These minutes are Approved and Final. Full Board review and decision took place at the August 16-17, 2016 Regular Meeting of the Board.

MONTANA BOARD OF INVESTMENTS
DEPARTMENT OF COMMERCE
2401 Colonial Drive, 3rd Floor
Helena, Montana
MINUTES OF THE MEETING – April 5, 2016

BOARD MEMBERS PRESENT:

Mark Noennig, Chairman
Kathy Bessette
Terry Cohea
Quinton Nyman
Jack Prothero
Marilyn Ryan
Jon Satre
Sheena Wilson

BOARD MEMBER ABSENT:

Karl Englund, Vice Chairman

LEGISLATIVE LIAISON PRESENT:

Representative Kelly McCarthy – (joined via telephone 11:00 AM)

LEGISLATIVE LIAISON ABSENT:

Senator Bob Keenan

STAFF PRESENT:

Polly Boutin, Associate Financial Manager
Jason Brent, CFA, Investment Analyst
Geri Burton, Deputy Director
Dana Chapman, Board Secretary
Frank Cornwell, CPA, Associate Financial Manager
Craig Coulter, Investment Analyst
Joseph M. Cullen, CFA, CAIA, FRM Chief Investment Officer
Roberta Diaz, Investment Accountant
David Ewer, Executive Director
Julie Feldman, CPA, Financial Manager
Julie Flynn, Bond Program Officer
Tim House, Investment Analyst
Douglas Hill, In-State Portfolio Manager
Ethan Hurley, CAIA, Director of Private Investments
Ed Kelly, Investment Analyst
Teri Kolnik, CFA, Investment Analyst
Eron Krpan, CIPM, Investment Analyst
April Madden, Investment Accountant
Savannah McCormack, Administrative Assistant
Rande Muffick, CFA, Director of Public Market Investments
Mary Noack, Network Administrator
Kelsey Poore, CPA, Investment Accountant
Jon Putnam, CFA, FRM, CAIA, Investment Analyst
John Romasko, CFA, Investment Analyst
Nathan Sax, CFA, Director of Fixed Income
Steve Strong, Investment Analyst
Louise Welsh, Senior Bond Program Officer
Maria Wise, Administrative Assistant
Dan Zarling, CFA, Director of Risk Management

GUESTS:

Jim Voytko, RVK, Inc.
Becky Gratsinger, CFA, RVK, Inc.
Cliff Sheets, CFA, Retired CIO
Herb Kulow, CMB, In-State Loan Program (Contracted)

CALL TO ORDER

Board Chairman Mark Noennig called the regular meeting of the Board of Investments (Board) to order at 9:33 a.m. As noted above, a quorum of Board Members was present. Chairman Noennig advised video recording of the meeting was underway and called for public comment. There was none.

ADMINISTRATIVE BUSINESS

Executive Director Ewer introduced Mr. Douglas Hill who has joined BOI as the In-State Portfolio Manager. Mr. Hill has many years of experience as a senior commercial bank officer at Stockman's Bank in Sidney and added staff is delighted to welcome Mr. Hill.

Chairman Noennig welcomed Mr. Hill on behalf of the Board.

Human Resource Committee Report

Chairman Noennig stated he conducted the HR Committee meeting as Committee Chairman Englund was absent. The Committee noted the hiring of Mr. Hill who began at BOI yesterday, April 4. The Committee reviewed and approved staff recommended revisions to the Organizational Chart and is recommending approval by the full Board.

Executive Director Ewer noted all Board members at the meeting were also present at the HR Committee meeting and asked if there were any questions on the Organizational Chart. Position titles are now more in line with functionality; risk management and compliance are in alignment and investment staff now report to directors. One open exempt position remains, and although staff is not sure of the time line, the position will be filled at some future date. Staff structure will continue to evolve going forward. Staff is recommending the full Board consider and adopt the changes to the Organizational Chart.

> Chairman Noennig made a motion to accept the revised Organizational Chart. Member Jon Satre seconded the motion.
>
> Director Ewer stated the credit analyst position has been converted to an investment analyst position and one summer intern will be hired in May, which is reflected on the chart. There was no further discussion. The motion carried.

Public Employees' Retirement System (PERS) and Teachers' Retirement System (TRS) Updates

Member Sheena Wilson stated the PERS Board met with the Governor's Office to discuss a plan for the next legislature to seek funding for the two retirement systems that are out of compliance on funding status. The new IT system project is progressing and will be wonderful when completed; however, it has had some hiccups. Training on the new system for member employers in the counties and cities is under way, as those will be first areas to go live; the projected go live date is later this month, although it appears there may be a slight delay.

The PERS Board is also involved in a new Helena Independent Record (IR) records request submitted by an IR reporter. The request is asking for complete records on all retirees, including how long they worked, benefits received, etc. The PERS Retirement Association is opposed to any disclosure of information; however, an opinion from then Attorney General Steve Bullock ruled retiree benefit information is public information. The AG opinion was very clear, and is the law of land unless changed by a court decision. Although some personal information may be kept private, retiree names and the amounts they receive is public. The Association of Montana Retired Public Employees is opposed to releasing information and may hire an attorney to fight the request. Member Wilson stated she generally favors open records, and the AG opinion is clear, although traditionally, the Association takes the view that pension information should be protected as private.

Member Jon Satre asked if the request is for how much each retiree receives in retirement benefits.

Member Wilson stated yes, that is correct.

Member Marilyn Ryan added the Denver attorney who made the prior request to TRS was involved in real estate, and has made no further contact at this point. TRS received the same request as PERS from the IR reporter. The IR request is fairly broad, such as job title of each person receiving benefits; and although salary may be relevant information, job title is not necessarily relevant. The TRS executive director has asked the IR for further clarification as to what specific information they are seeking. On a previous request for TRS salary information, the TRS Board decision was to not comply.

Chairman Noennig noted the referenced Attorney General's opinion determined that retiree names and benefit amounts constitutes public information.

Member Cohea asked if the request is for information on all PERS retirees.

Member Wilson state yes, which would include a huge amount of information.

Chairman Noennig asked if a fee to cover the reasonable cost of collecting the information could be charged.

Member Wilson stated yes, a reasonable fee is allowed.

Member Marilyn Ryan provided an update on TRS. The issue regarding K-12 teachers, whose income was not reported by the university, is being worked on to resolve the problem. The University System needs to follow the steps to be sure all relevant information is shared. TRS is prepping for the legislature; there is talk of a University contribution for those who stayed with the defined contribution system. This is still an issue, as a smaller amount is going in each year to supply the funds. Executive Director Shawn Graham is looking at new ways to resolve the issue, to provide at least some of the benefits. The TRS Board provided Director Graham with his annual evaluation, which was very good. The SAVA Committee has asked for an estimate of what would happen if there was a zero rate of return over 30 years. A zero rate assumes the stock market is not working any more. There is no decision on the response to SAVA yet. The larger question seems to point to what will happen if the actuarial rate of return is not met. Member Ryan noted the TRS Annual Financial report is now available on the TRS website.

Member Ryan stated for those in the University system, the University pays a small benefit amount; however, costs amount to a lot more to pay out benefits. The retirees from the University system are getting fully entitled benefits, although fewer and fewer who are working in the system are contributing. The University is paying less than half and their contribution is frozen, but more and more are withdrawing from the defined contributions. For those receiving benefits, the K-12 employed individuals are paying the benefits.

