



**Minutes of the PRIM Investment Committee Remote Meeting
Tuesday, January 30, 2024**

Committee members present:

- Treasurer Deborah Goldberg, Chair
- Joseph Bonfiglio
- C. LaRoy Brantley
- Catherine D'Amato
- Constance Everson, CFA (joined at 9:36 a.m.)
- Ruth Ellen Fitch, Esq.
- Philip Rotner (joined at 9:50 a.m.)
- Paul Shanley, Esq.
- Glenn Strehle, CFA
- Timothy Vaill

Committee members not present:

- Michael Even
- James Hearty
- Peter Monaco
- Phillip Perelmuter

The PRIM Investment Committee meeting was called to order at 9:32 a.m. Chair Treasurer Deborah Goldberg announced that the meeting was being held by internet and telephone in accordance with the provisions of Massachusetts Acts of 2022 which was most recently amended on March 29, 2023, to include an extension of the 2020 Executive Order 'Suspending Certain Provisions of the Open Meeting Law' until March 31, 2025. Accordingly, all members of the Committee participated remotely via telephone and/or internet enabled audio and video conferencing, and all votes were taken by roll call. Public access to the deliberations of the Committee was likewise provided via telephone, with presentation materials made available on PRIM's website (www.mapension.com). At the start of the meeting, the names of the members participating remotely were announced.

I. Approval of the Minutes (Voting Item)

The Investment Committee approved, by unanimous roll-call vote, the minutes of its November 14, 2023, meeting, attached as Appendix A of the Expanded Agenda, and further to authorize the Executive Director to take all actions necessary to effectuate the vote.

II. Executive Director/Chief Investment Officer Report

A. Markets and PRIT Fund Performance Summary

Michael G. Trotsky, CFA, Executive Director, and Chief Investment Officer, made comments to the Committee, including:

The PRIT Fund returns surged during the December quarter and performed strongly for the full calendar year 2023. For the December quarter the PRIT Fund was up 6.2% gross (6.1% net) and for calendar year 2023 the PRIT Fund was up 11.4% gross (11.0% net). This return equates to a net investment gain of \$10 billion, and the PRIT Fund reached \$101 billion in assets at the end of December 2023.

In the December quarter of 2022 financial markets were just beginning to rebound from a double-digit downturn. The consensus view of economists and market pundits at the time was that the economy would dip into a mild recession in calendar 2023. That did not occur. Instead, the economy continued to grow, inflation fell, bond yields peaked, and the markets took off. The S&P 500 returned

more than 26% and bonds returned more than 5% in calendar 2023; nobody would have predicted these strong returns a year ago. Once again, these outcomes support PRIM's core investment beliefs: Nobody can predict the future, so we don't try, and nobody can predict the direction of the financial markets, so we don't try.

It is important to emphasize PRIM doesn't alter asset allocations based on economic or market forecasts. Instead, we construct a well-diversified long-term portfolio with components that will perform well in a variety of market environments, and we are laser focused on controlling costs. We modestly adjust the portfolio each year using our internally developed asset allocation tools to improve the probability of achieving our mandate of funding the pension liability.

Last year at the February meeting we made very small adjustments to our long-term strategic allocation, and similarly this year's recommendation is also modest: a 1% increase in the Value-Added Fixed Income target range to 6%-12% with a focus on Other Credit Opportunities (OCO), and a 1% decrease in the Global Equities target range to 31%-41% funded from Developed Markets. These small changes increase the probability of achieving our investment objectives. The OCO allocation seeks unique exposures to credit sectors with returns targeted in the low double-digit range.

We also have discussed the fact that market downturns often create attractive investment opportunities. Throughout the downturn in the markets in 2022 the PRIM team deployed approximately \$5.7 billion in new investments which was enabled by our carefully planned commitment pacing models. We were investing steadily while other peers were pulling back. With the strong market returns during calendar 2023, that turned out to be very good timing. We continue to find attractive opportunities.

The world is full of difficult challenges, but the markets have been very strong mainly because of several factors: bond yields have peaked; inflation is trending downward; the economy has avoided a recession; employment remains strong; the Fed has stopped raising rates, and corporate earnings have remained healthy. We remain cautiously optimistic, but also acknowledge that risks remain. The main risks going forward are familiar: that inflation spikes again or remains too high; business spending or corporate earnings could weaken, or other unanticipated conditions could emerge that result in an economic slowdown or disruptions that impact financial markets. There are many moving pieces in the global economy and in the world's geopolitical situation. We can't control any of that, but we do believe the PRIT Fund is well constructed to perform well in any environment.

