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Call to Order

**REGULAR MEETING OF THE
MONTANA BOARD OF INVESTMENTS
DEPARTMENT OF COMMERCE
2401 Colonial Drive, 3rd Floor
Helena, Montana
November 17 - 18, 2015**

AGENDA

COMMITTEE MEETINGS

A. Audit Committee 8:30 AM

1. Public Comment – *Public Comment on issues with Committee Jurisdiction*
2. FY 2015 – Financial Audit – Status
3. Annual Compliance with Committee Charter (Charter Checklist) - **Decision**
4. Statutory Compliance Checklist
5. Annual Report - **Decision**
6. Accounting Presentation – Financial Statement Revisions - **Decision**
7. Securities Litigation and Litigation Policy Recommendation - **Decision**
8. STIP Local Government Resolution and Participation Requirements - **Decision**

B. Human Resource Committee 10:00 AM

1. Public Comment – *Public Comment on issues with Committee Jurisdiction*
2. Executive Director Comments
3. Annual Review of Exempt Staff (Executive Session)

BREAK 11:00 AM

C. Loan Committee 11:15 AM

1. Public Comment – *Public Comment on issues with Committee Jurisdiction*
2. INTERCAP Loan Requests - **Decision**
3. INTERCAP Bond Anticipation Note and Additional Bonds
Resolution No. 235 - **Decision**
4. In-State Loan Program Request – Consumer Direct Holding, Inc. - **Decision**

LUNCH SERVED 12:00 PM

Tab 1 CALL TO ORDER – Mark Noennig, Chairman 12:45 PM

- A. Notice of Video Recording of Meeting
- B. Roll Call
- C. Public Comment – *Public Comment on issues with Board Jurisdiction*
- D. Approval of the August and October 2015 Meeting Minutes
- E. Introduce Joseph M. Cullen, CIO, CFA, CAIA, FRM
- F. Administrative Business
 1. Audit Committee Report - **Decisions**
 2. Human Resource Committee Report
 3. Loan Committee Report - **Decisions**
- G. Comments from TRS and PERS Board Members
- H. Comments from Board Legislative Liaisons

Tab 2 RETIREMENT SYSTEMS' ANNUAL PRESENTATIONS 1:00 PM

- A. TRS – Shawn Graham, Executive Director
- B. PER Systems – Dore Schwinden, Executive Director

Tab 3 EXECUTIVE DIRECTOR REPORTS – David Ewer 1:45 PM

- A. Member Requests from Prior Meeting
- B. Quarterly Cost Report
- C. MBOI Snapshot
- D. 2015 Securities Litigation Review

- E. Resolution 217 – Authorization of Investment Managers
- F. Resolution 218 – Delegation of Authority – Executive Director
- G. Resolution 234 – Delegation of Authority – Chief Investment Officer
- H. FY 2015 Annual Report and Financial Statements – Status
- I. Governor’s Letter – Public Participation
- J. Draft 2016 Board Meeting Dates
- K. Draft 2016 Work Plan

BREAK **2:00 PM**

Tab 4 BENCHMARKS AS CURRENTLY IMPLEMENTED BY BOARD – Eron Krpan, CIPM **2:15 PM**
BENCHMARKS FROM AN RVK PERSPECTIVE – RVK, Inc.

Tab 5 MONTANA LOAN PROGRAM **3:45 PM**
 A. Commercial and Residential Portfolios Report

Tab 6 BOND PROGRAM – Louise Welsh **4:00 PM**
 A. INTERCAP
 1. Activity Report
 2. Staff Approved Loans Report
 3. Bond Anticipation Note and Additional Bonds – Resolution No. 235 - *Decision*

ADJOURN **4:15 PM**

AGENDA DAY 2

RECONVENE AND CALL TO ORDER – Mark Noennig, Chairman **8:30 AM**
 A. Notice of Video Recording of Meeting
 B. Roll Call
 C. Public Comment – *Public Comment on issues with Board Jurisdiction*

Tab 7 QUARTERLY PERFORMANCE REPORT – **8:40 AM**
RVK, INC. MBOI INVESTMENT CONSULTANT

Tab 8 INVESTMENT ACTIVITIES/REPORTS – Joseph M. Cullen, CFA, CAIA, FRM **9:30 AM**
 A. Retirement System Asset Allocation Report
 B. Private Asset Pool Reports – **Ethan Hurley, CAIA**
 1. Private Equity Pool (MPEP)
 2. Real Estate Pool (MTRP)
 C. Fixed Income Reports
 1. Bond Pools (RFBP and TFIP) – **Nathan Sax, CFA**
 2. Below Investment Grade Holdings
 3. Short-term (STIP) and Other Fixed Income Portfolios – **Richard Cooley, CFA**
 D. Public Equity Pool Reports – **Rande Muffick, CFA**
 1. Domestic Equity (MDEP)
 2. International Equity (MTIP)

BREAK **10:30 AM**

INVESTMENT ACTIVITIES REPORT continued **10:45 AM**

RECAP OF STAFF TO DO LIST AND ADJOURNMENT – Mark Noennig, Chairman **11:45 AM**

Appendix

- A. Annual Board Meeting Schedule
- B. 24 Month Work Plan
- C. Acronym Index
- D. Terminology List
- E. Public Market Manager Evaluation Policy
- F. Educational Resources

**MONTANA BOARD OF INVESTMENTS
DEPARTMENT OF COMMERCE
2401 Colonial Drive, 3rd Floor
Helena, Montana
MINUTES OF THE MEETING – August 18 - 19, 2015**

BOARD MEMBERS PRESENT:

Mark Noennig, Chairman
Karl Englund, Vice Chairman
Terry Cohea
Jack Prothero
Marilyn Ryan
Jon Satre
Sheena Wilson

BOARD MEMBERS ABSENT:

Quinton Nyman
Kathy Bessette

LEGISLATIVE LIAISON PRESENT:

Senator Bob Keenan (Aug 18 only)

LEGISLATIVE LIAISON ABSENT:

Representative Kelly McCarthy

STAFF PRESENT:

Polly Boutin, Associate Financial Manager	Herb Kulow, CMB,
Jason Brent, CFA,	Portfolio Manager, In-State Loan Program
Alternative Investments Analyst	Tammy Lindgren, Investment Accountant
Geri Burton, Deputy Director	April Madden, Investment Accountant
Dana Chapman, Board Secretary	Mary Noack, Network Administrator
Richard Cooley, CFA, Portfolio Manager,	Savannah McCormack,
Fixed Income/STIP	Administrative Assistant
Frank Cornwell, CPA, Associate	Rande Muffick, CFA, Portfolio Manager,
Financial Manager	Public Equities
Craig Coulter, Alternative	Kelsey Poore, CPA, Investment Accountant
Investments Analyst	Jon Putnam, CFA, FRM, Fixed Income
David Ewer, Executive Director	Investment Analyst
Julie Feldman, CPA, Financial Manager	John Romasko, CFA, Fixed Income
Julie Flynn, Bond Program Officer	Investment Analyst
Tim House, Equity Analyst/Investment	Nathan Sax, CFA, Portfolio Manager,
Operations Chief	Fixed Income
Ethan Hurley, CAIA, Portfolio Manager,	Clifford A. Sheets, CFA,
Alternative Equities	Chief Investment Officer
Ed Kelly, Alternative Investments Analyst	Steve Strong, Equity Investment Analyst
Teri Kolnik, CFA, Alternative	Louise Welsh, Senior Bond Program Officer
Investments Analyst	Maria Wise, Administrative Assistant
Eron Krpan, CIPM, Investment Data Analyst	Dan Zaring, CFA, Director of Research

GUESTS:

Jim Voytko, RVK, Inc.
Becky Gratsinger, CFA, RVK, Inc.
Mark Higgins, CFA, RVK, Inc.
Mike Heale, CEM Benchmarking
Daniel Day, Vice President, Bank of Montana
Tom Swenson, President, Bank of Montana
Rod Liebeck, GMA Garnet Group
Steve Gobby, GMA Garnet Group

CALL TO ORDER

Board Chairman Mark Noennig called the regular meeting of the Board of Investments (Board) to order at 10:39 AM. As noted above, a quorum of Board Members was present. Chairman Noennig advised video recordings of Board Meetings is now in effect, starting with this meeting. Chairman Noennig called for public comment.

Mr. Stephen Gobby, CEO of GMA Group presented a brief background of the company. GMA Group has been in the global garnet market for about 20 years and brings both capital and experience to the Montana mine. The mine, located in Alder, will assist a good, stable environment for Montana and the inclusion of the Australian expertise means the Montana location will have very experienced employees. Mr. Gobby expressed hope that the loan will be approved as the company embarks on its journey and adds a lot of value to the state of Montana, enabling a partnership for many years to come.

Chairman Noennig called for any corrections or revisions to the minutes from the May 19-20, 2015 Board Meeting or the June 22, 2015 Conference Call Board meeting.

Board Member Jack Prothero made a motion to approve the May 19-20, 2015, Board Meeting minutes. Member Sheena Wilson seconded the motion. The motion carried.

Board Member Karl Englund made a motion to approve the June 22, 2015, Conference Call Board Meeting minutes. Member Marilyn Ryan seconded the motion. The motion carried.

Chairman Noennig read Herb Kulow's resignation letter. Mr. Kulow is retiring, effective November 2, 2015. The letter was accepted.

Audit Committee Report

The Audit Committee met prior to the Board Meeting. Committee Chairman Jon Satre reported that staff has undertaken updating the annual report. He noted staff is making great progress, and added the Committee appreciates the effort. The Committee discussed the STIP draft revisions to protocol, which will include distribution to local governments requesting authorizing resolutions. Accounting staff will be attending several conventions and meetings to gather participant feedback. There is a pending GASB (Governmental Accounting Standards Board) change coming affecting how STIP is handled. Staff will be gathering input on identifying what those impacts will be.

The Committee reviewed Internal Controls. Wipfli, LLP (formerly Galusha, Higgins & Galusha) has completed the FY 2015 Internal Controls Report. The report did not contain any recommendations and Wipfli complimented BOI on the procedures used to complete the process. The Committee also reviewed revisions to the Internal Controls Policy, adding a section on SSAE 16 review.

Staff is currently working on the Fiscal Year 2015 financial statements and will have a number of deadlines between now and October 1. The Committee made decisions; however, no Board action is required.

Deputy Director Geri Burton stated the Internal Control Policy does require full Board approval and requested the Board delay the motion to allow the full Board an opportunity to review a copy of the redline Policy showing the changes. The motion was delayed until later in the agenda.

Human Resource Committee Report

The Human Resource Committee met prior to the Board Meeting. Human Resource Committee Chairman Karl Englund reported staff received 125 applications for the CIO position. From the 125, the Committee is in the process of conducting telephone interviews with 17 applicants. The Committee will determine which of those 17 to invite to Helena for interviews. The telephone interviews of the 17 will be completed tomorrow at the conclusion of the Board Meeting.

Chairman Englund expressed the Committee's deep appreciation to Deputy Director Geri Burton, Executive Director Ewer, Chief Investment Officer Cliff Sheets and Board Secretary Dana Chapman for their assistance to the Committee to do this work.

Chairman Mark Noennig asked if there were questions or comments. There were none.

Loan Committee Report

The Loan Committee met prior to the Board Meeting. Committee Chairman Jack Prothero reported the Committee approved two INTERCAP loans. The first loan is to the City of Fort Benton for \$2.5 million as interim financing in anticipation of USDA Rural Development long term financing for wastewater system improvements. The loan term is for up to two years and is in the form of a bond anticipation note (BAN).

The second loan is for the Department of Natural Resources and Conservation (DNRC) for \$3.1 million as interim financing for its Renewable Resource Grant & Loan Program (RRGL). This loan is in anticipation of issuing coal severance tax bonds to refinance existing local government debt or new projects associated with rehabilitating water and sewer facilities. The loan will be in the form of a BAN with a term of three years; however, DNRC typically pays funds back ahead of schedule.

Chairman Prothero reported Mr. Herb Kulow presented a Bank of Montana loan request for BOI to participate at 80% in the amount of \$24 million for funding of a hard rock garnet mine located in Alder, MT. The borrower is Garnet USA, LLC, and the loan is more unique than the usual BOI loan. The parent company, GMA Group, is an Australian company, based in Perth, which sells alluvial garnet used for sand blasting and water filtration for a myriad of uses including military, oil and aviation. The loan to value is 40% and the capacity to pay of the parent company is very strong. The Committee is recommending approval of the loan as presented.

Committee Chairman Prothero made a motion to approve the \$24 million loan to Garnet USA, LLC. Member Terry Cohea seconded the motion.

Member Karl Englund stated for the record he has done legal work for the Bank of Montana and recused himself from the vote. The motion carried.

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

PERS Representative Sheena Wilson reported the MPERA Board recently elected her as chairperson and three new members have joined the board: Pepper Valdez, a firefighter in Billings, who recently received his accounting degree at MSU Billings; Marty Tuttle, Chief Legal Counsel for the Montana Department of Commerce, representing defined compensation and Julie McKenna, a current state employee at the Department of Revenue who is very active in MEA-MFT. Member Wilson added the lawsuit has been settled and the computer system upgrade continues to move forward.

TRS Representative Marilyn Ryan reported that the TRS Board has policy changes regarding stipends for school staff under consideration at this time. There are still questions to answer such as caps on earnings, and the board is working with the legislature on the issue. The board received a FOIA request from an unknown source requesting information on TRS retirees and the amounts they earn in benefits. The Board is investigating how to handle the request. There is a concern, as beneficiaries have previously made threats of lawsuits regarding disclosure of the information. The Board is conducting strategic planning on how to address GASB 68. The Board currently has one vacancy.

Chairman Noennig asked for further information on the FOIA request.

Member Ryan stated the request is from an attorney in Colorado, and when directly asked, she refused to tell the reasoning for needing the information. The request includes information about all retirees and all benefits. The Board maintains their responsibility is to the members.

Legislative Liaisons Comments

Representative Kelly McCarthy was absent. Senator Sen Keenan had nothing to report.

EXECUTIVE DIRECTOR'S REPORT

Overall Comments

Executive Director Ewer noted the quarterly cost and monthly snapshot were included in the Board packet and asked if there were any questions on either. There were no questions.

Director Ewer presented the FY 2015 Expenditure Report and the FY 2016 Budget Report and accompanying memo showing details of the budget recommendation from staff for FY 2016 and the status of FY 2015. Director Ewer asked if there were any questions on the structure of the budget or the appropriations for BOI. He explained the legislature approves the yearly maximum dollar amount that can be charged, which covers daily operating costs. Law specifically allows BOI to collect costs in MCA 17-6-201, and allows collection of fees before distributions. Statute dictates by law the payment structure to cover the custodial bank, as well as the Enterprise Fund to run the INTERCAP program.

There are two program areas BOI reports costs for: the general investment side and the bond program. INTERCAP (the bond program) is an enterprise fund and the unified investment program is an internal service fund. The layout is the same for both reflecting actual and budgeted expenses; although there is a large research budget for the internal service fund (unified investments).

The Board materials include the FY 2016 budget, showing staff recommendations going forward. This requires a Board motion to adopt staff's recommendations on the budget. Staff can explain research expenses or relay the differences of the INTERCAP program if desired.

Member Sheena Wilson made a motion to approve the FY 2016 budget, and thanked staff for the thorough notes. Member Terry Cohea seconded the motion.

Executive Director Ewer asked Senator Keenan if he wanted to comment and added it is helpful that some legislators fully understand the budget process. Senator Keenan stated he had no questions, having served on the audit committee for several years he understands the process. The motion carried.

Chairman Noennig advised the Bank of Montana and Garnet USA representatives they were welcome to stay for the remainder of the Board meeting, but let them know they were free to leave should they choose to.

Executive Director Ewer provided an update on the Annual Report revisions underway by staff. The Annual Report is undergoing revisions to make it more digestible to the public. It has not been revised in many years; it is a work in progress and staff expects to present a draft at the November Board Meeting. The legal deadline for the report to be publicly available is December 31. Throughout the revision process, staff will continue to ask for Board guidance and approval.

Director Ewer reported staff has received the GASB exposure draft, which has implications for STIP. STIP functions similar to a money market fund, although not absolutely. It is similar to a "2a-7-like" fund. Staff will have a recommendation to maintain STIP at the current structure. New 2A-7 money market rules substantially reduce the ability to have longer maturities. Staff believes it is prudent to recommend leaving STIP as is from an operational standpoint to prevent the loss of additional yield. Changes will be made regarding the financial reporting of STIP. The cash flow situation of the state is known and is stable, not subject to volatility. The new GASB rule goes into effect after December 2015. Slight changes may be required to sharpen recommendations on the reserve account, to keep STIP current and allow the continued opportunity to provide the yields historically enjoyed.

Director Ewer provided an update on the executive search firm RFP for the CIO search. Two RFP responses were received, Korn/Ferry International and EFL Associates. Both firms are very qualified and the differences in the RFP responses are minor. The Board has empowered staff to score the RFP responses; however, scoring has not taken place. Director Ewer added the HR Committee is well on track with the current CIO search and he recommended letting the Committee proceed as is with the process.

BOND PROGRAM REPORTS

Activity Report

Ms. Louise Welsh reviewed the quarterly Activity Summary Report as of June 30, 2015. During the quarter there were 20 staff approved commitments, covering a variety of purposes; the biggest include construction, schools, fire halls and county buildings. Funding over the quarter included draws totaling \$10.8 million. The Board requested bond program staff provide an annual snapshot of activity, which has been included in the Board packet. It shows the concentration between the two fiscal years and loan details for the remaining commitments. In other news, staff attended a couple of conferences. Ms. Flynn presented at the MT Association of School Officials (MASBO). Each presenter had 20 minutes at a table of eight, which provided effective one on one discussion and question and answer opportunities. It was a very good way to disseminate information. Ms. Welsh attended the MT Joint Fire and Emergency Services Conference in Ennis, which was a very interesting conference. It utilized small groups and Ms. Welsh shared one of the presenter's illustrations that aptly showed the value of delegation.

MONTANA LOAN PROGRAMS

In-State Loan Program

Mr. Herb Kulow again thanked the Board for approving the Garnet USA, LLC loan. Mr. Kulow presented the Montana Loan Program Report. The commercial loan portfolio has an outstanding balance of \$93,316,253 and \$73,396,000 in reserved loans, as well as four committed loans totaling \$8,175,700. Of the \$8 million, roughly \$7 million is for the Loebro infrastructure loan that is expected to close late September or early October. The Garnet USA, LLC loan is expected to close at the end of August. There are two past due loans, only one is over 30 days, totaling \$141,155. The property in Lolo, GMP, LLC, has a one-year lease that is providing income of \$6,000 per month. At the end of the lease period, the bank will submit BOI's 70% participation and associated costs of carrying the property. On January 31, 2016, it is hoped the leaseholder will execute the option to buy, at which time BOI will be able to recoup the initial \$62,000 charge off.

The residential loan portfolio has 223 loans, totaling \$9,237,849 as of June 30, 2015. There are six past due loans totaling \$367,188; three are past due over 90 days, but all are guaranteed. The largest loan servicer was Streeter Brothers; however, they recently sold the servicing rights to the Board of Housing (BOH) and sold all loans to a firm in Texas. First Interstate Bank is the second largest lender of the top five, and there are 28 other lenders. Some borrowers continue to pay off their loans at the historical higher interest rates, some at over 7%.

Member Satre asked why a borrower would keep a loan with rates much higher than those currently available.

Mr. Kulow proposed many opt not to pay the costs of a refinance when their remaining balance is quite low.

Mr. Kulow reported the Veterans residential loan portfolio (VA) has 164 current loans with a balance of \$27,912,503 as of June 30, 2015. There is one loan past due over 60 days. The individual left the area to attend school. There is a one-year time limit; he wanted an extension, but staff declined as that exposes the loan guarantee. The process of foreclosure is handled by BOH as the loan servicer.