Mr. Jim Voytko added this is why systems conduct asset liability studies. Some plans are moving completely to defined contribution plans, and asset liability studies help provide the necessary information.

Legislative Liaison Comments
No legislative liaisons present.

Consultant Report

What Every Client Should Know About Capital Market Assumptions
Mr. Voytko stated the vision you want is for a very long horizon and depends on what expectations you have for the future. The BOI Board knows capital market assumptions are particular to all the different asset types. For each asset class you must ask how each is expected to behave over the long run and how best to use the information to make asset allocation decisions. What annual return can you expect over 10 to 15 years and longer; what are the associated risks and how uneven will those returns be?

It is important to understand how each asset class varies and how they synch up with each other; the diversification factor and smoothing over time adds to compound returns.

To have an effective context, assets must be viewed as a set and considered together. Each asset competes for investment dollars, and each presents opportunities and risks. Considering a set of assumptions for different asset classes, they need to have a rational relationship to each other. Asset mix accounts for between 82% and 100% of the return for a portfolio; asset allocation is the big driver and there is no other more efficient cost control that can make up for bad asset allocation.

Looking at assumptions for 10 or 15 years in the future, predicting the behavior of an asset class is almost always wrong. Common sense and judgement are needed; however, no one can predict correctly, in fact very few will pick correctly even one year out. The question often asked is, why not just look at the economic forecast? If you read the Wall Street Journal or your local newspaper, there is a tremendous amount of arguing about the Fed, will they raise rates? Will GDP be 1.7% or 2%? Economic forecasts and capital market forecasts do not look anything like each other. While economic forecasts rarely run longer than 12 months, capital market assumptions are usually 10 years or longer. Economic forecasts serve businesses, which must make short-term decisions, such as how much production or inventory is appropriate. Institutional investors work with a different time frame, and therefore use different metrics for different purposes.

Capital markets move much more quickly than the economy does. Substantial adjustment of capital markets can take place in just a few days, or weeks, or months at most. In any given year, much of the return is focused on just 10 or 15 days out of the year. The economy moves much more slowly. Very few organizations can do tactical asset allocation successfully. Results are dicey at the best.

Member Jon Satre asked if it is more in vogue for institutions to take an allocation to GTAA (Global Tactical Asset Allocation).

Mr. Voytko replied, yes, a small slice of GTAA, but not for a total portfolio, and it has not proved to be materially better. Some GTAA managers have done well, but very few.

Ms. Gratsinger added, investors are looking for risk assets, but good deals have not performed well, whereas the expensive assets, such as domestic equity, have done well.

Mr. Voytko noted at any institutional investor conference these days, the focus is on tactical, rapid pace, and the reason is because the expectation for major asset classes is not particularly rosy at this point. Actuarially, the year was a loss, therefore investors are seeking solutions; the few GTAA, such as Bridgewater's multi-asset class hedge structures, are structured completely differently from any institutional investor.

Mr. Voytko stated there are still a few overlaps between things that matter in the economy which have an overlap with capital market assumptions. Since the Great Financial Crisis (GFC) profit margins have come down and returns in the equity market have flattened, and inflation could be a factor.

If we believe asset allocation is important, and we do, looking ahead to the next 10 plus years, the process RVK follows includes a large group of internal professionals looking at all asset classes. Utilizing consultants, we are not a slave to historical data, to any economic forecast, or to aggressively marketed products. We allow the consultants latitude, while not allowing each to make up their own expectation of the future.

Mr. Voytko reviewed the short form of highlights for capital market assumptions for 2016, which is backed up by a 70-page white paper. RVK conducts its test assumptions on clients, and on a granular level, analyzing the different client portfolios and applying new sets vs. old sets. After the analysis, while it has not ever required going back and restarting the process, at times it has prompted going back to look closely at the assumptions.

Member Satre asked if all RVK capital market assumptions are done in house.

Ms. Gratsinger stated, yes all are done in house; and when completed the data are compared with external sources to compare triangulation. Comparisons are done with large asset class managers, taking biases into consideration.

Mr. Voytko added last week he moderated a panel for multi asset class managers, for defined benefit plans, KKR, Bridgewater and JPMorgan, who all have wildly differing views of the future, including a 2-4% annual difference over time. KKR had the highest expectation by far, but they are a long-term private equity manager. It goes to show, no two organizations, no matter the resources, will have the same point of view.

Member Satre asked how RVK has done historically vs. the actuarial rate of return.

Mr. Voytko stated RVK began capital market assumptions in 2002. The biggest mistake was in 1999 when many were using a 10-11% return for equity as the new standard; however, return for equity was zero for the next year. Regarding fixed income, real estate and hedge funds, RVK has a pretty good track record; equity causes the biggest problem as it is the most volatile asset class.

Mr. Voytko asked what does it mean to get capital assumptions right? In the world of mean variance optimization, asset classes compete for your dollars and the relative relationship between them drives returns; how asset classes correspond to each other. The relative relationship is what matters. RVK's triangulation committee decides if the estimates make sense, for example whether two classes are consistent or not.

Taking a disciplined look at the future, the less risk you take, the less return you can expect. Return on cash is stable, but very rarely produces double digits, usually in the low singles. Emerging market equity is the asset that varies widely, from worst, to best, to middle; and although recently it has been in the worst column, over time, generally it has one of the highest returns. Private equity is in that same camp, although the volatility is not so apparent due to the lag effect.

Member Satre noted he was surprised at the standard deviation for private equity, particularly compared to diversified hedge funds and GTAA shows low volatility compared to private equity as well.

Mr. Voytko responded diversified hedge funds have low volatility, definitely lower than equity. Additionally, GTAA operates with extremely diversified portfolios across many different investment classes. They contain equity, fixed income credit of all varieties, and are not true asset classes. There is no underlying beta, and are driven largely by manager selections over time. While they have a lower volatility, return is harder to gage and you do not have the same historical data.

Member Wilson asked over what time frame the assumptions cover.

Mr. Voytko stated the assumptions look forward 10–15 years, and added absolute accuracy matters too, particularly for boards that have the power to set benefit levels. If estimate assumptions for lower return expectations are for an extended period of time, there will be a call for increased contributions. If the outlook is pessimistic, contributions pulled today will go towards future benefits. For example for 1998 to 2001, depending on capital market assumptions, many raised benefits when times were good. However, looking back, expectations should have been reconsidered. If the outlook is too optimistic, it creates suppressed contributions and can create large unfunded liabilities. Painting a rosier picture than is likely to occur could cause issues 10 years down the road.

Chairman Noennig asked when determining capital market assumptions, if the prediction should not be relied upon, why do them.

Mr. Voytko responded, first, in many cases, the historical record is not the most powerful influence on the data, and second, you must pay attention to create a context for your decisions. You want to know which direction you are headed; when you make a wrong turn, your NAV recalculates and redirects you on the best course.

Mr. Voytko added while RVK is competitive, and wants BOI's business, it is not professional or responsible to paint a rosy picture or project an unrealistic outlook – only investments generate returns. The portfolio that emerges from the assumptions is the important key, as you reap returns based on the portfolio structure. The asset allocation now in place was a collaborative effort and the portfolio structure has worked well.

