | 1% | 2% | 4% | 6% | 5% | 5% | 5% | 5% | 6% | 4% | 3% | 4% | 6% | 8% | 9% | 7% |
| TIPS | 100% | | | | 6% | 11% | 8% | -1% | 3% | 5% | -1% | 4% | -9% | 7% | 14% | 6% | 11% | -2% | 12% | 0% | 3% | 8% | 8% | 17% | 8% | 13% | 2% | 4% | 3% | 4% | 18% | -3% | 10% | 7% | 16% | 9% | 15% | 8% |
| US Bond | 100% | | | | -2% | 8% | 9% | 0% | 4% | 3% | 1% | 6% | -2% | 4% | 8% | 7% | 6% | 5% | 7% | 4% | 2% | 4% | 4% | 10% | 8% | 12% | -1% | 9% | 10% | 4% | 18% | -3% | 10% | 7% | 16% | 9% | 15% | 8% |
| US Bonds - Dynamic | 100% | | | | 1% | 5% | 8% | 1% | 4% | 7% | -1% | 3% | 2% | 7% | 4% | 7% | 19% | -7% | 4% | 7% | 3% | 6% | 10% | 3% | 6% | 3% | 3% | 6% | 9% | 8% | 14% | 0% | 10% | 9% | 21% | 1% | 15% | 8% |
| For. Dev. Bond | 100% | | | | -6% | 8% | 7% | 1% | 6% | 3% | -2% | 4% | -2% | 4% | 5% | 4% | 3% | 9% | 8% | 5% | -2% | 9% | 10% | 14% | 1% | 4% | -1% | 15% | 3% | 8% | 19% | 1% | 14% | 6% | 14% | 9% | 0% | 6% |
| Global Bonds | 100% | | | | -1% | 6% | 8% | 2% | 3% | 4% | 1% | 8% | 0% | 6% | 5% | 5% | 5% | 6% | 5% | 4% | 4% | 5% | 3% | 8% | 7% | 10% | 1% | 10% | 10% | 7% | 18% | -4% | 11% | 7% | 14% | 7% | 15% | 8% |
| HY Bond | 100% | | | | 5% | 7% | 14% | -2% | 8% | 17% | -4% | 2% | 7% | 16% | 5% | 15% | 58% | -26% | 2% | 12% | 3% | 11% | 29% | -1% | 5% | -6% | 2% | 2% | 13% | 11% | 19% | -1% | 17% | 16% | 46% | -10% | 1% | 13% |
| EM Bond | 100% | | | | -9% | 3% | 13% | -6% | 15% | 10% | -15% | -6% | -9% | 17% | -2% | 16% | 22% | -5% | 18% | 15% | 6% | 23% | 17% | 14% | 10% | 13% | 20% | -8% | 11% | 38% | 27% | -19% | 17% | 16% | 46% | -10% | 1% | 13% |
| Global Equity | | 100% | | | 19% | 17% | 27% | -9% | 25% | 8% | -2% | 5% | 23% | 17% | -7% | 13% | 35% | -42% | 12% | 22% | 11% | 16% | 35% | -19% | -16% | -14% | 27% | 22% | 15% | 13% | 19% | 5% | 25% | -4% | 20% | -16% | 18% | 24% |
| US Equity (AC) | | 100% | | | 26% | 21% | 31% | -5% | 21% | 13% | 0% | 13% | 34% | 16% | 1% | 17% | 28% | -37% | 5% | 16% | 6% | 12% | 31% | -22% | -11% | -7% | 21% | 24% | 32% | 22% | 37% | 0% | 11% | 10% | 34% | -5% | 29% | 18% |
| US Equity (LC) | | 100% | | | 29% | 18% | 31% | -4% | 22% | 12% | 1% | 14% | 32% | 16% | 2% | 15% | 26% | -37% | 5% | 16% | 5% | 11% | 29% | -22% | -12% | -9% | 21% | 29% | 33% | 23% | 38% | 1% | 10% | 8% | 30% | -3% | 32% | 17% |
| US Equity (MC) | | 100% | | | 23% | 17% | 31% | -9% | 19% | 14% | -2% | 13% | 35% | 17% | -2% | 25% | 40% | -41% | 6% | 15% | 13% | 20% | 40% | -16% | -6% | 8% | 18% | 10% | 29% | 19% | 34% | -2% | 14% | 16% | 42% | -11% | 26% | 20% |
| US Equity (SC) | | 100% | | | 15% | 20% | 26% | -11% | 15% | 21% | -4% | 5% | 39% | 16% | -4% | 27% | 27% | -34% | -2% | 18% | 5% | 18% | 47% | -20% | 2% | -3% | 21% | -3% | 22% | 16% | 28% | -2% | 19% | 18% | 46% | -19% | 16% | 25% |
| Non-US Equity (ACWI) | | 100% | | | 8% | 11% | 22% | -14% | 28% | 5% | -5% | -3% | 16% | 17% | -13% | 12% | 42% | -45% | 17% | 27% | 17% | 21% | 41% | -15% | -19% | -15% | 31% | 14% | 2% | 7% | 10% | 7% | 35% | -11% | 14% | -23% | 12% | 28% |
| Int'l Dev. Equity | | 100% | | | 12% | 8% | 23% | -13% | 26% | 2% | 0% | -4% | 23% | 18% | -12% | 8% | 32% | -43% | 12% | 27% | 14% | 21% | 39% | -16% | -21% | -14% | 27% | 20% | 2% | 6% | 12% | 8% | 33% | -12% | 12% | -23% | 11% | 29% |
| EM Equity | | 100% | | | -2% | 19% | 19% | -14% | 38% | 12% | -15% | -2% | -2% | 19% | -18% | 19% | 79% | -53% | 40% | 33% | 35% | 26% | 56% | -6% | -2% | -31% | 66% | -25% | -12% | 6% | -5% | -7% | 75% | 11% | 60% | -11% | 65% | 40% |
| Real Estate | | | 100% | | 41% | -5% | 29% | -4% | 9% | 9% | 3% | 28% | 3% | 20% | 8% | 28% | 28% | -38% | -16% | 35% | 12% | 32% | 37% | 4% | 14% | 26% | -5% | -18% | 20% | 35% | 15% | 3% | 20% | 15% | 36% | -15% | 9% | 13% |
| Broad Real Assets | | | 100% | | 15% | 1% | 17% | -6% | 11% | 11% | -10% | 5% | 4% | 14% | 3% | 15% | 33% | -28% | 11% | 23% | 10% | 21% | 27% | 24% | -4% | 27% | 10% | -14% | 2% | 14% | 14% | 4% | 4% | 4% | 4% | -6% | 2% | 3% |
| Marketable Alternatives | | | | 100% | 7% | 11% | 8% | -4% | 8% | 1% | 0% | 3% | 9% | 5% | -6% | 6% | 11% | -21% | 10% | 10% | 7% | 7% | 12% | 1% | 3% | 4% | 26% | -5% | 16% | 14% | 11% | -3% | 26% | 12% | 14% | 18% | 23% | 19% |
| Private Equity | | | | 100% | 0% | 32% | 16% | 13% | 16% | 9% | 8% | 15% | 23% | 12% | 12% | 18% | 10% | -20% | 18% | 25% | 21% | 22% | 14% | -16% | -21% | 10% | 125% | 21% | 32% | 33% | 32% | 14% | 23% | 14% | 14% | 4% | 9% | 9% |

*Historical Returns for each Mix based on back-tested return calculations developed with the benefit of hindsight. Return calculations use an asset-weighted methodology based on the target asset allocation of each mix and the total return of index proxies used to represent each asset class and are gross of fees. Historical returns used are hypothetical and do not represent returns earned by a client. It is not possible to invest in an index. Please see disclosures at the end of this presentation for additional important information, including index proxies used to represent each asset class. For additional information on forecast methodologies, please ask for a copy of Fiducient Advisor's white paper titled 10-Year Capital Market Forecasts. Past performance does not indicate future performance and it is possible to lose money when investing.*

# Indices for Past Return & Risk Metrics

| Indices used to generate historical risk and return metrics | Most Recent Index | Index Dates | | | Linked Index 1 | Index Dates | | | Linked Index 2 | Index Dates | | | Linked Index 2 | Index Dates | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Cash | FTSE Treasury Bill 3 Mon USD | 12/21 | - | 1/79 | N.A. | N.A. | - | N.A. | N.A. | N.A. | - | N.A. | N.A. | N.A. | - | N.A. |
| US Bond | Bloomberg US Agg Bond TR USD | 12/21 | - | 1/79 | N.A. | N.A. | - | N.A. | N.A. | N.A. | - | N.A. | N.A. | N.A. | - | N.A. |
| US Bonds - Dynamic | *Custom Blend of Indices | 12/21 | - | 2/90 | Bloomberg US Agg Bond TR USD | 1/90 | - | 1/79 | N.A. | N.A. | - | N.A. | N.A. | N.A. | - | N.A. |
| HY Bond | Bloomberg US Corporate High Yield TR USD | 12/21 | - | 7/83 | Bloomberg US Agg Bond TR USD | 6/83 | - | 1/79 | N.A. | N.A. | - | N.A. | N.A. | N.A. | - | N.A. |
| Global Bonds | Bloomberg Global Aggregate TR Hdg USD | 12/21 | - | 2/90 | Bloomberg US Agg Bond TR USD | 1/90 | - | 1/79 | N.A. | N.A. | - | N.A. | N.A. | N.A. | - | N.A. |
| US Equity (LC) | S&P 500 TR USD | 12/21 | - | 1/79 | N.A. | N.A. | - | N.A. | N.A. | N.A. | - | N.A. | N.A. | N.A. | - | N.A. |
| US Equity (SC) | Russell 2000 TR USD | 12/21 | - | 1/79 | N.A. | N.A. | - | N.A. | N.A. | N.A. | - | N.A. | N.A. | N.A. | - | N.A. |
| Int'l Dev. Equity | MSCI EAFE GR USD | 12/21 | - | 1/79 | N.A. | N.A. | - | N.A. | N.A. | N.A. | - | N.A. | N.A. | N.A. | - | N.A. |
| EM Equity | MSCI EM GR USD | 12/21 | - | 1/88 | MSCI EAFE GR USD | 12/87 | - | 1/79 | N.A. | N.A. | - | N.A. | N.A. | N.A. | - | N.A. |
| Real Estate | FTSE Nareit All Equity REITs TR USD | 12/21 | - | 1/79 | N.A. | N.A. | - | N.A. | N.A. | N.A. | - | N.A. | N.A. | N.A. | - | N.A. |
| Broad Real Assets | S&P Real Asset TR USD | 12/21 | - | 5/05 | *Custom Real Assets Index | 4/05 | - | 1/79 | N.A. | N.A. | - | N.A. | N.A. | N.A. | - | N.A. |
| Marketable Alternatives | HFRI Fund of Funds Composite USD | 12/21 | - | 1/90 | HFN Hedge Fund Aggregate Average | 12/89 | - | 1/79 | N.A. | N.A. | - | N.A. | N.A. | N.A. | - | N.A. |
| Private Equity | Cambridge PE 67% Buyout vs. 33% Venture | 12/21 | - | 4/86 | Russell 2000 TR USD | 3/86 | - | 1/79 | N.A. | N.A. | - | N.A. | N.A. | N.A. | - | N.A. |

*US Bonds - Dynamic Index - 1/3 Bloomberg Gbl Agg Ex USD TR Hdg USD, 1/3 FTSE Treasury Bill 3 Mon USD & 1/3 Bloomberg US Corporate High Yield TR USD

*Note: Private Equity Index is frequently 3-6 months behind the other indices. For historical return calculation purposes, it is given 0% returns during the most recent period where gaps may exist.*

# Disclosure

The historical performance information derived from the Frontier Engineer and used or presented in charts, tables, or graphs represent simulated historical performance, which has been derived by retroactively applying an asset allocation modeling process in its most recently developed form with its most recently derived ten-year (forward-looking) capital market assumptions. Such historical return simulations (or back testing) was performed by simulating the combination of actual index returns for the historical period with a buy and hold strategy effective January 1, 1988 through the most recently available month-end date with simulated rebalancing occurring every month-end (with the reinvestment of dividends and capital gains from each index).

Back tested performance is hypothetical and does not reflect actual trades or actual client performance. As with all models, there are inherent limitations which are derived from the retroactive application developed with the benefit of hindsight, including the risk that certain factors such as material economic and market conditions could have contributed to materially different (either higher or lower) performance results than those depicted, or that certain material factors may have been included or excluded from consideration. As such, actual results during the applicable back tested period would have been different than those depicted.

The asset allocation modeling process currently used was initially developed in 2002, and was not offered as a strategy prior to that time. The output of a forward-looking model (or process) is a representation of allocation percentages among specific asset classes. Clients cannot invest directly in a target allocation, but rather, in underlying securities within designated asset classes. Advisor may change its models from time to time, and regularly updates its model as additional capital market assumption information becomes available or to increase or decrease relative weightings or emphasis on certain factors. Consequently, the Advisor may choose to deviate from a stated model over time as the model itself is revised, which could have a materially positive or negative impact on performance.

During the period represented, numerous modelling changes were made, including the regular changes in (ten-year) forward-looking expected returns, expected volatilities, expected non-normal return distribution assumptions, as well as tracking-error assumptions and risk budgets. Furthermore, such assumptions can be modified client-by-client depending on certain preferences, priorities, constraints or unique considerations applicable to each client.

Other economic and market factors may have impacted decision-making when using the model to manage client funds, including the list of approved asset classes by a client or client type as well as any client-directed or Advisor implemented constraints.

All investments bear the risk of loss, including the loss of principal. Past performance, actual or hypothetical, is no guarantee of future results.

The returns displayed on the preceding pages are gross of fees. Actual performance would be reduced by investment advisory fees and other expenses that may be incurred in the management of the client's portfolio. The collection of fees produces a compounding effect on the total rate of return net of management fees. As an example, the effect of investment management fees on the total value of a client's portfolio assuming (a) quarterly fee assessment, (b) $1,000,000 investment, (c) portfolio return of 8% a year, and (d) 0.50% annual investment advisory fee would be $5,228 in the first year, and cumulative effects of $30,342 over five years and $73,826 over ten years. Additional information on advisory fees charged by Fiducient Advisors are described in Part 2 of the Form ADV.

# Disclosure

**INDEX DEFINITIONS**

**FTSE Treasury Bill 3 Month** measures return equivalents of yield averages and are not marked to market. It is an average of the last three three-month Treasury bill month-end rates.

**Bloomberg Barclays Capital US Treasury Inflation Protected Securities Index** consists of Inflation-Protection securities issued by the U.S. Treasury.

**Bloomberg Barclays Muni 5 Year Index** is the 5 year (4-6) component of the Municipal Bond index.

**Bloomberg Barclays High Yield Municipal Bond Index** covers the universe of fixed rate, non-investment grade debt.

**Bloomberg Barclays U.S. Aggregate Index** covers the U.S. investment grade fixed rate bond market, with index components for government and corporate securities, mortgage pass-through securities, and asset-backed securities.

**FTSE World Government Bond Index (WGBI) (Unhedged)** provides a broad benchmark for the global sovereign fixed income market by measuring the performance of fixed-rate, local currency, investment-grade sovereign debt from over 20 countries,

**FTSE World Government Bond Index (WGBI) (Hedged)** is designed to represent the FTSE WGBI without the impact of local currency exchange rate fluctuations.

**Bloomberg Barclays US Corporate High Yield TR USD** covers the universe of fixed rate, non-investment grade debt. Eurobonds and debt issues from countries designated as emerging markets (sovereign rating of Baa1/BBB+/BBB+ and below using the middle of Moody's, S&P, and Fitch) are excluded, but Canadian and global bonds (SEC registered) of issuers in non-EMG countries are included.