The top banks with VA loans are First Interstate Bank, followed by Mountain West Bank, now owned by First Interstate Bank, then Opportunity Bank of Montana and Stockman Bank. Most VA loans are in the Helena area at \$8,843,810, followed by Great Falls, Missoula, East Helena, Kalispell and Billings. Mr. Kulow presented a summary of the In-State Loan Program over the past 15 years. BOI has funded 530 different loans totaling almost half a billion dollars, all within Montana. The outstanding balance is currently ~\$93 million. Over the program history, approximately 5,000 jobs have been created in Montana. The current committed and reserved loans will provide almost another 680 jobs when funded. At the request of lenders, BOI developed other loan programs within policy guidelines.

When interest rates were higher, BOI received a request to streamline the process and the small loan program was developed, allowing banks to package a number of small loans. Those loans required a higher equity and a higher capacity to pay or debt coverage, with a 30/360 basis and required auto deduct from their account. The program worked well.

Another request indicated a need for subsidized or low-income housing loans, which BOI did not offer at the time. When bankers asked why and there was no sufficient reason preventing such a program, BOI developed a low-income housing tax credit program where BOH applies for U.S. government tax credits, for either seniors or low income. In most cases, 80% of the loan is for tax credits. Loan amortization is 30 years; however, maturity is 16 years and the low-income participants have to remain in the project for 15 years; the interest rate is an average of the 15 and 20-year rates. If the borrower leaves the program early, they lose the credit. The program worked very well and was well received, although there were only half a dozen loans.

The legislature provided the Value Added Loan Program for BOI which was very successful when interest rates were high. It also initiated the Intermediary Relending Program (IRP), which allocated \$5 million for economic development for more matching federal dollars. Borrowers can apply for matching funds. BOI has only one seasoned loan, for the purpose of economic development. Seasoned loans must meet all commercial loan criteria. The most recent program established by the legislature was the VA program, created two legislative sessions ago. The program has been very successful.

Butte Silver Bow City County Investment Policy

Mr. Cliff Sheets and Mr. John Romasko presented a new policy, the Butte Silver Bow City County Investment Policy Statement, and provided a brief history. The authority for the entity, The Butte Redevelopment Trust Authority Fund (BRTA) came into existence in 2006 with the legal settlement between the City and County of Butte-Silver Bow and the Atlantic Richfield Company (Arco) stemming from Montana's long mining history and corresponding cleanup. The policy statement allows for investment in the Trust Funds Investment Pool (TFIP) as opposed to only cash, which has had a diminishing rate of return.

Executive Director Ewer provided some background information. Senator Jon Sesso, who is the chief planning officer of Butte Silver Bow, approached BOI about the possibility of enabling local governments, under certain circumstances, to utilize BOI for more than STIP investments. Up to this point, local governments have been authorized to invest exclusively in STIP. Senator Sesso requested, and then crafted the bill, and he was receptive to BOI offering input on drafting the bill. Senator Sesso included the items suggested by BOI into the bill draft.

The bill parameters stipulate if a government has a onetime phenomenon, such as an insurance settlement or environmental settlement, excluding operating costs, of a minimum of \$10 million, it may be eligible. Additionally, the local government applicant must represent, in good faith, that any principal is not needed for at least five years. The law states local governments are not required to use BOI and BOI is not obligated to accept the money. The Trust Funds Investment Pool (TFIP) is intended as a long-term investment. Mr. John Romasko compiled the investment guidelines, which were written very similar to other environmental funds.

Chairman Noennig asked if any other entities are expected to utilize the law.

Director Ewer stated there are no expectations at this time and the law has a high hurdle with specific, unique circumstances. Livingston has a significant site with Burlington Northern, but staff has not been contacted by them.

Responding to a question from Chairman Noennig, Director Ewer stated the TFIP investments are not unique. Certain clientele such as DNRC or DEQ use the pool when they require a long-term horizon. The TFIP provides liquidity and yield, but neither is guaranteed; it is used for long-term investments.

Responding to a question from Chairman Noennig, Mr. Romasko stated the only other investment option is STIP; unless there is a liability with a specific time frame, then an individual investment, such as a five-year agency bond, would be an option. TFIP provides diversity and additional pick up in yield.

Member Terry Cohea noted the Montana constitution does not allow for non-pension equity investments.

Mr. Sheets added the prohibition for investing in equities is precluded by constitutional requirements. An individual bond would have more direct exposure to default, but the TFIP is highly diversified and includes high yield investments through a high yield fund. It allows a highly diversified mix, with fixed income like instruments, and provides additional yield.

Member Jack Prothero made a motion to approve the Butte Silver Bow City County Investment Policy Statement. Member Cohea seconded the motion. The motion carried.

CEM BENCHMARKING ANALYSIS

Mr. Mike Heale, CEM Benchmarking

Mr. Heale presented the CEM Benchmarking Results. The report provides an independent, objective review of costs and performance over the five years ending 12/31/14. There are 53 U.S. public funds included in the universe. The review database was not fully populated, but did include about 75% participation. For the cost analysis, the focus is on the custom peer group of \$4.2 billion to \$17.8 billion; BOI is near the median at \$9.6 billion. The peer group contains mostly the same participants as prior years, with four new or different funds. The ones replaced were those that had not submitted data or the data was not of sufficient quality. The report focus is on the 18 U.S. public funds most similar to BOI for peer comparison and returns are broken into two key pieces. Asset mix is by far the main return driver, along with implementation impact. The report looks at costs and cost effectiveness in detail.

BOI has a total net total return of 10.6% over the five-year period compared to the U.S. public median of 9.7% and a peer median of 9.8% compared to the median of the 53 U.S. participating public funds universe.

Mr. Heale reviewed the policy return and noted the BOI policy return was 10.6% compared to the U.S. public median of 9.6% and peer median of 9.7%, a ranking in the top 10%. There is a special adjustment applied to private equity when comparing to benchmark, as funds have self-selective benchmarks that are very diverse. In order to show funds on a more consistent basis, a common benchmark is applied to the private equity component of all funds with private equity. Because this benchmark is a function of lagged public small cap equity returns, this lowers the policy return compared to applying the BOI benchmark of the S&P 1500 + 4%. Responding to a question from Member Satre, Mr. Heale stated the policy return is based on the benchmark, generally using passive indices.

Mr. Heale reviewed market returns of the different asset classes. The strongest class was publicly listed REITs; however, it was a very good five-year period for equities in general. Private equity lagged a bit, followed by bonds and the foreign equity market, and lastly by hedge funds at 4.2%, of which BOI has no holdings.

BOI policy return is high relative to most U.S. funds since it contains more U.S. stock at 36% on average, compared to 25%; and BOI has more private equity, 12% vs. 8%, and no hedge funds, while the public average is 4%.

Implementation impact is the difference between total return and policy return, and impacts are usually quite modest.

Mr. Heale added if totally invested in passively managed assets, the result would be minus some number of basis points compared to the benchmark, as there are costs to invest passively. Additionally, generally active management provides a modest return, adding 19 basis points of positive value; the recovered cost plus the added net value.

It helps to look at net returns by major asset classes compared to peers. BOI had higher net returns than peers for U.S. average public returns, all stock, all fixed income and real estate and just slightly behind peers for private equity. Costs for managing assets in house, including direct management transaction costs, are not included. External managers make up a bigger chunk of costs.

BOI total costs for 2014 by asset class, including both active and passive, equaled \$54.6 million or 56 basis points. In reviewing the cost trend over five years, costs decreased from \$68.9 million to \$56.6 million, a significant decrease over five years. Passive holdings increased from 36% to 53% and the allocation to higher cost private equity has declined to 12.7%. The 56.6 basis points of pure cost compared to the peer median and U.S. median of 67.2 basis points is due to the difference in asset mix, which has a big effect on cost. Holdings of high cost assets for BOI is 19% vs. the peer average of 21%.

Mr. Heale stated the benchmark cost calculation for BOI is 56.6 basis points, 3.4 basis points below the benchmark cost of 60 basis points, slightly below peers. The main reason BOI is lower is the difference in implementation style; less external active management and less fund of funds. BOI is paying slightly more for external investment management costs, and slightly less for custody costs.

For BOI implementation style differences, 47% external active asset management vs. peers at 69% provides a structural cost advantage of significantly less external active management. For U.S. large cap stock, BOI has almost 30% external active vs. peers at 38%, a 30 basis points advantage that saved \$717,000. BOI's private equity portfolio is more diversified than peers, containing 26.6% fund of funds vs. 34% for peers, which saved almost \$1 million.

In summary, including all costs, BOI saved \$3.2 million due to implementation style compared to what you would expect on a benchmark basis. The key factors include less external active management, minimal fund of funds, paying a bit more for external management and a bit less for internal management. The key results show good returns over five years, a 10.6% net total return, placing BOI in the top decile.

Executive Director Ewer asked what advantage active vs. passive management has on average year over a year by comparison.

Mr. Heale stated U.S. pension fund performance of the CEM database over the last 24 years averaged 19 basis points of positive net value added. Mr. Heale explained the factors associated with generating the 19 basis points include the use of active management, those using 100% active management outperformed by 38 basis points on average over passive funds net of fees.

Internal management outperformed external by 22 basis points and very few funds the size of Montana's use internal management. Typically, funds over \$50 billion manage internally and reap the benefits due to pure economies of scale. If 100% passive management were used, there would be a negative result.

Mr. Heale added cost trends have increased over the last 10 years from 42.2 to 61 basis points, due largely to private equity and hedge fund costs and more external active managers. For 2014, costs averaged 64.1 basis points for the U.S. universe; however, that excludes transaction costs and private equity incentive payments, therefore the actual true cost for U.S. pension funds is closer to about 90 basis points, if all costs were truly reported. Mr. Healy stated managing cost is important, as it consumes about three quarters of gross value added.

Mr. Heale reviewed performance differences between defined benefit vs. defined contribution. Reviewing the database, results over an 18-year history show a total return advantage of 1.11 basis points for defined benefit plans. The underperformance for defined contribution plans is due in part to asset class differences. Private equity has been a good returning class, but while defined benefit plans have 4%, defined contribution plans have none; real estate makes up 5% of defined benefit plans while defined contributions have none. Defined contribution plans do not reap the benefit from those asset classes.

Mr. Jim Voytko added if all structure was fixed between defined benefit and defined contribution it would still be problematic; there will always be a gap, due in part to behavioral factors.

Mr. Sheets asked about the general measure of implementation of the value added over the long term, the 19 basis points, in context of active vs passive. In terms of index funds creating the difference, there is broad implementation impact, the differential between policy weights and actual weights.

Mr. Heale stated, yes, there are mixed impacts with actual weights vs. policy weights, where you make tactical decisions and the asset class levels. U.S. large cap has been the exception and has been negative.

Mr. Heale added he commends BOI staff and noted the quality of the report is a reflection of the great job they do.

ASSET RANGE RECOMENDATION

Mr. Cliff Sheets, CFA, CIO

Executive Director Ewer stated the Board is required by policy, in accordance with the Governance Manual, to annually review pension asset allocation and it is one of the most important presentations staff makes. The annual review has been moved up from the November to the August Board Meeting, due to the retirement of Mr. Sheets in October.

Mr. Sheets started with a discussion of a cash flow analysis of the pensions, and noted it includes the two biggest plans, TRS and PERS, which represent about 87% of the total assets of the nine plans. Cash flow is important in relation to asset allocation given its impact on the ability to raise cash. The cash flow status of these plans is negative, meaning cash outflow for benefits is larger than incoming contributions and portfolio income or yield. Staff conducts an analysis each year, and projects over a five-year interval. Mr. Sheets acknowledged Mr. Eron Krpan as data analyst and noted he has been very helpful in enhancing the credibility of the data.

The contribution inflow to the portfolio, plus income and asset sales are combined to meet cash needs, primarily benefit outflows. The dependence on asset sales is the crux of the challenge given the net cash need. The implied asset sales are forecast to continue to grow in dollar amounts and as a percent of assets. The growth rate of benefit distributions is greater than contribution growth rates by 2-3% per year. The implied sales as a percent of assets is projected to increase to 1.7% of average assets in five years.

Mr. Sheets stated it is important to consider that growth of implied asset sales will increase irrespective of returns, as the size of the gap continues at approximately the same level regardless of investment returns. Even a good return year does not increase the portfolio enough to generate sufficiently more income to provide a meaningful change to the net cash needed. Assets must still be sold, although poor returns can make things much worse over a short period; however, even absolute strong returns will not close the expected gap. The current outlook suggests a marginal deterioration in cash flow. The change in cash flow status does not warrant a change in the management of assets at this time.

Member Terry Cohea asked for a brief review of the sensitivity analysis graph presented, showing the best, base and worst-case scenarios.

Mr. Sheets explained the graph projects the total return assumption for the next five years. The base line assumes a 7% total return, a bit more conservative than the actuarial rate of return; the best case reflects a more volatile picture, but is generally positive. The worst case is similar to the period of fiscal years 2008-2012. In the worst case, even when you get a snap back in terms of positive returns, you do not realize significant improvement on implied sales as a percent of assets. The difference in implied sales from best/worst case is a differential of 1.6%. On a cumulative basis, that adds up to 10-13% of assets.

Mr. Jim Voytko added it has been some time since RVK last conducted an asset liability study; the five-year analysis of cash flow is very reminiscent of the asset liability study. The study showed liquidity was an issue, and if payouts exceed the contribution policy, the trend of cash needed will continue to trend up. Consequently, the allocation to illiquid assets will need to be curbed back over time. This is something the Board has no control over, but increasingly will influence investment choices if the trend continues. It would take persistent, extraordinarily high returns to overcome contributions at levels less than benefit outflows.

Member Karl Englund inquired if there would be a lag between when higher contributions rates are implemented and when the payout is affected.

Mr. Voytko stated yes; and the lag can last longer if higher than expected retirement rates occur.

Mr. Sheets stated FY14 data reflected employee and employer contribution additions and general fund and coal tax reserve input. The issue is not just a contribution policy function. There was a meaningful impact from the changes in contributions set by the legislature, and any benefit adjustments were implemented on new employees only, so any benefit adjustments are slow to impact the cash need status. If changes in benefits only affect new employees, the impact will not be meaningful for a generation.

Chairman Noennig noted if there is a continued net increase in projected assets, though the concern is not immediate, there will come a time when that is no longer true and the required payouts may jeopardize the ability to invest.

Mr. Sheets stated the perception of the issue is affected by nominal asset growth. In 2009, there was a drawdown of assets, but that did not change the net cash needed. In 30 years, there may be an actual shrinkage of assets. Even as assets grow, there could be challenges, and over time more retirees will be added as well.

Chairman Noennig asked what strategy can be used to convince policy makers to understand the issue.

Mr. Sheets responded any need to sell assets requires a plan. The question is do you want a greater dependence on highly volatile assets if you have to depend on sales to provide the net cash need. It is much less painful to sell stocks when they are up 10% in value, but much more difficult if they are down 10-20%. Regarding the current asset allocation recommendation, staff is not recommending any change. The fundamentals are very similar to last year: determine what the plan needs are and what is required in terms of return. There is a need to invest in risky assets and stretching to include assets that provide return over time, while at the same time considering a balance of risk and return and viewing risk in the context of volatility. The fundamental concept is the importance of diversification, which helps smooth the return pattern. There will be times of a perfect storm for correlations, but over time, there is a benefit from diversification. The liquidity concern goes beyond just ease of trading, but the dependence on the need to possibly sell a depressed asset. Additionally, liquidity is not simply black and white. Staff conducted the secondary private equity asset sale last year and generated \$120 million, but you cannot rely on those opportunities. In addition, ranges need to be wide enough to accommodate inherent market volatility. The denominator effect can have a big impact. Staff uses the discipline of ranges to help keep within a similar risk profile.

Mr. Sheets summarized that while implied asset sales will continue to be more noticeable, they are manageable at this time. Staff is requesting Board approval of the pension asset allocation recommendation.

Executive Director Ewer asked if there is a reasonable argument for continuing the total maximum total equity level at 72%, given the permanent phenomenon of net cash needed, or if there is a counter argument for changing it.

Mr. Sheets replied we do not know what equity will do, including private equity, and we cannot predict what the market will do. Returns do not necessarily help the cash flow issue; even with great bull markets, that will not make up the difference required. Income and returns only help so much, they cannot overcome net cash needed which will continue to provide challenges in the future.

Director Ewer asked what the window is, going forward, before a change in asset allocation is required.

Mr. Sheets stated it is important to review asset allocation annually. Benefit or contribution policies are dependent on the legislature. These are important variables not set by pension boards or actuaries. Considering the status quo, if the baseline proves out, in seven or eight years the question will likely need to be addressed more seriously.

Mr. Sheets added the challenge will evolve over time in terms of asset class preferences. Monthly payouts are very predictable; it is a slow motion challenge. Cash flow is slow motion and on the asset front, it is more a case of adjusting the flavor of assets. Fixed income and real estate, for example, can provide more income generating strategies. Even public equities can allow more focus on income generation. The situation will be more stressful at some times than others; a bear market in stocks would create a more difficult scenario to sell assets.

Member Marilyn Ryan asked if, in the short run, simply increasing contributions can make a difference.

Mr. Sheets replied in the short run, yes. The effort to trim costs of the system by dialing down the Guaranteed Annual Benefit Adjustment (GABA) was on the right track, but it did not succeed legally and added staff must look at the investment end. It is natural as a defined benefit system matures that net cash needs play out; some plans are a lot further down that road than Montana.

Member Englund noted if you consider an increase in contributions over the long term, and the decrease in benefits to new employees, once the new employees start collecting less in benefits and those now collecting die, it should aid the system in the long run. Continuing the year-to-year analysis is a good approach as a Board.

Mr. Sheets added some adjustments will help over the long term. The ability to manage it depends on investment assets and the ability to raise cash; it is important to manage around the issue and to look at markets on a monthly and yearly basis.

Member Cohea asked what the best strategy is to let people know there is an issue; as even though assets are growing, net cash needs continue to grow because of the age of plan, although the progression is slow.

Mr. Voytko stated while the process is slow, the gap between contributions and payouts will continue to grow even as assets continue to grow. Looking beyond the current generation, the payout ratio could get worse before it gets better, and changes in asset allocation may be required to accommodate.

Member Jon Satre asked if there is a window of 5 – 7 years where the issue is not yet critical, should the opportunity be taken to enhance allocations, even if it does not make a huge difference. The private equity allocation decreased after the recent secondary sale.

Mr. Sheets explained private equity did decrease from 12.6% to 10.7%, but that was due in part to the denominator effect resulting from the long-term positive stock market, which boosted the denominator. Equities do provide better returns over time, but the balance of returns/risk must be maintained over time; selling assets in a down market is not ideal. Markets have had low volatility and been generally positive since 2011 and since March 2009, it is easy to be lulled by the return pattern of stocks. The trend line of the S&P 500 has been calm with low volatility for 3-4 years and it is easy to forget the third quarter of 2011 when stocks went down significantly. Asset allocation ranges are built to be flexible. There are ways to seek returns in a broad sense of asset allocation by maintaining the current biases. The current and expected net cash need is more a function of benefits and contributions. The cash issue is not a dire situation and is manageable in the foreseeable future; it is wise to keep a long term perspective, don't panic, and keep using a deliberative process.

Member Karl Englund made a motion to approve the asset allocation ranges as presented. Member Sheena Wilson seconded the motion. The motion carried.

RISK MANAGEMENT MINDSET – RVK INC.

Ms. Becky Gratsinger, CFA and Mr. Mark Higgins, CFA, RVK, Inc.