2016 Capital Market Assumptions

Mr. Voytko reviewed the 2016 Capital Market Assumption Report. RVK compiles the report each year to help with prospective expectations. Assets, asset liability, asset class allocations and mandates are all in the mix. U.S. equity can be structured more conservatively or with a higher beta, with more or less passive U.S. equity, then you choose managers who fit into that view of your portfolio. For 2016, adjustments based on disruptions of capital markets can cause a more or less optimistic outlook. The Fed and other central banks are trying to reach 2% inflation, but only the U.S. is getting close, despite energy prices declining steeply.

Over next 10 years, inflation may get to 2.5%; the Fed could overshoot. Looking at asset classes, there are those which have been down in the dumps, underperforming, and there are reasons, but trends tend to revert to the mean and run closer to normal. Certain asset classes, sub assets of equity, such as emerging markets and small cap equity, have lagged U.S. Domestic large cap equity. High yield or anything equity related has been flat. Inflation is expected to go up a bit and rates are expected to rise, considering the Fed's recent move, but fixed income in the near term is expected to have low returns, and perhaps capital losses. However, over the 5, 7 and 9 year periods, fixed income will heal and have higher coupons, and will repair earlier losses.

Mr. Voytko noted the RVK changes in assumptions for 2016 over 2015, while 25 basis points seems like hardly anything, when occurring on a compound basis, it adds up. U.S. equity is still carrying high valuations, and low expected returns on safer instruments such as 5-10 year treasuries. Small cap has lagged large cap but expectations have been raised for small cap as a good bet, which justifies adding a bit more investment dollars into small cap. Although international equity continues to lag behind, investment of a bit more over time into international equity is encouraged. While it is unknown when international may lift, it is trailing well below the trend line. The biggest change for 2016 is for high yield, primarily due to energy, and RVK has raised expectations for high yield. It appears assets are flowing into the high yield market. Regarding real estate, we are not negative or positive, but core real estate in particular has had a great run and the portfolio has benefited. Consequently, return expectations for real estate have been lowered slightly.

Member Jon Satre asked if when RVK make changes in return assumptions they review the changes with BOI staff.

Mr. Voytko replied yes, the information has been supplied to staff.

Mr. Cullen added staff has reviewed the information in detail. In terms of staff's concurrence, broadly, the answer is yes, but as to an explicit plan, staff is not at a point today to lay out specific allocations – although it will be done later in the year.

Mr. Voytko added Mr. Cullen reviewed the information when he visited RVK in Portland in March and conducted his own due diligence of the process RVK used to arrive at the recommendations. It is important to have confidence in the process for creating a good portfolio. The next three to five years will show how the changes have helped the portfolio. When RVK first came on board at BOI, the portfolio was not as good as it could be and it took years of fine-tuning the asset allocation to see long-term results. Turning around a portfolio is a slow process; it does not happen quickly.

Member Terry Cohea asked if the omission of commodities and hedge funds was due to BOI not holding those assets.

Mr. Voytko stated yes, RVK focuses on only the asset classes of BOI; however, they do have assumptions for all the different asset classes.

Member Cohea asked if the standard deviation on private equity is an adjustment due to the liquidity issue.

Mr. Voytko stated, yes. RVK reviewed the actual volatility of private equity allocations of many clients, and concluded there was overcompensation for illiquidity.

Mr. Voytko explained for capital market assumptions, the most important aspect for defined benefit public plans is to always look for asset class allocations which provide a counterweight to equity. While they often do not produce high returns, such as cash, they do produce a dampening effect. For large cap U.S. equity, fixed income is not correlated, so it adds a counterweight. However, high yield fixed income moves more closely to equity at 0.6, so is more highly correlated. Small cap U.S. equity and developed international equity are 0.8, so while not perfectly correlated they are much closer. Real estate is a more correlated asset; core real estate is an income producer with a competitive return.

Mr. Voytko reviewed CAPE Shiller Model Results. The forward 10-year return downward slope shows stocks are expensive and the 10-year outlook lower; it is more likely 10-year returns will be closer to 5% rather than 10%. When stocks are expensive, it is dangerous to assume returns will be higher; it is wise to exercise caution regarding forward-looking returns.

RVK runs several scenarios. Earnings growth plus dividends, inflation, and P/E is somewhat more optimistic than the Shiller Model. Fixed income is much the same, Ray Dalio of Bridgewater Associates, recently said the beginning yield is destiny to show the yield of any fixed income holding. Equity has had a lot of variation, fixed income is a little more stable, and because yields are so low, based on historical trends, it does not paint a good picture of fixed income over the next 10 years to help actuarial assumptions. In the past, fixed income has added a meaningful return.

Chairman Noennig asked if looking at yield and expected return, the return is the same as the bond yield.

Mr. Voytko stated 1976-1979 was inflationary when bond yields rose and provided return. If you start with 4% yield, you should expect a 4% asset return over 10 years.

<u>Efficient Hedging of Equity Risk in Total Fund Structure</u>
Ms. Becky Gratsinger explained when thinking long term, it is important there is a lot of equity risk, and also important to find ways to reduce or mitigate that risk. Certain asset classes can help reduce equity risk, such as commodities, hedge funds and others. Looking at any asset class that may be helpful, there are no single answers. Fund health and assumed returns are factors and we know funds with long-term liabilities, absent short-term liquidity needs, require substantial equities to get return, which is not achievable with a bond portfolio. However, substantial equity beta or exposure carries a lot of volatility risk with it. Diversification of equity risk is crucial and determining how much volatility a plan can withstand; the challenge is how to diversify equity exposure over the long-term by asset class for long-term objectives.

Comparing BOI to other public funds, RVK reviews asset allocation structure quarterly relative to other public funds; a group of 70-90 defined benefit systems. We compare fees, performance, risk and return. Overall BOI equity exposure is a bit above the median at 56%, relative to the median public fund at about 51%; most plans have half of their assets in equities. Evaluating total portfolio and return movements relative to equity markets, BOI has an equity beta of .6; the median is .62, so there is a bit more exposure, but with less equity sensitivity.

Mr. Voytko added it is good to have more equity, but beta is also good, and diversifying with non-equity assets is slightly better than other funds.

Ms. Gratsinger stated domestic equity is about 40% of the total portfolio. Using PERS for illustrative purposes, we expect 67% of fund volatility is driven by how domestic equity performs. We look at total plan volatility; acknowledging the need for an equity core, domestic equity and others such as international equity, and that it drives volatility. With a large equity core, the question is what other assets can you add and how can other investments, such as cash, help. The fund has frictional cash, but it has no correlation to equities. Fixed income moves up and down over time, but the long-term relationship runs .1 to .2, and so it is a very good diversifier. Real estate is also a good diversifier, with a low correlation to equities. Commodities are in the news every day, oil, industrial elements, etc. which have a low correlation;

however, commodities have had an impact on the stock market over the short term. Over the long term however, commodities have a low correlation to equities. Additionally with hedge funds, if you put a hedge fund together with equities, bonds, and distressed securities, the combined funds have a number of asset classes within them. A combined hedge fund will have a positive correlation to equities over time, and therefore can offer a correlation benefit.