**JP Morgan Government Bond Index-Emerging Market Index (GBI-EMI)** is a comprehensive, global local emerging markets index, and consists of regularly traded, liquid fixed-rate, domestic currency government bonds to which international investors can gain exposure.

**JPMorgan EMBI Global Diversified** is an unmanaged, market-capitalization weighted, total-return index tracking the traded market for U.S.-dollar-denominated Brady bonds, Eurobonds, traded loans, and local market debt instruments issued by sovereign and quasi-sovereign entities.

**MSCI ACWI** is designed to represent performance of the full opportunity set of large- and mid-cap stocks across multiple developed and emerging markets, including cross-market tax incentives.

**The S&P 500** is a capitalization-weighted index designed to measure performance of the broad domestic economy through changes in the aggregate market value of 500 stocks representing all major industries.

**Russell 3000** is a market-cap-weighted index which consists of roughly 3,000 of the largest companies in the U.S. as determined by market capitalization. It represents nearly 98% of the investable U.S. equity market.

**Russell Mid Cap** measures the performance of the 800 smallest companies in the Russell 1000 Index.

**Russell 2000** consists of the 2,000 smallest U.S. companies in the Russell 3000 index.

**MSCI EAFE** is an equity index which captures large and mid-cap representation across Developed Markets countries around the world, excluding the US and Canada. The index covers approximately 85% of the free float-adjusted market capitalization in each country.

**MSCI Emerging Markets** captures large and mid-cap representation across Emerging Markets countries. The index covers approximately 85% of the free-float adjusted market capitalization in each country

**The Wilshire US Real Estate Securities Index (Wilshire US RESI)** is comprised of publicly-traded real estate equity securities and designed to offer a market-based index that is more reflective of real estate held by pension funds.

**Alerian MLP Index** is a float adjusted, capitalization-weighted index, whose constituents represent approximately 85% of total float-adjusted market capitalization, is disseminated real-time on a price-return basis (AMZ) and on a total-return basis.

**Bloomberg Commodity Index (BCI)** is calculated on an excess return basis and reflects commodity futures price movements. The index rebalances annually weighted 2/3 by trading volume and 1/3 by world production and weight-caps are applied at the commodity, sector and group level for diversification.

**Treasury Inflation-Protected Securities (TIPS)** are Treasury bonds that are indexed to inflation to protect investors from the negative effects of rising prices. The principal value of TIPS rises as inflation rises.

**HFRI Fund of Funds Composite** is an equal-weighted index consisting of over 800 constituent hedge funds, including both domestic and offshore funds.

**Cambridge Associates U.S. Private Equity Index (67% Buyout vs. 33% Venture)** is based on data compiled from more than 1,200 institutional-quality buyout, growth equity, private equity energy, and mezzanine funds formed between 1986 and 2015.

**HFN Hedge Fund Aggregate Average** is an equal weighted average of all hedge funds and CTA/managed futures products reporting to the HFN Database. Constituents are aggregated from each of the HFN Strategy Specific Indices.

**Goldman Sachs Commodity Index (GSCI)** is a broadly diversified, unleveraged, long-only composite index of commodities that measures the performance of the commodity market.

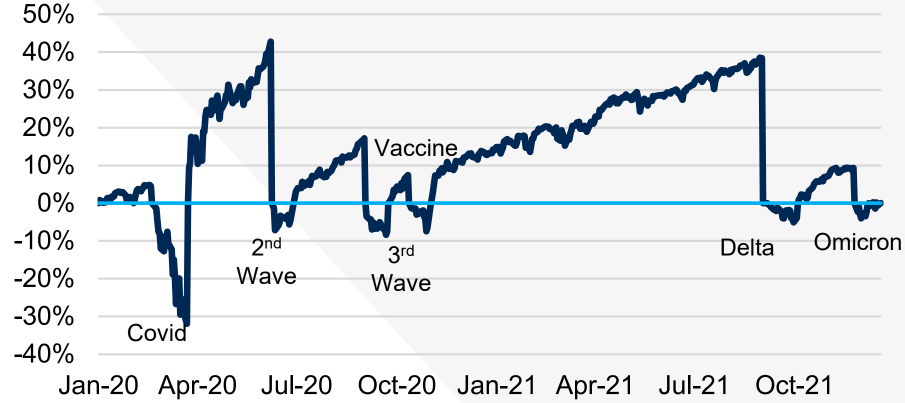
# December Flash Report

# Market Themes

1. Adaptation and flexibility should prove key for investors in 2022, driven by concern for moderating return opportunities and heightened capital market volatility.
2. Investors should remain attuned to a more differentiated array of central bank responses in the New Year as authorities increasingly customize policies to their particular economic circumstances.
3. U.S. large cap equities were among the leaders this quarter as the reopening trade took a back seat and large growth outpaced value. Real estate markets continued their banner year while fixed income was relatively flat, despite increased rate volatility.

### S&P 500 Drawdowns (% Change from Previous High/Low)

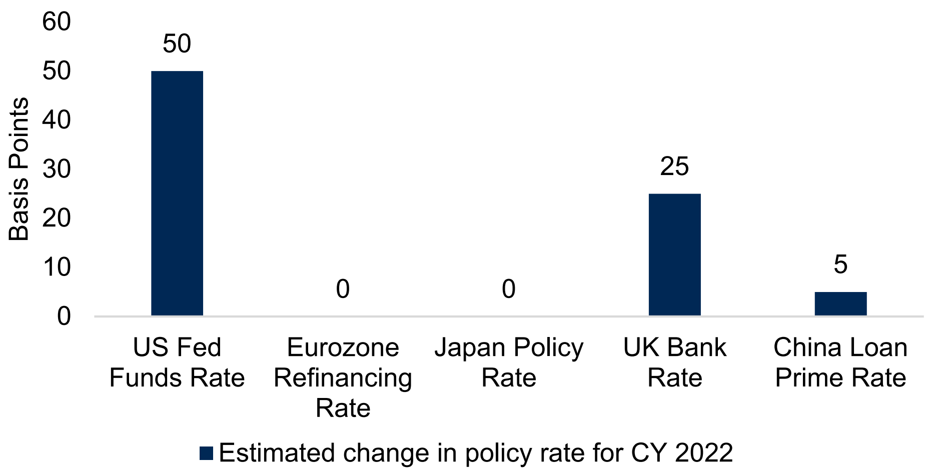
*The COVID-19 pandemic has driven volatility over the past two years. Recent variants have had a more subdued impact.*




Source: FactSet. As of December 20, 2021

### Global Policy Rates

*Market expectations are such that central bank coordination is likely to wane in 2022 as policy makers around the world react to their individual markets. This may present both opportunities and risks for investors in the coming quarters.*




Source: FactSet. As of January 5, 2022

### Elevated Rate Volatility

*The 10-year U.S. Treasury yield experienced elevated volatility in Q4 as investors digested the emergence of the omicron variant, elevated inflation, an increasingly hawkish Fed and prospects for further economic recovery.*


Source: FactSet. As of December 31, 2021.

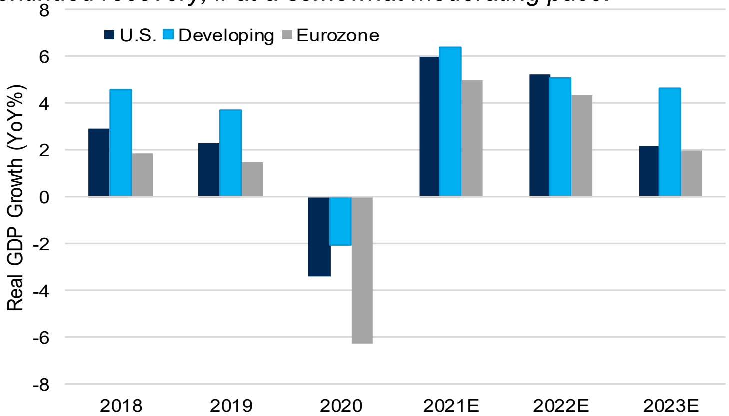


*See disclosures for list of indices representing each asset class. Past performance does not indicate future performance and there is a possibility of a loss.*

# Economic Review

### Real GDP Growth (YoY)

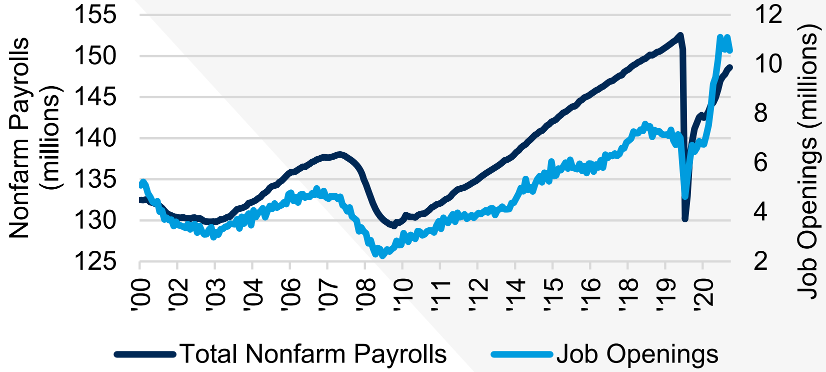
*Estimates for positive GDP growth remain strong for 2022. A favorable consumer profile and corporate health provide a solid foundation for continued recovery, if at a somewhat moderating pace.*




Source: FactSet, IMF World Economic Outlook. As of December 31, 2021.

### U.S. Labor Market

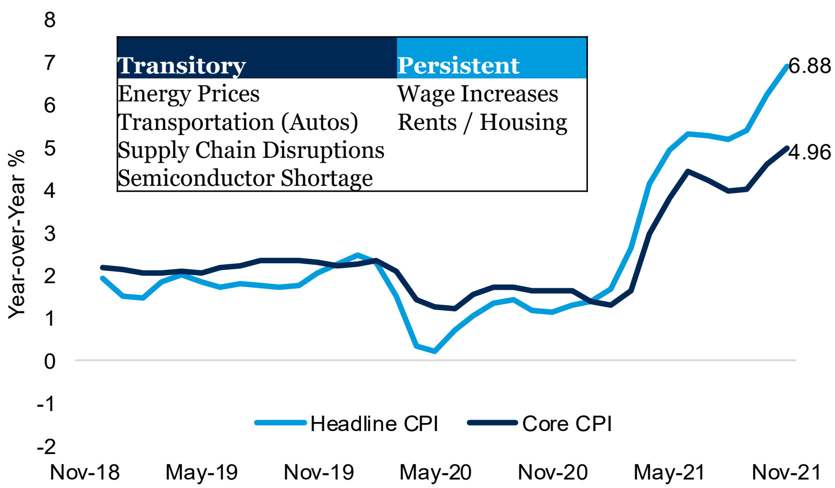
*Job openings are at twenty-year highs, yet employment levels (nonfarm payrolls) are still below pre-pandemic levels. This supply/demand imbalance could lead to higher wages and a stronger consumer.*




Source: FactSet, U.S. DOL. As of November 30, 2021

### U.S. Inflation

*Inflation remains elevated, with energy and transportation seeing the largest increases year-over-year. Inflation may moderate but we don't expect it to revert to benign pre-pandemic levels.*




| Transitory | Persistent |
|---|---|
| Energy Prices | Wage Increases |
| Transportation (Autos) | Rents / Housing |
| Supply Chain Disruptions | |
| Semiconductor Shortage | |

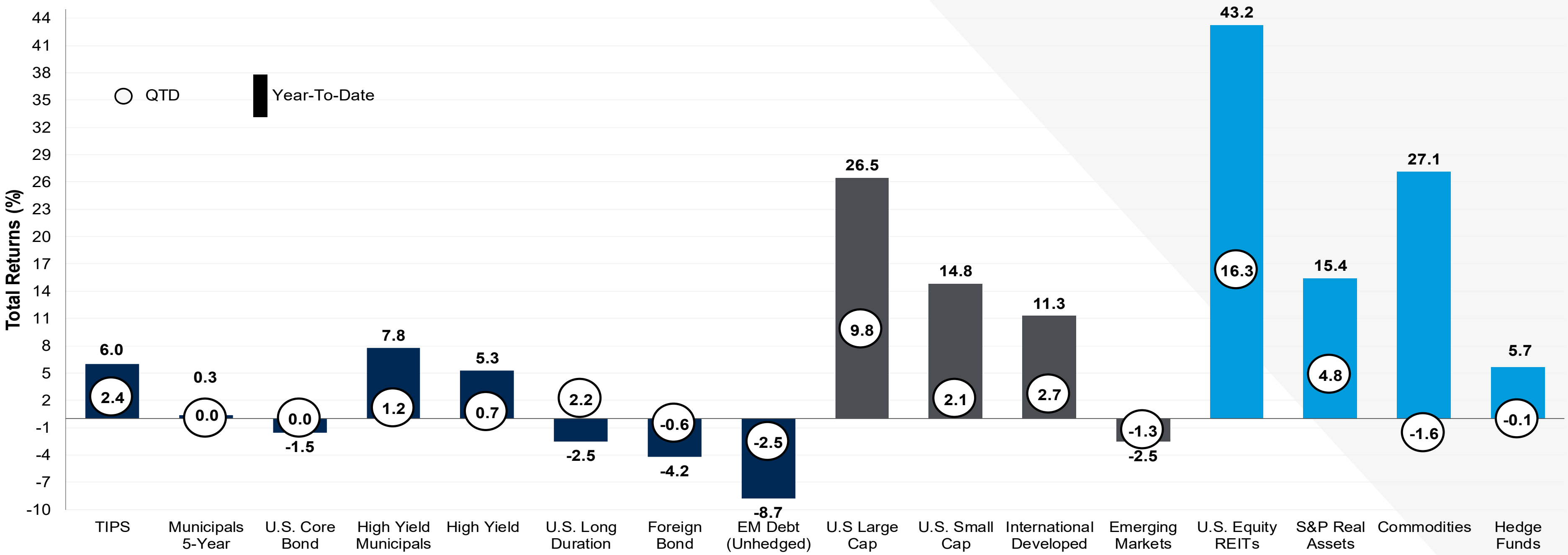
Source: FactSet, Fiducient Advisors. As of November 30, 2021.

### Shipping Costs

*Supply chain issues are easing somewhat. The Baltic Dry Index, a measure of shipping costs of raw materials, has come off recent highs, which could alleviate inflation pressure in the future.*


Source: FactSet, Baltic Exchange. As of December 31, 2021

# Asset Class Returns




*Hedge fund returns are lagged 1 month. Sources: FactSet, J.P. Morgan, Russell, MSCI, FTSE Russell, Alerian, Morningstar. As of December 31, 2021.

**Fixed Income (4Q)**

+/- U.S. bonds were flat on the quarter. A hawkish Federal Reserve incited a flatter yield curve.

+ Credit spreads ultimately ended the quarter tighter as investors continued to demand yield in the low-rate environment.

- Non-USD debt struggled in the period. A rising U.S. dollar coupled with Evergrande's debt default was a headwind for EM debt.

**Equity (4Q)**

+ Despite a volatile quarter, U.S. and developed international equities ultimately ended the quarter higher following a year-end rally.

- Government regulation and intervention in China continued to weigh on investor enthusiasm, pushing emerging markets into negative territory for the quarter.

**Real Asset / Alternatives (4Q)**

+ REITs benefited from strong industrial, self-storage and residential performance, areas that have continued to benefit during the COVID-19 era.

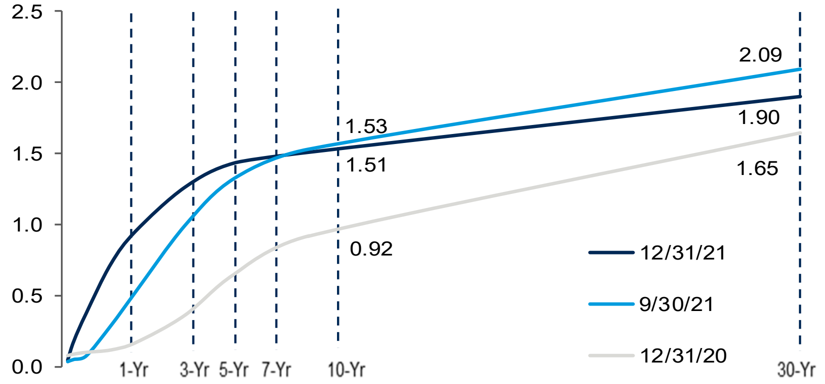
- Perceptions of lower energy demand due to COVID outbreaks led to falling energy prices, which weighed on the commodity market.