Ms. Gratsinger began the risk management presentation by recounting some of the key challenges facing public pension plans. She emphasized that while many investors focus heavily on volatility risk, there are many other risks that must be considered. Examples include investment or headline risk, liquidity risk, solvency risk and governance risk.

Mr. Higgins then reviewed each of these risks:

1. Governance risk occurs when the structure of an institution is not suited to manage assets effectively, and therefore are not managed efficiently or in the best interests of the benefit stakeholders.
2. Investment risk occurs when the investment strategy is not executed effectively.
3. Operational risk occurs when, although an organization is governed well, operationally, something lacks, such as an insufficient disaster recovery plan.
4. Solvency risk is the risk an institution cannot meet its obligations. Mr. Higgins noted that this risk a bit different, as this is outside of the control of this Board

Member Jack Prothero noted personnel changes, and the associated risk of hiring the right people, is a situation BOI is facing currently with the challenge of hiring a new CIO with the pending retirement of Mr. Sheets. It is a big risk, and if the individual filling the CIO position is a bad fit, it could be detrimental.

Mr. Higgins concurred that this is the biggest risk that the Board faces currently, but credited the Board for treating the issue with the appropriate level of concern and action.

Mr. Higgins reviewed the different aspects of the various risk categories. Governance risk includes problem areas such as an inadequate legal framework or delegation. Mr. Higgins noted that MBOI has done very well in this area. The Governance Manual includes established outlines, detailing what the Board, staff and other stakeholders are responsible for; it also ensures investments are well managed. The establishment of a citizen board and the ability to ask questions and monitor staff is important, but delegation is critical. Typically, boards do not delegate enough. The MBOI Board understands the oversight role and delegates appropriately.

Additionally, the decision making process itself, which may include discipline in sticking to an agenda and meeting preparation is a big risk. Mr. Higgins crediting the MBOI for the use of the 24-month work plan and preparing well. RVK noted that they use the work plan with other clients because it works so well.

The turnover of board members is one challenge many boards have; it is critical to maintain strategic continuity during turnover. The BOI board member orientation is very helpful for continuity. The BOI Board is also proactive in terms of reaching out to RVK and others for education of new and existing Board Members. That BOI is a well-governed board is not an accident; it is very deliberate.

Member Jon Satre asked Mr. Higgins if he had any concerns regarding the Board.

Mr. Higgins replied that poor performing boards rarely ask that question, but nonetheless, he believes that MBOI is a very well-functioning board.

Ms. Gratsinger added it is important to have the Governance Manual and to revisit it regularly. Having the plan in place helps to implement discipline; it codifies what is working and is a living breathing document.

Executive Director Ewer added is it a reality of what we are doing. The Governance Manual is the backbone of the status quo as of now and has been very important; staff takes it seriously. For instance, last year the succession plan was updated. It is the reference for process/discipline and is a profoundly important document.

Mr. Higgins stated on the operational front, the important factors include administrative structure, the right people, systems and policies in place, along with robust checks and balances, and regular internal/external audits. Additionally, it is important that budgetary controls are regularly reviewed and costs are reviewed, as they are an important driver of ultimate returns of a plan. Other factors include IT and security, which are very important; the technology invested in requires continuing investment and the necessity to have a continuity plan in place.

Mr. Higgins continued, regarding HR management, when senior staff leaves, the investment profession can attract talent and managers and one way to compete is to have exempt employee status, and be competitive in terms of pay. Characteristics include the ability of the personality and the leadership of staff. Additionally, Montana is not necessarily a destination, so recruiting can be difficult.

Ms. Gratsinger reviewed investment risk. Although revisited often, some institutions do not look at asset allocation enough or react to market factors. It is important to adhere to the prudent expert principle and diversification principles and to reaffirm the asset allocation ranges each year. Some plans still operate under the prudent man rule, rather than prudent expert. Even long-term investors can be tempted to make tactical moves, but it is best to have a clear long-term horizon. Monitoring the absolute levels of risk is also very important to prepare for market scenarios.

Ms. Gratsinger noted when it comes to active manager performance, when an investment manager goes through changes or performance suffers, decisions can be difficult. Nearly all managers go through lower quartile times and some funds cut and run when a manager is bottoming out. It is important to establish limitations on managers. It is painful to sell an asset at the low point. Another question is when you have illiquid asset classes, how much do you allocate to them. It is important to rebalance the portfolio to help keep on track from a risk and illiquidity standpoint.

Ms. Gratsinger reviewed solvency risk, stating if the contribution policy inadequately provides for sufficient contributions, it represents a long-term risk to the portfolio. Although the Board does not have control over contribution or distribution policies, both are closely monitored. Many plans struggle, with the market performing so well, with the assumed return and many plans are trimming forecasts back. You must regularly check in to what portfolio contribution expectations are, over time, to the plan.

Mr. Higgins added this is a very good point now, looking at the performance report, to guard against becoming complacent, as you never know when danger looms. Sticking to your strategy, philosophy and discipline are all important. It increases the odds you would act prudently and exercise due diligence when/if something happens.

Executive Director Ewer thanked Mr. Higgins and Ms. Gratsinger for the presentation and added it is a good resource to have an independent periscope from an outside source.

Being no further business, the meeting adjourned for the day at 3:48 PM.

BOARD MEETING - DAY 2

CALL TO ORDER

Board Chairman Mark Noennig called the regular meeting of the Board of Investments (Board) to order at 8:00 AM and called for public comment. There was no public comment.

Audit Committee Chairman Jon Satre requested the Board formally approve revisions to the Internal Control Policy as presented and made a motion for approval. Member Sheena Wilson seconded the motion. The motion carried.

CONSULTANT REPORT

Ms. Becky Gratsinger, CFA and Mr. Mark Higgins, CFA, RVK, Inc.

Mr. Higgins reviewed the capital markets for the past quarter and presented the executive summary, which was added as a regular item for Board distribution. Mr. Higgins stated the recent market trend has been challenging, but more positive for the BOI portfolio than others, due to domestic equity exposure. In the end, markets for the quarter ended up relatively flat, although international equity markets were up a bit more than domestic equity markets. The big news in the second quarter was the continued challenge in Europe related to the Greek economy and need for additional support from the Eurozone. While there was speculation that Greece may leave the Euro zone, in the end a deal was brokered.

Of bigger concern over the second and third quarters was uncertainty in China, which saw continued weakening of their economy. Evidence of weakening was apparent in export volumes and real GDP growth. One side effect of the slowing Chinese economy was a collapse in commodity prices, such as oil, copper and iron. There are also concerns that economic weakness in China may continue to negatively impact U.S. and world markets.

On the domestic front, U.S. equities and fixed income returns were not as strong as over the last five years. Headwinds included fears of what many believed to be a potentially premature Fed rate increase, as well as concerns over a slowing global economy. The U.S. dollar strengthened over the last year, putting further downward pressure on energy prices. On the positive side, there is still moderately positive GDP growth. Job growth also continued to show solid growth, with the U.S. continuing to add roughly 200,000 jobs per month. This continues to steadily decrease the unemployment rate and bring discouraged workers back into the market.

After Mr. Higgins concluded the discussion on capital markets, Ms. Gratsinger reviewed the retirement plans. The total market value of the retirement portfolio is over \$10 billion: for the two largest plans, PERS now has more than \$5 billion and TRS has roughly \$3.7 billion as of June 30. The relative allocation is about 57% equities, 11% private equity, and 22% fixed income (or 24% if you add in cash).

Ms. Gratsinger reviewed the relative performance of the largest retirement plans. There were muted returns of 0.5% for the quarter, although the plans did outperform the benchmark and ranked of 27th among peers. Calendar year to date rate of return was 2.62% gross of fees and 4.6% for the fiscal year end with a 2nd percentile ranking. Over five years, MBOI ranked in the 1st percentile.

Over a three and five-year period, the return of the retirement plans substantially exceeds the actuarial hurdle rate of 7.75%. However, the 10-year net return lags of 6.6% still lags as the effects of the global financial crisis continue to exert a strong impact.

Ms. Gratsinger proceeded to review PERS performance vs. the plan sponsor peer group and stated relative to other plans, the portfolio had a nice progression and ranks at the top compared to other plans. The slight lag behind the PERS benchmark is due to the same private equity benchmark issue the Board has discussed on several occasions.

It is important to look at portfolio risk relative to other plans and to the benchmark. The portfolio position relative to the index is right on top of the median for return perspective, but when risk is added, things appear more attractive. Another measure of risk in a portfolio is equity beta, which indicates the portfolio's sensitivity to the S&P 500 index. Relative to other comparable public plans the portfolio is right at the median. In other words, despite a large overall allocation to equities, the plans have a similar sensitivity to equity as other plans with lower equity allocations.

Ms. Gratsinger noted that despite the past success, it will be very hard to replicate returns achieved over the past 3 and 5-year periods. U.S. equity has performed quite well, but is not expected to continue as such going forward.

The RFBP and TFIP had negative returns as interest rates went up in the quarter. Over the longer period return history, both have beaten the benchmark on every trailing period.

Real estate has been outperforming over shorter periods, but the long-term returns reflect the timing issue of entering into the market.

STIP has had very small returns on a net of fee basis and has a small underperformance vs. the benchmark for the quarter.

In the absolute sense, the private equity pool has helped total return going back to 2012 and performance is very positive; there are no concerns regarding the underperformance vs. the benchmark.

Ms. Gratsinger noted on a gross of fee basis, the asset pool performance compared to other plans shows a relatively good ranking for domestic equity for the quarter and FYTD; the international ranking comparisons must take into consideration that other plans contain less emerging markets.

In summary, overall, relative ranking has improved and compared to other plans, Montana has extracted a considerable amount of value from capital markets. RVK continues to support the asset allocation decisions made by staff.

INVESTMENT ACTIVITIES/REPORTS

Retirement System Asset Allocation Report

Mr. Cliff Sheets reviewed asset allocation and performance for the quarter and fiscal year ending June 30, 2015 and highlighted the fact the quarter was relatively mediocre. Total plan assets were essentially flat, declining by \$10 million. Clearly, returns were more muted for equity assets this quarter, and slightly negative for fixed income because of a rise in interest rates. International equities did pick up relative to domestic, although that has changed since quarter end. Overseas events and emerging markets in particular are creating a return drag for international equity right now. Changes in asset allocation weights were small; domestic stocks saw a decline as performance was flat and sales were made from the domestic equity pool. A portion of the net sales across the three different equity categories were added to fixed income to retain the minimum policy weight to this asset class.

Mr. Sheets stated, looking back at the fiscal year, allocation changes were influenced by returns mostly, and transactions to a lesser extent; the actual dollar increase of total plan assets was approximately \$230 million. The positive net return of 4.6% was weaker than the actuarial hurdle. Missing by 3% is not a significant shortfall; FY12 was down about 2%. This does not indicate a real problem in the context of longer-term returns, and returns are not expected to continue at the recent pace. Allocations overall changed little, but of particular note is the domestic vs. international equity weights which grew apart due to relative performance. Overall, equity declined slightly, by half a

percent, reflective of negative returns for international stocks offset by a 7% plus return from domestic stocks and a little over 8% for private equity.

The sales of \$125 million in domestic stocks reflects the continuation of exercising limited degrees of change in asset allocation, consistent with selling stronger performing assets and buying weaker performing assets. Staff pulled out excess liquidity from the private asset pools and added \$135 million to the fixed income pool to remain above the allocation floor of 22%. Mr. Sheets emphasized that for overall diversification, the alternatives are providing benefits. The private equity pool continues to perform very well, and the real estate pool is doing well; the asset class is serving its function. The objective of the allocation to real estate was to provide added diversification and it is providing that function and hitting the absolute return target. There is no way to know if the trend will continue, but the pool has done well over the last year.

Mr. Sheets reviewed asset allocation peer comparisons and noted there were no meaningful changes relative to peers. Total public equity weight is right at the median of 56% for the custom universe, yet last quarter the median was 59%, so it varies from quarter to quarter. BOI does have an ongoing tilt to domestic equity vs. international. Fixed income is slightly above the median, although fixed income has been very close to the median in the recent past; policy minimum is 22%. For real estate, BOI is in the top quartile at 8%, although the median of 4.6% can be misleading. The true median is higher, closer to 7% or 8%, in reality. Real estate has provided a very favorable exposure, both with positive returns and diversification. BOI is now slightly below the median for private equity; no significant change there.

Member Englund asked if the relative allocation levels are cause for concern.

Mr. Sheets responded there will be times when domestic equity may hurt us, but that is not the case currently. As of now, the positive tilt still makes sense; international stocks are cheaper than U.S., but they are cheap for a reason. The portfolio does have a 17% exposure to international equity, and we do get concerned at times when international outperforms, but not over the long term. The current equity mix is functioning well.

Chairman Noennig asked what factors would lead to reducing domestic equity in favor of international.

Mr. Sheets stated the fundamental economic difference between the U.S. and the rest of world would have to equalize. There is a lot going for the U.S. economy versus the challenges in Europe, and emerging markets in particular. There would have to be a change from stagnation to more fundamentally positive economic growth, which will drive earnings, and more confidence is required to justify an increase on the international side. Also, global equities are more closely correlated than 20 years ago.

Mr. Sheets reviewed the measure of beta, or correlation with the S&P 500, of the different asset classes for the retirement plans as prepared by RVK. BOI's beta relative to the S&P 500 is stable at about 0.6; however, international stocks have been all over board, although for a while they were trending with domestic stocks. More recently, they have had a dip in beta. Whether beta is at 0.8 or 1.2, generally international equity moves in the same direction as domestic equity, though recently beta relative to the S&P is shifting to a lower correlation for international equity.

Mr. Sheets reviewed relative performance vs. the State Street peer universe, and stated looking at one through five years the portfolio is in top the quartile and sometimes the top decile. Comparing the median returns vs. the BNY Mellon data used in RVK's book, in some cases the State Street Bank data is higher or lower depending on the time period, but over 10 years the median returns are the same. Gross return for PERS for 10 years at 6.93% is spot on with the survey data provided by RVK, ranked around the 30th percentile.

Fixed Income

Mr. Nathan Sax presented the Fixed Income overview and strategy for the quarter ending June 30, 2015. Mr. Sax stated the U.S. Treasury 10-year note rose over the quarter, ending at 2.354%; today it is at 2.22%, so interest rates are still low. The Fed has been in the news a lot; the Fed's target of inflation is 2% and there is a lot of anticipation the Fed will raise rates. In Europe, there was a flight to quality; the German yield decreased to seven basis points, and there is a lot of concern with emerging markets due to China's markets. Commodities prices have fallen and manufacturing activity is on the wane. Oil is a big part of commodities and oil has fallen substantially. Over the last quarter, Aberdeen Asset Management was terminated. BlackRock was the transition manager and a total of \$106 million was liquidated, which will be kept and managed internally. Reams Asset Management has started to improve; they have been on a 17 basis points fee vs. Aberdeen, which was 25 basis points. After prolonged volatility and performance issues, including global bonds and exposure to currencies, Aberdeen (formerly known as Julius Baer then Artio) was terminated.

Mr. Sax stated there were no changes to below investment grade holdings.

Fixed Income External Managers Watch List

Mr. Sax reviewed the external managers watch list and noted Aberdeen, now terminated, will come off the list. They ranked at the 94th percentile for the quarter, 98th for the year and 99th 2013. Staff believes they have a good team; however, several strategies have not worked out. Reams will likely be removed from the list next quarter. Reams was ranked at the 86th percentile for three years, but moved up to 33rd last quarter. The Core Internal Bond Pool (CIBP) continues to perform well, ranking at the 10th percentile for one year and 32nd for three years. Neuberger has experienced mediocre returns for the 1, 3 and 5-year periods; high yield managers have not been comparable to liquid aggregate managers. Post has performed very well and returns over 1, 3 and 5-year have been fantastic; we pay a 60 basis points fee, but they have done remarkably well. They were on the watch list for a while but have improved.

Short Term Investment Pool, State Fund Insurance & Treasurer's Fund Report

Mr. Rich Cooley presented the Treasurer's Fund report for the quarter ending June 30, 2015. Staff bought \$20 million of securities to bring the total up to \$140 million, attempting to pick up additional yield; a 98 basis points yield for \$140 million is a good pick up over the STIP yield.

Mr. Cooley presented the STIP report for the quarter ending June 30, 2015 and noted there was not much change in money markets. Investors are still waiting for the Fed to take action on interest rates and the market seems to think it will happen in September. The 3-month Libor moved up five basis points; not much, but more movement than we have seen recently. There was a little widening of spreads with 2-year bank paper; staff sold a bit of short bank paper that had rolled down, most of which had a gain. Staff was able to increase book yield by rolling out to 2-year securities. The portfolio yield was 23 basis points at the end of the quarter; currently it is 24 basis points. STIP return is 12 basis points for the year, below both the benchmark and the peer group. This is mostly a function of the reserve account fund; the 3 and 5-year numbers have not changed much. The STIP reserve impact was reduced due to a decrease in the daily addition to STIP reserve fund from \$10,000 to \$8,000 per day on June 22. This reduced the STIP yield impact from 15 basis points to 12 basis points increasing yield to participants by three basis points. At quarter end, the total reserve fund balance was greater than the outstanding book value of the SIVs. Over the quarter, the reserve account increased by about \$1 million and the SIV pay down was about \$1.6 million.

Responding to questions from Member Englund and Member Cohea, Mr. Cooley explained paybacks on the SIVs are rolling right along and BOI may receive the total due over the next three to five years. The change in the reserve fund is a result of the change in book value due to pay downs on those assets; maturities over time will determine if and when something should be sold.

Additions to the STIP reserve account include the amount held back from yield, income that flows off the SIVs and proceeds of security sales made out of the portfolio. There were some gains on securities sold over the quarter.

Mr. Cooley presented the State Fund report for the quarter ending June 30, 2015. The most significant thing over the quarter was the widening of corporate spreads by 16 basis points and increasing treasury rates during the fiscal year. Fixed income, including STIP, had 40 basis points of out performance. Purchases included corporate and government, mostly 5-year, but some 10-year securities, with a good pick up in yield. Sales of equity units totaled \$3 million for the quarter as equity approached the fund maximum ceiling of 12%.

The current State Fund breakdown of fund holdings is 11.4% domestic equity and nearly 6% real estate. The total portfolio had a one-year return of 3.05%. Total equity return was 5.94%, although domestic equity was 7.49%. The best return was 12.38% for real estate.

Mr. Sheets added it is important to remember the objective for State Fund is income, although total return does affect income.

Mr. Cooley added the strategy is mostly buy and hold to keep the book yield up.

Montana Domestic Equity Pool (MDEP)

Mr. Rande Muffick presented the Domestic Equity Pool (MDEP) report for the quarter ending June 30, 2015. Greece and China were the main characters in play this quarter, in particular China's economic state; a market correction is due. The U.S. markets were affected by the influence of Greece and China; although trading ranges are consistent with those seen over the past several months. Investors are waiting to see what the Fed does and are biding their time. In the U.S. market environment, growth stocks fared a lot better than value over the past year, due mainly to commodities; as prices fall, stocks follow the commodities. Those stocks are typically value stocks so it has an effect. The markets were favorable for growth stocks such as health care and biotech stocks. Market capitalization performances were mixed for the quarter with not much going on. Mid-cap performance was down from 1-2%, while small caps eked out positive returns. Over the last 12 months and fiscal year, large, mid and small caps came in close to each other in the upper single digits for the fiscal year. In the active management industry, domestic active did pretty well for the year. The median manager outperformed for all large, small and mid-caps for the fiscal year and the same for the end of the second quarter. For the BOI managers, domestic equity outperformed the benchmark for the fiscal year, so active managers are pulling their weight. All four large cap managers added value for the fiscal year. Mid-cap managers within the domestic equity pool struggled a bit, but still outperformed for the second quarter. In summary, the strategy for both pools is performing fairly well; the favoring of mid and small caps will continue for the portfolio and we expect allocations to stay the same going forward.

