

Minutes of the meeting held on June 1, 2016

Present: Francis Murphy – Chairman, James Monagle, Michael Gardner, John Shinkwin, Ellen Philbin, Louis DePasquale, Rafik Ghazarian and Chris Burns.

Absent: Nadia Chamblin-Foster

The meeting was called to order at 11:06 AM. The meeting was digitally recorded.

Ghazarian reviewed Segal Rogerscasey's written analysis of investment performance for the period ending March 31, 2016. The overall markets have delivered mixed results over the last quarter. Emerging markets posted strong returns, while there were losses in the EAFE index. Ghazarian noted that he was pleased that the Aberdeen investment was finalized in time for the system to benefit from the strong performance in the last quarter. Fixed income and real estate also showed positive returns.

Ghazarian reviewed the system's current asset allocation. The system remains significantly overweighted to equities, but some of these funds will be drawn down as new managers are funded. The system is in the process of finalizing several transactions. Ghazarian stated that the MFS account will be liquidated and that the Emerging Markets Debt managers should be funded by the end of the day. The system will also fund the RhumbLine Russell 1000 Value index fund. Gardner noted that upon the execution of those transactions, the system would have about 16% of assets in the Russell 1000 Value/Growth funds, and about 2% in the S&P 500. Ghazarian stated that Cambridge now has a slight overweight to the Growth fund, at \$94 million, vs. \$84 million to be transferred to the Value fund. He stated that he would recommend that the growth fund be drawn down first in order to fund new managers, and to bring both sides into balance. The S&P 500 account is a core fund. Historically, the system has used this account to park excess cash, and to provide liquidity when necessary. He stated that the Board may wish to consider further consolidating these managers. The system is working on completing the contract with IFM, the new infrastructure manager. Ghazarain stated that Segal is continuing to work on identifying potential timber managers, but noted that very few of them are currently raising funds.

Overall, the Total Fund was valued at \$1.072 billion, representing a gain of 1.01% during the quarter. The fund underperformed with the policy index return of 1.74%. In the last year, the fund has seen significant underperformance from Wedge and Brandywine, although both have stronger returns over the long term. Ghazarian stated that Brandywine's losses are primarily due to currency effects, and that the benchmark consists entirely of US-dollar denominated bonds. Both real estate managers are currently underperforming their benchmark, although Ghazarain stated that this could be attributed to higher levels of leverage in the ODCE fund. The PRIT Hedge Fund sleeve has continued to underperform.

The Board reviewed Segal's analysis of the responses to the core open-end real estate search. The mandate is \$80 million, currently split between two managers, UBS and Invesco. The Board received 25 responses to the RFP. Segal has rated both of the incumbent managers as "Recommended" and has also given "Recommended" ratings to five other managers. In reviewing the individual candidates, Ghazarian noted that Intercontinental Real Estate Corp. has a small value-added component in its portfolio. None of the other managers include this type of investment. In comparing returns, Intercontinental, Principal and JP Morgan have posted the strongest performance. Invesco's performance has been somewhat lower than the other candidates. The Chairman stated that, given the limited number of holdings in each portfolio, he would favor retaining the two incumbent managers, and adding a third from among the other candidates. The Director stated that the two incumbents could be retained without conducting interviews. Ghazarian

stated that the Intercontinental portfolio would overlap somewhat with the Rockwood portfolio, which focuses on value-added properties. He also reviewed a Risk/Return analysis, showing that UBS has the lowest volatility of any of the candidates and Intercontinental is higher risk and higher return. Invesco has provided the lowest returns, with the highest degree of volatility. Ghazarian noted that the degree of leverage is not considered when comparing risk. He stated that the real estate sleeve is currently in-line with the allocation target. If the Board wishes to consider adding an additional manager, the funds would have to be drawn down from the existing real estate managers. Gardner stated that he remains concerned that the system has too many managers to monitor effectively, and that he would favor having only two managers manage the mandate. Shinkwin moved to invite Intercontinental and JP Morgan to interview with the Board. Monagle seconded the motion and it was voted unanimously.

The Board reviewed Segal's analysis of the responses to the custodial bank search. The Board received three responses to the RFP. The search was conducted due to the retirement office's displeasure with the service provided by State Street. The Director described issues that the office has had since State Street moved their custodial operations to Kansas City in 2014. She stated that the State Street representatives have had little training, and are slow to respond to concerns. Several other Massachusetts systems have switched to a new provider, including two who were on State Street's list of client references. Ghazarian stated that the fee calculation was somewhat complicated, with each bank charging on a number of different line items. Comerica was estimated at \$159,500 annually, People's United at \$241,880 and State Street at \$151,029. The Director stated that State Street's quote represents a significant discount from their current rate. The Board has paid nearly \$250,000 annually to State Street for the last several years. Gardner moved to invite Comerica and People's United to interview with the Board. Monagle seconded the motion and it was voted unanimously.