*See disclosures for list of indices representing each asset class. Past performance does not indicate future performance and there is a possibility of a loss.*

# Fixed Income Market Update

### U.S. Treasury Yields Curve

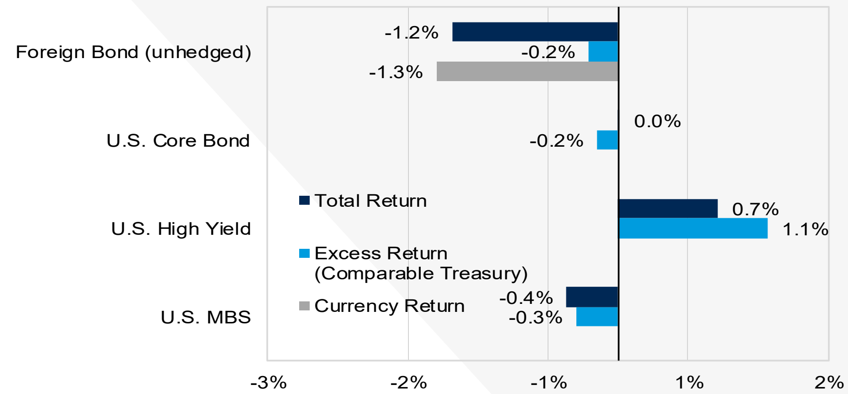
*The U.S. curve flattened as the Fed accelerated their tapering program and outlook for rate hikes in 2022 solidified. Concerns about the impact of the omicron variant on the economy put pressure on the long-dated rates.*




Source: FactSet

### Index Performance Attribution (4Q 2021)

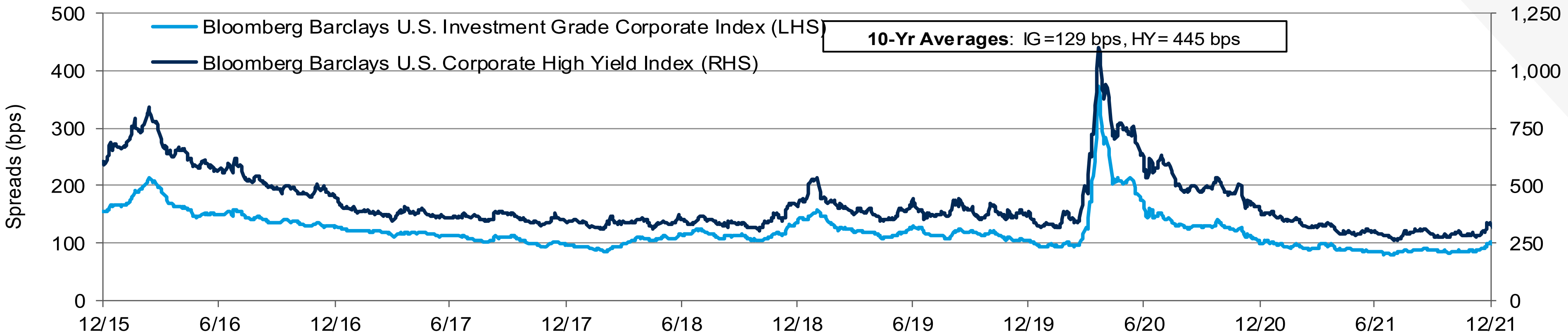
*On a duration adjusted basis, high yield outpaced U.S. Treasuries while the mortgage market came under pressure as the Fed began its tapering program. A strengthening U.S. dollar was a major headwind for non-USD debt.*




Source: FactSet. As of December 31, 2021

### Credit Market Spreads – Trailing 5 Years

*Credit spreads ultimately ended the quarter tighter, but the ride through the quarter was bumpy. Investor demand for yield continued to provide a tailwind for credit. Credit spreads sit well within their 10-year averages and, when coupled with heightened rate volatility, we currently favor active management.*




Source: FactSet. As of December 31, 2021

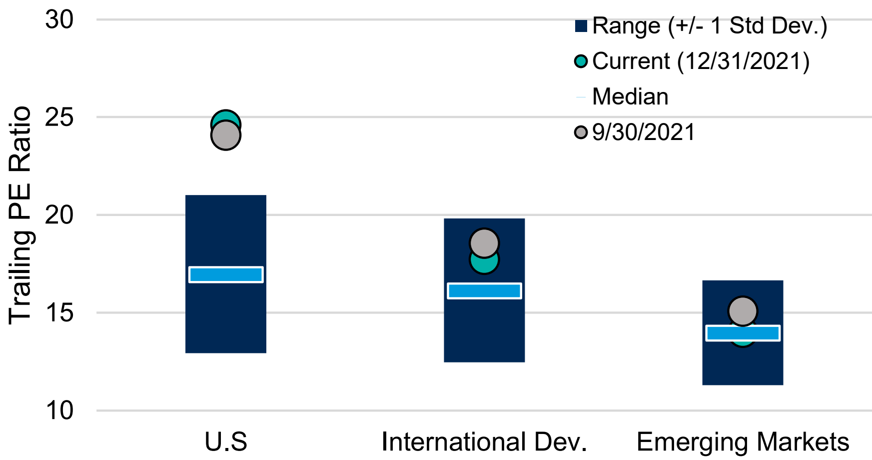


*Past performance does not indicate future performance and there is a possibility of a loss.*

# Equity Market Update

### Equity Valuations (Trailing 15 Years)

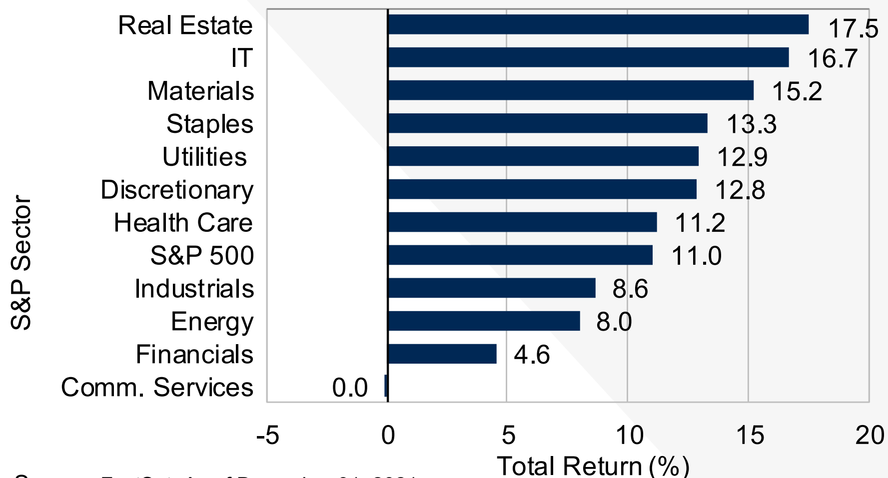
*Valuations persist above longer-term averages in the U.S. but are less pronounced elsewhere in the world. Falling equity prices within emerging markets moved valuations lower and in-line with the 15-year median.*




Source: FactSet. As of December 31, 2021

### U.S. Equities – Return by Sector (4Q 2021)

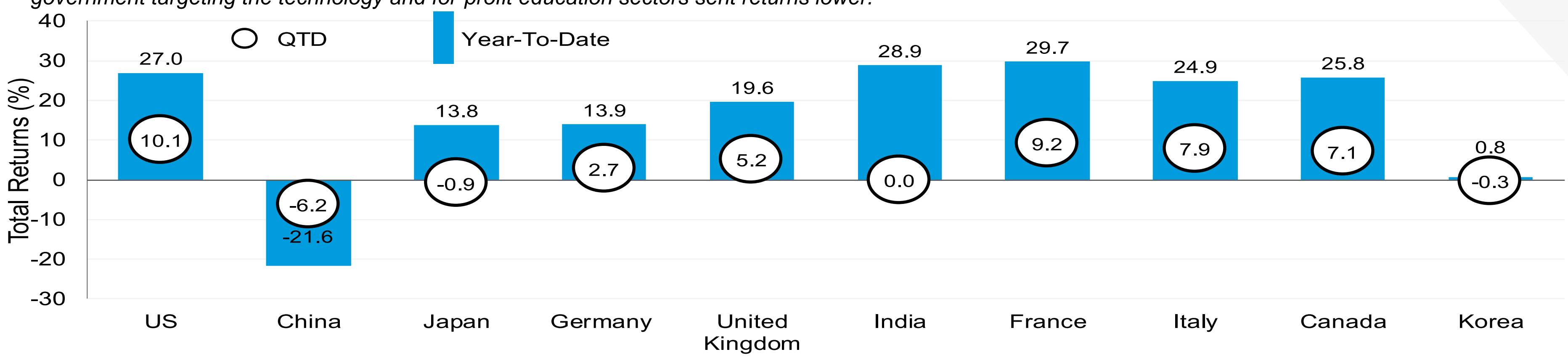
*Real Estate and Information Technology led the way as the reopening trade reversed course, while energy and financials lagged the broader equity market.*




Source: FactSet. As of December 31, 2021

### Country Total Returns (%) – Top 10 Largest Economies

*Equities were generally positive within developed regions, with the United States leading the way as COVID precautionary measures domestically were not as intense as those abroad. Chinese equities continued to be a drag on emerging market performance. Lingering concerns about the Chinese government targeting the technology and for-profit education sectors sent returns lower.*




Source: FactSet. As of December 31, 2021.

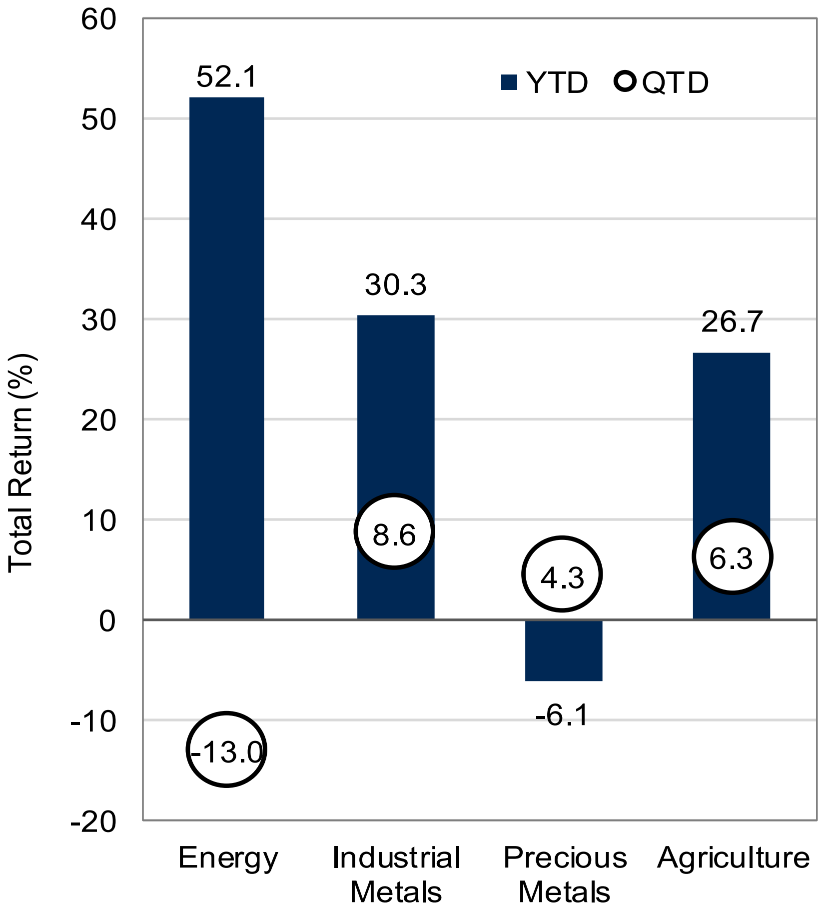


*Past performance does not indicate future performance and there is a possibility of a loss.*

# Alternatives Market Update

### Real Assets Performance

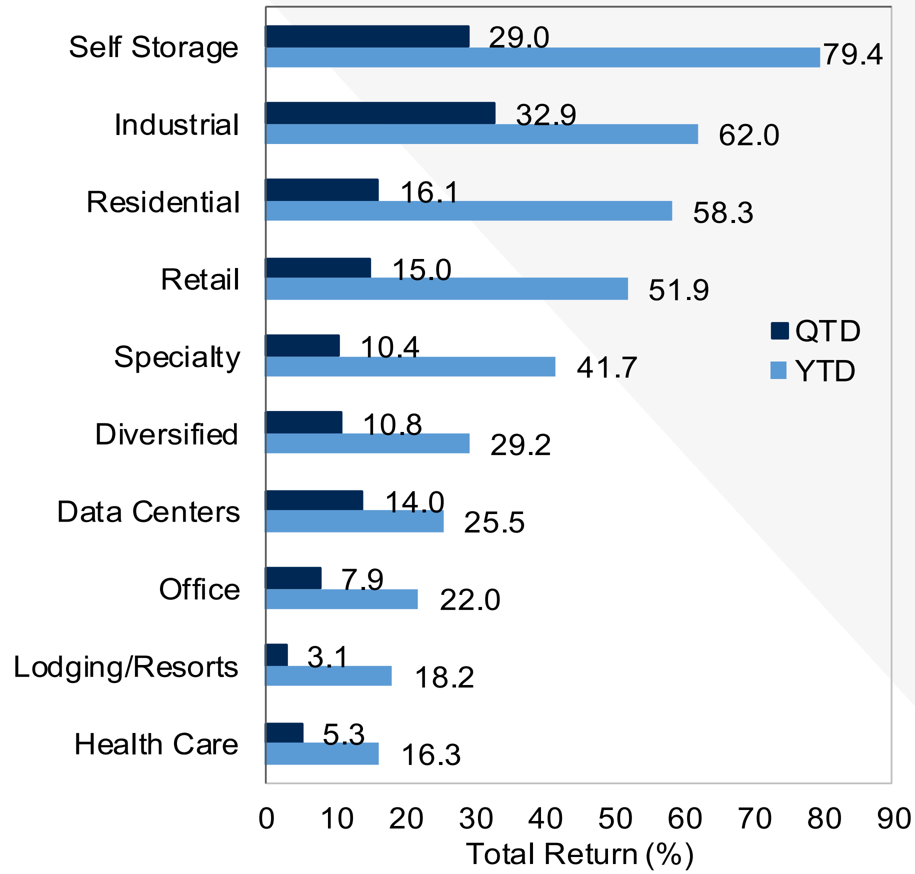
*Energy reversed course in the fourth quarter as the breakout of COVID-19 cases weakened demand amid new lockdowns around the globe, while the supply chain backlog pushed industrial metals prices higher.*




Source: FactSet. As of December 31, 2021

### REIT Sector Performance

*The Industrial and Self Storage sectors were the highlights this quarter, driven by the uncertainty generated by the omicron wave. Conversely, Lodging and Office lagged in the quarter. Real Estate, overall, performed well for the 2021 calendar year.*




Source: FactSet. As of December 31, 2021



*Past performance does not indicate future performance and there is a possibility of a loss.*