Montana International Equity Pool (MTIP)

Mr. Muffick presented the Montana International Pool (MTIP) report for the quarter ending June 30, 2015. There was a lot of volatility in the international markets in the second quarter due to China and Greece. International markets for U.S. investors like BOI were impacted due to dollar denominated negative numbers. Local markets did well, however U.S. investors are penalized when foreign dollars are transferred back into U.S. dollars. Small caps did well vs. large caps in non-U.S. developed markets and emerging markets. With all the concerns over the quarter, it is surprising small caps did as well as they did. Large caps are easier to sell generally.

The fiscal year had negative numbers due to currency, returns were mixed; large cap value did worse at -9.5% due to commodities. The top performer was small cap growth which still had a negative return at -1.4%. There was dramatic movement in the dollar over the year. The U.S. dollar was very strong over the last 12 months, which weighed on international returns for U.S. investors.

It has been a pretty good year for active management both domestic and international. MTIP outperformed vs. the benchmark and added value in large cap, even though we transitioned managers. There was an increase in the small cap allocation, which now has a slight overweight vs. the benchmark, due to the transition at the end of May.

For international exposure, specifically emerging market exposure, the portfolio is underweight as of the end of June; when China looked like a bubble, we pulled some money out of emerging markets. Consequently, there has been a big sell off. After the transition from the three legacy managers, the emerging market weighting was also affected and moved the portfolio to a slight underweight.

Public Equity External Manager Watch List

Mr. Muffick reviewed the Public Equity External Manager Watch List. There are two managers currently on the list. The first is a domestic manager, Artisan, which has been on the list for a long time. They have fallen in relative performance over the last year and a half; however, staff is not overly concerned and remains comfortable with the manager, and they are still following their style. Eventually performance is expected to come back. Mr. Muffick added, as Mr. Voytko mentioned, even the best managers can go through periods in the bottom quartile; Artisan's style is currently out of favor. The second manager on the list is Alliance Bernstein, a domestic small cap manager. Alliance Bernstein was hired at the top of their performance cycle; therefore, BOI's timing was not favorable. Performance has improved some, but they have stumbled a bit. A good manager, they have impeccable long-term numbers and are sticking to their strategy; a momentum stock manager, they are still picking stocks and managing the portfolio according to style.

Voya was removed from watch list this quarter. There was a change in the lead portfolio manager, but after three consecutive quarterly reviews with the new lead man, style implementation and philosophy have remained the same and things are going well, prompting staff to remove them from the list.

**PUBLIC EQUITIES
MANAGER WATCH LIST
August 2015**

<u>Manager</u>	<u>Style Bucket</u>	<u>Reason</u>	<u>\$ Invested (mil)</u>	<u>Inclusion Date</u>
Artisan	Domestic – MC Value	Performance	\$133.8	November 2014
Alliance Bernstein	Domestic – SC Growth	Performance	\$38.6	February 2015

Mr. Muffick reviewed the recent MTIP large cap manager transition. The main objective was to improve the combination of large cap managers within the international portfolio, and to enable more consistent performance relative to the benchmark and to improve the style complement with Acadian. Three large cap managers were terminated and three new managers were hired. The total transition amounted to \$360 million. When a new manager is hired, they do not receive 100% of the expected long-term funding goal, therefore the new managers received less than the amount removed from the terminated managers. The remaining balance went into a large cap index fund managed by BlackRock and \$10 million was allocated to Templeton. Templeton has performed well, therefore staff decided to allocate another \$10 million to the \$50 million currently under management.

Any transition is complex and affects several different accounts. State Street Bank Global Market was hired to manage the transition, at a total transition cost of 51.4 basis points. The cost turned out to be higher than anticipated; the actual cost on the \$360 million equaled \$1.9 million and the 11–12 basis points affected returns for the international pool as a whole. Transitions can be costly and when conducting any transition, it is important to understand when to hold on to a manager and when to let go. Ideally, it is best not to fire a manager at the bottom of a performance cycle.

Member Englund asked if all transition costs will be reflected in the most recent quarter returns.

Mr. Muffick stated yes, the negative 12 basis point impact will be reflected in the latest quarter. The newly hired managers had good performance in June, which helped. Mr. Muffick added the summary provided by State Street of the post trade report has detailed information of the transition. Some special trades were required as well as an initial position in emerging markets ETF's to take out an imbedded fund of a legacy manager. Transition managers attempt to mitigate any negative impact.

Mr. Muffick stated the largest part of the transition cost involved the portfolio holdings of the three legacy managers as State Street moved out of legacy stocks and into the new stocks. Those new stocks were outperforming the ones sold off and so the market moved against us. The cost to the actual portfolio return, as of the move on June 1, the \$1.9 million market impact, totaled 24 basis points which raised the total cost to 51 basis points. Taxes and commissions also had an impact.

The target portfolios were more expensive than expected and the internal/external cross costs were larger than estimated. Additionally, another fund was expected to do a transition at the same time as BOI, on the opposite side of the trade of many of the transition stocks, but pulled out at the last minute, which meant less external/internal crossing occurred. Internal crossing was estimated at 7.4%.

Mr. Muffick added there is an element of luck involved and there is no way to predict how the market will function on the day of transition.

Montana Private Equity Pool (MPEP)

Mr. Ethan Hurley presented the Montana Private Equity Pool report for the quarter ending March 31, 2015. There was one commitment for the quarter, a re-up with current manager Neuberger Strategic Co-Investment Partners, III, LP for \$20 million. MBOI committed \$20 million to Fund II in 2012 and \$35 million to Fund I in 2006.

Fund Name	Vintage	Subclass	Sector	Amount	Date
Neuberger Strategic Co-Investment Partners III, LP	2015	Buyout	Diversified	\$20M	7/10/2015

It was another positive cash flow quarter, which marks 13 out of the last 14 quarters. The pool is well diversified by strategy and industry and remains geographically North American centric. There were no material changes over the quarter; investments are primarily limited partnerships and fund of funds are used only when necessary. Responding to a question from Member Englund, Mr. Hurley stated fund of funds will continue to wind down, however the pace will be slow.

At quarter end since inception, the private equity pool net investment multiple was 1.5x and the net IRR multiple was 12.53%.

Montana Real Estate Pool (MTRP)

Mr. Hurley presented the Montana Real Estate Pool for the quarter ending March 31, 2015. Staff made one commitment since the last Board meeting to Equus Investment Partnership X, LP for \$20 million. This is also a re-up with an existing value add manager. The U.S. team is strong and tenured with a good record. Staff committed early with a first close and they gave us a reduced management fee.

Fund Name	Vintage	Subclass	Sector	Amount	Date
Equus Investment Partnership X, LP	2015	Value Add	Diversified	\$20M	4/1/2015

Reviewing pool cash flow for non-core funds only for the quarter, there was a net positive cash flow and real estate markets continue to rebound and are favorable. The portfolio exposure by strategy is relatively well diversified with no significant changes to report. Exposure by property type is very diversified, and there is no specific effort to under/overweight relative to the index. Time weighted returns remain positive for core managers.

Mr. Hurley reported the portfolio is conservatively leveraged and well within policy constraints.

Mr. Hurley advised there were no changes to the private equity and real estate partnership focus lists this quarter; however, Liquid Realty Partners, IV has been on list since August 2010 and has been a

concern. BOI joined other LPs as of June 26, 2015 and formally removed the GP and replaced with a new GP. The process proceeded in accordance with the governance outlined in the LP agreement, and the process worked.

Board Chairman Mark Noennig asked who initiated the action.

Mr. Hurley stated Duke Endowment, Harvard and Liberty Insurance initiated the process and it is a legal battle, not to the extent that the GP has been removed, but the GP has been reticent to relinquish the bank accounts. BOI is north of 6% of the fund; there is \$38 million in cash the GP has been holding back and has not given up. As of August 6, the current GP filed to show cause and there is a New York court date set for September 30 to disclose all books and records and accounts. The LP agreement letter was followed to the letter for the removal and replacement of the general partner; the process was done by the book.

Member Satre asked what the current BOI investment is.

Mr. Hurley stated BOI has over \$18 million in commitments, which is about 6% of the fund total and added he will keep board apprised of the situation.

Executive Director Ewer called for any to-do items for the next Board Meeting. There were no items noted.

The next scheduled Board Meeting is October 6. At this time, the Meeting is scheduled for one day, but may be extended to a day and a half if needed.

Being no further business before the Board, the meeting was adjourned at 9:55 a.m.

**MONTANA BOARD OF INVESTMENTS
DEPARTMENT OF COMMERCE
2401 Colonial Drive, 3rd Floor
Helena, Montana
MINUTES OF THE MEETING – October 6, 2015**

BOARD MEMBERS PRESENT:

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

BOARD MEMBER ABSENT:

Quinton Nyman

LEGISLATIVE LIAISONS PRESENT:

Representative Kelly McCarthy

LEGISLATIVE LIAISONS ABSENT:

Senator Bob Keenan

STAFF PRESENT:

Polly Boutin, Associate Financial Manager	Herb Kulow, CMB,
Jason Brent, CFA,	Portfolio Manager, In-State Loan Program
Alternative Investments Analyst	Tammy Lindgren, Investment Accountant
Geri Burton, Deputy Director	April Madden, Investment Accountant
Dana Chapman, Board Secretary	Savannah McCormack,
Richard Cooley, CFA, Portfolio Manager,	Administrative Assistant
Fixed Income/STIP	Rande Muffick, CFA, Portfolio Manager,
Frank Cornwell, CPA, Associate	Public Equities
Financial Manager	Mary Noack, Network Administrator
Craig Coulter, Alternative	Kelsey Poore, CPA, Investment Accountant
Investments Analyst	Jon Putnam, CFA, FRM, Fixed Income
Roberta Diaz, Investment Accountant	Investment Analyst
David Ewer, Executive Director	John Romasko, CFA, Fixed Income
Julie Feldman, CPA, Financial Manager	Investment Analyst
Julie Flynn, Bond Program Officer	Nathan Sax, CFA, Portfolio Manager,
Tim House, Equity Analyst/Investment	Fixed Income
Operations Chief	Clifford A. Sheets, CFA,
Ethan Hurley, CAIA, Portfolio Manager,	Chief Investment Officer
Alternative Equities	Louise Welsh, Senior Bond Program Officer
Ed Kelly, Alternative Investments Analyst	Maria Wise, Administrative Assistant
Eron Krpan, CIPM, Investment Data Analyst	Dan Zarling, CFA, Director of Research

GUESTS:

Jim Voytko, RVK, Inc.
Ryan Evans, Office of the Governor
Kristen Reynolds, DOA, State Accounting Bureau
Cody Pearce, DOA, State Accounting Bureau

CALL TO ORDER

Board Chairman Mark Noennig called the regular meeting of the Board of Investments (Board) to order at 10:14 AM. As noted above, a quorum of Board Members was present. Chairman Noennig advised the meeting is being video recorded and he called for public comment. There was no

public comment. The minutes of the August Board Meeting will be distributed for approval at the November 17 meeting.

Human Resource Committee Report

HR Committee Chairman Karl Englund stated the HR Committee met prior to the Board Meeting and will present its report after lunch.

Loan Committee Report

Committee Chairman Jack Prothero reported the Committee met prior to the Board Meeting and acted on two items. The first item was an INTERCAP loan for the City of Deer Lodge. The City is requesting an extension to its loan commitment for \$8,479,000 for its wastewater treatment plant. Based on the conditions set forth in the write-up, staff recommends approval of the extension.

Committee Chairman Prothero made a motion to accept the Loan Committee's recommendation to approve the loan extension request for the City of Deer Lodge. Member Kathy Bessette seconded the motion. The motion carried.

Committee Chairman Prothero stated Ms. Welsh provided an update on the status of loans with the Department of Natural Resources and Conservation; the Committee recommended no changes at this time.

Chairman Prothero noted the Committee also reviewed proposed Infrastructure Loan Policy changes for the In-State Loan program and he asked Mr. Kulow to present the changes to the Board.

Mr. Kulow explained the policy revision requires that the business entity using the infrastructure loan program must reimburse BOI for legal fees for review of the loan documents. It is the only fee required, and the legal fees are the only cost to BOI associated with the program. The policy now dictates that the entities reimburse the state for those legal fees.

Committee Chairman Prothero presented a recommendation from the Loan Committee to approve the proposed changes to Infrastructure Loan Policy and moved for approval. Member Terry Cohea seconded the motion.

Representative Kelly McCarthy asked if the entities will sign the loan agreement before the fee amount has been determined.

Mr. Kulow stated that is correct; however, every credit is different and therefore it is difficult to anticipate the exact fee amounts beforehand. Additionally, the cost varies depending on the attorney. There was no further discussion. The motion carried.

Committee Chairman Prothero reported the last item discussed by the Committee was a write-off of a Montana Science and Technology loan.

Mr. Kulow stated staff is recommending a write-off of Glacier Fund Manager, LP, which has a current outstanding balance of \$922,209. The original loan in 1995 was for \$1 million; in 2012 the debentures were converted into a partnership ownership. Some payments have been received over the years; however, the remaining balance is amortizing over an extended period of time. Staff is requesting a write-off of the remaining balance to enable an adequate reflection on the balance sheet. Any future funds received will be treated as recovery.

Committee Chairman Prothero made a motion to approve the write-off of the Glacier Fund Manager, LP loan in the amount of \$922,209. Member Terry Cohea seconded the motion. The motion carried.

Committee Chairman Prothero noted that Cascade County commissions offered good reviews of Mr. Kulow at a recent meeting.

Mr. Kulow added BOI has done three infrastructure loans in Cascade County: Centene, Loenbro and ADF, which combined, adds 800 jobs for the Cascade County/Great Falls areas, primarily due to infrastructure financing.

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

TRS Representative Marilyn Ryan reported on the TRS Board meeting last week, which included the 2015 Cavanaugh McDonough actuarial results presentation; also the July 1, 2013 factors were updated. Mr. Sheets attended that meeting and was able to provide some clarity to the TRS Board. In the last year, TRS was amortized at 28 years, which has now decreased to 26 years with a funding ratio of 67.46%, an increase of 2.1%. Even though the amortization has decreased and the funded ratio has increased, selling down of resources continues. The Board also reviewed the Guaranteed Annual Benefit Adjustment (GABA) in light of the case decision earlier this year. There are 18,316 active members and 14,839 retirees in the system, or 0.8 retirees for every active member, which has increased over the last 10 years, as it was previously 0.6.

Member Ryan provided an update on the request for information received by the TRS Board. Attorney Amy Leach from Colorado submitted the request. Ms. Leach is asking for all information on retirees, benefits and demographics. TRS has voted not to reply to the request. Installation of the new computer system is progressing and there are no new delays; it is a long process but is slowly moving forward. Member Ryan added Member Satre has a copy of the actuary book and summary.

Mr. Sheets noted Member Ryan is referring to the actuarial presentation, which included a page on cash flow; however, the actuaries for TRS look at the total return and designate it as income. To the extent that total return is positive, the actuaries treat it as a positive. The classification according to the actuaries is "total return investment income."

PERS Representative Sheena Wilson reported the PERS Board meets this Thursday and the actuary will provide a presentation to the Board. PERS has a new Board member, a former actuary, which is helpful. The Board conducted a one-year evaluation of Executive Director Dore Schwinden, which went very well. Mr. Schwinden is receiving rave reviews. The computer system project continues; the main concern is providing enough resources to keep the process on schedule; ITSD has been helpful. The audio of the PERS Board meeting and the actuary report will be posted online.

Legislative Liaisons Comments

Representative Kelly McCarthy reported there has been some good news, and pending the full report from legislative finance, the state is doing well with more state income than the legislature had estimated. The numbers are strong, especially given the changes in the eastern part of state.

Member Karl Englund asked if Representative McCarthy was referencing the Bakken region.

Representative McCarthy stated drilling activity is close to a standstill, although oil is still being pulled out; however, there is not a lot of new exploration. Indications warrant the situation should be more dire than it is, but the uptick in unemployment has only been 0.1%.

Chairman Noennig asked if there is yet another shoe to drop considering the inactivity in drilling and if that suggests a downturn in income at some point.

Representative McCarthy stated no, there was a free ride provided for the first 18 months, so now that the tax holiday is over, the companies are starting to pay. It still takes manpower to fill the jobs; it is only new drilling that is currently on hold. All associated businesses are still going strong.

Senator Bob Keenan was absent from the meeting.

EXECUTIVE DIRECTOR'S REPORT

Overall Comments

Executive Director David Ewer reported the revamping of the Annual Report is underway and progressing well. Staff will provide a draft for the Board at the November meeting and the Audit Committee will have an opportunity to look at the draft prior to the meeting. A lot of work has gone into the revisions with staff meeting weekly on the project.

Executive Director Ewer stated the Legislative Auditors will be on site this coming Friday or Monday for as long as it takes to perform the audit on the financial condition of the Board of Investments. The balance sheets include the Unified Investment Program, which includes almost all state money and exceeds \$16 billion, and the Enterprise Fund, mainly the INTERCAP program, which is a voluntary program for eligible governmental entities. Unified investments come under the internal service fund, and the programs are mandated to pay fees. The legislature puts limits on the fees BOI charges.

Director Ewer reported staff is in the process of finalizing a contract with Cliff Sheets, who retires October 9. The contract will allow Mr. Sheets to serve various duties, including help with continuity and for contingencies, including any advice and counsel to the executive director and the new CIO. Mr. Herb Kulow, who retires November 2, has also agreed to work on contract basis for continuity. Director Ewer thanked both Mr. Sheets and Mr. Kulow who have graciously agreed to serve and added it is important to preserve continuity on both fronts.

Director Ewer stated with respect to PERS and TRS, Dore Schwinden and Shawn Graham have been invited and have accepted to make a presentation at the November Board meeting. They will report on the recently completed actuary reports.

Director Ewer presented an action item to the Board. The Board's corporate governance spells out how to delegate to staff and third parties any securities litigation. Seven years ago, the Board set out and issued an RFP to interview/select outside contingency counsel. BOI has a current relationship with two firms approved by the Board: Barrack, Rodos & Bacine and Bernstein, Litowitz, Berger & Grossmann, LLC; both contracts expired September 30, 2015. Both firms operate on a contingency basis and receive payment only if there is a successful lawsuit with recovery received. Staff is presenting two recommendations to the Board.

BOI has not been a lead plaintiff in any action for a long time and the Board's governance spells out the stages of delegation for any securities litigation action. It is the responsibility of the custodial bank, State Street Bank, to act on behalf of clients if a class action suit is initiated. If warranted, the additional threshold of whether BOI should act in a separate class or take a lead role is determined. In those circumstances, staff presents a recommendation to the Audit Committee. In the Pfizer case, staff brought the case before the Audit Committee. Ultimately, elements of the case shifted and BOI moved back to the regular class on attorney's advice.

Director Ewer explained, under statute and a Governor's Executive Order, a Legal Services Review Committee was formed allowing state agencies to submit requests to hire outside legal counsel. The Committee consists of the Governor's Budget Director, a delegate from the State Attorney General's Office and another individual from the Budget Office. Director Ewer explained in certain circumstances, BOI is not required to issue an RFP for specialty counsel, bond counsel, underwriter's counsel or alternative equities counsel.

Director Ewer recommended submission of the two securities litigation firms for legal review to the Legal Services Review Committee. BOI has had one other firm express interest, but more in a monitoring role and on international issues. Under the U.S. system, there are allowances to act as a plaintiff and not be responsible for other parties' legal fees; however, that is not the case for

foreign entities. Executive Director Ewer asked the Board to authorize staff to go through the Legal Services Review Committee to approve these two firms.

