NEPC, LLC

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To: Tracy Elliott, Director of Finance and Controller

From: Jay E. Roney, CTP, Partner and Kelly Regan, Senior Consultant

Date: July 10, 2017

Subject: Rate of Return Assumption – FY 2017

NEPC would like to update our return expectations for the ***University of Maine System Managed Investment Pool***. NEPC's analysis suggests that a return expectation in the range of 6.50% to 7.50% is reasonable. Based upon data highlighted below, there is support for a return assumption of 7.50%. This memo provides background and support for this recommendation.

<u>NEPC Assumptions</u>

The NEPC Asset Allocation Committee is responsible for the development of our capital market assumptions. The Committee is drawn from a cross section of NEPC's senior personnel representing both the research and consulting functions of the firm, with expertise covering both public and private markets. Prior to publication, the assumptions are reviewed and approved by the Partner's Research Committee, a separate group composed of NEPC Partners responsible for oversight of the firm's research efforts.

The Asset Allocation Committee publishes two sets of capital market return expectations, a longer-term (30 year) and a shorter-term (5-to-7 year) set. While the long-term time horizon for the Plan would argue for using the 30 year assumptions, the Plan's current asset allocation policy is not likely to persist beyond the shorter-term time frame. We therefore believe that a blended approach is preferable.

Many asset class returns are fairly consistent over a long time horizon, thus, the historical record provides the basis for our longer term expectations. Asset class performance can be much more volatile on a shorter-term basis. In order to develop our 5-7 year forward-looking assumptions, we complement our historical analysis with an in-depth look at the current market environment. This forward-looking analysis is based on current market pricing and a building blocks approach. The focus here is on key economic observations (inflation, real growth, valuation measures) and structural themes that can have meaningful effects on asset class performance.

Below please find the 2017 5-7 year and 30 year expected market returns for the University of Maine System's Managed Investment Pool. Please note that there will be significant volatility around these expected returns each year:

Asset Class	Policy Weight	NEPC 5-7 Year 2017	NEPC 30 Year 2017
Large Cap Equities	16.0%	5.75%	7.50%
Small/Mid Cap Equities	6.0%	6.00%	7.75%
International Equities	11.0%	7.25%	7.75%
International Small Cap Equities	5.0%	7.50%	8.25%
Emerging Market Equities	3.5%	9.50%	9.50%
Emerging Small Cap Market Equities	3.5%	10.00%	9.75%
Domestic Core Bonds	5.0%	2.65%	4.00%
TIPS	8.0%	3.00%	3.75%
Bank Loans	5.0%	5.25%	6.00%
Global Asset Allocation	23.0%	6.03%	6.71%
Real Assets (Timber)	3.0%	6.00%	6.00%
Private Equity (Core)	2.0%	8.25%	9.50%
Hedge Funds	9.0%	5.95%	6.47%
TOTAL	**100.0%**	**6.50%**	**7.50%**

(Note: Consistent with past years, the total plan return is not the weighted average of the asset class returns above. Returns above are all geometric average returns. The total plan return is calculated using the arithmetic average return, volatility and correlation of each asset class)

As you can see, our return expectations range from 6.50% to 7.50%. Our assumptions are based on market returns. On that basis, they do not include investment management fees or assumptions for active manager out-performance, or alpha. Each manager structure is different, but NEPC believes in active management and our clients have beaten index returns for most years in most asset classes.

As a result of these inputs, we are comfortable with the use of 7.50% as an expected return, noting that there will be significant volatility around this expected return each year.

Please call us at (617) 374-1300 with any questions.