PRIT Fund Performance

For the one-year ended December 31, 2023, the PRIT Fund was up 11.4%, (11.0% net), underperforming the total core benchmark of 11.8% by 37 basis points (84 bps net).

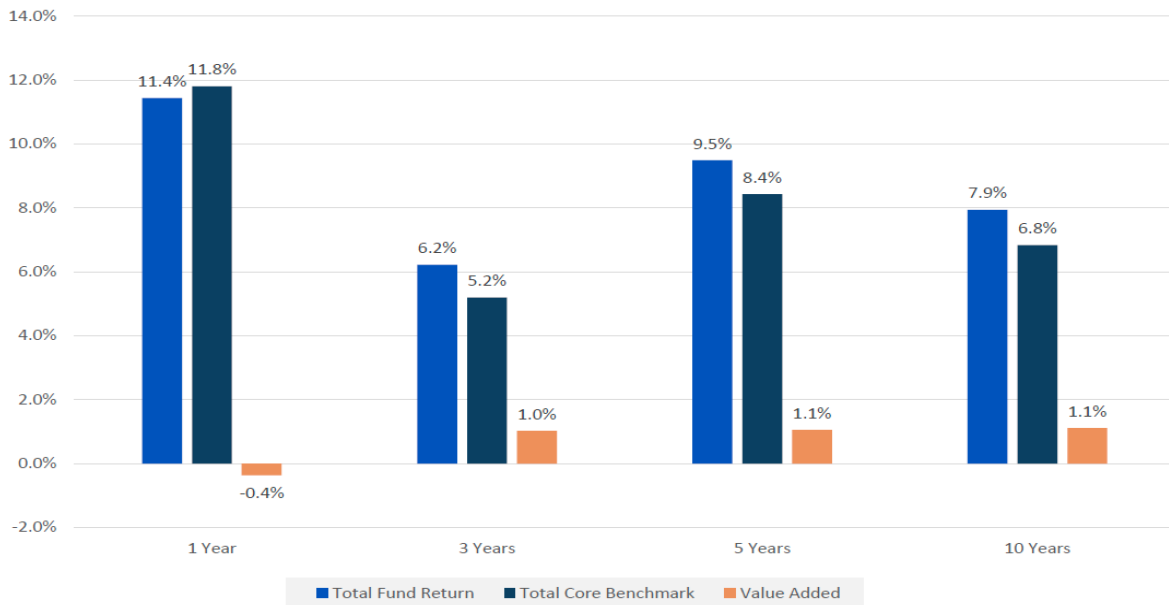
- This performance equates to an investment gain of \$10.0 billion, net of fees.
- This underperformance equates to \$770 million of value below the benchmark return, net of fees.
- Net total outflows to pay benefits for the one-year ended December 31, 2023, were approximately \$992 million.

Mr. Trotsky referred to the following charts:

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PRIT Fund Total Returns

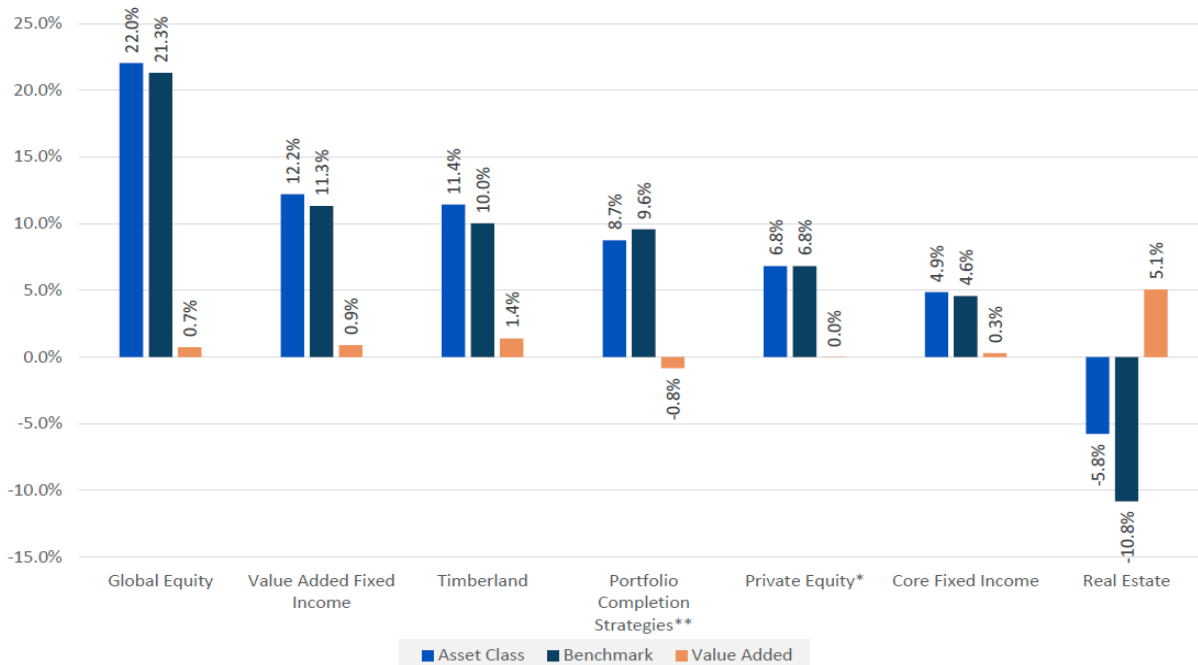
Annualized Returns as of December 31, 2023 (Gross of Fees)



Source: BNY Mellon. Totals may not add due to rounding. Total Core Benchmark includes private equity benchmark.

PRIT Asset Class Performance Summary

One-Year Ended December 31, 2023 (Gross of Fees)



Source: BNY Mellon. Totals may not add due to rounding. *Benchmark is actual performance. **Hedge Fund returns are net of fees.

PRIT Fund Annualized Returns By Asset Class

As of December 31, 2023 (Gross of Fees)

1 Year	3 Year	5 Year	10 Year
GLOBAL EQUITY 22.0%	PRIVATE EQUITY 19.2%	PRIVATE EQUITY 19.2%	PRIVATE EQUITY 19.5%
VALUE-ADDED FIXED INCOME 12.2%	TIMBER 10.4%	GLOBAL EQUITY 12.0%	REAL ESTATE 8.8%
TIMBER 11.4%	REAL ESTATE 9.1%	REAL ESTATE 7.9%	GLOBAL EQUITY 8.2%
PORTFOLIO COMPLETION STRATEGIES 8.7%	GLOBAL EQUITY 6.1%	TIMBER 7.0%	TIMBER 6.3%
PRIVATE EQUITY 6.8%	VALUE-ADDED FIXED INCOME 5.8%	VALUE-ADDED FIXED INCOME 6.3%	VALUE-ADDED FIXED INCOME 5.0%
CORE FIXED INCOME 4.9%	PORTFOLIO COMPLETION STRATEGIES 5.0%	PORTFOLIO COMPLETION STRATEGIES 4.7%	PORTFOLIO COMPLETION STRATEGIES 3.7%
REAL ESTATE (5.8%)	CORE FIXED INCOME (5.0%)	CORE FIXED INCOME 1.4%	CORE FIXED INCOME 2.8%

Source: BNY Mellon.

Investment Committee member Constance Everson, CFA, provided her comments on the economy and markets.

Organizational Updates

Mr. Trotsky announced that PRIM Board Members Theresa McGoldrick and Dennis Naughton were both reelected to their seats. They have been thoughtful and engaged Board members, and he thanked them for their continued service on the PRIM Board. Theresa represents the Massachusetts State Employees' Retirement System (MSERS) and her term's duration is three years, Dennis represents the Massachusetts Teachers' Retirement System (MTRS) and his term's duration is four years.

Internally, we promoted four outstanding individuals on the PRIM staff, and we look forward to their continued success.

Tim Doyle was promoted to Investment Officer on the Private Equity team. He joined the team as an Investment Analyst in February of 2022. Prior to PRIM, Tim spent three years at Cambridge Associates, first as an Investment Associate and then he was promoted to Team Leader and eventually to Senior Investment Associate in their Pension Practice. Prior to joining PRIM, Tim was an Investment Analyst at Mass General Brigham Investment Office. Tim has made a significant contribution to new manager underwritings and has taken over leading manager coverage responsibilities at PRIM. Tim's contributions to the team's market mapping and pro-active sourcing efforts have been outstanding.