# The Case For Diversification

| 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | YTD | 10Yr (Ann) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| TIPS 13.6 | Emerging Markets 18.2 | U.S. Small Cap 38.8 | U.S. Equity REITs 30.1 | U.S. Equity REITs 3.2 | U.S. Small Cap 21.3 | Emerging Markets 37.3 | High Yield Munis 4.8 | U.S. Large Cap 31.5 | U.S. Small Cap 20.0 | U.S. Equity REITs 43.2 | US Large Cap 16.5 |
| High Yield Munis 9.3 | High Yield Munis 18.1 | U.S. Large Cap 32.4 | High Yield Munis 13.8 | Municipals 5-Year 2.4 | High Yield 17.1 | International Dev. 25.0 | Municipals 5-Year 1.7 | U.S. Equity REITs 26.0 | U.S. Large Cap 18.4 | Commodities 27.1 | US Small Cap 13.2 |
| U.S. Equity REITs 8.3 | U.S. Equity REITs 18.1 | International Dev. 22.8 | U.S. Large Cap 13.7 | High Yield Munis 1.8 | U.S. Large Cap 12.0 | U.S. Large Cap 21.8 | Foreign Bond 0.5 | U.S. Small Cap 25.5 | Emerging Markets 18.3 | US Large Cap 26.5 | U.S. Equity REITs 11.4 |
| Core Bond 7.8 | International Dev. 17.3 | Balanced 12.2 | Core Bond 6.0 | U.S. Large Cap 1.4 | Commodities 11.7 | EM Debt (unhedged) 15.2 | Core Bond 0.0 | International Dev. 22.5 | TIPS 11.0 | US Small Cap 14.8 | International Dev. 8.0 |
| Municipals 5-Year 6.9 | EM Debt (unhedged) 16.9 | Hedge Funds 9.0 | Balanced 5.1 | Core Bond 0.6 | Emerging Markets 11.2 | U.S. Small Cap 14.6 | TIPS -1.3 | Emerging Markets 18.4 | Balanced 8.8 | International Dev. 11.3 | Balanced 7.4 |
| High Yield 5.0 | U.S. Small Cap 16.3 | High Yield 7.4 | U.S. Small Cap 4.9 | Hedge Funds -0.3 | EM Debt (unhedged) 9.9 | Balanced 13.6 | High Yield -2.1 | Balanced 17.5 | International Dev. 7.8 | Balanced 9.8 | High Yield 6.8 |
| Foreign Bond 4.2 | U.S. Large Cap 16.0 | U.S. Equity REITs 2.5 | TIPS 3.6 | International Dev. -0.8 | U.S. Equity REITs 8.5 | High Yield Munis 9.7 | Hedge Funds -4.0 | High Yield 14.3 | Core Bond 7.5 | High Yield Munis 7.8 | High Yield Municipals 6.7 |
| U.S. Large Cap 2.1 | High Yield 15.8 | Municipals 5-Year 0.8 | Hedge Funds 3.4 | TIPS -1.4 | Balanced 7.6 | Hedge Funds 7.8 | U.S. Large Cap -4.4 | EM Debt (unhedged) 13.5 | Hedge Funds 7.1 | TIPS 6.0 | Emerging Markets 5.5 |
| Balanced 0.9 | Balanced 11.5 | Foreign Bond -1.0 | Municipals 5-Year 3.2 | Foreign Bond -2.3 | TIPS 4.7 | High Yield 7.5 | U.S. Equity REITs -4.6 | High Yield Munis 10.7 | High Yield 7.1 | Hedge Funds 5.7 | Hedge Funds 4.4 |
| EM Debt (unhedged) -1.8 | TIPS 7.0 | Core Bond -2.0 | Foreign Bond 2.9 | Balanced -3.3 | Foreign Bond 3.2 | Foreign Bond 6.5 | Balanced -5.8 | Core Bond 8.7 | Foreign Bond 7.0 | High Yield 5.3 | TIPS 3.1 |
| U.S. Small Cap -4.2 | Foreign Bond 5.3 | Emerging Markets -2.6 | High Yield 2.5 | U.S. Small Cap -4.4 | High Yield Munis 3.0 | U.S. Equity REITs 5.2 | EM Debt (unhedged) -6.2 | TIPS 8.4 | High Yield Munis 4.9 | Municipals 5-Year 0.3 | Core Bond 2.9 |
| Hedge Funds -5.7 | Hedge Funds 4.8 | High Yield Munis -5.5 | Emerging Markets -2.2 | High Yield -4.5 | Core Bond 2.6 | Core Bond 3.5 | U.S. Small Cap -11.0 | Hedge Funds 7.8 | Municipals 5-Year 4.3 | Core Bond -1.5 | Municipals 5-Year 2.4 |
| Commodities -13.3 | Core Bond 4.2 | TIPS -8.6 | International Dev. -4.9 | Emerging Markets -14.9 | International Dev. 1.0 | Municipals 5-Year 3.1 | Commodities -11.2 | Commodities 7.7 | EM Debt (unhedged) 2.7 | Emerging Markets -2.5 | Foreign Bond 2.3 |
| International Dev. -12.1 | Municipals 5-Year 3.0 | EM Debt (unhedged) -9.0 | EM Debt (unhedged) -5.7 | EM Debt (unhedged) -14.9 | Hedge Funds 0.5 | TIPS 3.0 | International Dev. -13.8 | Foreign Bond 6.3 | Commodities -3.1 | Foreign Bond -4.2 | EM Debt (unhedged) 0.7 |
| Emerging Markets -18.4 | Commodities -1.1 | Commodities -9.5 | Commodities -17.0 | Commodities -24.7 | Municipals 5-Year -0.4 | Commodities 1.7 | Emerging Markets -14.6 | Municipals 5-Year 5.4 | U.S. Equity REITs -8.0 | EM Debt (unhedged) -8.7 | Commodities -2.9 |

Source: FactSet & Morningstar as of December 31, 2021. Periods greater than one year are annualized. All returns are in U.S. dollar terms. One month lag for Hedge Funds.

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*See disclosures for list of indices representing each asset class. Past performance does not indicate future performance and there is a possibility of a loss.*

# Financials Markets Performance

## Financial Markets Performance

**Total return as of December 31, 2021**

***Periods greater than one year are annualized***
***All returns are in U.S. dollar terms***

| Global Fixed Income Markets | QTD | YTD | 1YR | 3YR | 5YR | 7YR | 10YR | 15YR |
|---|---|---|---|---|---|---|---|---|
| Bloomberg 1-3-Month T-Bill | 0.0% | 0.0% | 0.0% | 0.9% | 1.1% | 0.8% | 0.6% | 0.8% |
| Bloomberg U.S. TIPS | 2.4% | 6.0% | 6.0% | 8.4% | 5.3% | 4.2% | 3.1% | 4.7% |
| Bloomberg Municipal Bond (5 Year) | 0.0% | 0.3% | 0.3% | 3.3% | 3.0% | 2.4% | 2.4% | 3.5% |
| Bloomberg High Yield Municipal Bond | 1.2% | 7.8% | 7.8% | 7.8% | 7.5% | 6.0% | 6.7% | 5.2% |
| Bloomberg U.S. Aggregate | 0.0% | -1.5% | -1.5% | 4.8% | 3.6% | 3.0% | 2.9% | 4.1% |
| Bloomberg U.S. Corporate High Yield | 0.7% | 5.3% | 5.3% | 8.8% | 6.3% | 6.1% | 6.8% | 7.1% |
| Bloomberg Global Aggregate ex-U.S. Hedged | -1.2% | -1.4% | -1.4% | 3.3% | 3.1% | 3.1% | 3.8% | 4.0% |
| Bloomberg Global Aggregate ex-U.S. Unhedged | -1.2% | -7.0% | -7.0% | 2.5% | 3.1% | 1.5% | 0.8% | 2.6% |
| Bloomberg U.S. Long Gov / Credit | 2.2% | -2.5% | -2.5% | 10.6% | 7.4% | 5.7% | 5.7% | 7.0% |
| JPMorgan GBI-EM Global Diversified | -2.5% | -8.7% | -8.7% | 2.1% | 2.8% | 1.0% | 0.7% | 3.5% |
| **Global Equity Markets** | **QTD** | **YTD** | **1YR** | **3YR** | **5YR** | **7YR** | **10YR** | **15YR** |
| S&P 500 | 11.0% | 28.7% | 28.7% | 26.1% | 18.5% | 14.9% | 16.6% | 10.7% |
| Dow Jones Industrial Average | 7.9% | 20.9% | 20.9% | 18.5% | 15.5% | 13.3% | 14.2% | 10.1% |
| NASDAQ Composite | 8.4% | 22.2% | 22.2% | 34.3% | 25.0% | 19.8% | 21.0% | 14.4% |
| Russell 3000 | 9.3% | 25.7% | 25.7% | 25.8% | 18.0% | 14.5% | 16.3% | 10.6% |
| Russell 1000 | 9.8% | 26.5% | 26.5% | 26.2% | 18.4% | 14.8% | 16.5% | 10.7% |
| Russell 1000 Growth | 11.6% | 27.6% | 27.6% | 34.1% | 25.3% | 19.6% | 19.8% | 13.7% |
| Russell 1000 Value | 7.8% | 25.2% | 25.2% | 17.6% | 11.2% | 9.7% | 13.0% | 7.5% |
| Russell Mid Cap | 6.4% | 22.6% | 22.6% | 23.3% | 15.1% | 12.2% | 14.9% | 10.2% |
| Russell Mid Cap Growth | 2.8% | 12.7% | 12.7% | 27.5% | 19.8% | 14.9% | 16.6% | 11.7% |
| Russell Mid Cap Value | 8.5% | 28.3% | 28.3% | 19.6% | 11.2% | 10.0% | 13.4% | 8.8% |
| Russell 2000 | 2.1% | 14.8% | 14.8% | 20.0% | 12.0% | 10.8% | 13.2% | 8.7% |
| Russell 2000 Growth | 0.0% | 2.8% | 2.8% | 21.2% | 14.5% | 11.7% | 14.1% | 10.0% |
| Russell 2000 Value | 4.4% | 28.3% | 28.3% | 18.0% | 9.1% | 9.5% | 12.0% | 7.2% |
| MSCI ACWI | 6.7% | 18.5% | 18.5% | 20.4% | 14.4% | 10.9% | 11.9% | 7.1% |
| MSCI ACWI ex. U.S. | 1.8% | 7.8% | 7.8% | 13.2% | 9.6% | 6.6% | 7.3% | 3.8% |
| MSCI EAFE | 2.7% | 11.3% | 11.3% | 13.5% | 9.5% | 6.8% | 8.0% | 3.6% |
| MSCI EAFE Growth | 4.1% | 11.3% | 11.3% | 19.0% | 13.6% | 9.7% | 10.1% | 5.5% |
| MSCI EAFE Value | 1.2% | 10.9% | 10.9% | 7.8% | 5.3% | 3.6% | 5.8% | 1.6% |
| MSCI EAFE Small Cap | 0.1% | 10.1% | 10.1% | 15.6% | 11.0% | 9.5% | 10.8% | 5.6% |
| MSCI Emerging Markets | -1.3% | -2.5% | -2.5% | 10.9% | 9.9% | 6.1% | 5.5% | 4.5% |
| **Alternatives** | **QTD** | **YTD** | **1YR** | **3YR** | **5YR** | **7YR** | **10YR** | **15YR** |
| Consumer Price Index* | 1.7% | 6.6% | 6.2% | 3.3% | 2.9% | 2.4% | 2.1% | 2.2% |
| FTSE NAREIT Equity REITs | 16.3% | 43.2% | 43.2% | 18.4% | 10.8% | 9.3% | 11.4% | 6.9% |
| S&P Real Assets | 4.8% | 15.4% | 15.4% | 11.0% | 7.4% | 5.2% | 5.9% | 5.5% |
| FTSE EPRA NAREIT Developed | 12.5% | 36.9% | 36.9% | 13.1% | 7.2% | 7.9% | 11.0% | 5.4% |
| FTSE EPRA NAREIT Developed ex U.S. | 2.1% | 8.8% | 8.8% | 7.4% | 7.1% | 4.8% | 7.8% | 2.4% |
| Bloomberg Commodity Total Return | -1.6% | 27.1% | 27.1% | 9.9% | 3.7% | 0.1% | -2.9% | -2.6% |
| HFRI Fund of Funds Composite* | -0.1% | 5.7% | 9.6% | 7.7% | 5.8% | 4.1% | 4.4% | 2.8% |
| HFRI Fund Weighted Composite* | -0.7% | 8.9% | 13.9% | 9.4% | 7.0% | 5.4% | 5.6% | 4.6% |
| Alerian MLP | 0.6% | 40.2% | 40.2% | 2.1% | -2.7% | -5.1% | -0.3% | 4.3% |

*One month lag.

*Source: FactSet & Morningstar as of December 31, 2021. Periods greater than 1 year are annualized. All returns are in U.S. dollar terms.*

# Asset Allocation

## As of December 31, 2021

| | Asset Allocation ($) | Asset Allocation (%) | Target Allocation (%) | Differences (%) |
|---|---|---|---|---|
| **West Hartford Total Pension** | **384,591,877** | **100.0** | **100.0** | **0.0** |
| **Short Term Liquidity** | **243,869** | **0.1** | **0.0** | **0.1** |
| WF Government Money Market Fund | 243,869 | 0.1 | 0.0 | 0.1 |
| **Fixed Income** | **110,172,003** | **28.6** | **30.0** | **-1.4** |
| Vanguard Total Bond Market Index Instl | 62,566,172 | 16.3 | 17.0 | -0.7 |
| Metropolitan West Total Return Bond Pl | 47,605,831 | 12.4 | 13.0 | -0.6 |
| **Domestic Equity** | **172,641,338** | **44.9** | **43.5** | **1.4** |
| Vanguard Total Stock Market Index Instl | 124,541,051 | 32.4 | 31.3 | 1.1 |
| T. Rowe Price Instl Large Cap Value | 16,843,186 | 4.4 | 4.3 | 0.1 |
| Silvercrest Small Cap Value | 16,576,070 | 4.3 | 4.0 | 0.3 |
| Pier Capital Small Cap Growth | 14,675,311 | 3.8 | 4.0 | -0.2 |
| Equity Holdings | 5,720 | 0.0 | 0.0 | 0.0 |
| **International Equity** | **79,326,490** | **20.6** | **21.5** | **-0.9** |
| Acadian Non-US All Cap Equity Fund,USD Hedged | 18,674,516 | 4.9 | 5.0 | -0.1 |
| Harbor Diversified International All Cap Ret | 20,300,011 | 5.3 | 5.5 | -0.2 |
| Causeway International Value Instl | 20,381,070 | 5.3 | 5.5 | -0.2 |
| Vanguard International Growth Adm | 19,970,894 | 5.2 | 5.5 | -0.3 |
| **Real Estate** | **22,208,177** | **5.8** | **5.0** | **0.8** |
| Barings Core Property Fund LP | 22,208,177 | 5.8 | 5.0 | 0.8 |

Investments with a zero balance were held in the portfolio during the reporting period and will be removed once they no longer impact portfolio performance.
Asset Allocation weightings may not add up to 100% due to rounding.

# West Hartford, CT Pension Plan

## Performance Update As Of December 31, 2021

**Portfolio Performance**

| | Value | Performance(%) | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | 1 Month | QTD | 1 Year | 3 Years | 5 Years | 7 Years | 10 Years | Since Inception | Inception Date |
| **West Hartford Total Pension** | **384,591,877** | **2.7** | **3.9** | **13.2** | **16.9** | **11.8** | **9.5** | **10.9** | **6.9** | **01/01/2001** |
| *Pension Blended Benchmark* | | *2.5* | *4.4* | *12.6* | *15.9* | *11.3* | *9.4* | *10.6* | *7.1* | *01/01/2001* |

**Calendar Year Performance**

| | 2020 | 2019 | 2018 | 2017 | 2016 | 2015 | 2014 |
|---|---|---|---|---|---|---|---|
| **West Hartford Total Pension** | **16.6** | **20.9** | **-5.4** | **15.8** | **7.7** | **0.1** | **7.1** |
| *Pension Blended Benchmark* | *14.3* | *20.8* | *-4.8* | *15.3* | *8.3* | *1.2* | *8.6* |

| Allocation Mandate | Weight (%) |
|---|---|
| **Apr-2018** | |
| Blmbg. U.S. Aggregate Index | 30.00 |
| Russell 3000 Index | 43.50 |
| MSCI AC World ex USA (Net) | 21.50 |
| NCREIF Fund Index - ODCE (net) | 5.00 |

The allocation mandate represents the current benchmark composition for the portfolio. Please keep in mind that the investment objective may have changed over time.