Mr. Tim House, who monitors security litigation, advised the Board of the amounts recovered: in 2011, \$1.1 million; in 2012, \$167,722; in 2013, \$203,159 and in 2014 \$323,513. All recoveries were the result of class action suits.

Mr. Jim Voytko added that when looking at taking a lead plaintiff position, the onus that falls on the Board, counsel and executive director is huge. There is a premium to let those with the biggest stake in a case take the lead. In cases where you are the most aggrieved party, it may make sense, but BOI has not had such a case.

Responding to a question from Chairman Noennig, Director Ewer stated the contracts will be for one year only, which is all that is allowed under the legal service review.

Director Ewer explained that so far, the two firms have had no role. Both want to capture potential upside. The role of the Legal Services Review Committee is to approve or deny the legal contracts with these firms. Once the Committee approves the firms, the actual parameters and usage of the firms falls back to the Board's purview.

Chairman Noennig proposed the Board submit these two firms for approval by the Legal Services Review Committee for one-year contracts.

Member Sheena Wilson so moved, Member Marilyn Ryan seconded the motion. The motion carried.

Member Englund asked if the firms screen cases to decide if we should opt in or out.

Director Ewer stated yes, the firms report activity monthly; however, they do not advise us of items except those they recommend BOI opt in on. Neither has ever advised opting out of a class action. There have been two cases where BOI was asked to be a lead, one was turned down, and the other was the Pfizer case, which due to a legal ruling, BOI was advised and did rejoin the class.

Responding to questions from Board Members, Director Ewer clarified:

- The contracts were originally awarded through the RFP process. Initially Board and staff opted to use an RFP as at that time there was a lot of interest in the litigation by law firms
- The total maximum contract allowed by law is seven years, so the contracts cannot be extended
- Another RFP is not required
- The Legal Services Review Committee did not replace the RFP process, as the Committee has been in existence for many years

Member Englund stated that often when people see he is on the Board they ask what opportunities may be available regarding legal work.

Chairman Noennig asked if there is any question on compliance when it comes to the need for an RFP.

Director Ewer noted if the Board requests additional support from a legal perspective, staff can provide it from the Department of Commerce attorney, and supply it to the Board for the November meeting. The procedure is not out of alignment with state practices/policies; if the Board chooses, the decision to proceed with the two contracts can be deferred until the November meeting.

Member Englund stated his preference is not to defer, but rather to go ahead and approve the recommendation for the one-year contracts and then review more closely in a year, before prolonging the time between RFP's.

With no further discussion, the motion carried.

Executive Director Ewer asked Deputy Director Burton to make a note of unfinished business on this matter, for future consideration.

INVESTMENT POLICY CHANGES

Executive Director Ewer stated staff is proposing policy revisions to two policies; the Historical Society Trust Funds Investment Policy and the Infrastructure Loan Policy, which was approved earlier in the meeting.

Mr. John Romasko explained that the proposed changes to the Historical Society Policy are minor. The Historical Society requested the ability to invest long-term funds into the Trust Funds Bond Pool, which were previously invested in STIP only, and two funds were added, the Women's Mural and the General Trust.

Director Ewer noted the assets are legacy assets, not involved in operating funds.

Member Jack Prothero made a motion to approve the proposed revisions to the Historical Society Trust Funds Investment Policy Statement. Member Terry Cohea seconded the motion. The motion carried.

SHORT TERM INVESTMENT POOL

STIP Accounting Requirements, Policy Revisions and Protocol for Local Government Participation

Executive Director Ewer presented his memo on the Short Term Investment Pool (STIP). Director Ewer stated the STIP pool has historically followed the general accounting rules on an amortized cost basis. After in depth review of the complicated issue, staff will recommend to the Board changing STIP to a net asset value (NAV) basis for financial reporting purposes. Director Ewer explained briefly that BOI is under the GASB legal framework, which in turn is under the SEC. Corporate America has to adhere to governing accounting principles, how investments are booked and accounted for. BOI has used the amortized cost basis for financial reporting purposes, which allowed treating STIP as a money market fund, dollar in/dollar out. The parameters used, via the investment policies were tight enough, and if the net asset value for a day was off by a small amount, it could be accounted by the amortized cost basis. After the Great Financial Crisis (GFC) the parameters were changed on an amortized cost perspective. With the proposed new GASB guidance, the ability to provide returns for STIP participants would be markedly different and liquidity would be changed.

Director Ewer referred to his August 25 memo, contained in the Board packet, which was sent out to interested parties. If the Board accepts the staff recommendation, it will require showing net asset value monthly, and participants will have to report on net asset value basis as opposed to the amortization basis for financial reporting purposes. The amortized cost basis is similar to 2A-7 funds. If the Board approves converting STIP as of today, it will function like all other BOI pools, which are on a net asset value basis, and the Board's balance sheet will reflect STIP on net asset value basis. Staff is calculating a continual shadow pricing on STIP to be sure it is not varying, and that the current valuations are accurate, with no roll up valuation. There will be no material difference; staff can report what NAV is, and staff are working with State Street Bank to ensure it is possible to post the NAV at the end of each month. A June 30 fiscal year is not utilized by all local governments.

Staff recommendations are to adopt a NAV basis for financial reporting purposes and to approve the STIP Participant Resolution authorizing participation in STIP by local governments. Staff will recommend to the Board at the November meeting the proposed procedures to alert local governments of the steps they must take to adhere to the Resolution. The new procedures will benefit both local government clientele and BOI by reporting who the delegated authorized parties

for STIP participation are. Staff will send out a letter annually to elected officials; the process will enhance internal controls.

Additionally, staff is recommending changes to the STIP Investment Policy to reflect the change to NAV for financial reporting purposes and removing references to a 2A-7 like fund.

Executive Director Ewer stated staff has acted proactively in alerting local governments of the coming changes, including the Montana League of Cities and Towns and the Montana Association of Counties (MACo) and so far there has been no push back on the proposal.

Mr. Rich Cooley presented the changes to the STIP Investment Policy. All references to a 2a-7 like fund have been stricken and the scope language clarifies investment income to participants is net of fees and reserve accruals. Ms. Julie Feldman added the STIP financial reporting standpoint can be either amortized or NAV. Staff will make changes to the financial footnotes and the NAV will be recorded on the financial statements. Accounting staff will also record adjustments for all state agencies, including the university system. Agency financial statement preparers will have to change the related reporting on their financial statements. Local governments will need to use the amount BOI posts monthly to calculate their financial statements adjustments.

Mr. Cooley stated the money market references were removed from the policy and the parameters expanded for how the reserve fund can be used, including to offset realized gains or losses.

Member Jon Satre asked how the offsetting realized gains functions.

Mr. Cooley stated in managing the portfolio, if there is a loss, the reserve can be used to offset it, and for gains, if there is a gain, it can be added back into the reserve. There have been previous realized gains that were added to the reserve. Mr. Cooley added any use of the reserve fund is reported to the Board.

Mr. Cooley reviewed two housekeeping items in the policy changes. Regarding the purchase of institutional sized CDs, it is preferable to treat CDs the same as corporate notes, therefore policy language was revised making changes to the CD requirements, and as mentioned, all references to the 2a-7 like funds were removed.

Mr. Jim Voytko observed for clients of NAV cash management, there are two types of points where NAV is used, one is at the end of the year, on the balance sheet, and the other concerns whether for transactions in and out of a fund the NAV reflects the presence of a reserve, or is NAV excluding the reserve.

Mr. Cooley noted for STIP, the NAV is calculated without the reserve.

Ms. Feldman stated it is most important, from a participant standpoint, that STIP remains on a dollar in/dollar out basis for transactions, and participants will still control their accounts. Staff is not expecting adjustments will need to be posted on daily or monthly basis.

Member Terry Cohea asked for a refresher on the reserve fund.

Executive Director Ewer offered a couple of other points. With local or state governments using dollar in/dollar out, there is no difference in or out; it is a business obligation not to have the NAV drift for too long so that it becomes a material issue. The reserve is about \$28 million and STIP is over \$2 billion, so the reserve can cover a full 1%. Before the GFC there was no reserve; it is helpful to let the Board know what the NAV's are.

Mr. Cooley noted NAV's have all been at par.

Mr. John Romasko added 1.0002 is where it is at now, without the reserve.

Director Ewer explained the reserve is free standing. It is important because, A) you have it, and B) currently all interest from the legacy SIV assets are added to the reserve. The SIV's have been written down far enough so they do not upset the NAV – the reserve is a combination of interest earnings from the legacy assets and approximately \$8,000 per day which is taken out of STIP and added to the reserve. At some point, the inflow will be reduced and the reserve will stand on its own. The reserve has several functions; it can be used to write down the SIV's and also provides the capacity for the STIP manager to change an asset and take an actual realized loss if deemed necessary.

Member Jack Prothero made a motion to approve the staff recommended revisions to the STIP Investment Policy. Member Terry Cohea seconded the motion. The motion carried.

Executive Director Ewer stated he was unsure if a motion by the Board is required for the STIP participant resolution. In November, staff will notify local governments that starting January 1, 2016, local governments will be obligated to enter into a resolution (state government agencies have no choice) to participate in STIP. Between January 1 and June 30, all entities will be required to come into compliance by providing a resolution.

Ms. Feldman added staff distributed the one page STIP informational handout to the County Treasurer and MACo convention attendees and she and Ms. April Madden will speak at the League of Cities and Towns in Bozeman, providing information on the new STIP resolution. Additionally, they will travel to Billings to speak to school officials on October 15.

Executive Director Ewer stated staff is recommending the Board make a motion to accept, effective today, changing STIP to an NAV basis and post it monthly on the BOI website.

Member Sheena Wilson so moved, Member Cohea seconded the motion. The motion carried.

Director Ewer stated staff clarified with GASB to continue to operate on a dollar in/dollar out basis and reported on a NAV basis for financial reporting purposes and he thanked staff for all their hard work.

Mr. Jim Voytko commented what staff is doing is fine, by moving to an NAV hybrid with the reserve fund. However, while it is appropriate, if clients expect that you are guaranteeing a dollar in/dollar out, some places have negative interest rates, and if like the GFC there are circumstances where clients feel there will be no losses, that may not always be so. It is an extremely rare situation, but not impossible.

Executive Director Ewer agreed it is an excellent point. The resolution, under Section 3.01 No Guaranteed Return, states there is no guaranteed interest rate return. Program participation is voluntary and there is no warranty funds will be available. Section 3.06 states STIP is not insured against losses, so participants are advised the reserve may not be adequate to guard against losses.

**NEW PRIVATE EQUITY & REAL ESTATE MANAGERS AND
FIXED INCOME MANAGER TERMINATION**

Montana Private Equity Pool (MPEP)

Mr. Ethan Hurley advised the Board there was one commitment of \$25 million to JLL Partners Fund VII since the last meeting.

Fund Name	Vintage	Subclass	Sector	Amount	Date
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JLL Partners Fund VII, LP	2015	Buyout	Diversified	\$25M	8/6/15
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Montana Real Estate Pool (MTRP)

Mr. Hurley advised there was one new commitment of \$20 million to a new manager, Stoltz Real Estate Fund V, LP since the last meeting.

Fund Name	Vintage	Subclass	Property Type	Amount	Date
Stoltz Real Estate Fund V, LP	2014	Value Add	Diversified	\$20M	7/10/15

Member Prothero asked why Mr. Hurley liked this fund.

Mr. Hurley stated Stoltz is an operating partner with a long history of generating returns over differing market cycles. They are efficient and partnership relationships mean a lot; staff evaluates what that means to a GP. Mr. Hurley added Keith Stoltz views partnership roles similarly to his own views and he has a high comfort level with the deal.

Member Terry Cohea asked for an explanation of a European waterfall.

Mr. Hurley explained the structure is framed to return of all money back plus an 8% return premium prior to the GP receiving any money back. The name European is due to the roots in the private equity market in Europe and added in an ideal world the European framework is preferred for all deals.

Responding to a question from Member Cohea, Mr. Hurley stated 20-30% of BOI's private equity deals have European-style waterfalls, and staff tries for that structure which is more available with smaller cap deals. The dynamic of trends in the market dictates the driver, who has the power, LP's versus GP's and what capital markets are seeking at the time.

Fixed Income Manager Termination

Mr. Nathan Sax presented a summary of the recent transition and termination of Aberdeen Asset Management. Managers are generally evaluated in the context of a market cycle, over a period of 3-5 years, which is a normal evaluation period. Aberdeen had underperformed to such an extent that staff decided to terminate them and bring the money in house to manage in the Core Internal Bond Pool (CIBP). BlackRock was hired as transition manager, which was a less expensive option than State Street Bank, and BlackRock provided a clearer plan of how the process would work. The transition occurred in August and staff's goal was to minimize the transition costs. Treasuries and under 6-month maturities were kept. The remaining securities positions that could not be transferred were liquidated by Aberdeen.

Securities valued at \$104 million were sold and the money put into treasuries with a target duration of 5.4 years, to stay consistent with the existing previous duration. The transition cost was approximately 45 basis points, or \$474,846, on the \$5 million fund broken down as five basis points to BlackRock in commissions, approximately 28 basis points for bid/ask spreads and market impact, and the remaining 12 basis points for opportunity costs. The original estimated cost range was 12-54 basis points. The remaining fixed income external managers are Reams and two high yield managers, Post and Neuberger Berman.

Human Resource Committee – CIO Recruitment Update

Committee Chairman Karl Englund summarized the status of the CIO recruitment process. Mr. Cliff Sheets announced his retirement in June of this year. The Board is grateful to Mr. Sheets for his 10 years at BOI and appreciates all his work and many accomplishments. By the end of June, the CIO job was posted, including notices in Pensions & Investments, the state job site and the MBOI web site and by the end of July 125 applications had been received. The Board and HR Committee, with the assistance of senior staff, reviewed the applications and selected 17 applicants for

interviews. There were 14 outside applicants interviewed via telephone and 3 internal BOI applicants interviewed in person. After the first round of interviews, invitations were extended to six applicants to visit Helena for in person interviews. Two of the six declined, resulting in four applicants traveling to Helena for in person interviews. The interviews were conducted by members of the HR Committee, Executive Director Ewer and Mr. Sheets. Each interview was followed by a brief interview by members of the investment staff. The HR Committee then gathered input from all those involved and invited three finalists to come to Helena with their spouses to ensure that they had an interest in moving to Helena.

The final choice is Joseph M. Cullen, a CFA, CAIA and FRM certified professional. Mr. Cullen has worked for Fidelity Investments as head of institutional portfolio management, spent three years as a senior investment manager at Amherst College, and several years at Lucent Asset Management. The HR Committee is requesting the Board offer Mr. Cullen the CIO position, pursuant to a two-year employment contract at an annual salary of \$230,000 plus a \$55,000 relocation package. Mr. Cullen's starting date will be November 2. Additionally, the Committee is requesting authorization be granted to Board Chairman Mark Noennig to sign the contract on behalf of the Board.

Member Karl Englund so moved. Member Marilyn Ryan seconded the motion. The motion carried.

Chairman Noennig thanked HR Committee Chairman Englund and staff for all their hard work, in particular Mr. Sheets, Executive Director Ewer, the HR Committee and other Board Members who participated in the process.

Executive Director Ewer noted he will contact Mr. Cullen and advise him of the Board's decision.

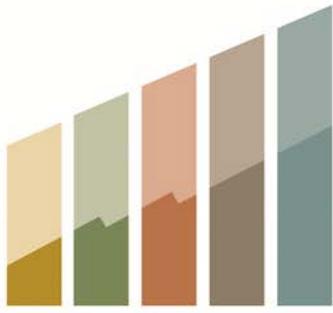
RECAP OF STAFF TO DO LIST AND ADJOURNMENT

- Member Prothero suggested when the Board reviews benchmarks at the November meeting, he would like an in depth review of the private equity benchmark in particular.
- Director Ewer asked Deputy Director Burton to make a note that at the November meeting staff will report on the legal services relationship and the hiring of attorneys, as a follow up to today's discussion.
- Benchmarks are on the agenda for the next meeting and this is the first occasion where benchmarks will be a staff presentation, providing education for the Board.
- Staff will provide the draft 2016 Work and Education Plan. Director Ewer added he has spoken to Mr. Cullen and advised him that before investment subjects are added to the agenda, Mr. Cullen will be allowed time to get up to speed.

Member Englund emphasized that staff's involvement in the CIO hiring process was critical in the sense there was only a brief time to meet with the many applicants. Finding a candidate who was a good fit was vital. Mr. Cullen has good qualifications but also appears to be an appropriate fit with BOI, which was an important part of the decision making process.

Mr. Jim Voytko stated the topic of European waterfalls vs. American waterfalls may be a topic for RVK to provide a special review of, if it is of interest to the Board, to keep it in mind as a future topic.

Being no further business, the meeting was adjourned at 12:58 PM.



MONTANA

BOARD OF INVESTMENTS



DRAFT

11/6/2015

2015 Annual Report



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The Board is committed to employing proven, long-term investment strategies and finding creative solutions to financial issues facing government entities and new and expanding businesses in the state.

The cover photo is the location of the Montana Board of Investments’ offices at 2401 Colonial Drive, Helena, Montana. The building was designed and constructed under the leadership of the Board’s previous Executive Director, Carroll South, and is administered as an investment of Montana’s nine pension funds. The building was completed in 1999 and houses Board staff and other Montana state agencies.



It is my pleasure to present our 2015 annual report to the Legislature, the Governor and the public.

It is the highest honor and privilege for the Board of Investments to oversee the only program specifically required in the Montana

Constitution, the *Unified Investment Program*. Since its inception in 1972, the Board invests essentially all of the State's money, its operating funds, trust funds, and its pension funds. Today the Board manages over \$16 billion for all state agencies and many local governments.

This is a great responsibility. We must discharge our duties with care, skill, prudence, and diligence. We must be mindful of both maximizing returns and minimizing losses. We must discharge our duties solely in the interest of and for the benefit of the funds forming the Unified Investment Program. ***This is the law.***

We also oversee some of the most important economic development and local government funding programs in the state using the financial strength of Montana's Coal Severance Trust Fund. These programs have helped create hundreds of jobs and have saved local governments millions of dollars in interest expense.

We are a nine member board, chosen by the Governor, confirmed by the Montana Senate, and qualified as required by law. We operate under a strong governance system. We act only through our official capacity in meetings that are open and publically accessible. We delegate by policy only those duties to our staff that are appropriate, as the Board bears the ultimate responsibility to the public.

Our investment horizon is for the very long term for the pension systems, intermediate term for our trust fund clientele, and very short term for the state's daily cash needs. While every year's investment performance is important, I urge we all remember that investing often requires a long term view. We need to be patient, diligent, and thoughtful.

As we further describe in this report, achieving a diversified mix of investment assets is what drives over 90% of total returns.

The Board is mindful about costs, especially managing pension dollars. We conduct an independent study yearly on our pension investments and compare our results and costs to our peers. Over the last five years, we have earned more than our peers and at slightly lower costs. This study is on our website.

Almost \$8 billion in investments is internally managed by our own investment staff, and for these investments our costs are very low and performance is solid. We have a highly trained and professional staff. Many hold advanced degrees, and many hold financial and accounting professional designations.

Our Chief Investment Officer, Clifford A. Sheets, CFA, retired in October. He brought tremendous skills and achievements to our Board. We are very grateful for his service. In November we welcomed Joseph M. Cullen, CFA to the Board's investment team as the new Chief Investment Officer.

Our website has a great deal of information about the Board's activities, its investment holdings and performance. I invite you to contact me or our Executive Director if you have any questions.



Mark Noennig, Chairman



"Our investment horizon is for the very long term for the pension systems, intermediate term for our trust fund clientele, and very short term for the state's daily cash needs."



