NOTE: These minutes were approved and executed at the February 21, 2014 Independent Investment Committee meeting.

Independent Investment Committee January 24, 2014

Public Minutes

New Hampshire Retirement System 54 Regional Drive Concord, NH 03301

Committee Members: Harold Janeway, Chair, David Jensen; Patrick O'Donnell; Catherine Provencher; and Hersh Sosnoff.

NHRS Trustees: Dean Crombie; Dick Gustafson, Ph.D; Germano Martins; George Walker; and Jack Wozmak.

Staff: George Lagos, Executive Director; Larry Johansen, Director of Investments; Jack Dianis, Director of Finance; Jeff Gendron, Investment Officer, Scott Needham, Investment Analyst; and Greg Richard, Investment Analyst.

NEPC, LLC: Kevin Leonard, Partner and Senior Consultant; Sean Gill, Partner; and John Minahan, Senior Investment Strategist.

Mr. Janeway called the meeting to order at 9:01 a.m.

Mr. Janeway surveyed the Committee for comments on the draft public and non-public minutes of the December 20, 2013 Investment Committee meeting. A motion to approve the public and non-public minutes of the December 20, 2013 Investment Committee meeting was made by Mr. Sosnoff and seconded by Ms. Provencher. The motion carried unanimously.

Mr. Johansen provided a brief update on the returns of the Marketable Investments portfolio through December 31, 2013. For the six-month fiscal year-to-date period ending December 31st the Marketable Investments portfolio returned 12.0%, matching the return of its custom benchmark of 12.0%. The 1-year return through December 31, 2013 for the Marketable Investments portfolio was 19.3%, 60 basis points above the 18.7% return of the custom benchmark for the same period. The 5-year return of the Marketable Investments portfolio through December 31, 2013 was 14.3%, 70 basis points ahead of the custom benchmark return of 13.6%. Mr. Johansen stated that the Total Fund returns for

the 1-year, 3-year and 5-year periods ending December 31st were 18.3%, 10.6% and 12.9%, respectively, all of which met or exceeded the returns of the custom benchmark. He noted that a detailed overview of Total Fund performance for the period ended December 31st would be presented at the February Committee meeting.

Mr. Johansen referred to the "Six-month Investment Work Plan" dated January 10, 2014. He noted that the work plan for the 4th quarter of Fiscal Year 2014 has been added for the Committee's consideration. He commented that the work plan remains flexible and subject to change as the Committee deems appropriate. A motion was made by Mr. O'Donnell and seconded by Mr. Jensen to approve the investment work plan for the 4th quarter of Fiscal Year 2014. The motion carried unanimously.

Mr. Johansen provided an update on the status of the liquidation of the fund-of-funds absolute return portfolio managed by Arden Asset Management ("Arden"). He indicated that to date, NHRS has received approximately \$36 million in proceeds from Arden, which represents approximately 81% of the portfolio's pre-liquidation market value. He commented that the remainder of the portfolio is invested in less-liquid assets, and is expected to be distributed to NHRS slowly over time.

Mr. Johansen mentioned that Staff and NEPC held interviews in January with emerging market equity managers and unconstrained fixed income managers, with the expectation that one or two of the fixed income managers will be selected to make an educational presentation at a future Committee meeting. A subset of the emerging market equity managers will make portfolio presentations at today's Committee meeting.

Mr. Joseph Carson, Director of Global Economic Research and Ms. Elizabeth Smith, Senior Managing Director of Public Funds, of AllianceBernstein provided a brief introduction of themselves and their firm. They referred to the "Global Economic Outlook and the Changing Structure of the Business Cycle over Post War Period" presentation, dated January 2014. A lengthy discussion with the Committee followed.

In response to Committee member questions, Mr. Carson stated AllianceBernstein's 2014 forecast for U.S. real GDP is 3.3% with the primary drivers being lower energy and input costs, business investment and housing expansion. He explained the structural issues regarding the labor force and unemployment rate and noted that there is also a cyclical component.

Mr. Carson summarized the economic outlook for the rest of the world including Europe, Asia and Latin America and highlighted the relevant risk factors associated with each.