Eliza Haynes was promoted to Investment Officer on the PE team. She joined PRIM as an Investment Analyst on the team in September of 2020. Eliza graduated from Holy Cross and had interned in their Investment Office. Upon graduation, she was hired as an Investment Fellow at the Investment Office and worked there for more than two years. During her three plus years at PRIM, Eliza's contributions have been impactful. She has contributed to and led the evaluation of many private equity funds and co-

investment opportunities. Last year Eliza received the Treasurer's citation for outstanding performance. Eliza is also leading the design and implementation of PRIM's GP-led secondary investment strategy and process.

John LaCara, Senior Investment Officer on the Real Estate and Timberland team was promoted to Senior Investment Officer - Director of Listed Real Estate and Debt Capital Markets. John joined the Real Estate and Timberland team as an Investment Officer in 2008 and was promoted to Senior Investment Officer in 2016. As you know, John's contributions are extensive. His responsibilities include oversight of private real estate and private timberland investments across various regions, property types and investment vehicles. Additionally, John manages the listed real estate investment mandates (REITS) and the private real estate leverage program, which has issued more than \$2 billion in innovative and low-cost debt facilities since 2013. Prior to PRIM John held positions at Fidelity Investments, New England Securities, and Citizens Financial Group. John holds a Master of Science degree in Investment Management from the Boston University School of Management and is a graduate of Lesley University in Cambridge, MA.

Joy Seth was promoted to Senior Investment Officer on the Portfolio Completion Strategies team. He joined PRIM in March of 2020 as an Investment Officer. Joy pursued his undergraduate degree from the University of Texas, Austin, and graduate degree from the University of Washington. He started his career as a Software Engineer at Microsoft. He then worked for the Employees Retirement System of Texas as a Senior Investment Analyst and was there for almost seven years before joining PRIM. Joy is a CFA Charter holder. During the past four years, Joy has grown to be a vital member of the team. He has become a key strategist covering Stable Value Hedge Funds; he developed PRIM's industry-leading Digital Platform by automating analytics and designing our internally designed back testing tools; and he has emerged as a thought leader in technology topics, hosting seminars to demystify complex concepts for PRIM colleagues. He actively contributes to the FUTURE Initiative by searching and vetting emerging diverse fund managers. He also dedicates significant effort to recruiting and mentoring interns from diverse backgrounds.

Lastly, Mr. Trotsky acknowledged that Colleen Nulty on the accounting team passed the CFA Investment Foundations test.

B. Summary of the 2024 Annual Plans

Mr. Trotsky stated that customary for this Board cycle annual plans are discussed. The annual plans are consistent with prior years, but this year's plans include continued support of the new Stewardship & Sustainability Committee, and the exploration of how large language models (AI) could improve our internal operations as well as our investment monitoring/analysis.

III. Asset Allocation Recommendation (Voting Item)

Maria Garrahan, Senior Investment Officer - Director of Research, presented the staff's 2024 Asset Allocation recommendation along with representatives from NEPC.

Ms. Garrahan noted the 2024 Asset Allocation recommendation represents no major changes to the prior year's recommendation. The 2024 recommendation includes a 1% increase in the Value-Added Fixed Income range to 6-12% (formerly 5-11%) and subsequently a 1% decrease in the Global Equities ranges to 31-41% (formerly 32-42%). Within Value-Added Fixed Income, the focus will be on Other Credit Opportunities (OCO) and a pro-rata decrease from Developed Market equities.

PRIM's asset allocation research program, Ms. Garrahan continued, utilizes both quantitative and qualitative insights into the analysis while focusing on a dual objective. The core framework used a probabilistic based approach to maximize the likelihood of achieving the dual objective.

Over the last few years, PRIM has been building further enhancements within strategic asset allocation research. PRIM's proactive approach to creating a robust set of tools and analysis has been especially useful given this higher interest rate environment. Forward-looking analysis is very dependent on forward expectations which is why it is only one component of the strategic asset allocation research program. Likewise, the core framework, driven by historical performance, has a different set of limitations.