BOARD MEMBERS



Mark Noennig
BILLINGS
Board Chairman
Representing Business
Term Ending:
01/01/2017



Karl Englund
MISSOULA
Board Vice Chair
Representing Law
Term Ending:
01/01/2019

- Human Resources (HR) Committee, Chair



Marilyn Ryan
MISSOULA
Representing TRS
Term Ending:
01/01/2017

- HR Committee
- Loan Committee



Teresa Olcott Cohea
HELENA
Representing Financial Community
Term Ending:
01/01/2019

- Audit Committee
- Loan Committee



Sheena Wilson
HELENA
Representing PERS
Term Ending:
01/01/2017

- Audit Committee



Kathy Bessette
HAVRE
Representing Agriculture
Term Ending:
01/01/2017

- Loan Committee



Quinton Nyman
HELENA
Representing Labor
Term Ending:
01/01/2019

- HR Committee



Jack Prothero
GREAT FALLS
Representing Small Business
Term Ending:
01/01/2017

- HR Committee
- Loan Committee, Chair



Jon Satre
HELENA
Representing Business
Term Ending:
01/01/2019

- HR Committee
- Audit Committee, Chair

LEGISLATIVE LIAISONS



Representative Kelly McCarthy
BILLINGS
House of Representatives Liaison
Term Ending:
12/31/2016



Senator Bob Keenan
BIG FORK
Senate Liaison
Term Ending:
12/31/2016

Senior Management

- ◆ **David Ewer**
Executive Director
- ◆ **Geri Burton**
Deputy Director
- ◆ **Herbert Kulow, CMB**
Portfolio Manager –
Montana Investments
- ◆ **Clifford A. Sheets, CFA**
Chief Investment Officer
- ◆ **Julie Feldman, CPA**
Financial Manager
- ◆ **Dana Chapman**
Office Manager – Board Secretary

Staff

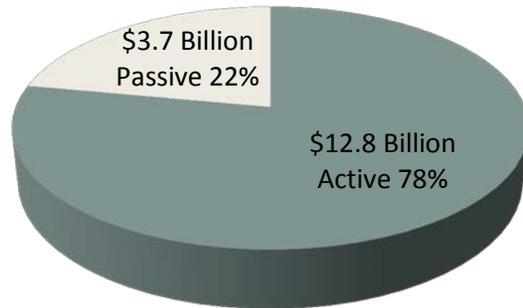
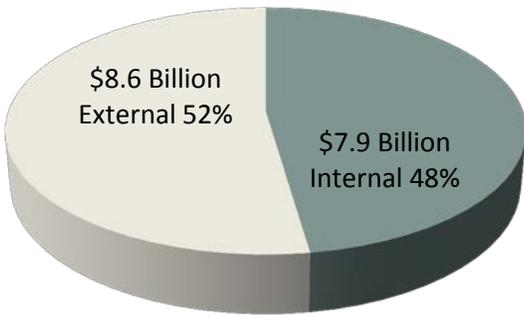
- ◆ **Polly Boutin**
Associate Financial Manager
- ◆ **Jason Brent, CFA**
Investment Analyst
- ◆ **Richard Cooley, CFA**
Portfolio Manager –
Fixed Income/STIP
- ◆ **Frank Cornwell, CPA**
Associate Financial Manager
- ◆ **Craig Coulter**
Investment Analyst
- ◆ **Roberta Diaz**
Investment Accountant
- ◆ **Julie Flynn**
Bond Program Officer
- ◆ **Tim House**
Investment Analyst –
Investment Operations Chief
- ◆ **Ethan Hurley, CAIA**
Portfolio Manager –
Alternative Investments
- ◆ **Edward Kelly**
Investment Analyst
- ◆ **Teri Kolnik, CFA**
Investment Analyst
- ◆ **Eron Krpan, CIPM**
Investment Data Analyst
- ◆ **Tammy Lindgren**
Investment Accountant
- ◆ **April Madden**
Investment Accountant
- ◆ **Savannah McCormack**
Administrative Assistant
- ◆ **Rande Muffick, CFA**
Portfolio Manager –
Domestic & International Equities
- ◆ **Mary Noack**
Network Administrator
- ◆ **Kelsey Poore, CPA**
Investment Accountant
- ◆ **Jon Putnam, CFA, FRM**
Investment Analyst
- ◆ **John Romasko, CFA**
Investment Analyst
- ◆ **Nathan Sax, CFA**
Portfolio Manager –
Fixed Income
- ◆ **Steve Strong**
Investment Analyst
- ◆ **Louise Welsh**
Senior Bond Program Officer
- ◆ **Maria Wise**
Administrative Assistant
- ◆ **Daniel Zarling, CFA**
Director of Research



The Montana Constitution requires that the State’s investments fall under the **UNIFIED INVESTMENTS PROGRAM**. The legislature created the Board of Investments to administer this critical program. State law requires the Board to be prudent and meet various requirements. As of June 30, 2015, State investments total over \$16 billion and generally fall into broad categories: state operating, trust funds, pension funds, insurance

reserves, and certain local government funds. To meet the needs of these four categories, the Board uses a combination of investment pools or when necessary, tailors a specific financial need through individual securities.

In response to two common questions...how much of the over \$16 billion total is internally managed and how much is actively managed, the information is presented in the following charts:



The first chart shows that almost \$7.9 billion is managed in-house by the Board’s investment staff. Many of the lower risk assets are internally managed which keeps expenses down. External management is generally used where outside expertise is deemed more advisable. The Board’s investment staff chooses the outside investment money managers and closely monitors them to ensure performance meets the Board’s investment expectations.

The second chart shows the proportion of ‘passive’ to ‘active’ investments. Approximately 78% of the Board’s investments are actively managed and 22% are investments that follow both an average market holding of investments and only return the market average. The advantages of active management are more control over investments and generally a better return. Expenses are higher with active selection. Passive selection is generally cheaper; however, some asset classes do not have the option of investing passively.

Total Fund							
Net Asset Value* (In Millions) With Time Weighted Annualized Returns							
As of June 30, 2015							
Fund	NAV	1-Year Return %	10-Year Return %	Fund	NAV	1-Year Return %	10-Year Return %
Pension Funds	10,055.9			Real Property	6.8	3.03	5.29
Firefighters	326.3	4.58	6.56	Regional Water Fund	90.1	3.17	5.42
Game Wardens	148.0	4.57	6.53	Resource Indemnity	111.5	3.21	5.43
Highway Patrol	128.2	4.58	6.59	Smelter Hill Upload	10.5	1.37	-
Judges	86.7	4.58	6.58	Streamside Tailings	43.8	2.97	5.10
Police	320.8	4.57	6.54	Tobacco	195.2	3.21	5.46
Public Employees	5,043.6	4.58	6.59	Treasure State Endowment	267.7	3.19	5.48
Sheriffs	295.0	4.58	6.57	UCFRB Reserve	17.6	2.86	5.24
Teachers	3,673.4	4.60	6.59	UCFRB Restoration	122.9	2.95	5.21
Volunteer Firefighters	33.9	4.67	6.57	Wildlife Habitat	12.1	2.97	5.30
Trust Funds	2,510.3			Zortman/Landusky	15.8	1.64	-
Abandoned Mine	6.2	1.16	3.12	Zortman/Landusky Water	14.5	1.24	5.42
Blackfoot Response	26.1	1.11	-	Insurance Reserves	1,542.6		
Butte Area One Rest	31.7	1.91	-	Group Benefits	47.8	1.20	3.05
Clark Fork River Rs	32.4	2.24	-	MT University Sys Group In	36.3	1.38	-
Clark Fork Site Resp	97.1	2.62	-	State Fund Insurance	1,458.2	3.04	5.21
Cultural Trust	13.8	3.14	5.44	Subsequent Injury Fund	0.3	0.13	-
East Helena Comp. Fund	5.8	1.46	-	State Operating Funds	1,794.5		
Economic Development	85.6	3.17	5.41	FWP License	16.4	0.54	2.54
Endowment For Children	1.3	3.07	-	Montana State University	106.7	0.47	2.18
FWP Mitigation	11.5	1.05	2.98	Montana Tech UofMontana	12.1	0.24	1.88
Montana Pole	33.8	2.58	4.80	State Agency**	455.0	-	-
Noxious Weeds	10.9	3.21	5.21	Treasurers Fund	1,124.3	0.27	1.70
Older Montanans	1.1	3.02	-	University Of Montana	79.8	1.67	2.97
Park Acquisition	25.5	3.11	5.40	Local Government Funds	574.5		
Permanent Coal Trust	559.3	3.32	5.24	Local Governments	574.5	-	-
Trust & Legacy (School)	659.5	3.21	5.44	Total	16,477.7		

*Net Asset Value (NAV) includes net receivable & payable accruals.

**State Agency is an umbrella account for 272 sub-accounts including 5 insurance funds holding \$43.7M in STIP. The insurance funds are broken out on page 19.

Total Fund by Participant Type & Major Asset Type						
Net Asset Value* (In Millions)						
As of June 30, 2015						
	Cash Equivalents	Public Stocks	Fixed Income	Loans	Other (1)	Total
Pension Funds	186.7	5,660.8	2,245.3	-	1,963.1	10,055.9
Trust Funds	91.3	-	2,284.9	134.1	-	2,510.3
Insurance Reserves	57.2	165.4	1,235.5	-	84.6	1,542.6
State Operating Funds**	1,553.3	0.2	240.9	-	-	1,794.5
Local Government Funds	574.5	-	-	-	-	574.5
Total	2,463.0	5,826.4	6,006.6	134.1	2,047.6	16,477.7

(1) Private Equity and Real Estate

*Net Asset Value (NAV) includes net receivable & payable accruals.

**State Operating Funds participant type includes the State Agency account which includes sub-accounts that hold \$248k in public stocks which were donated. Under statute State Agencies may not invest in public corporate capital stock.

Investment Pools

The Board primarily uses seven internal investment pools in managing money. Over \$14 billion (88%) is managed through these pools. Each pool has its own type of investment focus such as domestic stocks, foreign stocks, fixed income (e.g., bonds), real estate, private equity, and cash/cash equivalents. Almost all of the Board’s clients use one or several of these investment pools as a way to invest. Separate securities outside of these seven investment pools are also purchased when circumstances merit. Currently, separate investments account for \$1.9 billion, with the State Fund owning the largest dollar value of such securities, approximately \$1.5 billion.

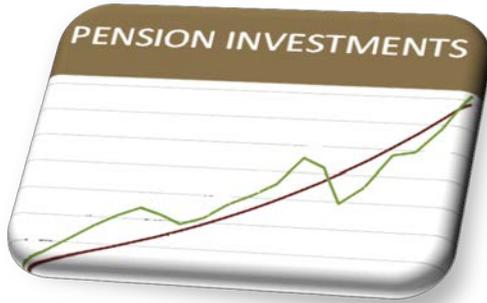
The following are the Board’s current investment pools and principal users:

<u>Name of Pool</u>	<u>Abbreviation</u>	<u>Eligible Participants</u>
• Trust Funds Investment Pool	TFIP	Various state trust funds
• Retirement Funds Bond Pool	RFBP	Retirement systems funds only
• Montana Domestic Equity Pool	MDEP	Retirement systems funds only
• Montana International Equity Pool	MTIP	Retirement systems funds only
• Montana Private Equity Pool	MPEP	Retirement systems funds only
• Montana Real Estate Pool	MTRP	Retirement systems funds only
• Short Term Investment Pool	STIP	Eligible local & state agencies

Total Fund Annual Change by Pool Net Asset Value* (In Millions) As of June 30						
Investment Pool	2015	Total %	2014	Total %	Change \$	Change %
Short Term Investment Pool	2,510.8	15.24	2,511.5	15.60	(0.7)	(0.03)
Montana Domestic Equity Pool	3,992.0	24.23	3,851.6	23.93	140.4	3.64
Montana International Pool	1,669.0	10.13	1,747.6	10.86	(78.6)	(4.50)
Retirement Funds Bond Pool	2,245.3	13.63	2,131.0	13.24	114.3	5.36
Trust Funds Investment Pool	2,256.2	13.69	2,195.7	13.64	60.5	2.76
Montana Private Equity Pool	1,075.4	6.53	1,031.2	6.41	44.3	4.29
Montana Real Estate Pool	887.6	5.39	849.8	5.28	37.9	4.45
All Other Funds	1,904.6	11.56	1,840.7	11.44	63.8	3.47
STIP Included in Investment Pools	(63.3)	(0.38)	(62.0)	(0.39)	(1.3)	2.02
Total	16,477.7	100.00	16,097.1	100.00	380.6	2.36

*Net Asset Value (NAV) includes net receivable & payable accruals.

The State’s largest general operating account is the Treasurer’s Fund and is the largest participant in STIP. Most state agencies are limited where their funds may be invested. If agencies have the legal authority to invest separately from the State’s general cash account (the Treasurer’s Fund) then they may invest in STIP. If an agency has funds other than ordinary operating monies and can prudently have a longer term investment outlook and a need for better returns, then the Trust Funds Investment Pool or separate individual securities are available. The Montana Constitution limits the investment in equities to the state’s retirement systems and to a more limited extent, the state’s workers compensation insurance agency, the State Fund.



Montana's **STATE PENSIONS** consist of nine separate retirement plans for state and local government employees, with the largest being the Montana Public Employee Retirement Program and the Montana Teachers' Retirement Program. The Board has established a number of different investment pools to meet the investment needs of the retirement plans. The Montana Constitution allows pension funds to be invested in common stock and the Board has created several

investment pools for this purpose. Altogether, pension monies are invested in six different pools: STIP, the Montana Domestic Equity Pool, the Retirement Funds Bond Pool, the Montana International Equity Pool, the Montana Private Equity Pool and the Montana Real Estate Pool.

In managing the state's pension investments, the Board balances many factors: maximize long term growth, analysis of the liquidity needs of plans, limit risks and be cost conscious. Long term growth is mostly driven by holding various types of domestic stocks or other equities such as international stocks, as they tend to provide the greatest return (but bear the greatest risk) over many years. Generating cash is done primarily by holding cash or investments that provide income such as bonds. Limiting risks is best accomplished by holding both a wide mix of investments and knowing generally which ones do not behave the same in an economic downturn (i.e., avoid over concentration of highly correlating-performing investments). Excessive costs substantially reduce returns. The Board is mindful that expenses must be budgeted to maximize value. Certain types of investments are more expensive to hold and manage than others and the Board requires staff to justify more expensive investment strategies. The Board does an annual cost analysis as part of its annual assessment of performance and efficiency.



Managing Pension Investments requires a skillful balance of:

- Maximizing long term growth
- Analyzing plan liquidity needs
- Limiting risks
- Controlling costs



To obtain an expected positive investment performance requires a long term view, at least 10 years, and accepting that bull and bear markets occur. In practice, this means that news is mostly noise, and that a steady hand, patience, and a professional discipline to rebalance is required. Modern portfolio theory **requires** establishing asset allocation ranges and staying within them even if it requires selling down assets that are performing well and buying into other asset classes.

Almost 90% of total investment performance is driven by asset class allocation. Ranges are determined by the Board, with recommendations from staff. The Board sets a range for each pension asset class, and the staff reports quarterly on how each class is performing and the relative holdings within the permitted ranges. The Board reviews and sets asset allocation ranges at least annually by Board policy.

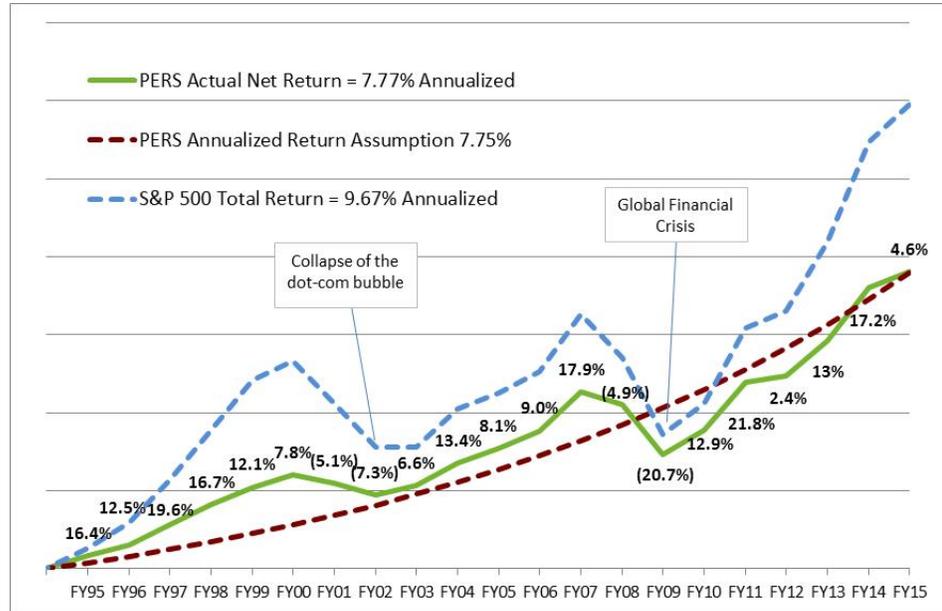
There are many possible investment asset classes and a wide range of possible mixes. In developing its investment rationale, the Board considers the merits of each class: its expected long rate of return, its likely riskiness (generally how volatile are its values), how readily convertible to cash is it (i.e., liquidity), and how it behaves in tandem to all the other asset classes (i.e., correlation). Running various possibilities, the Board determines the asset class ranges to maximize expected investment returns, keep risk within prudent levels, and maintain sufficient liquidity to meet current benefit payments. Some asset classes have been considered but are currently excluded. The Board by policy does not use hedge funds. Commodities and infrastructure investments are not excluded but are not currently part of the Board's asset allocation mix.

The Board's asset allocation mix is critical to the return on pension fund investments. The following major and sub asset classes and their approved ranges have been established by Board policy. The actual dollar amounts and the actual relative weight as of June 30, 2015 are also shown:

Pension Fund Asset Allocations & Board Approved Ranges As of 6/30/15		
Investment Type	%	Annually Approved Range
Asset Class - Domestic Equity	39.7%	28% - 44%
Large	81.1%	72% - 91%
Passive	57.0%	45% - 70%
Enhanced	12.0%	8% - 12%
Equity Long/Short Managers	12.0%	8% - 12%
Mid	12.3%	6% - 17%
Passive	2.1%	0% - 17%
Active	10.2%	0% - 17%
Small	6.6%	3% - 11%
Passive	0.2%	0% - 11%
Active	6.5%	0% - 11%
Asset Class - International Equity	16.6%	14% - 22%
Large	86.5%	79% - 92%
Passive	63.8%	42% - 66%
Active	22.7%	22% - 32%
Small	11.5%	8% - 16%
Passive	1.7%	0% - 16%
Active	9.7%	0% - 16%
Emerging	2.0%	0% - 5%
Passive	2.0%	0% - 5%
Asset Class - Private Equity	10.7%	9% - 15%
Buyouts	69.0%	50% - 80%
Venture Capital	21.8%	10% - 25%
Debt Related	9.2%	0% - 25%
Asset Class - Fixed Income	22.3%	22% - 30%
Domestic High Yield	8.5%	0% - 15%
International	1.9%	0% - 10%
Core (U.S. Investment Grade)	89.6%	80% - 100%
Asset Class - Real Estate	8.8%	6% - 10%
Core/Timberland	44.2%	35% - 65%
Value Added	39.3%	20% - 45%
Opportunistic	16.6%	10% - 30%
Asset Class - Cash Equivalents	1.9%	1% - 5%
All Investment Classes	100.0%	
*Equities represent 67% of the pension portfolio. Policy allows total equity range of 58% - 72%		

The chart below shows investment returns for the Public Employees’ Retirement System (PERS) since fiscal year 1995. These returns reflect the effects of the total asset allocation of the various investment pool performances, net of fees. The returns for the other eight retirement systems have been nearly identical to the PERS. As shown by the S&P 500 in the chart, economic conditions heavily influence returns.