Mr. Carson provided a review of the change in business cycles and explained that the traditional cycle began with income driving demand eventually resulting in price misalignments in the real economy and leading to inventory cycles. He compared this traditional cycle to the modern cycle which began in the late 1990s in which wealth has been driving demand eventually resulting in price misalignments in asset markets and leading to debt/asset cycles. Mr. Carson stated that asset price changes now act as the accelerator, either up or down, to the economy.

In response to additional Committee member questions, Mr. Carson opined that the shift from an income driven economy to a balance sheet driven economy would be more of a concern if U.S. manufacturing production was not increasing along with productivity and technological advances. He concluded by noting that profit margins are at an all-time high in part due to these technological advances.

Mr. Matthew Marra, Managing Director and Senior Product Strategist; Mr. Douglas McNeely, Managing Director of Institutional Client Business; Ms. Shannon Nelson, Associate of Institutional Client Business; and Ms. Jillian Sandler, Analyst, of BlackRock provided a brief introduction of themselves and their firm. They referred to the "Rethink Fixed Income" presentation, dated January 24, 2014. A lengthy discussion with the Committee followed.

In response to Committee member questions, Mr. Marra confirmed that in today's low interest rate environment, for the first time in the history of the Barclays Aggregate index, the coupon rate is lower than the price volatility of the index. He stated that the senior, high-quality fixed income sectors such as U.S. Treasuries and investment-grade corporates are less attractive compared to junior sectors given that investors are not being compensated enough for the duration risk. Mr. Marra opined that, for this reason, BlackRock favors a more flexible approach to fixed income investing and noted that the market has recently labeled this approach as "unconstrained". He confirmed that an unconstrained or flexible approach does not guarantee higher returns than core fixed income investments but that the outcomes are dependent on the investment process and investment choices made.

In response to additional Committee member questions, Mr. Marra stated that the largest embedded risk for the unconstrained fixed income

approach is a substantial selloff in risk assets such as equities and a corresponding rally in U.S. Treasuries. Mr. Marra concluded by stating that the return target of the BlackRock unconstrained strategy is that of U.S. T-bills plus 4%-5% over a full market cycle.

Mr. John Minahan, Senior Investment Strategist, of NEPC provided a brief introduction of himself and referred to the "Asset Allocation: Assumptions and Behavior" presentation, dated January 24, 2014 and the NEPC white paper titled "Shedding Light on the Future", dated November 2013. A lengthy discussion with the Committee followed.

In response to Committee member questions, Mr. Minahan explained how NEPC introduces behavioral elements into its asset class assumptions such as returns and correlations. He confirmed that although historical data is used as a starting point, the assumptions are forward-looking and do include the behavioral elements. In response to a Committee member suggestion, Mr. Minahan stated that NEPC would work towards providing visual data to assist the Committee in better understanding how the aforementioned behavioral elements are incorporated into the NEPC asset class assumptions.

In response to additional Committee member questions, Mr. Leonard confirmed that the updated NEPC asset class assumptions would be provided to the Committee at its February meeting, along with a NEPC model portfolio. Mr. Minahan concluded by thanking the Committee for their suggestions on improving the data NEPC provides regarding their asset allocation assumptions.

Mr. Janeway entertained a motion to convene into non-public session under RSA 91-A:3, II(c) for the purpose of discussing a matter which, if discussed in public, would likely affect adversely the reputation of a person other than a member of the public body. A motion was made by Mr. Jensen and seconded by Mr. O'Donnell to enter into non-public session, in accordance with the aforementioned provision.

Roll call vote:

Aye: Mr. Janeway, Mr. Jensen, Mr. O'Donnell, Ms. Provencher and Mr. Sosnoff.

Nay: None

Motion carried.

The Committee discussed the recent organizational change at PIMCO which manages a core plus fixed income portfolio on behalf of NHRS. Mr. Johansen and Mr. Leonard provided details on the change and referred to a handout from PIMCO dated January 21, 2014 and noted that effective as of mid-March Mr. Mohamed El-Erian will step down as co-Chief Investment Officer and Chief Executive Officer. Mr. Johansen stated that Mr. Bill Gross, founder and co-Chief Investment Officer, will continue to serve as PIMCO's CIO at that time. He apprised the Committee that PIMCO has appointed two Deputy CIOs: Mr. Andrew Balls and Mr. Dan Ivascyn. In addition, Mr. Doug Hodge has been elected as CEO and Mr. Jay Jacobs as President.