# Manager Performance Overview

## As of December 31, 2021

| | 1 Month | QTD | 1 Year | 3 Years | 5 Years | 7 Years | 10 Years | Dec-2008 To Dec-2021 | Since Inception | Inception Date |
|---|---|---|---|---|---|---|---|---|---|---|
| **West Hartford Total Pension** | **2.7** | **3.9** | **13.2** | **16.9** | **11.8** | **9.5** | **10.9** | **11.3** | **6.9** | **01/01/2001** |
| *Pension Blended Benchmark* | *2.5* | *4.4* | *12.6* | *15.9* | *11.3* | *9.4* | *10.6* | *10.9* | *7.1* | |
| | | | | | | | | | | |
| **Fixed Income** | **-0.3** | **-0.1** | **-1.4** | **5.2** | **3.8** | **3.1** | **3.4** | **4.7** | **4.7** | **12/01/2008** |
| *Blmbg. U.S. Aggregate Index* | *-0.3* | *0.0* | *-1.5* | *4.8* | *3.6* | *3.0* | *2.9* | *4.0* | *4.0* | |
| **Vanguard Total Bond Market Index Instl** | **-0.4 (93)** | **-0.1 (41)** | **-1.7 (67)** | **4.8 (70)** | **3.6 (58)** | **3.0 (57)** | **2.9 (65)** | **N/A** | **3.1 (60)** | **11/01/2010** |
| *Blmbg. U.S. Aggregate Index* | *-0.3* | *0.0* | *-1.5* | *4.8* | *3.6* | *3.0* | *2.9* | *N/A* | *3.1* | |
| IM U.S. Broad Market Core Fixed Income (MF) Median | -0.2 | -0.1 | -1.3 | 5.2 | 3.7 | 3.1 | 3.1 | N/A | 3.2 | |
| **Metropolitan West Total Return Bond Pl** | **-0.2 (87)** | **-0.1 (41)** | **-1.1 (56)** | **5.6 (52)** | **4.1 (52)** | **N/A** | **N/A** | **N/A** | **3.3 (50)** | **05/01/2015** |
| *Blmbg. U.S. Aggregate Index* | *-0.3* | *0.0* | *-1.5* | *4.8* | *3.6* | *N/A* | *N/A* | *N/A* | *3.0* | |
| IM U.S. Broad Market Core+ Fixed Income (MF) Median | 0.0 | -0.2 | -1.0 | 5.7 | 4.1 | N/A | N/A | N/A | 3.3 | |
| **Domestic Equity** | **3.9** | **7.9** | **24.6** | **25.2** | **17.5** | **13.9** | **15.9** | **15.7** | **15.7** | **12/01/2008** |
| *Russell 3000 Index* | *3.9* | *9.3* | *25.7* | *25.8* | *18.0* | *14.5* | *16.3* | *16.0* | *16.0* | |
| **Vanguard Total Stock Market Index Instl** | **3.8 (67)** | **9.2 (41)** | **25.7 (42)** | **25.8 (21)** | **18.0 (17)** | **14.5 (8)** | **16.3 (11)** | **N/A** | **16.2 (6)** | **06/01/2009** |
| *CRSP US Total Market Spliced Index* | *3.8* | *9.2* | *25.7* | *25.8* | *18.0* | *14.5* | *16.3* | *N/A* | *16.2* | |
| IM U.S. Multi-Cap Core Equity (MF) Median | 4.4 | 8.7 | 25.3 | 22.8 | 15.8 | 12.3 | 14.7 | N/A | 14.5 | |
| **T. Rowe Price Instl Large Cap Value** | **6.1 (56)** | **6.9 (79)** | **25.8 (56)** | **18.0 (49)** | **11.7 (46)** | **10.0 (36)** | **13.3 (21)** | **13.1 (27)** | **9.0 (21)** | **07/01/2005** |
| *Russell 1000 Value Index* | *6.3* | *7.8* | *25.2* | *17.6* | *11.2* | *9.7* | *13.0* | *12.7* | *8.4* | |
| IM U.S. Large Cap Value Equity (MF) Median | 6.2 | 8.2 | 26.2 | 17.9 | 11.6 | 9.7 | 12.5 | 12.4 | 8.1 | |
| **Silvercrest Small Cap Value** | **5.6 (34)** | **7.8 (12)** | **24.5 (93)** | **18.4 (48)** | **9.2 (39)** | **N/A** | **N/A** | **N/A** | **9.8 (42)** | **12/01/2016** |
| *Russell 2000 Value Index* | *4.1* | *4.4* | *28.3* | *18.0* | *9.1* | *N/A* | *N/A* | *N/A* | *9.8* | |
| IM U.S. Small Cap Value Equity (MF) Median | 5.2 | 5.9 | 30.9 | 18.3 | 8.6 | N/A | N/A | N/A | 9.2 | |
| **Pier Capital Small Cap Growth** | **0.4 (76)** | **-0.8 (74)** | **9.6 (48)** | **30.1 (15)** | **22.0 (17)** | **16.2 (15)** | **17.6 (7)** | **18.7 (7)** | **12.1 (4)** | **01/01/2001** |
| *Russell 2000 Growth Index* | *0.4* | *0.0* | *2.8* | *21.2* | *14.5* | *11.7* | *14.1* | *15.6* | *8.2* | |
| IM U.S. Small Cap Growth Equity (MF) Median | 1.9 | 1.8 | 8.9 | 24.4 | 16.9 | 13.2 | 15.0 | 16.3 | 9.2 | |

Returns for periods less than one year are not annualized. Returns are net of fees unless otherwise noted.

# Manager Performance Overview

## As of December 31, 2021

| | 1 Month | | QTD | | 1 Year | | 3 Years | | 5 Years | | 7 Years | | 10 Years | | Dec-2008 To Dec-2021 | | Since Inception | | Inception Date |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **International Equity** | **3.4** | | **0.8** | | **10.5** | | **18.4** | | **12.8** | | **8.6** | | **9.9** | | **11.0** | | **11.0** | | **12/01/2008** |
| *International Equity Benchmark* | *4.1* | | *1.8* | | *7.8* | | *13.2* | | *9.2* | | *6.5* | | *7.8* | | *8.2* | | *8.2* | | |
| **Acadian Non-US All Cap Equity Fund,USD Hedged** | **4.7** | **(61)** | **3.9** | **(12)** | **23.4** | **(1)** | **17.9** | **(5)** | **N/A** | | **N/A** | | **N/A** | | **N/A** | | **10.4** | **(4)** | **05/01/2018** |
| *MSCI EAFE Hedged (net)* | *4.5* | | *4.2* | | *19.4* | | *15.1* | | *N/A* | | *N/A* | | *N/A* | | *N/A* | | *9.2* | | |
| IM International Multi-Cap Core Equity (MF) Median | 4.8 | | 2.8 | | 10.5 | | 13.2 | | N/A | | N/A | | N/A | | N/A | | 5.7 | | |
| **Harbor Diversified International All Cap Ret** | **4.2** | **(66)** | **1.3** | **(77)** | **10.3** | **(52)** | **14.0** | **(40)** | **N/A** | | **N/A** | | **N/A** | | **N/A** | | **6.5** | **(27)** | **03/01/2018** |
| *MSCI AC World ex USA (Net)* | *4.1* | | *1.8* | | *7.8* | | *13.2* | | *N/A* | | *N/A* | | *N/A* | | *N/A* | | *5.7* | | |
| IM International Large Cap Core Equity (MF) Median | 5.0 | | 2.9 | | 10.3 | | 13.3 | | N/A | | N/A | | N/A | | N/A | | 5.5 | | |
| **Causeway International Value Instl** | **6.5** | **(3)** | **0.9** | **(79)** | **9.1** | **(91)** | **11.4** | **(48)** | **7.4** | **(29)** | **4.8** | **(30)** | **7.3** | **(1)** | **8.6** | **(1)** | **5.8** | **(1)** | **05/01/2004** |
| *MSCI EAFE Value Index (Net)* | *6.0* | | *1.2* | | *10.9* | | *7.8* | | *5.3* | | *3.6* | | *5.8* | | *6.4* | | *4.8* | | |
| IM International Large Cap Value Equity (MF) Median | 5.5 | | 2.2 | | 14.3 | | 11.0 | | 6.6 | | 4.4 | | 5.9 | | 6.3 | | 5.0 | | |
| **Vanguard International Growth Adm** | **-1.3** | **(100)** | **-2.8** | **(98)** | **-0.7** | **(96)** | **27.7** | **(1)** | **N/A** | | **N/A** | | **N/A** | | **N/A** | | **15.6** | **(3)** | **03/01/2018** |
| *MSCI AC World ex USA Growth (Net)* | *3.0* | | *2.4* | | *5.1* | | *17.8* | | *N/A* | | *N/A* | | *N/A* | | *N/A* | | *9.0* | | |
| IM International Large Cap Growth Equity (MF) Median | 3.9 | | 3.0 | | 8.7 | | 17.7 | | N/A | | N/A | | N/A | | N/A | | 8.5 | | |
| **Real Estate** | **7.4** | | **7.4** | | **18.9** | | **7.9** | | **7.3** | | **8.3** | | **8.7** | | **5.3** | | **4.9** | | **01/01/2008** |
| *NCREIF Fund Index - ODCE (net)* | *0.0* | | *0.0* | | *12.6* | | *5.7* | | *6.2* | | *7.5* | | *8.7* | | *4.9* | | *4.6* | | |
| **Barings Core Property Fund LP** | **7.4** | | **7.4** | | **18.9** | | **7.9** | | **7.3** | | **8.3** | | **8.7** | | **5.3** | | **4.9** | | **01/01/2008** |
| *NCREIF Fund Index - ODCE (net)* | *0.0* | | *0.0* | | *12.6* | | *5.7* | | *6.2* | | *7.5* | | *8.7* | | *4.9* | | *4.6* | | |

The inception date expressed on the Manager Performance Overview page(s) represents the first day of the first full month following the purchase of the investment. Performance figures shown at the fund level begin on this inception date. Your performance may differ slightly if the fund was purchased during the previous month. Actual performance is captured at the total plan level.

Returns for periods less than one year are not annualized. Returns are net of fees unless otherwise noted.

# Asset Allocation

## As of December 31, 2021

| | Asset Allocation ($) | Asset Allocation (%) | Target Allocation (%) | Differences (%) |
|---|---|---|---|---|
| **West Hartford POB ST Account** | **214,699,119** | **100.0** | **100.0** | **0.0** |
| **Short Term Liquidity** | **54,000,074** | **25.2** | **0.0** | **25.2** |
| WF Government Money Market Fund | 54,000,074 | 25.2 | 0.0 | 25.2 |
| **Fixed Income** | **160,699,045** | **74.8** | **100.0** | **-25.2** |
| Baird Ultra Short Term Bond Fund Instl | 80,564,888 | 37.5 | 50.0 | -12.5 |
| Payden Limited Maturity Fund SI | 40,268,885 | 18.8 | 25.0 | -6.2 |
| Vanguard Short Term Invst Grade Inst | 39,865,272 | 18.6 | 25.0 | -6.4 |

Investments with a zero balance were held in the portfolio during the reporting period and will be removed once they no longer impact portfolio performance.
Asset Allocation weightings may not add up to 100% due to rounding.

# West Hartford, CT - Retiree Medical Fund

## Performance Update As Of December 31, 2021

### Portfolio Performance

| | Value | Performance(%) | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | 1 Month | QTD | 1 Year | 3 Years | 5 Years | 7 Years | 10 Years | Since Inception | Inception Date |
| **West Hartford POB ST Account** | **214,699,119** | **0.1** | **-0.2** | **N/A** | **N/A** | **N/A** | **N/A** | **N/A** | **-0.3** | **08/01/2021** |
| *POB ST Blended Benchmark* | | *0.0* | *-0.2* | *N/A* | *N/A* | *N/A* | *N/A* | *N/A* | *-0.2* | *08/01/2021* |

### Calendar Year Performance

| | 2020 | 2019 | 2018 | 2017 | 2016 | 2015 | 2014 |
|---|---|---|---|---|---|---|---|
| **West Hartford POB ST Account** | **N/A** | **N/A** | **N/A** | **N/A** | **N/A** | **N/A** | **N/A** |
| *POB ST Blended Benchmark* | *N/A* | *N/A* | *N/A* | *N/A* | *N/A* | *N/A* | *N/A* |

| Allocation Mandate | Weight (%) |
|---|---|
| **Jul-2021** | |
| 90 Day U.S. Treasury Bill | 25.00 |
| Blmbg. U.S. Credit 1-5 Year Index | 25.00 |
| Blmbg. Short-term Government/Corporate | 50.00 |

The allocation mandate represents the current benchmark composition for the portfolio. Please keep in mind that the investment objective may have changed over time.

# Manager Performance Overview

## As of December 31, 2021

| | 1 Month | QTD | 1 Year | 3 Years | Since Inception | Inception Date |
|---|---|---|---|---|---|---|
| **West Hartford POB ST Account** | **0.1** | **-0.2** | **N/A** | **N/A** | **-0.3** | **08/01/2021** |
| *POB ST Blended Benchmark* | *0.0* | *-0.2* | *N/A* | *N/A* | *-0.2* | |
| **Short Term Liquidity** | **0.0** | **0.0** | **N/A** | **N/A** | **0.0** | **08/01/2021** |
| **WF Government Money Market Fund** | **0.0** | **0.0** | **N/A** | **N/A** | **0.0** | **08/01/2021** |
| *90 Day U.S. Treasury Bill* | *0.0* | *0.0* | *0.0* | *1.0* | *0.0* | |
| **Fixed Income** | **0.1** | **-0.2** | **N/A** | **N/A** | **-0.3** | **08/01/2021** |
| **Baird Ultra Short Term Bond Fund Instl** | **0.0 (31)** | **0.0 (3)** | **N/A** | **N/A** | **0.0 (12)** | **08/01/2021** |
| *Blmbg. Short-term Government/Corporate* | *0.0* | *0.0* | *0.1* | *1.4* | *0.0* | |
| IM U.S. Short Term Investment Grade (MF) Median | 0.0 | -0.4 | 0.0 | 2.3 | -0.4 | |
| **Payden Limited Maturity Fund SI** | **0.1 (16)** | **-0.1 (16)** | **N/A** | **N/A** | **0.0 (13)** | **08/01/2021** |
| *90 Day U.S. Treasury Bill* | *0.0* | *0.0* | *0.0* | *1.0* | *0.0* | |
| IM U.S. Short Term Investment Grade (MF) Median | 0.0 | -0.4 | 0.0 | 2.3 | -0.4 | |
| **Vanguard Short Term Invst Grade Inst** | **0.0 (29)** | **-0.7 (84)** | **N/A** | **N/A** | **-0.9 (91)** | **08/01/2021** |
| *Blmbg. U.S. Credit 1-5 Year Index* | *0.0* | *-0.7* | *-0.6* | *3.7* | *-0.9* | |
| IM U.S. Short Term Investment Grade (MF) Median | 0.0 | -0.4 | 0.0 | 2.3 | -0.4 | |

The inception date expressed on the Manager Performance Overview page(s) represents the first day of the first full month following the purchase of the investment. Performance figures shown at the fund level begin on this inception date. Your performance may differ slightly if the fund was purchased during the previous month. Actual performance is captured at the total fund level.
Investment returns are derived from custodian valuations and may deviate slightly from fund level returns displayed in other pages in your report. Mutual fund performance may differ slightly from the current share class's historical performance due to share class exchanges.