PRIM's proposed 1% increase in the range of Value-Added Fixed Income will focus on the Other Credit Opportunities sub-asset class whereas the decrease in the Global Equities target range will come from Developed Markets. Ms. Garrahan explained further that the Value-Added Fixed Income is comprised of High Yield, Bank Loans, EM Debt, and Other Credit Opportunities. OCO includes the following strategies: consumer credit; corporate credit; and real estate debt. The OCO sub-asset class seeks to identify unique exposure to credit sectors, therefore tends to have higher credit sensitivity, lower interest rate risk, and less liquidity.

Ms. Garrahan noted that Vivian Liang, a member of PRIM's Research team, led the research to better understand potential implications of a higher interest rate environment. Tianyi Shi, also from the Research team, in collaboration with the Real Estate team researched the role of public and private real estate. This work reaffirmed PRIM's prior decision with regards to the role both public and private real estate play within the PRIT Fund.

Phillip Nelson, CFA, Partner – Director of Asset Allocation from NEPC, presented to the Committee a summary of NEPC's 2024 investment outlook and NEPC's asset class return assumption, noting PRIM's recommended Asset Allocation is still appropriately designed.

Jay Leu, Senior Investment Officer - Director of Risk, joined and presented a risk update and comments on the 2024 Asset Allocation recommendation. Mr. Leu noted that one of the key themes of 2023 was declining inflation. During all of 2022 and for the first half of 2023, the Federal Reserve engaged in an aggressive tightening campaign, raising the Federal Funds rate 525 bps, spread over 11 separate hikes. CPI has declined from a high of 9.1% in June 2022 to 3.4% currently. Core PCE declined from a high of 5.6% in February 2022 to 2.9% currently. The Federal Reserve's target rate for inflation is 2%. The Fed's restrictive campaign has been extremely effective at bringing inflation down almost all the way to their goal and at the same time has averted inflationary spirals, all while the economy has remained resilient and, so far, has avoided a recession. Mr. Leu summarized inflation has declined dramatically, interest rates are slightly elevated, interest rate volatility is high but down from the last two years, credit spreads are tight, and equity volatility is low.

Next, Mr. Leu provided comments on the 2024 Asset Allocation recommendation. The proposed asset allocation and the current asset allocation are roughly the same level of risk. The 1% shift from Global Equities to Other Credit Opportunities is a small change.

The Investment Committee voted, by unanimous roll-call vote, to approve a recommendation to the PRIM Board to approve the 2024 Asset Allocation Recommendation as described in the Expanded Agenda, and further to authorize the Executive Director to take all actions necessary to effectuate this vote.

IV. Public Markets

A. Performance Summary

Michael McElroy, CFA, Senior Investment Officer - Director of Public Markets, presented an update on Public Markets performance.

Mr. McElroy noted the fourth quarter of 2023 delivered positive absolute returns across public market asset classes. Global equity returns were positive in all major geographies, with the U.S. markets the highest, primarily driven by U.S. large capitalization stocks. Returns ranged from 8% in emerging markets stocks to 12% in US stocks. Value stocks generally outpaced growth stocks, except in non-US Developed Markets where growth outperformed. Smaller stocks generally did slightly better than their larger cap peers in the fourth quarter. For the one-year period, equity returns were strong, ranging between 12-25%, with U.S. large-cap exhibiting the strongest returns. The US market strength has been driven by a handful of stocks, commonly referred to as the "Magnificent 7", with these seven stocks were up 76% in 2023, whereas the other 493 stocks in the index were up 12%.

Mr. McElroy also noted that bond returns were positive with returns in Core Fixed Income up almost 9%, and the more credit-sensitive mandates were up around 4%. Rates did decline across the yield curve in the quarter, and credit spreads narrowed. Over the last 12 months, Core Fixed Income was up approximately 5%, and Value-Added Fixed Income was up 11%. The 10-year note finished the year about where it started, though with some meaningful upward and downward moves over the 12-month period.

Results for the PRIT Fund in the fourth quarter were in-line with the benchmark. Global Equities lagged its benchmark slightly, as Developed Markets Equity managers struggled to beat benchmarks in such a strong market, though the Emerging Markets Equity managers were able to outperform in the quarter. For the 1-year period, the active managers delivered strong relative performance, with PRIM's Emerging Markets Equity managers in aggregate outperformed benchmarks by over 6%, helped in part by their underweight positions in Asia. Overall Global Equity performance outperformed its benchmark. For the fixed income investments in the fourth quarter, Core Fixed Income slightly underperformed, whereas the Value-Added Fixed Income delivered good outperformance, primarily from Emerging Market Debt and credit-related managers. The results for the 1-year period were good, with Core Fixed Income and Value-Added Fixed Income managers delivering relative outperformance.