The Committee discussed the recent organizational change at Thornburg Investment Management ("Thornburg") which manages a core non-U.S. equity portfolio on behalf of NHRS.

Mr. Johansen and Mr. Leonard provided details on the change and referred to a handout from Thornburg dated January 16, 2014 and noted that effective April 1, 2014 Mr. Lei Wang and Mr. Bill Fries will shift their focus from the International Equity Strategy (institutional), the strategy in which NHRS invests, to the International Equity Value Strategy (retail). Mr. Johansen stated that, at that time, Ms. Wendy Trevisani will serve as the portfolio manager of the International Equity Strategy for which she has been a co-manager since 2006 alongside Mr. Fries and Mr. Wang. Ms. Trevisani will be supported by Mr. Charlie Wilson and Mr. Rolf Kelly, both whom support her on other Thornburg funds.

Mr. Johansen confirmed that both PIMCO and Thornburg will continue to be monitored closely by Staff and NEPC and that any developments would be communicated to the Committee.

The Committee discussed the current status of a commitment made to a private debt general partner. Mr. Johansen provided an update and confirmed that he will reach out to the general partner to discuss a potential closing date on the investment and will update the Committee accordingly.

A motion was made by Mr. Sosnoff and seconded by Mr. Jensen to conclude non-public session.

Roll call vote:

Aye: Mr. Janeway, Mr. Jensen, Mr. O'Donnell, Ms. Provencher and Mr. Sosnoff.

Nay: None

Motion carried.

Mr. Leonard briefly described the search process that led to today's emerging markets ("EM") equity manager presentations and provided an introduction of the presenting managers. He referred to the "Emerging Market Equity Manager Search" presentation dated January 2014. Mr. Leonard described how the manager candidates would fit into the portfolio.

Mr. Christopher Lively, Portfolio Manager and Ms. Lindsay Chamberlain, Vice President of Client Service/Marketing, of Axiom International Investors ("Axiom") provided an overview of their firm and the capabilities of its emerging markets equity strategy. They referred to the "Emerging Markets Equity Management" presentation as of December 31, 2013.

In response to questions, Mr. Lively stated that the annual turnover in names within the emerging markets equity strategy is approximately 40%-50%. He confirmed that the information used to analyze companies is public and not proprietary. Mr. Lively explained that the portfolio's percentage of earnings revisions, approximately 50% up and 50% down as of December 31st, exceeds that of the benchmark. He concluded by confirming that each country within emerging markets is very different and needs to be analyzed individually as opposed to making generalized statements regarding EM countries as a whole.

Mr. Conrad Saldanha, Managing Director and Portfolio Manager of Global Equity, and Ms. Carter Reynolds, Managing Director and Team Leader of Public Funds Relationship Management, of Neuberger Berman ("Neuberger") provided an overview of their firm and the capabilities of its emerging markets equity strategy. They referred to the "Emerging Markets Equity" presentation, dated January 24, 2014.

In response to questions, Mr. Saldanha stated that the annual turnover in names within the emerging equity strategy was approximately 35% over the prior 12-month period and has historically been around 25%. He concluded by confirming that the firm's institutional clients have stayed with the emerging markets equity strategy despite the asset class' recent volatility noting that, as long-term investors, opportunities are presented at these times to add to the strategy.

The Committee discussed the emerging market equity presentations as well as the performance and investment team turnover of Batterymarch Financial Management.

A motion was made by Ms. Provencher and seconded by Mr. O' Donnell to terminate the investment management agreement with Batterymarch Financial Management and allocate 100% of the assets to emerging market equity manager Neuberger Berman, subject to successful contract negotiations. The motion carried unanimously.

On a motion by Mr. Sosnoff, seconded by Ms. Provencher, the meeting adjourned at 2:20 p.m.