When considering the combination of assets to invest, the Board works to optimize three broad investment traits: expected return, risk, and historical performance compared to other investment classes in the same time period. The Board uses various simulation models which assign estimated future returns for each investment category, and then summarizes an expected return for the entire investment mix.



Pension Funds 10-Year Comparison Fair Value (In Millions) As of June 30, 2015						
Fund	Fair Value	% of Total	10-Year Fair Value	% of Total	Change \$	Change %
Firefighters Retirement	326.3	3.25	146.7	2.31	179.6	122.46
Game Wardens Retirement	148.0	1.47	51.8	0.82	96.2	185.95
Highway Patrol Retirement	128.2	1.28	83.6	1.32	44.7	53.43
Judges Retirement	86.7	0.86	48.4	0.76	38.3	79.04
Police Retirement	320.8	3.19	153.7	2.42	167.1	108.68
Public Employees Retirement	5,043.6	50.16	3,232.8	50.92	1,810.8	56.01
Sheriffs Retirement	295.0	2.93	151.0	2.38	143.9	95.32
Teachers Retirement	3,673.4	36.53	2,461.2	38.76	1,212.3	49.26
Vol. Firefighters Retirement	33.9	0.34	20.1	0.32	13.8	69.00
Grand Total	10,055.9	100.00	6,349.2	100.00	3,706.7	58.38
Investment Type						
Montana Domestic Equity Pool	3,991.7	39.70	3,009.3	47.40	982.5	32.65
Montana International Pool	1,669.0	16.60	996.5	15.69	672.6	67.50
Montana Private Equity Pool	1,075.4	10.69	297.4	4.68	778.0	261.58
Montana Real Estate Pool	887.6	8.83	16.5	0.26	871.2	5,287.89
Retirement Funds Bond Pool	2,245.3	22.33	1,928.4	30.37	316.9	16.43
Short Term Investment Pool	186.7	1.86	101.1	1.59	85.6	84.67
Grand Total	10,055.9	100.00	6,349.2	100.00	3,706.7	58.38

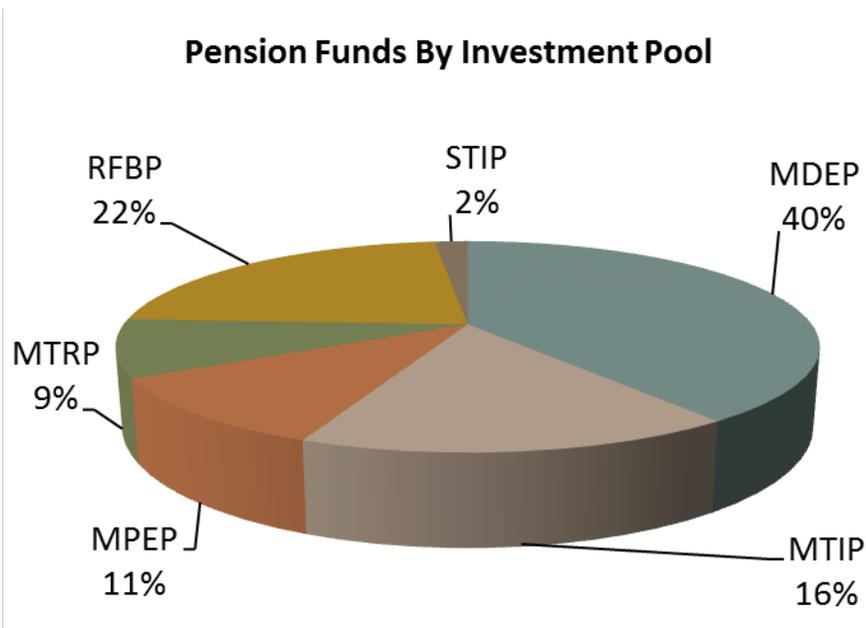
The Board reviews both absolute return performance and performance to internally established benchmarks. It also uses several external sources to compare the Board’s performance with other state and large public pension systems.

The Board’s investment performance and costs relative to its peers can be found on the Board’s website at: [\[include web address here\]](#).

The Board of Investments manages all pension fund investments through six of the Board’s seven investment pools. Each investment pool is governed by a separate investment policy and concentrations into any one pool are limited by the Board’s asset allocation policy. Selective return performance of the retirement systems is shown here:

Pension Fund By Investment Pool					
Fair Value (In Millions) With Time Weighted Annualized Net Returns					
As of June 30, 2015					
Investment Pool	Fair Value	1-Year Return %	2-Year Return %	10-Year Return %	21-Year Return %*
Montana Domestic Equity Pool (MDEP)	3,991.7	7.35	25.18	7.77	
Montana International Pool (MTIP)	1,669.0	(4.21)	21.67	4.64	
Montana Real Estate Pool (MTRP)	887.6	13.12	11.67		
Montana Private Equity Pool (MPEP)	1,075.4	8.44	16.51	10.55	
Retirement Funds Bond Pool (RFBP)	2,245.3	2.30	5.22	5.32	
Short Term Investment Pool (STIP)	186.8	0.12	0.14	1.70	
All Pension Funds	10,055.9	4.58	17.17	6.59	7.77

*Since inception of current custodial bank records.





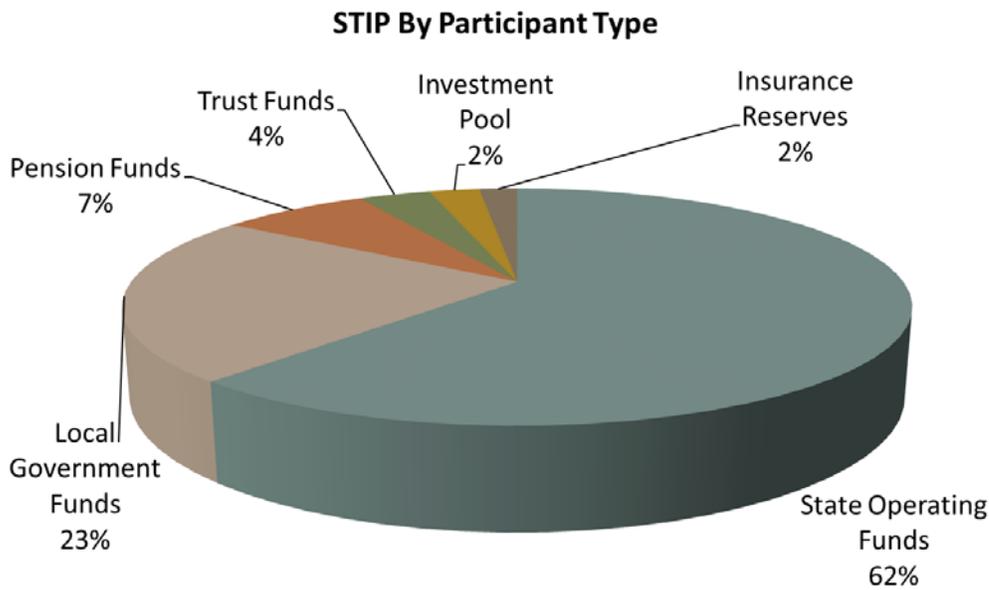
The Board’s **SHORT TERM INVESTMENT POOL (STIP) PROGRAM** is used by state agencies, local governments and the retirement systems as an alternative to idle cash. STIP investments are short, highly liquid and among the safest obtainable. Although not a money market fund, STIP is structured very similar to one although its yield tends to be higher due to lower expenses and an ability to make slightly longer investments due to the predictable nature of government cash needs.

On October 6, 2015 the Board approved, that for financial reporting purposes the STIP portfolio will be reported on a Net Asset Value basis beginning with the month of October 2015 versus amortized cost.

STIP is NOT Federal Deposit Insurance Corporation (FDIC) insured or otherwise insured or guaranteed by the federal government, the State of Montana, the Board or any other entity against investment losses. The Board maintains a reserve fund to offset possible losses and limit fluctuations in STIP’s net asset value (NAV).

Created in 1973, STIP provides participants ready access to cash. Shares are fixed at \$1.00, fractional shares may be purchased, and participants may buy or sell shares with one business days’ notice. The over \$2.5 billion in pool investments are managed by Board Staff. There were 490 accounts invested in STIP during the year, including 170 local government accounts. All investments are made by Board staff and all income is distributed to participants on the first day of the month. The pool reported earnings for state and local government agencies of \$2.82 million (unaudited) in Fiscal Year 2015. The table below shows the percent of shares by major participant type.

STIP Investments are short, highly liquid and among the safest obtainable.





The Board invests over \$2.5 billion for several **TRUST FUNDS**, some of which were created and protected by the state Constitution. The trusts are managed for income, rather than total rate of return. Other trusts have been created statutorily by the legislature or involve federal funds. Several trust funds were established as part of settlements

between the state and private corporations to ensure environmental clean-up of polluted sites. The fiscal year changes in the trusts' fair value are shown below.



Total Trust Funds By Type & Major Asset Type Fair Value (In Millions) As of June 30, 2015					
Trust Fund	Cash Equivalents	Fixed Income	Fixed Income/Real Estate (TFIP)	Loans	Total
Abandoned Mine Trust	1.09	5.13	0.00	-	6.22
Blackfoot Response	13.77	6.74	5.60	-	26.10
Butte Area One Rest	9.51	6.53	15.59	-	31.63
Clark Fork River Rs	6.88	6.94	18.60	-	32.41
Clark Fork Site Resp	7.00	10.80	79.29	-	97.09
Cultural Trust	0.17	-	13.61	-	13.78
East Helena Comp. Fund	3.32	-	2.45	-	5.77
Economic Development Tr	1.29	-	84.35	-	85.64
Endowment For Children	0.00	-	1.35	-	1.35
FWP Mitigation	2.00	9.47	0.00	-	11.48
Montana Pole	6.70	-	27.08	-	33.78
Noxious Weeds	0.00	-	10.86	-	10.86
Older Montanans Trust Fur	0.03	-	1.09	-	1.12
Park Acquisition	0.44	-	25.08	-	25.52
Permanent Coal Trust	17.97	-	407.15	133.68	558.80
Public School Trust	0.00	-	659.46	-	659.46
Real Property Trust	0.35	-	6.44	-	6.78
Regional Water Fund	1.29	-	88.81	-	90.10
Resource Indemnity Trust	0.02	-	111.48	-	111.50
Smelter Hill Upload	4.84	2.72	2.94	-	10.49
Streamside Tailings	2.80	0.06	40.98	-	43.84
Tobacco Trust	0.28	-	194.97	-	195.24
Treasure State Endowmen	2.24	-	265.07	0.41	267.72
UCFRB Reserve	0.71	-	16.89	-	17.60
UCFRB Restoration	7.23	-	115.72	-	122.95
Wildlife Habitat	0.55	-	11.52	-	12.07
Zortman Trust	0.02	15.76	0.00	-	15.77
Zortman Water	0.17	14.38	0.00	-	14.55
Total	90.66	78.51	2,206.37	134.08	2,509.62

Table excludes the receivable and payables accruals.

COAL SEVERANCE TAX TRUST FUND. Article IX, Section 5 of the state Constitution requires that 50 percent of all coal severance tax revenues be deposited in a permanent trust fund (Trust), in which the principal "shall forever remain inviolate unless appropriated by a three-fourths vote of each house" of the legislature. The Board is encouraged to invest 25 percent of the Trust in Montana economy with emphasis on new or expanding businesses.

The legislature has partitioned the Trust into several sub-funds. The Permanent Fund was initially established when the Trust was created, while the Severance Tax Bond Fund, created later, provides debt service guarantees and is invested solely in STIP. There is currently no new coal severance tax revenue dedicated to the Permanent Fund.

The Treasure State Endowment Fund was created July 1, 1993, with a \$10.0 million transfer from the Permanent Fund. From July 1, 1993 through June 30, 1999 one-half of the coal severance tax earmarked for the Trust was deposited in the Permanent Fund and the remaining 50 percent was deposited in the Treasure State Endowment Fund. The deposit of coal severance tax revenue to this fund terminates June 30, 2016.



Coal Severance Tax Trust Fund

... "principal of the trust shall forever remain inviolate unless appropriated by vote of three-fourths (3/4) of the members of each house of the legislature."

Montana Constitution – Article IX



Effective July 1, 1999, a new Treasure State Endowment Regional Water Fund sub-fund was created and 25 percent of Trust revenues were dedicated to that account. The deposit of coal severance tax revenue to this fund terminates June 30, 2016.

Effective July 1, 2005, a new Big Sky Economic Development Fund sub-fund was created and 25 percent of Trust revenues were dedicated to that account.

Income from the Permanent Fund and the Bond Fund is deposited in the Permanent Fund Income Fund where it is transferred periodically to the state general fund. Effective July 1, 2015 through July 1, 2018, on July 1 of each year, up to \$21 million of the interest income that is transferred to the general fund is statutorily appropriated to the Public Employees’ Retirement System Defined Benefit Plan Trust Fund. Effective July 1, 2019, on July 1 of each year, up to \$24 million of the interest income that is transferred to the general fund is statutorily appropriated to the Public Employees’ Retirement System Defined Benefit Plan Trust Fund. All sub-funds, except the income fund, are protected by the Constitution and may be appropriated only by a three-fourths vote of each house of the legislature. Income from the Treasure State Endowment Fund is appropriated by the legislature for local government infrastructure projects. Treasure State Endowment Regional Water Fund income is appropriated by the legislature for local government water projects. Big Sky Economic Development Fund income is appropriated by the legislature for economic development projects.

The annual change in the fair values of the Coal Severance Tax Trust sub-funds is shown below:

Coal Severance Tax Trust Fair Value (In Millions)						
Annual Change By Sub Fund & Investment Type						
As of June 30						
Sub Fund	2015	Total %	2014	Total %	Change \$	Change %
Permanent Coal Trust	558.8	55.64	559.88	57.30	(1.08)	(0.19)
Treasure State Endowment	267.7	26.66	254.08	26.00	13.64	5.37
Regional Water Fund	90.1	8.97	83.05	8.50	7.05	8.50
Economic Development Trust	85.6	8.53	78.56	8.04	7.08	9.01
Severance Tax Bond Fund	2.1	0.21	1.48	0.15	0.62	42.05
Permanent Fund Income	0.0	0.00	0.04	0.00	(0.04)	(88.29)
Grand Total	1,004.4	100.00	977.09	100.00	27.28	2.79
Investment Type						
Fixed Income (TFIP)	845.37	84.17	821.84	84.11	23.53	2.86
Loans - Commercial	68.68	6.84	74.71	7.65	(6.02)	(8.06)
Loans - Local Gov Infrastructure	21.34	2.13	22.65	2.32	(1.31)	(5.78)
Loans - Value Added	0.60	0.06	1.07	0.11	(0.47)	(43.74)
Loans - Science & Tech	10.04	1.00	10.18	1.04	(0.15)	(1.44)
Loans - Montana Facility Finance	2.26	0.22	3.15	0.32	(0.89)	(28.36)
Loans - Intermediary	3.24	0.32	3.28	0.34	(0.03)	(0.96)
Loans - Veterans	27.91	2.78	22.88	2.34	5.03	22.00
Cash Equivalents (STIP)	24.91	2.48	17.33	1.77	7.58	43.76
Grand Total	1,004.37	100.00	977.09	100.00	27.28	2.79

Table excludes the receivable and payables accruals.



OTHER TRUST FUNDS

Abandoned Mine - an expendable trust funded by federal grants under the Surface Mining Control and Reclamation Act of 1977, Article IV. Ten percent of Montana’s annual grant amount is deposited into this trust to fund programs related to abandoned mine land reclamation.

Butte Area One Restoration - funds derived from the 2008 consent decree between the Montana Department of Justice (DOJ) and Atlantic Richfield Company (ARCO) for projects that restore, replace or acquire the equivalent of injured natural resources or lost services at Butte Area One.

Clark Fork River Restoration - funds derived from the 2008 consent decree between the DOJ and ARCO for restoration of the Clark Fork River and associated riparian areas from Warm Springs Ponds to Milltown Reservoir and related projects.

Clark Fork Site Response Action - funds derived from the 2008 consent decree between the Montana Department of Environmental Quality (DEQ), the U.S. Environmental Protection Agency (EPA), and ARCO to remediate the environmental contamination at the Clark Fork River Operable Unit of a federal Superfund site.

Coal Tax Parks/Cultural Trust Funds (i.e. Cultural Trust & Parks Acquisition) - A portion of the coal severance tax is dedicated to a statutorily created Parks Trust Fund and a Cultural Trust Fund (Trusts). Investment income generated by the Trusts is appropriated by the legislature to acquire/operate state parks and to fund cultural and aesthetics projects. The 1997 legislature appropriated \$3.9 million of Cultural Trust principal to purchase historical properties.

East Helena Compensation - funds derived from the 2008 settlement between the DOJ and the American Smelting and Refining Company (ASARCO) for purposes of the restoration and oversight of environmental cleanup on and around the former site of the ASARCO smelter in East Helena.

Endowment for Children - funds derived from state appropriation, gifts, grants, and donations, or any other source for programs and services related to child abuse and neglect, primarily prevention activities and family resource programs.

Fish, Wildlife, and Parks (FWP) Mitigation - an expendable trust funded by a 1988 agreement between the Montana FWP and the Bonneville Power Administration to provide protection, mitigation, and enhancement of wildlife and wildlife habitat affected by the development of Libby and Hungry Horse Dams.

FWP Real Property - a non-expendable trust funded with proceeds from the sale of real property, oil, gas or mineral deposits, and from leases for the operation, development, and maintenance of real property under management of the Montana FWP.



Trust Investments are managed primarily to generate income for the Board's Trust Fund clientele.



Montana Post and Pole - funds derived from the 1996 consent decree between the DEQ, EPA, ARCO, Burlington Northern Railroad, Montana Resources, Inc., and other responsible parties for the environmental cleanup of the former Montana Pole and Treatment Plant in Butte.

Noxious Weed Management - a non-expendable \$10 million trust that receives funding from state and federal contributions and private donations for programs and services related to noxious weed control.

Older Montanans - funds derived from contributions and gifts to be used towards programs and services that promote dignity, respect, and enable an independent lifestyle in the least restrictive setting for Montana residents 60 years of age or older.

Resource Indemnity Trust Fund - Article IX, Section 2 of the state Constitution requires that revenues from the Resource Indemnity Tax on minerals be deposited in the Resource Indemnity Trust Fund, the principal of which "shall forever remain inviolate" until the principal reaches \$100 million. The fund's book value reached \$100 million in fiscal year 2002.

Smelter Hill Uplands Restoration - funds derived from the 2008 consent decree between the DOJ and ARCO for the restoration of the environment, vegetation and soils on lands affected by the Anaconda smelter.

Streamside Tailing - funds derived from a 1998 consent decree between the DEQ, EPA, ARCO, and other responsible parties, for the purpose of remediating the mine waste contamination at the Streamside Tailings Operable Unit of the Silver Bow Creek/Butte Area.

Tobacco - funds derived from a 1999 master settlement agreement between the states and the nation's largest tobacco companies payable over 25 years beginning fiscal year 2000. Forty percent of Montana's share is deposited in this trust and funds programs related to health care benefits, services, or coverage and tobacco disease prevention.

Trust and Legacy (Schools) Fund - Article X, Sections 2 and 3 of the state Constitution requires that all royalties and other proceeds received from school lands granted to the state under federal enabling legislation be deposited in the Trust and Legacy (Schools) Fund, where it shall forever remain inviolate and guaranteed by the state against loss or diversion.