Of the asset classes that offer beneficial effects, it is important to look at all the characteristics as each comes with attributes of risk, expected return, volatility, correlation, relative fees for implementation and liquidity. With cash, you have the penalty of a very low return, while the ability to hedge is great, fees are low and it provides daily liquidity. Fixed income is better than cash, but still provides a low expected rate of return, and is more volatile than cash, although a good .2 to .18 correlation. Due to the low return, you cannot afford a high allocation. In the basket of the hedge fund universe, you get an expected return of 6.5% with 10% expected volatility; a return near equity, but more volatility than cash or fixed income.

Chairman Noennig noted with hedge funds they have terrific variety, and here you are looking at averages.

Ms. Gratsinger responded, yes, it is true hedge funds vary widely. Direct hedge funds mimic the diversification of basket investing that are investible. A large fund like BOI has choices.

Mr. Voytko added you decide what your specific hedge funds look like; it can be fixed income leaning, macro fund with equity beta, lots of equity within it with a lot of volatility. It adds more return than first two diversifiers, but can add to volatility and is not as good a diversifier; and there are higher fees and liquidity issues. The diversified basket RVK looked at is similar to equity. When you look at history from 1982 to 2005, the correlation of hedge funds was lower, but as with commodities, it has increased as of late.

Member Satre stated with all kinds of hedge funds, what is the common denominator that allows them to be called hedge funds.

Ms. Gratsinger stated it is a partnership structure, a skill based investment strategy with an engineered structure.

Mr. Voytko added it is similar to the 130/30 fund BOI has, with the ability to go long and short.

Ms. Gratsinger stated they are hard to define and summarize, and come with higher fees and less liquidity as well. With real estate as you are familiar with, it has an attractive return, with less return and volatility than equities, and an attractive correlation, although moderate to high fees. Core real estate is a bit less expensive, and real estate is less liquid than stock investments.

Mr. Voytko recalled the Board decided to invest in real estate but to forego investment in hedge funds, putting a bet on one certain set of characteristics over another. Real estate is a better diversifier than hedge and liquidity is similar. It was a close call as each offers a differing set of diversifying characteristics.

Ms. Gratsinger reviewed the characteristics of commodities. Return is lower at 6% and although better than cash or fixed income, volatility is higher. Commodities fees are low to moderate, they offer the ability to buy indexed exposure and they are quite liquid.

Member Prothero asked what other options are out there.

Ms. Gratsinger stated GTAA (Global Tactical Asset Allocation) assumed rate of return is 6%, fees are moderate, they are equity-like and are liquid vehicles.

Chairman Noennig noted the expected rate of return on all of these is lower than the BOI actuarial rate.

Ms. Gratsinger responded, we are in this cycle, following the Great Financial Crisis, and the time horizon we are looking at is over the next few years, not for the longest horizon. For the next 30 – 50 years, the outlook is much better.

Mr. Voytko noted if we are remotely correct about the inability to reach that 7.5%, it creates the context of whether contributions should be increased.

Ms. Gratsinger reviewed five test portfolios with varying amounts allocated to equity, hedge funds and other equity hedging assets. Using hedge funds as a tool can reduce equity risk and an allocation of up to 15% could be considered. Higher levels of other equity hedging assets reduces expected risk, but also provides a lower expected return.

Ms. Gratsinger showed illustrations based on forward looking returns, and with varying expected returns. For example if fixed income or cash returned higher and if hedge stayed the same, or real estate returned 7.5% and commodities had 7%, it would produce a different allocation on the different scenarios of expected returns. Under these circumstances, hedge funds did not have the best role; other assets were more important. Examination of different market conditions is a consideration.

Mr. Voytko added diversifying assets compete with each other, when the biased competition is against hedge funds, and other assets keep their diversification benefit, they perform much better than hedge funds. Under current capital market conditions, they are reasonable diversifiers.

Ms. Gratsinger explained hedge funds are an engineered asset and can take on a variety of forms. They can be equity oriented, high return, and high standard deviation with a high correlation with equity. Or they can be multi-strategy funds, or macro portfolios; with that particular strategy, you may expect perhaps a 7% return, but with high volatility.

Mr. Voytko stated they are engineered to do different things; the type of hedge fund you choose depends on the purpose it fills.

Ms. Gratsinger compared a traditional allocation vs. an enhanced diversification. Traditionally, integrating real estate, private equity, equity or hedge funds, they are utilized as diversification tools. There could be a benefit to having hedge funds such as fixed income arbitrage, or perhaps distressed debt or distressed securities; diversification and beta are factors. BOI does have a hedge-type fund with the 130/30, which benefits the portfolio. Other investors consider opportunistic buckets to put these allocations in.

Mr. Voytko stated whenever you add complexity to an allocation, it adds pressure on investment staff; however, if too simple, it minimizes diversification,

Ms. Gratsinger explained there are other solutions, tools and methods to implement risk control with hedge funds. Some types of investors use risk parity based on total fund structure and total fund overlay, creating a structure whereby another party enters into an agreement to protect the total fund. The drawbacks include giving up some of the up side and they are expensive when markets are volatile; fees are high and you forego return.

Mr. Voytko added although you are insured against a catastrophic situation, you have to write a check.

Executive Director Ewer noted additionally, the insurance policy is only as good as the entity it is purchased from.

Chairman Noennig asked how the risk parity model works.

Mr. Voytko explained with risk parity, the notion is to have less equity to begin with, you borrow money and buy low return assets, such as fixed income, in hopes the return on fixed income is favorable.

Ms. Gratsinger reviewed the take aways: Montana's retirement fund has long-term liabilities and short term needs to pay out benefits; however, short-term liquidity is not an issue at this time. The fund equity core reflects equity beta, and the diversification around that equity core is critical. The challenge is picking the assets to surround that equity core and asset allocation and liability always need to be included in the long-term outlook.

Member Satre asked when the next asset liability study was scheduled.

Director Ewer stated we do not do them regularly and have not had one since 2011. At this time, there are no current plans to do another one. The Board has directed that we allow at least two spots for education presentations from RVK. Each April for the last 4-5 years, we have had capital market discussions. BOI is very equity centric, which comes with volatility. There are other ways to invest, such as hedge funds and we should discuss them. Considering the actuarial expected return of 7.75%, we should ask if we are comfortable with our level of risk. The CIO has led the discussion for the last four years. May, August or October Board meetings would be potential dates.

Ms. Gratsinger stated RVK has been reviewing assumptions and constraints with Mr. Cullen.

Mr. Voytko noted an asset liability study does come with an extra fee for BOI and the subject generated a lot of discussion previously. The case for a new study may be warranted, if there were big changes in liabilities or uncertainties regarding contributions.

Executive Director Ewer noted the bias against a study is due to the cost; the revenue flow picture is better than it was, although we still have the challenge of determining risk appetite and return expectations.

Mr. Voytko added prior trend lines were unfavorable; however, some issues have been addressed, at least partially.

Director Ewer stated he believes the current balance is right; otherwise, adjustments would be necessary. These types of presentations should be made unilaterally by RVK to the Board. One reason the October meeting will be important is to provide Mr. Cullen with more background from the RVK component prior to the November Board Meeting.

Member Satre thanked RVK for providing the three presentations for the meeting.