Returns for periods less than one year are not annualized. Returns are net of fees unless otherwise noted.

# Definitions & Disclosures

**Please note: Due to rounding methodologies of various data providers, certain returns in this report might differ slightly when compared to other sources**

**REGULATORY DISCLOSURES**

**Offer of ADV Part 2A**: Rule 204-3 under the Investment Advisers Act of 1940 requires that we make an annual offer to clients to send them, without charge, a written disclosure statement meeting the requirements of such rule. We will be glad to send a copy of our ADV Part 2A to you upon your written request to compliance@fiducient.com.

**ASSET CLASS REPRESENTATIONS**

All material and information is intended for Fiducient Advisors L.L.C. business only. Any use or public dissemination outside firm business is prohibited. Information is obtained from a variety of sources which are believed though not guaranteed to be accurate. Any forecast represents future expectations and actual returns, volatilities and correlations will differ from forecasts. Past performance does not indicate future performance. This presentation does not represent a specific investment recommendation. Please consult with your advisor, attorney and accountant, as appropriate, regarding specific advice.

When referencing asset class returns or statistics, the following indices are used to represent those asset classes, unless otherwise notes. Each index is unmanaged and investors can not actually invest directly into an index:

**TIPS:** Bloomberg Barclays Global Inflation-Linked: U.S. TIPS Total Return Index Unhedged
**Municipals 5-Year:** Bloomberg Barclays Municipal Bond 5 Year (4-6) Total Return Index Unhedged USD
**Core Bond:** Bloomberg Barclays US Agg Total Return Value Unhedged USD
**High Yield Municipals:** Bloomberg Barclays Muni High Yield Total Return Index Value Unhedged USD
**High Yield:** Bloomberg Barclays US Corporate High Yield Total Return Index Value Unhedged USD
**Foreign Bond:** Bloomberg Barclays Global Aggregate ex-USD Total Return Index Value USD (50/50 blend of hedged and unhedged)
**EM Debt (unhedged):** J.P. Morgan GBI-EM Global Diversified Composite Unhedged USD
**U.S. Large Cap:** S&P 500 Total Return Index
**U.S. Small Cap:** Russell 2000 Total Return Index
**International Developed:** MSCI EAFE Net Total Return USD Index
**Emerging Markets:** MSCI Emerging Markets Net Total Return USD Index
**World:** MSCI ACWI Net Total Return USD Index
**U.S. Equity REITs:** FTSE Nareit Equity REITs Total Return Index USD
**S&P Real Assets:** S&P Real Assets Total Return Index
**Commodities:** Bloomberg Commodity Total Return Index
**Hedge Funds:** Hedge Fund Research HFRI Fund of Funds Composite Index
**Balanced:** 3% TIPS, 33% Core Bond, 4% High Yield , 2% Foreign Bond. 2% EM Debt (unhedged), 18% U.S. Large Cap, 6% U.S. Small Cap, 16% International, 8% Emerging Markets, 5% U.S. Equity REITS, 3% Commodities
**U.S.:** MSCI USA Net Total Return USD Index
**China:** MSCI CHINA Net Total Return USD Index
**Japan:** MSCI Japan Net Total Return USD Index
**Germany:** MSCI Germany Net Total Return USD Index
**India:** MSCI India Net Total Return USD Index
**United Kingdom:** MSCI UK Net Total Return USD Index
**France:** MSCI France Net Total Return USD Index
**Italy:** MSCI Italy Net Total Return USD Index
**Brazil:** MSCI Brazil Net Total Return USD Index
**Canada:** MSCI Canada Net Total Return USD Index

**INDEX DEFINITIONS**

- **Citigroup 3 Month T-Bill** measures monthly return equivalents of yield averages that are not marked to market. The Three-Month Treasury Bill Indexes consist of the last three three-month Treasury bill issues.
- **Ryan 3 Yr. GIC** is an arithmetic mean of market rates of $1 million Guaranteed Interest Contracts held for three years.
- **Bloomberg Barclays Treasury U.S. T-Bills-1-3 Month Index** includes aged U.S. Treasury bills, notes and bonds with a remaining maturity from 1 up to (but not including) 3 months. It excludes zero coupon strips.
- **Bloomberg Barclays Capital US Treasury Inflation Protected Securities Index** consists of Inflation-Protection securities issued by the U.S. Treasury.
- **Bloomberg Barclays Muni Index** is a rules-based, market-value-weighted index engineered for the long-term tax-exempt bond market. Bonds must be rated investment-grade by at least two ratings agencies.
- **Bloomberg Barclays Muni 1 Year Index** is the 1-year (1-2) component of the Municipal Bond index.
- **Bloomberg Barclays Muni 3 Year Index** is the 3-year (2-4) component of the Municipal Bond index.
- **Bloomberg Barclays Muni 5 Year Index** is the 5-year (4-6) component of the Municipal Bond index.
- **Bloomberg Barclays Muni 7 Year Index** is the 7-year (6-8) component of the Municipal Bond index.
- **Bloomberg Barclays Intermediate U.S. Gov't/Credit** is the Intermediate component of the U.S. Government/Credit index, which includes securities in the Government and Credit Indices. The Government Index includes treasuries and agencies, while the credit index includes publicly issued U.S. corporate and foreign debentures and secured notes that meet specified maturity, liquidity, and quality requirements.

- **Bloomberg Barclays U.S. Aggregate Index** covers the U.S. investment grade fixed rate bond market, with index components for government and corporate securities, mortgage pass-through securities, and asset-backed securities.
- **Bloomberg Barclays Global Aggregate ex. USD Indices** represent a broad-based measure of the global investment-grade fixed income markets. The two major components of this index are the Pan-European Aggregate and the Asian-Pacific Aggregate Indices. The index also includes Eurodollar and Euro-Yen corporate bonds and Canadian government, agency and corporate securities.
- **Bloomberg Barclays U.S. Corporate High Yield Index** covers the universe of fixed rate, non-investment grade debt. Eurobonds and debt issues from countries designated as emerging markets (sovereign rating of Baa1/BBB+/BBB+ and below using the middle of Moody's, S&P, and Fitch) are excluded, but Canadian and global bonds (SEC registered) of issuers in non-EMG countries are included.
- **JP Morgan Government Bond Index-Emerging Market (GBI-EM) Index** is a comprehensive, global local emerging markets index, and consists of regularly traded, liquid fixed-rate, domestic currency government bonds to which international investors can gain exposure.
- **The S&P 500** is a capitalization-weighted index of 500 stocks designed to measure performance of the broad domestic economy through changes in the aggregate market value of 500 stocks representing all major industries.
- **The Dow Jones Industrial Index** is a price-weighted average of 30 blue-chip stocks that are generally the leaders in their industry.
- **The NASDAQ** is a broad-based capitalization-weighted index of stocks in all three NASDAQ tiers: Global Select, Global Market and Capital Market.
- **Russell 3000** is a market-cap-weighted index which consists of roughly 3,000 of the largest companies in the U.S. as determined by market capitalization. It represents nearly 98% of the investable U.S. equity market.
- **Russell 1000** consists of the largest 1000 companies in the Russell 3000 Index.
- **Russell 1000 Growth** measures the performance of those Russell 1000 companies with higher P/B ratios and higher forecasted growth values.
- **Russell 1000 Value** measures the performance of those Russell 1000 companies with lower P/B ratios and lower forecasted growth values.
- **Russell Mid Cap** measures the performance of the 800 smallest companies in the Russell 1000 Index.
- **Russell Mid Cap Growth** measures the performance of those Russell Mid Cap companies with higher P/B ratios and higher forecasted growth values.
- **Russell Mid Cap Value** measures the performance of those Russell Mid Cap companies with lower P/B ratios and lower forecasted growth values.
- **Russell 2000** consists of the 2,000 smallest U.S. companies in the Russell 3000 index.
- **Russell 2000 Growth** measures the performance of the Russell 2000 companies with higher P/B ratios and higher forecasted growth values.
- **Russell 2000 Value** measures the performance of those Russell 2000 companies with lower P/B ratios and lower forecasted growth values.
- **Russell 2500** consists of the 2,500 smallest U.S. companies in the Russell 3000 index.
- **Russell 2500 Growth** measures the performance of the Russell 2500 companies with higher P/B ratios and higher forecasted growth values.
- **Russell 2500 Value** measures the performance of those Russell 2500 companies with lower P/B ratios and lower forecasted growth values.
- **MSCI World** captures large and mid-cap representation across 23 Developed Markets countries. With 1,645 constituents, the index covers approximately 85% of the free float-adjusted market capitalization in each country.
- **MSCI ACWI (All Country World Index) ex. U.S. Index** captures large and mid-cap representation across 22 of 23 Developed Markets countries (excluding the United States) and 23 Emerging Markets countries. With 1,859 constituents, the index covers approximately 85% of the global equity opportunity set outside the US.
- **MSCI ACWI (All Country World Index) ex. U.S. Small Cap Index** captures small cap representation across 22 of 23 Developed Markets countries (excluding the US) and 23 Emerging Markets countries. With 4,368 constituents, the index covers approximately 14% of the global equity opportunity set outside the US.
- **MSCI EAFE** is an equity index which captures large and mid-cap representation across Developed Markets countries around the world, excluding the US and Canada. With 930 constituents, the index covers approximately 85% of the free float-adjusted market capitalization in each country.
- **MSCI EAFE Value** captures large and mid-cap securities exhibiting overall value style characteristics across Developed Markets countries around the world, excluding the US and Canada. The value investment style characteristics for index construction are defined using three variables: book value to price, 12-month forward earnings to price and dividend yield. With 507 constituents, the index targets 50% coverage of the free float- adjusted market capitalization of the MSCI EAFE Index.
- **MSCI EAFE Growth** captures large and mid-cap securities exhibiting overall growth style characteristics across Developed Markets countries around the world, excluding the US and Canada. The growth investment style characteristics for index construction are defined using five variables: long-term forward EPS growth rate, short-term forward EPS growth rate, current internal growth rate and long-term historical EPS growth trend and long-term historical sales per share growth trend. With 542 constituents, the index targets 50% coverage of the free float-adjusted market capitalization of the MSCI EAFE Index.
- **MSCI Emerging Markets** captures large and mid-cap representation across 23 Emerging Markets countries. With 836 constituents, the index covers approximately 85% of the free-float adjusted market capitalization in each country.
- **Consumer Price Index** is a measure of prices paid by consumers for a market basket of consumer goods and services. The yearly (or monthly) growth rates represent the inflation rate.
- **FTSE NAREIT Equity REITs Index** contains all Equity REITs not designed as Timber REITs or Infrastructure REITs.
- **S&P Developed World Property** defines and measures the investable universe of publicly traded property companies domiciled in developed markets. The companies in the index are engaged in real estate related activities, such as property ownership, management, development, rental and investment.
- **S&P Developed World Property x U.S.** defines and measures the investable universe of publicly traded property companies domiciled in developed countries outside of the U.S. The companies included are engaged in real estate related activities, such as property ownership, management, development, rental and investment.
- **Fund Specific Broad Real Asset Benchmarks:**
  - **DWS Real Assets:** 30%: Dow Jones Brookfield Infrastructure Index, 30%: FTSE EPRA/NAREIT Developed Index,15%: Bloomberg Commodity Index, 15%: S&P Global Natural Resources Index, 10%: Barclays U.S. Treasury Inflation Notes Total Return Index
  - **PIMCO Inflation Response Multi Asset Fund:** 45% Barclays U.S. TIPS, 20% Bloomberg Commodity Index, 15% JP Morgan Emerging Local Markets Plus, 10% Dow Jones Select REIT, 10% Bloomberg Gold Subindex Total Return
  - **Principal Diversified Real Assets:** 35% BBgBarc U.S. Treasury TIPS Index, 20% S&P Global Infrastructure Index NTR, 20% S&P Global Natural Resources Index NTR, 15% Bloomberg Commodity Index, and 10% FTSE EPRA/NAREIT Developed Index NTR
  - **Wellington Diversified Inflation H:** 50% MSCI ACWI Commodity Producers Index, 25% Bloomberg Commodity Index, and 25% Bloomberg Barclays US TIPS 1 – 10 Year Index
- **Bloomberg Commodity Index** is calculated on an excess return basis and reflects commodity futures price movements. The index rebalances annually weighted 2/3 by trading volume and 1/3 by world production and weight-caps are applied at the commodity, sector and group level for diversification.
- **HFRI Fund Weighted Composite Index** is a global, equal-weighted index of over 2,000 single-manager funds that report to HFR Database. Constituent funds report monthly net of all fees performance in US Dollar and have a minimum of $50 Million under management or a twelve (12) month track record of active performance. The HFRI Fund Weighted Composite Index does not include Funds of Hedge Funds.
- **The Alerian MLP Index** is the leading gauge of energy Master Limited Partnerships (MLPs). The float adjusted, capitalization-weighted index, whose constituents represent approximately 85% of total float-adjusted market capitalization, is disseminated real-time on a price-return basis (AMZ) and on a total-return basis.
- **The Adjusted Alerian MLP Index** is commensurate with 65% of the monthly returns of the Alerian MLP Index to incorporate the effect of deferred tax liabilities incurred by MLP entities.
- **Cambridge Associates U.S. Private Equity Index** is based on data compiled from more than 1,200 institutional-quality buyout, growth equity, private equity energy, and mezzanine funds formed between 1986 and 2015.