The Board reviewed a report prepared by Segal Rogerscasey regarding overlap between the Russell 1000 Value and Russell 1000 Growth indices. Approximately 30% of holdings are listed on both indices. Gardner noted that given the overlap, the fund might achieve some savings by investing only in the core Russell 1000 fund.

The Board reviewed a schedule of completed and pending manager searches. The Board must still issue RFPs for core bond funds, currently managed by Pyramis and IRM; index funds managed by SSGA; and the mid cap value fund, currently managed by Wedge. Ghazarian stated that he hopes to complete all searches by the end of 2017. He recommended starting with the bond managers. Both managers in this sleeve have performed well, and it may not be necessary to conduct full interviews. He recommended issuing the index fund RFPs next. The Board may wish to consider using that process as an opportunity to consolidate managers in the domestic equity sleeve. If, as part of that process, the Board opts to terminate Wedge and transfer their holdings to an index fund, it would not be necessary to issue an RFP for a mid cap value manager. Gardner noted that the custodial bank RFPs were due in September 2015, but were only being considered by the Board nine months later. Ghazarian stated that Segal does not normally evaluate custodians and that additional work was required. Their evaluation of investment managers generally takes between six and eight weeks.

The Board reviewed a memorandum from Segal describing the system's exposure to the production or upgrading of nuclear weapons systems. Ghazarian stated that the system's holdings are minimal. The MFS portfolio contains holdings of Northrup Grumman, Lockheed Martin and Honeywell. IRM has holdings of BAE systems. MacKay Shields has holdings of Gencorp, Inc. and AECOM CUSIP. Ghazarian stated that he only requested information from separately managed portfolios, as the system would not be able to alter holdings within commingled funds. Segal reviewed various socially responsible mutual funds and found none that screened for nuclear weapons, although

several screen out all weapons manufacturers. RhumbLine also reported that they do not have the capability to run an index fund that screens out nuclear weapons. Gardner stated that he felt that, acting as fiduciaries, the Board has no authority to divest for a social purpose, except as mandated by the State legislature. Murphy noted that the companies listed in Segal's memo are involved in the production of many products other than nuclear weapons. Monagle stated that he was concerned about fielding requests from other groups who want to push a social agenda through the Retirement Board. DePasquale urged the Board to be diplomatic in responding to the City Council. Gardner moved to forward Segal's memo to Attorney Quirk and to request that he draft a letter responding to the City Council, and to have the draft reviewed by the Board before sending it. Monagle seconded the motion and it was voted unanimously.

Frank Sposato and Ben Wulfsohn represented Lazard Asset Management. A written portfolio review was submitted to the Board. There have been no changes to the portfolio management or strategy over the last year. The portfolio has shown strong returns in 2016, returning 12.02% YTD vs. the index at 6.29%. This marks a significant turnaround from the poor performance in 2014 and 2015. At that time, the portfolio was hurt by currency effects from the strong US dollar. He also attributed some of this underperformance to geopolitical factors, particularly in Russia, Brazil and China. Stocks in countries considered more stable, such as South Korea, saw significant gains. This resulted in a situation in which expensive stocks gained in value while cheap stocks got cheaper. There was very little turnover in the portfolio, as Lazard chose not to sell during a falling market. Over the last six months, fear has been less of a factor, and prices have risen. He attributed this to a general feeling that the US dollar will weaken as interest rates rise. He also cited rising prices for oil and other commodities. Finally, he stated that China seems more likely to avoid a hard landing as their economy slows. Wulfsohn stated that he felt the markets were now in neutral territory, neither fearful nor overly exuberant.

Bernard Horn, Jason Crawshaw and Gerald Cosgrove represented RBC Global Asset Management. A written portfolio review was submitted to the Board. There have been no changes to the portfolio management in the last year. In 2015, the portfolio was able to defend in a down market, returning 0.45% vs. the index at -5.22%. The worst performers over the last year came mostly from the oil industry. RBC sold off all oil exploration and production stocks. This was done due to their feeling that oil prices will remain relatively low, as supply has continued to exceed demand. While demand in the third world is growing, the US and Europe continue to conserve and reduce demand for oil. At the same time, OPEC has not moved to cut production, as countries such as Venezuela are so desperate for revenue that they continue to produce as much as possible, even as prices remain low. British homebuilders have also continued to perform well. Horn noted there was some weakness in the first quarter due to concerns about the UK voting to leave the EU. He stated that ultimately, he did not expect this to have a major impact, regardless of the outcome of the vote.