Montana Private Equity Pool (MPEP)

Mr. Ethan Hurley reported staff made two new commitments since the last Board Meeting. The first was Tenex Capital Partners II, LP for $35 million. This was an upsize, as staff previously committed to Fund I in 2012. The second to DFW Capital Partners V, LP is a new commitment to a lower middle market buyout fund. Briefs on both commitments are included in the Board packet.

Fund Name	Vintage	Subclass	Sector	Amount	Date
Tenex Capital Partners II, LP	2016	Buyout	Diversified	$35M	3/15/16
DFW Capital Partners V, LP	2016	Buyout	Diversified	$20M	2/26/16

Member Prothero asked Mr. Hurley how he selected the new DFW fund.

Mr. Hurley stated DFW attracted staff due to their stellar performance. Additionally, the rather large general partner commitment of $23 million against the total $360 million fund, which is outside of the norm, and the small team have known each other for years and are still working together.

Mr. Prothero noted most all partners have tremendous educational backgrounds and business experience, and wondered how much emphasis is placed on the educational factor when choosing funds to invest in.

Mr. Hurley replied no emphasis at all, although it is true many have impressive educations. It is more about the complexion of the human connection and interesting incentives. More emphasis is placed on the ability to generate return and create value; how well the team works together and assesses talent, or new product lines, and geography. All these factors come out in the track record and provide a complex picture.

Member Terry Cohea noted she is looking forward to a deep dive into private equity, such as the terms used and an in depth look at the process staff goes through when picking managers; how success is gauged.

Mr. Hurley stated if Board members have particular areas they would like to explore, he would be happy to create a presentation for the Board.

Member Satre suggested Mr. Hurley go through the cover sheet the Board receives; for example what does a placement agent do, and what a claw back is.

Chairman Noennig added it would also be helpful to see examples of funds not picked and the reasoning and an explanation of the process staff goes through.

Mr. Hurley stated staff throws out on average 3.6 deals per day. It is a commodity as there are plenty of managers lined up for BOI's capital.

Mr. Voytko noted he has been working with Executive Director Ewer and Mr. Cullen and added RVK would be happy to compile a comparison of American and European waterfall structures, term sheets, and how they work in different environments.

Member Cohea stated in the Board report, a review of the net IRR, would be helpful as well.

Mr. Hurley stated the Board reports will evolve over time, to arrive at a format that works for everybody.

EXECUTIVE DIRECTOR'S REPORT

Overall Comments

Executive Director Ewer presented his report and reviewed member requests from the last meeting. Direct hands on training is under way for staff with new supervisory duties; the updated staff organizational chart is included in the Board packet; and staff will provide more detail for INTERCAP loans involving the USDA Rural Development program.

Member Marilyn Ryan complimented staff on providing training for supervisory duties.

Director Ewer presented the monthly snapshot, which is available and emailed mid-month to Board Members and is also included in the meeting packet. It is very helpful and provides handy information when we receive questions from the press. The one page format works well, although staff is open to suggestions for improvements, if needed.

Director Ewer stated the organization chart was presented earlier in the meeting and the new In-State Portfolio Manager, Doug Hill was introduced.

Director Ewer stated he has informally, proactively asked the Budget Office if they would consider a purchase of the BOI managed buildings, with the exception of the Colonial Building. The process could take 18 months at least, with no obligation to purchase. There are reasons the buildings came on to the fiduciary balance sheet, which were complementary to the pensions; however, it is necessary to look at the complete total return for public employees. BOI strives to be a good landlord to the tenants of the state government agencies in the buildings, but it is helpful to ask if we are getting the best return from these properties. Staff has recent appraisals indicating that market value is less that the book value on two of the buildings, which shows we are not getting the best return for the pension funds. People want the state of Montana as a tenant and are willing to go longer term with less rent because the state is a great tenant. Staff has emailed the two building appraisals to the Budget Office and they seem to be receptive to the idea. Staff will meet with Administrators from the Department of Administration, Tom O'Connell with the Architecture and Engineering Division and Steve Baiamonte with General Services Division.

Chairman Noennig asked who would have the building titles.

Director Ewer explained Montana Board of Investments has the titles, but act as the fiduciary. The building titles would go to the state of Montana.

Chairman Noennig asked if a market analysis had been completed on the buildings.

Director Ewer stated the appraisals served that function.

Chairman Noennig stated the issue is not insufficient rent rates for building tenants, but rather staff time required to manage the buildings which is not the best use of staff time and fiduciary duty.

Ms. Julie Feldman added that staff has looked at the appraisals regarding GASB 72 and the fair market value considerations. The appraisals help determine what bucket to put them in; the value determination needs to be completed by June 30.

Member Satre asked if the preferred option is to sell only to the state and not outside buyers.

Director Ewer stated the buildings are almost all state agency leased. There has been a shortage of space for state agencies and the bias is for state agencies to occupy the buildings, which has increased in recent years to the current level of about 90%. The land board building in Bozeman has four state agencies; two state agencies occupy the old PERS building on 9th Avenue, and the IBM Building in downtown Helena houses four state agencies and a small private tenant.

Member Satre stated whenever the issue comes up, it seems the discussion is that the buildings are not the best use of resources, both staff and money. If the state does not want to purchase them, are there other options to divest from the buildings.

Director Ewer stated realistically, no; the buildings have long-term leases, although yes, they could be sold privately.

<u>All Policy Review</u>
Executive Director Ewer stated as scheduled by the Work and Education Plan, each year in April all Board policies are reviewed by staff and when necessary, proposed revisions are presented to the Board. For this meeting, several changes are proposed, some more substantive than others. Director Ewer noted he reviews the Governance Policy each year, while investment staff is the lead on investment policies. There is a separate memo in the packet from the CIO on pension policy changes.

Director Ewer stated staff plans to propose further formatting changes to the Governance Policy at a future meeting to allow for ease in navigating the many appendixes. The current staff recommended changes to the Governance Policy outlined in the memo include:

<u>II. Sec 7 Board Meeting and Frequency and Recording</u>

- adds a reference to the recording of Board Meetings in accordance with 2-3-214, MCA, effective July 1, 2015; and
- changes Board Meeting frequency to "at least" quarterly. (The Board actually meets 5 or 6 times per year.)

After brief discussion, Members reached a consensus to review each policy change individually and then vote collectively on all changes at the end.

<u>II. Sec 14 Selection of Custodial Bank and Investment Consultant</u>
Director Ewer explained the changes to this section clarify the legal authority for choosing the investment consultant and custodial bank. The custodial bank is under the depository bank; DOA has delegated that decision to BOI; however, that delegation could change at any time. Legally it is a shared relationship, regarding both banking and procurement, although technically the director of Administration can weigh in and overrule anything regarding procurement.

III. Sec 1 Executive Director
Director Ewer stated the change in this section clarifies that approval of all travel comes under the executive director's delegation of authority for expenditures. Staff intends to step up the area of travel, including increased on site due diligence; this is an area sensitive to reputational risk.

III. Sec 7 Contracts/Legal Services
Director Ewer stated the Board relies on the executive director to ensure BOI is represented by counsel, including external counsel. BOI has several firms that perform highly specialized work, and although some we rarely do business with, occasionally their expertise is necessary. There is a process for selection of legal firms, many have to go through an opinion of the governor. The Legal Service Review Board, chaired by the budget director, reviews outside counsel requests and is authorized to grant permission to use outside counsel rather than state counsel.