- **Cambridge Associates U.S. Venture Capital Index** is based on data compiled from over 1,600 institutional-quality venture capital funds formed between 1986 and 2015.
- **Vanguard Spliced Bloomberg Barclays US1-5Yr Gov/Cr Flt Adj Index:** Bloomberg Barclays U.S. 1–5 Year Government/Credit Bond Index through December 31, 2009; Bloomberg Barclays U.S. 1–5 Year Government/Credit Float Adjusted Index thereafter.
- **Vanguard Spliced Bloomberg Barclays US5-10Yr Gov/Cr Flt Adj Index:** Bloomberg Barclays U.S. 5–10 Year Government/Credit Bond Index through December 31, 2009; Bloomberg Barclays U.S. 5–10 Year Government/Credit Float Adjusted Index thereafter.
- **Vanguard Spliced Bloomberg Barclays US Agg Flt Adj Index:** Bloomberg Barclays U.S. Aggregate Bond Index through December 31, 2009; Bloomberg Barclays U.S. Aggregate Float Adjusted Index thereafter.
- **Vanguard Spliced Bloomberg Barclays US Long Gov/Cr Flt Adj Index:** Bloomberg Barclays U.S. Long Government/Credit Bond Index through December 31, 2009; Bloomberg Barclays U.S. Long Government/Credit Float Adjusted Index thereafter.
- **Vanguard Balanced Composite Index:** Made up of two unmanaged benchmarks, weighted 60% Dow Jones U.S. Total Stock Market Index (formerly the Dow Jones Wilshire 5000 Index) and 40% Bloomberg Barclays U.S. Aggregate Bond Index through May 31, 2005; 60% MSCI US Broad Market Index and 40% Bloomberg Barclays U.S. Aggregate Bond Index through December 31, 2009; 60% MSCI US Broad Market Index and 40% Bloomberg Barclays U.S. Aggregate Float Adjusted Index through January 14, 2013; and 60% CRSP US Total Market Index and 40% Blomberg Barclays U.S. Aggregate Float Adjusted Index thereafter.
- **Vanguard Spliced Intermediate-Term Tax-Exempt Index:** Bloomberg Barclays 1–15 Year Municipal Bond Index.
- **Vanguard Spliced Extended Market Index:** Dow Jones Wilshire 4500 Index through June 17, 2005; S&P Transitional Completion Index through September 16, 2005; S&P Completion Index thereafter.
- **Vanguard Spliced Value Index:** S&P 500 Value Index (formerly the S&P 500/Barra Value Index) through May 16, 2003; MSCI US Prime Market Value Index through April 16, 2013; CRSP US Large Cap Value Index thereafter.
- **Vanguard Spliced Large Cap Index:** Consists of MSCI US Prime Market 750 Index through January 30, 2013, and the CRSP US Large Cap Index thereafter.
- **Vanguard Spliced Growth Index:** S&P 500 Growth Index (formerly the S&P 500/Barra Growth Index) through May 16, 2003; MSCI US Prime Market Growth Index through April 16, 2013; CRSP US Large Cap Growth Index thereafter.
- **Vanguard Spliced Mid Cap Value Index:** MSCI US Mid Cap Value Index through April 16, 2013; CRSP US Mid Cap Value Index thereafter.
- **Vanguard Spliced Mid Cap Index:** S&P MidCap 400 Index through May 16, 2003; the MSCI US Mid Cap 450 Index through January 30, 2013; and the CRSP US Mid Cap Index thereafter.
- **Vanguard Spliced Mid Cap Growth Index:** MSCI US Mid Cap Growth Index through April 16, 2013; CRSP US Mid Cap Growth Index thereafter.
- **Vanguard Spliced Total Stock Market Index:** Dow Jones U.S. Total Stock Market Index (formerly known as the Dow Jones Wilshire 5000 Index) through April 22, 2005; MSCI US Broad Market Index through June 2, 2013; and CRSP US Total Market Index thereafter.
- **Vanguard Spliced Small Cap Value Index:** SmallCap 600 Value Index (formerly the S&P SmallCap 600/Barra Value Index) through May 16, 2003; MSCI US Small Cap Value Index through April 16, 2013; CRSP US Small Cap Value Index thereafter.
- **Vanguard Spliced Small Cap Index:** Russell 2000 Index through May 16, 2003; the MSCI US Small Cap 1750 Index through January 30, 2013; and the CRSP US Small Cap Index thereafter.
- **Vanguard Spliced Small Cap Growth Index:** S&P SmallCap 600 Growth Index (formerly the S&P SmallCap 600/Barra Value Index) through May 16, 2003; MSCI US Small Cap Growth Index through April 16, 2013; CRSP US Small Cap Growth Index thereafter.
- **Vanguard Spliced Total International Stock Index:** Consists of the Total International Composite Index through August 31, 2006; the MSCI EAFE + Emerging Markets Index through December 15, 2010; the MSCI ACWI ex USA IMI Index through June 2, 2013; and FTSE Global All Cap ex US Index thereafter. Benchmark returns are adjusted for withholding taxes.
- **Vanguard Spliced Developed Markets Index:** MSCI EAFE Index through May 28, 2013; FTSE Developed ex North America Index through December 20, 2015; FTSE Developed All Cap ex US Transition Index through May 31, 2016; FTSE Developed All Cap ex US Index thereafter. Benchmark returns are adjusted for withholding taxes.
- **Vanguard Spliced Emerging Markets Index:** Select Emerging Markets Index through August 23, 2006; MSCI Emerging Markets Index through January 9, 2013; FTSE Emerging Transition Index through June 27, 2013; FTSE Emerging Index through November 1, 2015; and FTSE Emerging Markets All Cap China A Transition Index thereafter. Benchmark returns are adjusted for withholding taxes.
- **Vanguard REIT Spliced Index:** MSCI US REIT Index adjusted to include a 2% cash position (Lipper Money Market Average) through April 30, 2009; MSCI US REIT Index through January 31, 2018; MSCI US Investable Market Real Estate 25/50 Transition Index through July 24, 2018; MSCI US Investable Market Real Estate 25/50 Index thereafter.

**Additional:**

- Equity sector returns are calculated by Russell and MSCI for domestic and international markets, respectively. MSCI sector definitions correspond to the MSCI GICS® classification (Global Industry Classification System); Russell uses its own sector and industry classifications.
- MSCI country returns are calculated by MSCI and are free float-adjusted market capitalization indices that are designed to measure equity market performance in each specific country.
- Currency returns are calculated using Bloomberg's historical spot rate indices and are calculated using the U.S. dollar as the base currency.
- The Index of Leading Economic Indicators, calculated by The Conference Board, is used as a barometer of economic activity over a range of three to six months. The index is used to determine the direction and stability of the economy. The composite index of leading indicators, which is derived from 10 leading indicators, helps to signal turning points in the economy and forecast economic cycles. The leading indicators are the following: average weekly hours, average weekly initial claims, manufacturers' new orders, both consumer and non-defense capital goods, vendor performance, building permits, stock prices, money supply (M2), the interest rate spread and the index of consumer expectations.
- S&P Target Date Indexes are constructed using a survey method of current target date investments with $100 million or more in assets under management. Allocations for each vintage are comprised of exchange-traded- funds that represent respective asset classes used in target date portfolios. The indexes are designed to represent a market consensus glide path.

**DEFINITION OF KEY STATISTICS AND TERMS**

- **Returns:** A percentage figure used when reporting historical average compounded rate of investment return. All returns are annualized if the period for which they are calculated exceeds one year.
- **Universe Comparison:** The universe compares the fund's returns to a group of other investment portfolios with similar investment strategies. The returns for the fund, the index and the universe percentiles are displayed. A percentile ranking of 1 is the best, while a percentile ranking of 100 is the worst. For example, a ranking of 50 indicates the fund outperformed half of the universe. A ranking of 25 indicates the fund was in the top 25% of the universe, outperforming 75%.
- **Returns In Up/Down Markets:** This measures how the fund performed in both up and down markets. The methodology is to segregate the performance for each time period into the quarters in which the market, as defined by the index, was positive and negative. Quarters with negative index returns are treated as down markets, and quarters with positive index returns are treated as up markets. Thus, in a 3 year or 12 quarter period, there might be 4 down quarters and 8 up quarters. A simple arithmetic average of returns is calculated for the fund and the index based on the up quarters. A simple arithmetic average of returns is calculated for the fund and the index based on the down quarters. The up market capture ratio is the ratio of the fund's return in up markets to the index. The down market capture ratio is the ratio of the fund's return in down markets to the index. Ideally, the fund would have a greater up market capture ratio than down market capture ratio.

- **Standard Deviation:** Standard deviation is a statistical measure of the range of performance within which the total returns of a fund fall. When a fund has a high standard deviation, the range of performance is very wide, meaning there is a greater volatility. Approximately 68% of the time, the total return of any given fund will differ from the average total return by no more than plus or minus the standard deviation figure. Ninety-five percent of the time, a fund's total return will be within a range of plus or minus two times the standard deviation from the average total return. If the quarterly or monthly returns are all the same the standard deviation will be zero. The more they vary from one another, the higher the standard deviation. Standard deviation can be misleading as a risk indicator for funds with high total returns because large positive deviations will increase the standard deviation without a corresponding increase in the risk of the fund. While positive volatility is welcome, negative is not.
- **R-Squared**: This reflects the percentage of a fund's movements that are explained by movements in its benchmark index. An R-squared of 100 means that all movements of a fund are completely explained by movements in the index. Conversely, a low R-squared indicates very few of the fund's movements are explained by movements in the benchmark index. R-squared can also be used to ascertain the significance of a particular beta. Generally, a higher R-squared will indicate a more reliable beta figure. If the R-squared is lower, then the beta is less relevant to the fund's performance. A measure of diversification, R-squared indicates the extent to which fluctuations in portfolio returns are explained by market. An R-squared = 0.70 implies that 70% of the fluctuation in a portfolio's return is explained by the fluctuation in the market. In this instance, overweighting or underweighting of industry groups or individual securities is responsible for 30% of the fund's movement.
- **Beta**: This is a measure of a fund's market risk. The beta of the market is 1.00. Accordingly, a fund with a 1.10 beta is expected to perform 10% better than the market in up markets and 10% worse that the market in down markets. It is important to note, however, a low fund beta does not imply the fund has a low level of volatility; rather, a low beta means only that the fund's market-related risk is low. Because beta analyzes the market risk of a fund by showing how responsive the fund is to the market, its usefulness depends on the degree to which the markets determine the fund's total risk (indicated by R-squared).
- **Alpha:** The Alpha is the nonsystematic return, or the return that can't be attributed to the market. It can be thought of as how the manager performed if the market's return was zero. A positive alpha implies the manager added value to the return of the portfolio over that of the market. A negative alpha implies the manager did not contribute any value over the performance of the market.
- **Sharpe Ratio:** The Sharpe ratio is the excess return per unit of total risk as measured by standard deviation. Higher numbers are better, indicating more return for the level of risk experienced. The ratio is a fund's return minus the risk-free rate of return (30-day T-Bill rate) divided by the fund's standard deviation. The higher the Sharpe ratio, the more reward you are receiving per unit of total risk. This measure can be used to rank the performance of mutual funds or other portfolios.
- **Treynor Ratio:** The Treynor ratio measures returns earned in excess of that which could have been earned on a riskless investment per each unit of market risk. The ratio relates excess return over the risk-free rate to the additional risk taken; however, systematic risk is used instead of total risk. The Treynor ratio is similar to the Sharpe ratio, except in the fact that it uses the beta to evaluate the returns rather than the standard deviation of portfolio returns. High values mean better return for risk taken.
- **Tracking Error:** Tracking error measures the volatility of the difference in annual returns between the manager and the index. This value is calculated by measuring the standard deviation of the difference between the manager and index returns. For example, a tracking error of +/- 5 would mean there is about a 68% chance (1 standard deviation event) that the manager's returns will fall within +/- 5% of the benchmark's annual return.
- **Information Ratio:** The information ratio is a measure of the consistency of excess return. This value is determined by taking the annualized excess return over a benchmark (style benchmark by default) and dividing it by the standard deviation of excess return.
- **Consistency:** Consistency shows the percent of the periods the fund has beaten the index and the percent of the periods the index has beat the fund. A high average for the fund (e.g., over 50) is desirable, indicating the fund has beaten the index frequently.
- **Downside Risk:** Downside risk is a measure similar to standard deviation but focuses only on the negative movements of the return series. It is calculated by taking the standard deviation of the negative quarterly set of returns. The higher the factor, the riskier the product.
- **M-Squared:** M-squared, or the Modigliani risk-adjusted performance measure is used to characterize how well a portfolio's return rewards an investor for the amount of risk taken, relative to that of some benchmark portfolio and to the risk-free rate.

**DEFINITION OF KEY PRIVATE EQUITY TERMS**

- **PIC (Paid in Capital):** The amount of committed capital that has been transferred from the limited partner to the general partner.
- **TVPI (Total Value to Paid in Capital):** Money returned to limited partners plus the fund's unrealized investments, divided by money paid-in to the partnership. The TVPI should equal RVPI plus DPI.
- **DPI (Distribution to Paid In Capital):** Money returned (distributions) to limited partners divided by money paid in to the partnership. Also called cash-on-cash multiple.
- **RVPI (Residual Value to Paid In Capital):** The value of a fund's unrealized investments divided by money paid-in to the partnership.
- **Internal rate of return (IRR):** This is the most appropriate performance benchmark for private equity investments. It is a time-weighted return expressed as a percentage. IRR uses the present sum of cash drawdowns (money invested), the present value of distributions (money returned from investments) and the current value of unrealized investments and applies a discount.
- **Commitment:** Every investor in a private equity fund commits to investing a specified sum of money in the fund partnership over a specified period of time. The fund records this as the limited partnership's capital commitment. The sum of capital commitments is equal to the size of the fund.
- **Capital Distribution:** These are the returns that an investor in a private equity fund receives. It is the income and capital realized from investments less expenses and liabilities. Once a limited partner has had their cost of investment returned, further distributions are actual profit. The partnership agreement determines the timing of distributions to the limited partner. It will also determine how profits are divided among the limited partners and general partner.
- **Carried Interest:** The share of profits that the fund manager is due once it has returned the cost of investment to investors. Carried interest is normally expressed as a percentage of the total profits of the fund.
- **Co-Investment**: Co-Investments are minority investments made alongside a private equity investor in an LBO, a recapitalization, or an expansion capital transaction. It is a passive, non-controlling investment, as the private equity firm involved will typically exercise control and perform monitoring functions.
- **General Partner (GP):** This can refer to the top-ranking partners at a private equity firm as well as the firm managing the private equity fund.
- **GP Commitments:** It is normal practice for the GP managing a private equity fund to also make a financial commitment to the fund on the same basis as the LPs in the fund, and this is seen as an important factor driving the alignment of GP and LP interests. The historic benchmark for GP commitments has been 1% of the total fund size, but this is by no means universal, and many GPs commit significantly larger amounts. Furthermore, there has been a marked trend towards GPs making larger commitments to their funds over recent years.
- **Leveraged Buy-Out (LBO):** The acquisition of a company using debt and equity finance.
- **Limited Partner (LP):** Institutions or high-net-worth individuals/sophisticated investors that contribute capital to a private equity fund.
- **Public Market Equivalent (PME):** Performance measure used to evaluate performance relative to the market. It is calculated as the ratio of the discounted value of the LP's inflows divided by the discounted value of outflows, with the discounting performed using realized market returns.
- **Primaries:** An original investment vehicle that invests directly into a company or asset.

**VALUATION POLICY**

Fiducient Advisors does not engage an independent third-party pricing service to value securities. Our reports are generated using the security prices provided by custodians used by our clients. Our custodial pricing hierarchy is available upon request. If a client holds a security not reported by the first custodian within the hierarchy, the valuation is generated from the next custodian within the hierarchy, and so forth. Each custodian uses pricing services from outside vendors, where the vendors may generate nominally different prices. Therefore, this report can reflect minor valuation differences from those contained in a custodian's report. In rare instances where Fiducient Advisors overrides a custodial price, prices are taken from Bloomberg.

**REPORTING POLICY**

This report is intended for the exclusive use of the client listed within the report. Content is privileged and confidential. Any dissemination or distribution is strictly prohibited. Information has been obtained from a variety of sources believed to be reliable though not independently verified. Any forecast represents median expectations and actual returns, volatilities and correlations will differ from forecasts. Please note each client has customized investment objectives and constraints and the investment strategy for each portfolio is based on a client-specific asset allocation model. Past performance does not indicate future performance and there is a possibility of a loss. Performance calculated net of investment fees. Certain portfolios presented may be gross of Fiducient Advisors' fees and actual performance would be reduced by investment advisory fees. This report does not represent a specific investment recommendation. Please consult with your advisor, attorney, and accountant, as appropriate, regarding specific advice.

Custodian reports are the reports that govern the account. There will be different account values between Fiducient Advisors' reports and the custodian reports based on whether the report utilizes trade date or settlement date to calculate value. Additionally, difference between values contained on reports may be caused by different accrued income values. Any forecasts represent future expectations and actual returns, volatilities and correlations will differ from forecasts. This report does not represent a specific investment recommendation. Please consult with your advisor, attorney, and accountant, as appropriate, regarding specific advice. Past performance does not indicate future performance and there is a possibility of a loss.

Manager performance for mutual funds and ETFs is based on NAV and provided by Lipper. Performance for non-mutual fund or ETF investments is based on the returns provided by managers, calculations based on a manager statement, or calculations based on a statement or data from the client's custodian. Unless specified otherwise, all returns are net of individual manager fees, represent total returns and are annualized for periods greater than one year. The deduction of fees produces a compounding effect that reduces the total rate of return over time. As an example, the effect of investment management fees on the total value of a client's portfolio assuming (a) quarterly fee assessment, (b) $1,000,000 investment, (c) portfolio return of 8% a year, and (d) 0.50% annual investment advisory fee would be $5,228 in the first year, and cumulative effects of $30,342 over five years and $73,826 over ten years. Additional information on advisory fees charged by Fiducient Advisors are described in Part 2 of the Form ADV.