The public markets portfolio remains well-diversified across geographies, styles, and sectors, and is built to withstand market stress periods. The aggregate risk of the overall equity and fixed income portfolios remains low, and the managers have delivered good benchmark-relative value-added in recent periods, and certainly over longer periods.

B. New Investment Recommendation: Economic Index Associates (Voting Item)

Mr. McElroy presented the recommendation of an initial investment of up to \$500 million to the Economic Index Associates' (EIA) IFED-LG index (Index) through RhumbLine Advisers (RhumbLine).

The EIA IFED-LG index combines a dynamic "top-down" regime indicator with a "bottom-up" stock selection model. EIA licensed the IFED-LG index to NASDAQ in 2020 and it has been simulated since 1999. RhumbLine has been implementing the S&P 500 index for PRIM since 2021 and is the recommended investment manager to implement the EIA IFED-LG index.

The Investment Committee voted, by unanimous roll-call vote, to approve a recommendation to the PRIM Board to approve an initial investment of up to \$500 million to the Economic Index Associates IFED-LG index through RhumbLine Advisers, as described in the Expanded Agenda, and further to authorize the Executive Director to take all actions necessary to effectuate this vote.

V. Portfolio Completion Strategies

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Bill Li, CFA, CAIA, Senior Investment Officer - Director of Portfolio Completion Strategies (PCS), presented the performance of the PCS portfolio, noting PRIT Hedge Funds returned 10.6%, outperforming its benchmark by 83 bps.

Stable Value Hedge Funds delivered a 8.7%, and Directional Hedge Funds returned 16.3%. Return/Risk ratio trailing three year was 1.4X, meaning for each unit volatility risk, there had been 1.4 units of return. This continued to compare favorably vs. a 60/40 market portfolio's 0.2X Return/Risk ratio.

VI. Private Equity

A. Performances Summary and Cash Flows

Michael McGirr, CFA, Senior Investment Officer - Director of Private Equity, presented PRIM's Private Equity performance, which remains strong in the long-term, with the 3, 5, and 10-year returning 19.2%, 19.2%, and 19.5%, respectively, gross of fees. This is its fourth straight positive quarter of performance. For the July through September 2023 period, Private Equity was up 1.3% gross or 1.0% net of fees.

For the quarter and trailing year, Growth Equity and Venture Capital declined in the quarter while Buyouts returned a positive performance. PRIM's Venture Capital portfolio was down -4.3% for the quarter and is down -12.8% for the trailing one-year period. Growth Equity was down -1.5% for the quarter but is up +2.4% for the trailing one-year. Small and Mid-Cap buyouts were up approximately 1.6% for the quarter and were up 8.2% for the one-year period. Mega and Large Buyouts were up 0.6% for the quarter and up 12.6% for the trailing one-year, making it Private Equity's strongest performing sub asset class.

In terms of cash flows, distributions outpaced contributions in the fourth quarter. For the one-year period, the Private Equity portfolio received more than \$1.7 billion in cash distributions. This flipped PRIM to net cash flow positive for calendar year. With the positive performance, and modest cash inflow, assets stayed roughly the same at \$17.2 billion but decreased as a percent of the PRIT Fund (17.0%).

B. Commitment Summary

Mr. McGirr stated that Private Equity's annual plan for the calendar year 2024 will be to allocate \$2.2 to \$3.0 billion to funds, co-investments, and secondary opportunities.

The PRIM Investment Committee meeting adjourned at 11:41 a.m.

List of documents and exhibits used during the meeting:

- A. Minutes of the November 14, 2023, PRIM Investment Committee Meeting
- B. PRIT Fund Performance Report (December 31, 2023)
- C. BNY Mellon Gross of Fees Performance Report (December 31, 2023)
- D. 2024 PRIM Staff Annual Plans
- E. 2024 Asset Allocation Presentation
- F. 2024 NEPC Asset Allocation Presentation
- G. Economic Index Associates Presentation