For Dorsey & Whitney, LLP, the Board's bond counsel, and Jackson Walker, LLP, which provides expertise in private equity, there is a special provision in law providing BOI is not required to go through the Procurement Bureau Request for Proposal (RFP) process. There is the long standing edict of the Legal Service Review Board. In 2012, there was a review of the procurement process and it was determined BOI is not required to use the procurement process for the selection of investment managers.

Deputy Director Geri Burton added at a recent Board meeting the securities litigation contract process was discussed which detailed the procedures BOI follows.

Director Ewer noted the securities litigation contracts were originally completed through the RFP process; however, the Legal Service Review Board was used for the recent contract renewals.

III. Sec 16 Further Delegation by the Executive Director
Executive Director Ewer noted staff recommends deleting this section since it is redundant regarding the delegation of authority by the executive director.

Director Ewer outlined proposed revisions to the Board's Ethics Policy. Staff is suggesting removal of language referencing meals and beverages, which does not apply when BOI is a Limited Partner. When BOI has a contractual relationship with a manager, a sandwich in their office should not pose an issue, although at a restaurant, it would be no host. The policy also expands to investment managers, which staff intends to conduct more on site visits with. Currently staff does not routinely visit all managers, there are over 200, (150 in private equity alone) and although staff cannot visit each manager every year, the current level is closer to zero. Staff is looking to ask the legislature to allot more money on travel which is part of due diligence, to allow on site and manager office visits.

Member Satre asked if the meal restriction is mentioned in the Ethics Policy.

Mr. Cullen explained restrictions generally refer to gifts, something with cash value, meals and beverages are usually excluded; although a meal can potentially be a gift.

Executive Director Ewer stated the Ethics Policy is in need of revisions for clarity. It is too lengthy, and vague in places, and he requested that the Audit Committee undertake rewriting the Policy.

Chairman Noennig agreed the policy is important, but needs clarification on what is and is not allowed, and he agreed it is a good idea to review the whole policy.

Director Ewer agreed; the goal is to simplify the policy.

Audit Committee Chairman Jon Satre advised the Committee accepts the project.

Member Prothero asked if there is an industry standard when it comes to ethics policies.

Director Ewer stated he believes there is, and standards have become a lot tighter these days. Federal employees are very restricted, and he asked Mr. Voytko to comment.

Mr. Voytko stated the pendulum has swung very far, and now is swinging back; is a cup of coffee really a gift? Policies for any kind of gift, such as tickets, trips, etc. have gotten tighter. In California, employees must go through many hours of training on ethics.

Executive Director Ewer noted BOI has a gift registry. The existing Ethics Policy does not apply to meals or beverages provided by general partners when BOI is limited partner.

IV. Sec 1 Part A Monetary Provisions

Director Ewer reviewed the a proposed policy revision which currently states meal/beverage restrictions do not apply when staff attends meetings/conferences held by General Partners where the Board is a Limited Partner, and revises the Policy to include any investment managers already hired by the Board. Additionally, new Policy language states the restrictions do not apply when BOI serves as a member of a Limited Partner Advisory Committee (LPAC) where the limited partnership agreement or other legal agreements explicitly allow for coverage of lodging and other reasonable travel expenses. BOI owns these partnerships, and is already paying for GP costs. Director Ewer added he is aware of potential reputational risks; staff will not endeavor in cases of extravagant expenses, and asked Mr. Cullen if he would like to comment.

Mr. Cullen stated the function of an LPAC is for when the GP may have conflicting issues, and therefore, they reach out to the investors serving on the LPAC. A number of issues can come up, such as a change to valuation policy, or an investment they are making. The LPAC is a subset of the Limited Partners, but really acts as a fiduciary representing all LPs. It is an important part of partnerships. Staff is honored when asked to join and takes the role seriously. The Policy change allows staff to attend those meetings without restrictions to cost on the overall travel budget, and it helps BOI execute fiduciary duties of assets.

Chairman Noennig asked if there is an issue regarding the LPACs as to restrictions on management or control over the GPs.

Mr. Cullen explained that broader documents define what issues are brought to the LPAC and what powers the LPAC has.

IV. Sec 1 Part F Monetary Provisions

Director Ewer stated this section is also revised stating the meal/beverage restrictions do not apply to investment managers already hired by the Board.

Loan Committee Charter – Committee Duties and Responsibilities - Revisions

Director Ewer stated there are two sections staff recommends removing from the Loan Committee Charter which are performed by staff rather than Committee Members, regarding setting of interest rates and portfolio risk/loan parameters.

Audit Committee Charter – Authority - Revisions

Director Ewer stated staff recommends eliminating as non-applicable the reference in the Charter to Committee Members meeting with Internal Auditors, as BOI does not have Internal Auditors. The Audit Charter details the responsibilities of the Committee, which reports and affirms at least annually to the Board that is has executed and fulfilled its duties.

Staff recommends Board approval of all policy changes as presented.

Member Prothero asked if an internal auditor was something worth taking another look at.

Executive Director Ewer stated we would not have sufficient duties for a full time auditor on staff, and except for the Departments of Lottery and Revenue, almost no state agency has internal auditors. BOI is one of the few agencies with an external independent auditor; BOI has the Legislative Auditor and the independent external auditor. Many agencies do not have an external auditor. BOI's Audit Committee has increased and expanded its role over the last four years, and BOI has now incorporated the role of compliance risk manager on staff.

Member Terry Cohea noted BOI is moving into more of a compliance direction.

Member Prothero stated while the status quo is acceptable, it is always an area to be cognizant of.

Member Sheena Wilson stated PERS does have an internal auditor, but they audit the counties and cities that send in their documentation on pension reporting. PERS has a legislative auditor, but not an outside firm.

Responding to Chairman Noennig's question, Director Ewer stated BOI's external auditor for internal controls is Wipfli. The firm reviews and tests the adequacy of BOI's internal controls.

Ms. Julie Feldman added by statute, the legislative auditor must approve any outside external auditor for audits of state agencies.

> Member Sheena Wilson made a motion to approve all policy changes as presented in the Executive Directors policy memo. Member Terry Cohea seconded. The Motion Carried.

<u>All Policy Review</u>
Mr. Joe Cullen provided an overview of investment policies. Ideally, investment policies should be streamlined and consistent. Staff proposed changes to the Montana State Fund Investment Policy Statement reflect mostly moving of sections, rather than removing or deleting content. The legal and constitutional authority remains the same, the policy objectives are the same regarding investment income, the preservation of principal, and taking limited risk while striving for capital appreciation. The majority of assets are in fixed income and the benchmark, Barclays Intermediate Credit Index, remains the same. The majority of policy changes are for asset allocation and investment guidelines. State Fund is not changing in the sense of target range for public equities; historically the range was 8-10% with a maximum of 15%. An equity allocation above 10% is generally expected. The real estate range has been increased slightly from 3-7% to 3-8%; currently real estate is at 5%. This allows a little more flexibility, although the target remains the same at 5%.

Member Cohea asked if State Fund needs to approve the policy changes.