**OTHER**

By regulation, closed-end funds utilizing debt for leverage must report their interest expense, as well as their income tax expense, as part of their total expense ratio. To make for a useful comparison between closed-end funds and both open-end funds and exchange-traded funds, adjusted expense ratios excluding interest and income tax expenses are utilized for closed-end funds within this report. See disclosure on closed-end fund fact sheets for information regarding the total expense ratio of each closed-end fund.

Please advise us of any changes in your objectives or circumstances.

**CUSTODIAN STATEMENTS**

Please remember to review the periodic statements you receive from you custodian. If you do not receive periodic statements from your custodian or notice issues with the activity reported in those statements, please contact Fiducient Advisors or your custodian immediately.

**Town of West Hartford Pension Fund**

**Pier Capital Small Cap Growth Portfolio - Fee Analysis**

| Year | AUM-Ending MV | Adjustments | Adjustment Factor/AUM | Amount Due at Current Fee Structure 0.4% pa | Performance Fee | Total | Amount Due at Flat 1% pa fee |
|---|---|---|---|---|---|---|---|
| 2001 | 10,581,802 | | | 37,284 | - | 37,284 | 93,211 |
| 2002 | 7,332,014 | | | 33,792 | 189,200 | 222,992 | 84,481 |
| 2003 | 10,295,022 | | | 35,735 | 33,900 | 69,635 | 89,337 |
| 2004 | 11,128,403 | | | 40,303 | 100,028 | 140,331 | 100,758 |
| 2005 | 8,764,443 | | | 33,731 | 181,721 | 215,452 | 84,328 |
| 2006 | 7,767,954 | | | 30,506 | - | 30,506 | 76,264 |
| 2007 | 9,557,671 | | | 35,254 | 204,243 | 239,497 | 88,136 |
| 2008 | 5,695,821 | | | 29,580 | - | 29,580 | 73,950 |
| 2009 | 8,272,388 | | | 27,707 | 103,114 | 130,821 | 69,267 |
| 2010 | 8,270,800 | | | 30,693 | - | 30,693 | 76,733 |
| 2011 | 7,233,969 | | | 30,967 | - | 30,967 | 77,418 |
| 2012 | 7,422,679 | | | 29,894 | - | 29,894 | 74,736 |
| 2013 | 9,811,634 | | | 39,352 | 46,237 | 85,589 | 98,381 |
| 2014 | 10,308,513 | | | 40,059 | - | 40,059 | 100,149 |
| 2015 | 8,713,515 | | | 37,590 | 15,912 | 53,502 | 93,975 |
| 2016 | 9,868,040 | | | 37,289 | - | 37,289 | 93,222 |
| 2017 | 12,052,903 | | | 43,554 | 63,675 | 107,229 | 108,885 |
| 2018 | 7,567,895 | | | 39,429 | 116,622 | 156,051 | 98,808 |
| 2019 | 8,818,278 | | | 35,445 | - | 35,445 | 87,255 |
| 2020 | 14,121,717 | | | 41,368 | 327,375 | 368,743 | 103,420 |
| 2021 | 14,675,309 | | | 50,218 | 158,354 | 208,572 | 125,561 |
| | | | Total Fees Due From Inception | 759,752 | 1,540,381 | 2,300,133 | 1,898,275 |
| | | | | | Difference v. Flat Rate ($) | 401,859 | |

Fees are calculated at the end of each quarter based on the ending market value for the period, adjusted for cash flow activity. Performance based fees calculated annually.

DISCLOSURE: The figures on this page have been obtained from sources we deem to be reliable. Fiducient Advisors has not independently verified this information.

**A virtual regular meeting of the Town of West Hartford Pension Board was held on Monday, November 15, 2021 at 7:45 a.m.**

**This meeting was made available live on West Hartford Community Interactive: Comcast Channel 5, Frontier TV Channel 6098, YouTube, and www.whctv.org.**

**The meeting was called to order at 7:46 a.m.**

I. Roll Call/Attendance

**Pension Board Members:** Chair Lazaro Guzman, Commissioners Alan Lebow, Ethan Goldman, Perry Salonia, Brittany MacGilpin, and Peter Privitera, Director of Financial Services.

**Participants/Guests:** Mayor Shari Cantor, Rick Ledwith, Executive Director of Human Resources, Chris Kachmar, Fiducient Advisors, Lori Kearney, Clerk of the Board, and Paula Knake, Pension Benefits Coordinator.

**Absent:** Matt Hart, Town Manager; Lee Gold, Town Council.

II. Chair's Opening Comments

A. Review of rules of decorum and procedure for the virtual meeting in accordance with Governor Lamont's Executive Order #7B permitting municipalities to conduct public meetings virtually during the COVID-19 pandemic.

III. Peter Privitera, Director of Finance

A. No items to report. Will discuss Milliman invoices during review of Formal Actions.

IV. Chris Kachmar, Investment Review, Fiducient Advisors

A. 3rd quarter investment review

1. Two of six dollar cost averaging exercises completed.
2. Asset allocations in line with targets specified in investment policy statement.
3. Pension fund balance at $321,789,416 as of September 30, 2021.
4. Two manager strategies in elevated status: Metropolitan West Total Return Bond PI elevated to "discuss" in 3Q 2021 and Harbor Diversified International All Cap Ret elevated to "watch" in 2Q 2021. No action needed by the Pension Board at this time.
5. Portfolio is down approximately 40 basis points for the quarter and up 9% YTD through September.

B. POB fund performance

1. Asset allocation of POB portion of portfolio to target.
2. Performance data for POB account is limited – only a couple of months of history available.

V. Brittany Birmingham, Town Matters

1. No items to report

VI. Rick Ledwith, Executive Director of Human Resources

A. Proposed meeting schedule for 2022

VII. Formal Actions

A. Minutes

1. Approval of the minutes for the virtual regular meeting held on Monday, October 18, 2021.
    a. Chair Guzman requested an amendment to the minutes under Section VIII (New Business) item 2: change "invest in" to "issue."

**Motion by Chair Guzman for approval of the minutes for the virtual regular meeting held on Monday, October 18, 2021 with amendment as noted. No objections were raised. Peter Privitera abstained.**

**It was unanimously voted to approve the amended minutes for the virtual regular meeting held on Monday, October 18, 2021.**

B. Pension Administration

**Motion by Chair Guzman for approval of the items under Pension Administration. No objections were raised.**

1. Memberships

    **It was unanimously voted to approve membership for:**
    **BOE – Carolyn Barbaresi, Jomar Diaz, Melissa Harhay, Xiolmara Isaac, and Nelson Pavao.**
    **Town – Daniel Loos, Rebecca Sears, and Thomas Wallace.**

2. Terminations and Refunds

    **It was unanimously voted to approve terminations and refunds for:**
    **Town – Matthew Wilson.**

3. Applications for Approval
    a. Vested Interest applications

        **It was unanimously voted to approve a vested interest for:**
        **BOE – Mary Coons**
        **Town – Irene-Lee Klein**

    b. Normal retirement applications

        **It was unanimously voted to approve a Normal retirement application for:**
        **BOE – Izeth Dennis**

C. Invoices for Consideration

1. Silvercrest

    Invoice for payment for management fees for quarter ending 9/30/2021 in the amount of $22,230. Invoice date 7/8/2021.

2. Silvercrest

    Invoice for payment for management fees for quarter ending 12/31/2021 in the amount of $30,359.00. Invoice date 10/6/2021.

    ***These Silvercrest invoices represent management fee charges only (no incentive fee). Silvercrest bills on a forward/in advance basis.***

    **Motion by Chair Guzman to approve payment of the Silvercrest invoices. No objections were raised. It was unanimously voted to approve the payment of the Silvercrest invoices.**

3. Milliman

    Invoice for payment for actuarial services rendered through 12/2020 in the amount of $18,747.50 (projected retirement benefits and POBs). Invoice date 2/5/2021.

    ***Rick Ledwith stated that the charges for consultation related to the Town Manager's projected retirement benefits ($4,762.50) on the 2/5/2021 invoice will be charged to a Risk Management fund. This leaves the balance of $13,985 (for POB related consultation) for Pension Board approval.***

4. Milliman
Invoice for payment for actuarial services rendered through 2/2021in the amount of $9,395 (stochastic forecast model and POBs). Invoice date 4/12/2021.
5. Milliman
Invoice for payment for actuarial services rendered through 4/2021 in the amount of $9,320 (projection scenarios). Invoice date 6/14/2021.
***Al Lebow requested that back up detail be obtained from Milliman for the 6/14/2021 invoice. If there is a discrepancy noted after the review of the back up detail, the Town can request a credit from a future invoice.***
6. Milliman
Invoice for payment for actuarial services rendered through 7/2021 in the amount of $6,185 (stochastic forecast model, POBs, QDRO, contingent annuity factors). Invoice date 9/2/2021.
7. Milliman
Invoice for payment for actuarial services rendered through 9/2021 in the amount of $7,165 (GASB basic services, special services – illustration of proposed actuarial equivalence basis, contingent annuity factor). Invoice date 11/1/2021.
***Due to a change in Milliman's billing practices, several invoices issued to the Town were missed and became past due. It is anticipated that the Town will not incur late fees associated with those invoices.***
**Motion by Chair Guzman to approve payment of the Milliman invoices (including the 2/5/2021 invoice as amended and in advance of a review of back up detail for the 6/14/2021 invoice). No objections were raised. It was unanimously voted to approve the payment of the Milliman invoices.**

VIII. New Business
A. Pension Dashboard
1. A work group consisting of Al Lebow and Ethan Goldman was established to develop ideas for a pension dashboard. The Pension Board will review the dashboard metrics at the January meeting.
2. The work group has been limited to two individuals due to FOIA requirements.

IX. Adjournment
**Motion by Chair Guzman to adjourn the meeting at 9:14 a.m. No objections were raised. It was unanimously voted to adjourn.**

Attest:

LKearney

Lori Kearney, Clerk of the Board

**AMENDED MINUTES (Section VIII, item 2)**

**A virtual regular meeting of the Town of West Hartford Pension Board was held on Monday, October 18, 2021 at 7:45 a.m.**

**This meeting was made available live on West Hartford Community Interactive: Comcast Channel 5, Frontier TV Channel 6098, YouTube, and www.whctv.org.**

**The meeting was called to order at 7:45 a.m.**

I. Roll Call/Attendance

**Pension Board Members:** Chair Lazaro Guzman, Commissioners Alan Lebow, Ethan Goldman, Perry Salonia, and Brittany Birmingham.

**Participants/Guests:** Mayor Shari Cantor, Matt Hart, Town Manager, Rick Ledwith, Executive Director of Human Resources, Chris Kachmar, Fiducient Advisors, Becky Sielman, Milliman, Lori Kearney, Clerk of the Board, and Paula Knake, Pension Benefits Coordinator.

**Absent:** Peter Privitera, Director of Financial Services and Lee Gold, Town Council.

II. Chair's Opening Comments

- A. Review of rules of decorum and procedure for the virtual meeting in accordance with Governor Lamont's Executive Order #7B permitting municipalities to conduct public meetings virtually during the COVID-19 pandemic.

III. Peter Privitera, Director of Finance

- A. Absent – no report

IV. Chris Kachmar, Investment Review, Fiducient Advisors

- A. September flash reporting
  1. Asset allocation as of 9/30/2021, $321,181,831.
  2. DCA phase 1 of $54 million went into the portfolio and an additional injection was just completed representing phase 2 of the 6 phase effort to deploy the POB funds.
  3. Two manager status updates: MetWest Total Return Bond on "discuss" status and Harbor Diversified International All Cap on "watch" status. No action immediately required by the Board. Remainder of the managers on "maintain."
  4. Pension plan portfolio down 2.7% for September and up 8.8% year to date.
  5. Underweight in real estate allocation – a catch up contribution was made and Barings Core Property Fund is closer to target now.
- B. Investment Policy Statement
  1. Fiducient Advisors considers IPS in good working order and has no recommendations for the Pension Board.
  2. Discussion on Section VIII Proxy Voting. Fiducient Advisors' research team gathers this data annually.

  **Motion by Chair Guzman to reaffirm the Investment Policy Statement.**
  **No objections were raised. It was unanimously voted to reaffirm the Investment Policy Statement.**
- C. Pension obligation bond dashboard discussion with Milliman
  1. Becky Sielman provided an example of a dashboard format and requested feedback on what the Pension Board wants to achieve.

2. Chair Guzman suggested establishing a work group to determine the dashboard metrics the Board wants to track.
3. Becky made recommendations related to monitoring the Town's liabilities.
   a. Conduct a full valuation every year. Currently, the Town conducts full valuations every other year (resulting in a 2 year gap).
   b. Conduct an experience study (retirement patterns, turnover patterns, payment options selected at retirement, disabilities).
   c. Track mortality of retirees' contingent annuitants. When the status of the contingent annuitant is unknown, the valuation assumes the beneficiary is living and will receive a pension. Knowing a contingent annuitant has died means the valuation could be based on a benefit payable only for the remainder of the retiree's life and this would reduce liability.
   d. Modernize the administrative infrastructure related to how the Town calculates pension benefits.

V. Brittany Birmingham, Town Matters
   1. No updates to report

VI. Rick Ledwith, Executive Director of Human Resources
   A. Meeting schedule for 2021
      1. Last meeting of the year on 11/15/2021.
      2. A 2022 schedule will be presented for review on 11/15/2021.

VII. Formal Actions
   A. Minutes
      1. Approval of the minutes for the virtual regular meeting held on Monday, September 13, 2021.

      **Motion by Chair Guzman for approval of the minutes for the virtual regular meeting held on Monday, September 13, 2021. No objections were raised.**

      **It was unanimously voted to approve the minutes for the virtual regular meeting held on Monday, September 13, 2021.**

   B. Pension Administration

      **Motion by Chair Guzman for approval of the items under Pension Administration. No objections were raised.**

      1. Memberships

      **It was unanimously voted to approve membership for:**

      **BOE – Leslier Adler, Muradiye Akcay, Osheia Blomquist, Daniella Davis, Vincenza Flynn, Alex Hasselberger, Ashley Key, Cady Kurpaska, Kaila Louw, Amelia Pingue, Wanda Rodriguez, Cynthia Sanchez, Anna Williams, and Mary Willis.**

      **Town – Zachary Berbereia, Mohammed Hossain, Hunter Humble, Samantha Inniss, Kevin Kaselouskas, Joseph Milton, Jack Paulus, Christine Pettit, Ashleigh Prucker, Yeraida Reinheimer, and Evan Riley.**

      2. Terminations and Refunds

      **It was unanimously voted to approve terminations and refunds for:**

      **BOE – Christopher Shea, Dawn Flanagan, Blanca Burns, and Caitlyn Campagna.**

      **Town – Joshua Motulski.**

      3. Applications for Approval
         a. Early retirement applications

         **It was unanimously voted to approve an Early retirement application for Lois Benedetto, BOE, and Kathleen Looney, BOE Nutrition Services.**

b. Normal retirement applications

**It was unanimously voted to approve a Normal retirement application for:**

**BOE – Eileen Flaherty, Doreen Nadeau, Angela Tokarz, and Adrienne Wuertz.**

**Town – Laura Cashman, Karen Clen, Shane McAvay, and Sandra Mickewicz.**

VIII. New Business

1. Chair Guzman will contact Corporation Counsel to discuss establishing a work group and any FOIA parameters to comply with and report back to the Board.
2. Perry Salonia requested guidance on determining the responsibilities of the Pension Board versus the responsibilities of Town Finance. Regarding the POBs, Chair Guzman explained that the decision to issue POBs was outside the scope of the Pension Board. The Pension Board's responsibility is to manage those POB assets and to adjust those investments as needed to achieve the Town's goals.

IX. Adjournment

**Motion by Chair Guzman to adjourn the meeting at 8:51 a.m. No objections were raised. It was unanimously voted to adjourn.**

Attest:

Lori Kearney

Lori Kearney, Clerk of the Board