John Norman represented Wedge Capital Management. A written review of the portfolio was presented to the Board. There have been no changes to the portfolio management or strategy. The past year has seen significantly worse performance than 2014, with the portfolio returning -7.63% vs. the index at -3.39%. Norman described issues that caused the losses. He described the holding of Lincoln National, which fell 31% over the last year as their sales started to slip. Wedge has sold all shares of Lincoln. The firm was also hurt by the holding of Dana, which fell 32%. Wedge continues to hold this stock, feeling that due to their backlog of contracted work, the price should recover. Brunswick Corporation also saw losses, due to lower earnings. Norman also described the holding of Marvell Technologies. This stock saw losses due to internal audit issues. Norman stated that the company has removed two top executives and may be a target for a takeover in the next year. Wedge also continues to hold both Brunswick and Marvell. He noted that the firm has not rebalanced these stocks. Norman stated that the firm will sometimes buy falling stocks, but in these cases, the firm felt that there were better investments in other areas. He stated that Wedge continues

to believe that their strategy of long holding periods will result in higher returns, and he urged patience in waiting out periods of losses.

Maria Bascetta and Stephen Olstein represented UBS. A written overview of the portfolio was presented to the Board. There have been no changes to the firm's investment strategy. Bascetta reported that Ron Urdanick retired as Head of Acquisitions and was replaced by John Connelly. The retirement has been planned, and the transition has been seamless. Olstein reviewed the portfolio's returns. He emphasized that the UBS portfolio maintains a lower level of leverage than the ODCE index at 13.6% vs. the ODCE at 23.1%. Returns over the last five years have been somewhat less than the index, mainly due to the lack of leverage. Olstein stated that he felt that lower leverage was a better long-term strategy, noting that UBS saw much lower losses in 2008-2009, and that the ODCE's recent outperformance has not been sufficient to make up their losses during that period. Over the last three years, UBS has rebalanced their portfolio by acquiring more west coast properties, which are now equal to the east coast holdings. Olstein described the firm's appraisal process. The firm uses an independent appraiser to assess the value of each property on a quarterly basis. Olstein noted that there are occasional gaps between a sale price and the most recent appraised value, but that over time, sales proceeds tend to slightly exceed appraised value. He also described the firm's timing in selling properties. He noted that, due to low leverage, the firm is never forced to sell a holding, and can wait to sell at the top of the market. 2015 saw the highest sales proceeds in the history of the portfolio.

Richard Lawrence, Brian Giuliano and Jonathan Cordo represented Brandywine. A written portfolio report was submitted to the Board. There have been no significant changes to the portfolio team or investment strategy, and the firm is working on developing succession plans for the senior partners, although no immediate departures are anticipated. The portfolio has run well behind the benchmark over the last year, returning -0.12% vs. the Citigroup WGBI Ex-US at 7.74%. Cordo noted that currency effects have more effect on the Brandywine portfolio than the benchmark. Lawrence reviewed the history of US dollar strength, noting that it tends to revert to the mean. The dollar has been strong for the past four years, which is an unusually long period of strength. 2016 appears to be the beginning of a weaker dollar environment, and returns to date this year have been stronger. Lawrence stated that, historically, the dollar has tended to weaken following interest rate increases. The portfolio maintains the strategy of having zero holdings of Japanese bonds, as it has for the last several years, and also maintains a significant underweight to the Euro. In the past year, these positions significantly hurt performance.

Mark Davidson represented AEW. A written overview of the portfolio was presented to the Board. The fund is almost fully liquidated. There is one unsold residential unit in the Menkes Gibson Square investment, but it should be sold within the next thirty days. Following liquidation, the fund will hold back \$10 million for potential contingent liabilities. Assuming no unanticipated liability, this last piece will be returned to investors in the first quarter of 2017. The fund should terminate with a net IRR of 2.1%. Davidson noted that this was significantly less than he had anticipated at the time of the investment, but that he felt that the fund had performed strongly given the timing of the investments in 2005 and 2006. He reminded the Board that the firm had stopped investments in 2007. AEW is currently raising their seventh fund, and is taking a cautious approach to this portfolio, since the real estate market may be approaching a peak.

Ghazarian reviewed a written proposal to extend the contract with Segal Rogerscasey for an additional two years, ending on December 31, 2018. The proposed fee would be \$172,000 for 2017 and \$176,000 for 2018. The Board also reviewed PERAC's schedule of fees paid by other retirement systems. Cambridge will pay \$160,000 in 2016. Ghazarian reminded the Board that Segal was performing significantly more searches than were required in the past. Monagle and Shinkwin stated that they were very pleased with Segal's work. Gardner noted that the bulk of the

searches required under Chapter 176 are now done, and that the Board is moving in the direction of indexing and using PRIT for certain asset classes, which should reduce the volume of Segal's work. He said he would prefer to negotiate the fee increase. He also stated that he felt Segal had not done enough to keep the system in line with target allocations to timber and private equity. Shinkwin moved to extend the contract for two years. Monagle seconded the motion and it was voted unanimously. Monagle moved to accept Segal's proposed fee schedule. Shinkwin seconded the motion and it was voted unanimously.

Without objection, the Board agreed to retain UBS without conducting an additional interview. The Board scheduled an additional meeting to conduct interviews on Wednesday, July 13th at 11:00 am. The Board agreed to interview Invesco, in addition to Intercontinental and JP Morgan.

Monagle moved to adjourn at 3:45 PM.