Mr. Cullen stated Jon Putnam and Rande Muffick reviewed and discussed the proposed changes with State Fund and they agreed with the changes. State Fund senior executives were involved in the process; therefore, no formal approval was required. Overall, policy changes were not substantive; cash investments remained the same at 1-5% and fixed income, the majority of assets, must be a minimum of 75%; along with the preservation of principal. The historical formatting of permitted fixed income has been revised. Policy now describes permitted assets (vs. prohibited) and the restrictions on assets are listed. Items that reflected characteristics rather than a security type have been removed.

Mr. Cullen noted changes are generally in line with previous policy provisions. Corporate bond allocation was increased and there was a small increase in international exposure. Policy now allows a bit more risk; at time of purchase, the maximum for any single name has been increased from 2% to 3%. However, additional restrictions are in place to ensure no single name goes above 4%; this applies not only at time of purchase, but at any time of ownership. Additionally, portfolio duration will be maintained within +/- 20% of the index duration.

The benchmark, Barclays Capital Government Credit Intermediate index is compiled of government securities, U.S. treasuries and agencies, and corporate type bonds; intermediate term means a maximum 10-year maturity. Mr. Cullen thanked Jon Putnam and Rande Muffick for their work on the policy.

Member Jack Prothero made a motion to approve the staff recommended revisions to the Montana State Fund Investment Policy Statement. Member Marilyn Ryan seconded the motion. The motion carried.

Montana Public Retirement Plans Investment Policy

Mr. Cullen presented the new consolidated Montana Public Retirement Plans Investment Policy. The goal of the revisions was to create a unified policy for the six retirement pools under one umbrella. STIP will continue to have a separate policy. The separate pool policies contained a lot of commonality with some differences. The idea was to unify the policies into one for comprehensibility, similar to the structure of the Governance Policy. This will help reduce some duplication, such as the section on securities lending, and will allow for improved clarity and consistency. The definition of asset class was addressed, and although all key information is still included, a few things that did not fit were removed

Member Jon Satre asked if there was an initial rationale for developing individual policies for the pools.

Executive Director Ewer stated the policies evolved organically; all the pools had different start dates and each policy was written when the individual pools were created. A more comprehensive policy approach will cut out redundancies. The six different pools, created over a decade, have an overarching view as a collective.

Mr. Cullen added the one policy that stood out was real estate; it included a lot of discussion that was not relative for a policy. Overall substance is not changing as much as format. This streamlines the process and improves readability. The new policy is a self-contained policy, with a table of content and appendix, including asset allocation, and schedules for the five pools. The roles and responsibilities are taken from the Governance Policy. There were no significant changes to strategic allocation and rebalancing; risk management is in the core of the policy and may be revised further. The policy will evolve over time.

Other risk sections are new, but were taken from current policies, such as liquidity. The policy includes leverage and cash investment language and a description of each pool. The MDEP schedule refers to security and structure generally; the STIP discussion is really just a reference. At the May Board Meeting, staff may review and revise the STIP policy separately.

Member Sheena Wilson asked if perhaps the performance management section regarding the actuarial target return, should include a reference to the origin. Should it state "as determined by PERS and TRS" for the actuarial rate of 7.75%, since BOI does not determine the rate.

Chairman Noennig agreed that it should be spelled out in the policy.

Mr. Cullen agreed that a clear reference of where the actuarial rate originates should be included. He added a lot of substance is in the Appendices such as asset classes and approved ranges, which are not changing except for real estate, which has been revised to 6-10%. Previously domestic equity large cap was designated as core passive, enhanced and long/short. The reference to core has been removed; however, the larger change is to enhanced and long/short managers, which are not asset classes, but are descriptions of strategies and/or product types. They are a subset of management. The domestic equity range is 28-44% for retirement funds and large cap is 72-91% of the 44%; this remains the same. The active large cap range is now 0-24%; if staff cannot find a good manager that can outperform net of fees, there is no obligation to invest in managers.

Member Jon Satre stated when the Board was first introduced to long/short managers, it wanted to impose restrictions on the allocation.

Mr. Cullen stated the control is on maximums and there should be controls on any assets we want to restrict. This item can be added under Appendix 2, Schedule A MDEP Pool as part of the investment guidelines. It can easily be added as item #6, "no more than 12% of large cap domestic equity invested in Long/Short." Mr. Cullen stated the allocation to passive large cap is now 48-91% rather than 45-70% for large cap domestic equities only.

Member Jack Prothero stated the Board has approved broad ranges, which is a concern, as there is a need for adequate controls.

Mr. Cullen stated the top end of the ranges is most important. Diversification is critical and ranges are important, but for less liquid asset classes, such as real estate and private equity, the position in those ranges is not always under your control. It is important to know what you can control vs. what you have no control over. Asset allocation is different from strategy; long/short equity managers should be looked at but we should not be forced to have them.

International equity remains 14-22% of total equity, of that, passive large cap is 47-92% revised from 42-66% and active is 0-32%. This allows for flexibility if good active managers are not available.

Buyouts now include private equity related strategies and the ceiling was raised from 80% to 90% to allow more flexibility regarding venture capital and debt related assets.

For real estate, value added and opportunistic were combined into one group. Core real estate has a high quality nature with 90% leased, income generating property; non-core provides more upside but requires more of an investment.

The total equity range is 58–72% and timber may not exceed 2% of total pension assets.

Mr. Cullen stated staff recommends adoption of the Montana Public Retirement Plans Investment Policy.

> Member Jack Prothero made a motion to approve the new Policy as presented. Member Kathy Bessette seconded the motion. The motion carried.

Executive Director Ewer noted he would like three components added: 1. Allow staff under Board authorization to format the policy by number and sub-numbering; 2. On Page 4 revise the wording to reflect the actuarial target rate of return is "as determined by the governing boards of the public retirement systems"; and 3. As per Member Jon Satre's point, on Page 5 to add a new item, number 6: "for large cap public equities no more than 12% may be invested in a long/short strategy." Additionally, on Page 15 revise the allocation table for real estate to the correct range to 6-10%.

> The Board approved the motion, as amended.

Member Terry Cohea thanked staff for all their work on the new policy.

<u>General Discussion Executive Director David Ewer and Chief Investment Officer Joe Cullen</u>

Executive Director Ewer stated there were six areas he wanted to touch on.

1. Staff intends to look at the quarterly investment report presentations for possible revisions to make them more dynamic.
2. There may be changes to the Work and Education Plan regarding the quarterly reports; the reports require a lot of staff time and resources, if that time is reduced, it may allow deeper dives of the asset classes going forward. Some reviews are required annually, while the others are reviewed at least every 24 months.
3. The October meeting will be held as scheduled (there was discussion of skipping it).
4. Staff is reviewing the option to convert the investment pools into one master account pool. Retired staff Cliff Sheets and Gayle Moon may be consulted on the process and allowed to weigh in on the advantages or disadvantages, of creating a master account.
5. Consideration of whether the manager watch lists should continue to be included in the Board packets.

In summary, Director Ewer stated one goal is to have a lot less emphasis on near term static reports. While it is important to be advised quarterly that assets are within policy, it may be beneficial to do a deeper dive of the different asset classes.

Mr. Cullen noted for example private equity and real estate are presented to the Board quarterly by Mr. Hurley, with very little change from quarter to quarter, except for new investments and commitments. Producing the portfolio breakdowns and associated charts takes a lot of resources. The time saved could be dedicated to more educational aspects of private equity and real estate. Over time, the quarterly reports will be modified as well, and staff welcomes Board input. Staff can focus more on the long term and educational topics.

Member Jack Prothero stated it is important to receive the information and his interest is in the quarter-to-quarter changes and discussing the implications for the future, rather than reviewing the past.

Mr. Cullen agreed it is important to review key changes and what those changes mean going forward. In the future staff may include similar information, but without such an in depth review.

Chairman Noennig noted yes, sometimes areas are glossed over; however, for new members it is important to hear and have it engrained. Once a year, to stagger each asset class over different meetings is a good plan; once a year for each asset type.

Mr. Cullen agreed with a deep dive of a different asset class per meeting. The Board can expect the overview each meeting, along with an in depth review of an asset class.

Director Ewer added staff may be able to work with RVK to have them cover information staff is covering each meeting. The deeper dives are presented by staff every 24 months at this point.

Member Jon Satre agreed with Member Prothero stating he likes seeing results and what has happened over the quarter, in a snapshot format. If there is a change or trend or a meaningful difference, it would be helpful to see that as well; however, it is not necessary to see every pool report each quarter.

Member Satre added he likes the staff involvement and it is the responsibility of Board members to keep up to date as well.

Member Prothero stated he would like to hear from more staff members for future presentations and for the deep dives.

Executive Director Ewer noted for the May meeting there will be less routine. Staff needs to present assets are within approved ranges each quarter and staff may rely heavier on RVK involvement. The May meeting will review domestic and international equity, but there needs to be a deeper dive of each.

Member Satre stated RVK started the executive summary last year, and we may want to have a similar thing for staff performance in the quarterly reports.

Director Ewer stated each November the CIO gives a recommendation on any proposed asset allocation changes. The October meeting will provide an opportunity for more staff preparation of any coming changes at the November meeting. We still need the Monte Carlo and Efficient Frontier, and to continue asking Board members if they are happy with the status quo or whether changes are needed.

Director Ewer stated Mr. Cullen raised the question of having a master pool for all pensions and he will lead the effort to look at abolishing the investment pools for pensions, except for STIP, as of July 1, 2017. A master pool could yield many benefits; for example, it would eliminate a lot of middle accounting and each pension dollar would buy a unit of pension assets. Currently all pools have the same asset allocation. A single master pool containing all assets would be structured similar to a mutual fund. The nine retirement plans, seven pools, (six without STIP), must be synchronized. Shares would be allocated across the plans and accounting procedures would be simplified. Staff will pursue the idea and will invite Cliff Sheets and Gayle Moon to be part of the discussion.

Chairman Noennig asked how the master accounting would function.

Mr. Cullen explained the nine pension plans buy units in the six different pools for the different assets and all own units in all the pools. Each pension plan has target allocations equal to the other plans. All plans would have actual allocation to the same assets, plan to plan, and instead of plans investing in individual pools, the asset classes would be contained in one master plan. All plans would have same asset mix.

Chairman Noennig asked how the current structure differs.

Mr. Cullen replied the current structure allows for different individual asset mixes in the pension plans if needed. Every month end, staff must determine the adjustments to move assets around, such as more or less MDEP, more or less MTIP, to ensure allocations are consistent within the plans.

Executive Director Ewer added it is an operational requirement to true up those 54 boxes. Granularly, the changing of asset allocation can be accomplished with a master pool. PERS and TRS are so large, and the other plans so small, it is unlikely the different plans would require different asset allocation mixes. Director Ewer asked Mr. Cliff Sheets if he had any comments on the matter.

Mr. Cliff Sheets stated it is complicated, but staff has maintained asset allocation within the plans. Actuarially the plans are different, and there are some eccentricities; the smaller plans have been swamped by the larger plans, and they could have different liquidity needs. Having the tools available to change the asset mix as the plans mature is an option that may be useful in the future. While the system could be automated, it could also raise concerns. Presuming the same asset allocation mix will be required across all nine plans going forward is a leap.

Mr. Cullen agreed the ability to maintain flexibility is a consideration. Over the next year, staff will want to consider the amount of flexibility with a master pool, whether or not it is 100% correlated and how to address different asset mixes. Operational efficiencies are an upside; staff will need to look at the benefits and costs going forward.

Director Ewer advised staff would take an in depth look and keep the Board apprised.

Director Ewer stated staff is looking to make a request to the legislature to allow BOI an additional full time employee (FTE) for an additional investment analyst. Staff will also be requesting additional travel budget funds to allow for more on site due diligence. Additionally, staff is looking at changes in research vendor services, although no changes have been proposed yet. The vacant credit analyst position has been changed to an investment analyst position.

Member Jack Prothero agreed with the proposed staffing changes.

Chairman Noennig noted BOI previously gave up one FTE to the Department of Commerce.

Director Ewer stated yes that is correct; one position was given up and the credit analyst position converted to the investment side. Commerce staff was scheduled to meet with the budget director on the FTE; the process is moving along.

Member Prothero noted lenders have many options and good service, which includes timely decisions, is important and asked what happens if within a year the credit analyst position is needed again.

Director Ewer stated the position could always be opened up on a temporary long-term basis and he added as budget director he directed DPHHS to hire 30 staff at Warm Springs. When there is a compelling need, it can be done.

Member Marilyn Ryan added that loans represent economic development; BOI staff must be efficient and accurate in representing economic development.

Executive Director Ewer discussed the manager watch list. He acknowledged it has a utility purpose, but there is a down side. The list is posted to the BOI website and we receive phone calls about it, as it is deemed newsworthy. Staff is exploring a different approach and he added he is not inclined to keep recommending the manager watch list.

Mr. Cullen agreed; as you look at prospective managers, or existing managers, staff are assessing managers continually and whether they are meeting, exceeding or falling short of expectations. The list has little value if you are keeping the Board apprised of changes and updates. If there is transparency on other fronts, the watch list is not needed. Without the list, staff could improve efficiencies without losing utility.

Member Prothero stated he would like to see the private equity/real estate watch list replaced with some sort of system to notice the Board if a problem arises in the portfolio to the level that the Board should be made aware of it. It would function as a double check on internal controls.

Mr. Cullen agreed it is important to have a process to identify problems. As we move forward, staff can address those needs without the operational inefficiencies of a formal watch list.

RECAP OF STAFF TO DO LIST AND ADJOURNMENT

Executive Director Ewer reviewed items on the "to do" list for the next Board meeting:

1. Staff will provide the Board with a finalized electronic copy of the revised Public Retirement Plans Investment Policy reflecting the minor revisions discussed and formatted for easier navigation. (Asset allocation ranges will be reviewed at the November Board meeting.)
2. The Audit Committee will review the Ethics Policy at the May meeting.

With no further business before the Board, the meeting adjourned at 4:10 p.m.

Next Meeting

The next regular meeting of the Board will be May 24-25, 2016 in Helena, Montana.

Complete copies of all reports presented to the Board are on file with the Board of Investments.

BOARD OF INVESTMENTS

APPROVE: Mark E. Noennig
Mark E. Noennig, Chairman

ATTEST: David Ewer
David Ewer, Executive Director

DATE: August 16, 2016

BOI:drc
6/24/16