Upper Blackfoot Mine Complex - funds derived from the 2008 settlement agreement between the DOJ, DEQ, EPA, ASARCO, and ARCO to be used, in consultation with the U.S. Forest Service, for conducting response and restoration activities within the Upper Blackfoot Mining Complex Site.

UCFRB Restoration/Reserve - funds derived from the 1998 consent decree between ARCO and the DOJ for the restoration, replacement, or acquisition of equivalent state natural resources injured in the Upper Clark Fork River Basin.

Wildlife Habitat - a non-expendable trust funded by twenty percent of the non-resident hunting license revenue collected between 1989 and 1994 for the acquisition, development, and maintenance of wildlife habitat.

Zortman/Landusky - funds paid by the Pegasus mining company and its insurer to provide long-term water treatment at the closed Zortman and Landusky mines near Malta.

Zortman/Landusky LT H2O - funds derived from state appropriations of \$1.2 million a year until there are sufficient funds to generate \$19.3 million by January 1, 2018 for long-term water treatment at the closed Zortman/Landusky mines near Malta.





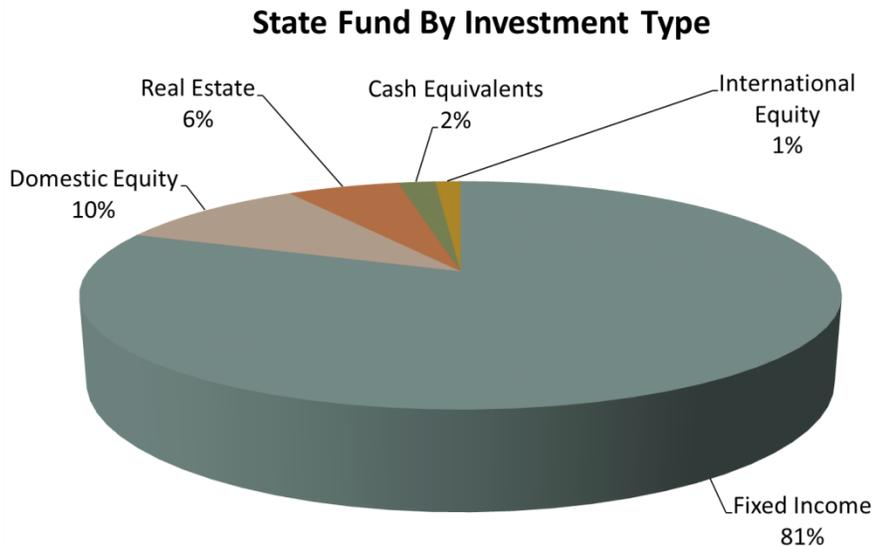
The Board invests over \$1.5 billion for several **INSURANCE PROGRAMS**, with the State Fund owning the largest dollar value of such securities.

The State Compensation Insurance Fund (State Fund) provides workers' compensation and occupational disease insurance for claims arising from injuries including those that occurred prior to July 1, 1990.

STATE FUND INSURANCE RETURNS	1-Year	2-Year	10-Year
	3.04%	6.13%	5.20%

State Fund Insurance Fair Value (In Millions) Annual Change As of June 30						
	2015	Total %	2014	Total%	\$ Change	Change %
Corporate/Asset-Backed Bonds	697.3	69.42	685.2	48.57	12.1	1.76
International Government	21.2	2.11	20.9	1.48	0.4	1.68
US Govt Direct Obligations	196.6	19.58	177.3	12.57	19.3	10.89
US Agency Bonds	256.1	25.49	254.9	18.07	1.2	0.45
Blackrock ACWI EX US Super Fund	19.1	1.90	20.1	1.43	(1.0)	(5.20)
Blackrock Equity Index (S&P 500)	146.3	14.56	147.4	10.45	(1.1)	(0.75)
American Core Realty	44.8	4.46	42.0	2.98	2.7	6.54
TIAA CREF Asset Management	39.8	3.97	32.1	2.27	7.8	24.24
Cash Equivalents (STIP)	28.0	2.79	31.0	2.20	(3.0)	(9.66)
Grand Total	1,449.1	100.00	1,410.9	100.00	38.3	2.71

Table excludes receivable & payable accruals.





OTHER INSURANCE FUNDS INVESTMENTS

Other Insurance Funds By Investment Type			
Fair Value (In Millions)			
As of June 30, 2015			
Other Insurance Funds	Cash		Total
	Equivalents	Fixed Income	
Agency Insurance*	15.9		15.9
Group Benefits	11.3	36.3	47.6
Hail Insurance*	3.0		3.0
MT University Sys Group Ins	8.1	28.1	36.2
Subsequent Injury Fund	0.3		0.3
Unemployment Insurance Benefits*	5.2		5.2
Uninsured Employees*	1.6		1.6
University Workers Compensation*	18.0		18.0
Total	63.5	64.3	127.8

Table excludes the receivable and payables accruals.

*These are sub-accounts of the State Agency account and are included under State Operating Funds rather than Insurance Reserves on pg.6.

Agency Insurance - reserve account for the state's property self-insurance program (including liability, property, flood, etc.).

Group Benefits - created in 1981, provides health and life insurance to non-university state employees.

Hail Insurance - provides benefits to producers engaged in the growing of crops subject to hail damage.

Montana University Group Insurance - reserve account for the Montana University System's self-insured health plan.

Subsequent Injury - provides benefits to workers who are vocationally handicapped and whose Workers' Compensation benefits have expired.

Unemployment Insurance Benefits - Unemployment benefits are paid from this fund to eligible recipients.

Uninsured Employees - accounts for activity related to uninsured workers compensation employers and related benefits paid.

University Workers Compensation - accounts for self-insured workers compensation coverage for employees of the Montana University System.





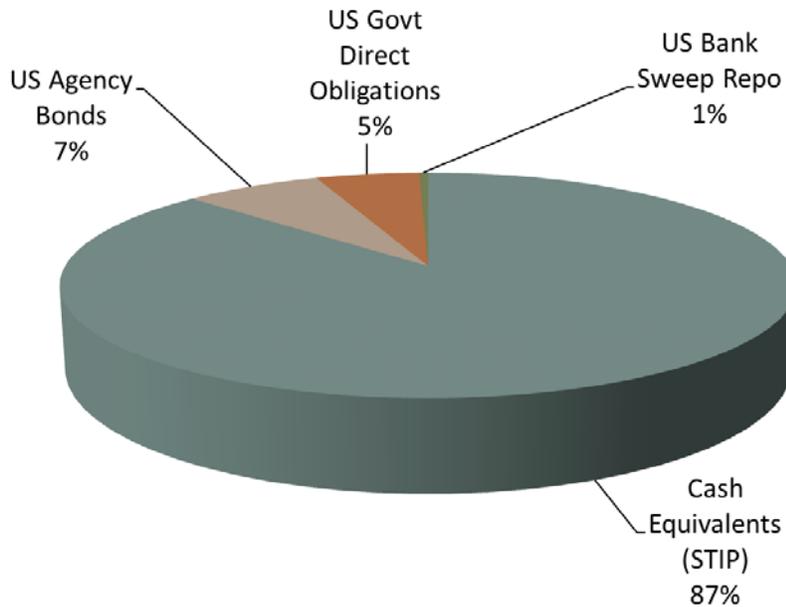
The **TREASURER'S FUND** (Fund) is comprised of surplus cash in all state accounts that do not retain their investment earnings. All earnings are deposited in the state general fund. State law authorizes the Board to determine the amount of surplus cash in the Fund to be invested and the type of investments to be made. Invested balances at book value vary widely due to varying levels of excess cash in the state's general fund and other accounts comprising the Fund. The Fund

is managed to maximize income, rather than for total rate of return. This Fund has been a major participant in STIP since 1973 when STIP was created.

Treasurer's Fund Balance
as of June 30, 2015
is \$1.1 Billion.

TREASURER'S FUND RETURNS	1-Year	2-Year	10-Year
	.27%	.21%	1.70%

Treasurer's Fund By Investment Type





Over the years, the Montana Legislature has directed that the Board provide certain financial incentives, typically at below-market interest rates, to certain borrowers who meet the program requirements set in law.

The In-State Loan Program, created in 1984 as part of the "Build Montana" program, invests Coal Tax Trust (Trust) funds in Montana to stimulate the state's economy. State law authorizes the Board to invest the Trust to increase employment and business opportunities, while maintaining and improving the state's physical environment.

Over the past 15 years staff has funded 530 loans, totaling \$472.1 million creating approximately 5,000 new jobs in the state of Montana. The current reservations and commitments anticipate creating an additional 680 jobs, when funded.



 Over the past 15 years, the Board has invested \$472 million in low interest loans into the state's economy creating approximately 5,000 new jobs.



Loan Types – Four different loan types are available in the In-State Investment Program, some of which offer a job credit interest rate reduction equal to 0.05 percent for each qualifying job created, up to a maximum reduction of 2.5 percent.

- **The Commercial Loan Participation Program** allows the In-State Loan Program to participate up to 80% in a loan originated by an approved lender. Unencumbered land, buildings, and equipment may be financed with the loan proceeds. The financial institutions charge a fee to service the loan and the Board's loan is collateralized proportionally to the Board's share of the loan. These loans may not exceed 25 percent of the Trust and the individual loans may not exceed 10 percent of the Trust. Loans exceeding 6percent of the Trust must have lender participation of at least 30 percent.
- **The Infrastructure Loan Program** provides loans to eligible local governments for constructing or purchasing infrastructure to be used by a basic sector business. Total loans outstanding in this Program are limited by law to \$80 million.
- **The Value-added Loan Program** provides low interest loans to value-added type businesses that create or retain jobs. Total loans outstanding in this Program are limited by law to \$70 million.
- **The Intermediary Re-lending Program** provides loans to local economic development organizations with revolving loan programs. Individual loans may not exceed \$500,000 and total loans outstanding in this Program are limited by law to \$5 million.

The Veteran's Home Loan Program provides low interest loans for Montana Veterans who are first-time home buyers. By law, the Montana Board of Housing administers the Program; however, the Board of Investments approves and funds all loans. Total loans outstanding in this Program are limited by law to \$30 million (increased to \$40 million July 1, 2015).

Annual Change by Loan and Mortgage Type						
Fair Value (In Millions)						
As of June 30						
	2015	Total %	2014	Total %	Change \$	Change %
Commercial Loans	68.7	56.40	74.7	59.96	(6.0)	(8.06)
Infrastructure Loans	21.3	17.53	22.7	18.18	(1.3)	(5.78)
Veteran's Home Loan Mortgage	27.9	22.92	22.9	18.36	5.0	22.00
Intermediary Program Loans	3.2	2.66	3.3	2.63	(0.0)	(0.96)
Value-added Loans	0.6	0.50	1.1	0.86	(0.5)	(43.74)
Total	121.8	100.00	124.6	100.00	(2.8)	(2.25)

In addition to the Coal Tax Loan Program, the Board also invests other state funds in Montana and guarantees bonds as shown below:

In-State Loans, Other In-State Investments and Bond Guarantees						
Fair Value (In Millions)						
As of June 30						
	2015	Total %	2014	Total %	Change \$	Change %
Coal Tax Trust Loans	93.9	25.82	101.7	25.46	(7.8)	(7.70)
Veteran's Home Loan Mortgage	27.9	7.68	22.9	5.73	5.0	22.00
Montana Science and Technology	10.0	2.76	10.2	2.55	(0.1)	(1.44)
Montana Facility Finance Authority Loans	2.3	0.62	3.2	0.79	(0.9)	(28.36)
Total AOF Loans and Mortgages	134.1	36.88	137.9	34.52	(3.8)	(2.78)
Med Map LLC (St. Vincent Hospital, Billings)	7.9	2.17	8.5	2.13	(0.6)	(7.06)
Board of Housing	0.8	0.22	0.8	0.20	0.0	0.00
Total Bonds	8.7	2.39	9.3	2.33	(0.6)	(6.45)
Totals RFBP Residential Mortgages	8.0	2.20	10.6	2.65	(2.6)	(24.34)
Total MTRP Direct Real Estate	19.5	5.36	19.1	4.79	0.3	1.80
Bond Guarantees (1)	193.3	53.17	222.6	55.72	(29.3)	(13.16)
Total Other In-State and Bond Guarantees	220.8	60.73	252.3	63.15	(31.5)	(12.50)
Total	363.6	100.00	399.5	100.00	(36.6)	(8.94)

(1) Guarantees of INTERCAP and Montana Facility Finance Bonds

The above table reflects only what the Board of Investments directly manages or directly guarantees. The Montana Legislature has authorized other programs to use coal tax monies from various sub-funds. See page 15 for more information on these sub-funds.



For nearly 30 years, the Board has provided low interest loans to Montana state agencies, universities, and local governments for various projects. Since the program's inception, the Board's INTERCAP Loan Program (INTERCAP) has loaned \$456.5 million statewide and issued \$148.0 million in bonds with \$106.4 million outstanding at June 30, 2015. The Board makes firm one-year commitments to fund the loans. On

average, over the past five fiscal years, the program committed to \$35.1 million and funded \$26.3 million in loans. In fiscal year 2014, the program estimated fiscal year 2015 commitments and fundings would be ~\$30 million. In fiscal year 2015, the program committed to \$26.2 million and funded \$28.2 million in loans. For fiscal year 2016, the program estimates the Board will commit to and fund approximately \$30 million.

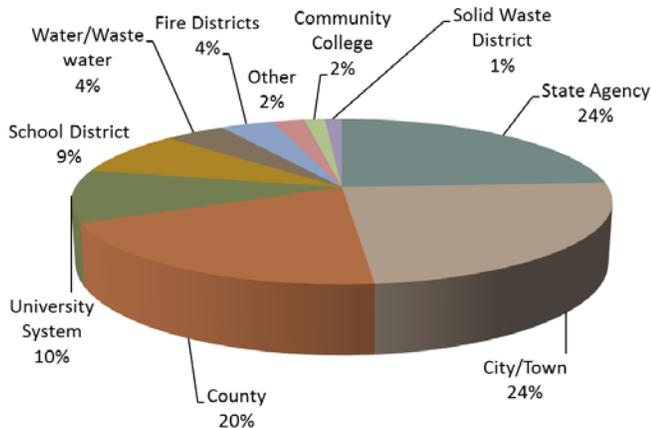
Loan interest rates are reset every February; the loan rate through February 15, 2016 is 1.25%.



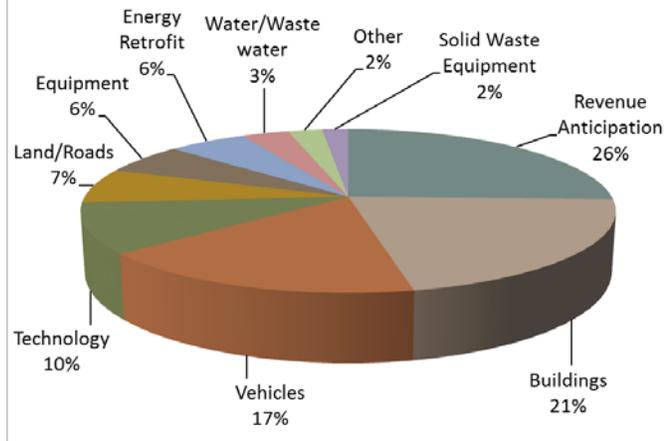
Over 75% of all Montana counties and municipalities have financed projects through INTERCAP.



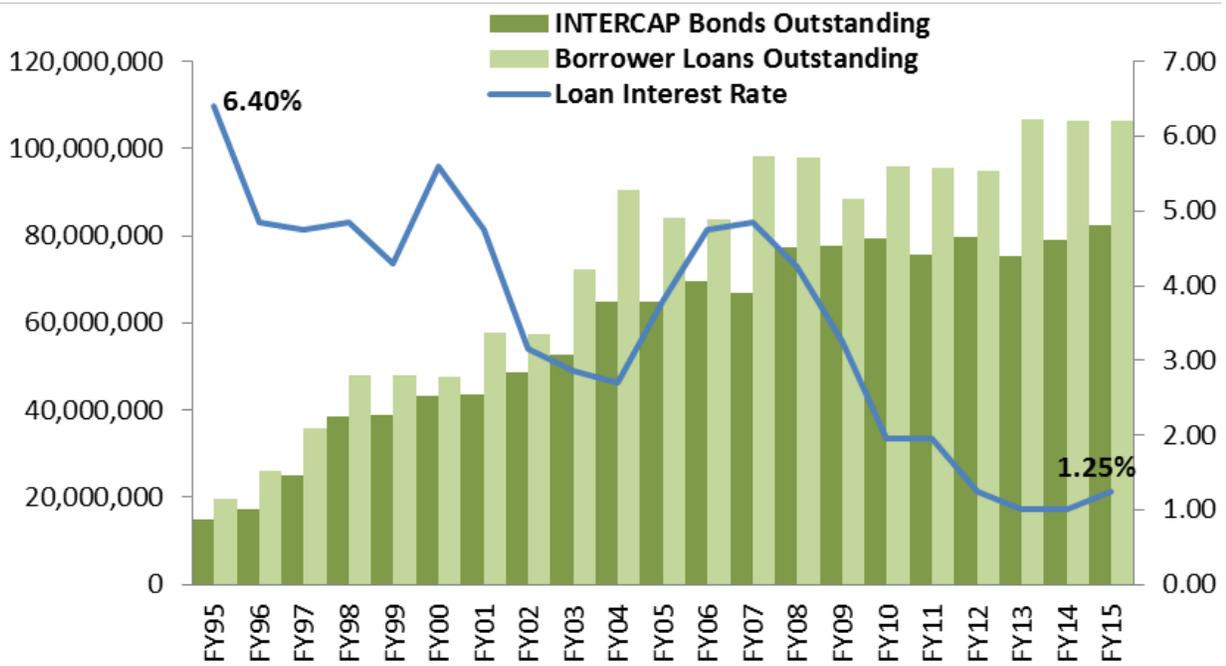
Loans By Borrower Type Since Inception



Loans By Project Type Since Inception



The table below compares the INTERCAP bonds outstanding vs. borrower loans in relation to the loan interest rate in effect at the time.



Through a statutory mechanism, the Board is allowed to pledge certain moneys as a guarantee on these loans, which allows for the low interest rate. To date (without intending any limitation) the Board has identified two funds, the Treasurer's Fund and the Coal Severance Tax Trust Fund, as being legally available for such purposes.

INTERCAP loans have been very high credit quality, and to date, the Board has never suffered a loss, due in part to reasonable underwriting standards and the credit soundness of State of Montana agencies, boards, and authorities and Montana local governments.

Other programs the Board administers under the Bond Program are as follows:

- **Qualified Zone Academy Bond Program (QZAB)**

This program allows qualifying school districts to borrow money at no or nominal interest rates by issuing qualified zone academy bonds. The Board acts as a legal funding conduit only and has no pecuniary liability for the repayment of the bonds. Nine school districts have issued over \$9.98 million in QZAB bonds as of June 30, 2015.

- **Qualified School Construction Bond Program (QSCB)**

This program allows qualifying school districts to borrow money at no or nominal interest rates by issuing qualified school construction bonds. The Board acts as a legal funding conduit only and has no pecuniary liability for the repayment of the bonds. Two school districts have issued over \$8.37 million in QSCB bonds as of June 30, 2015.



JOB GROWTH IN GREAT FALLS



The Board's In-State Loan Program, in cooperation with the City of Great Falls and Great Falls Developments was able to attract ADF International, Inc., a complex structural steel fabrication company with headquarters in Toronto, Ontario Canada, through the use of Board's Infrastructure Loan Program that provided \$4,999,800 at 1.98% fixed interest rate for 15 years. In consideration for the terms of the loan, ADF International, Inc. has agreed to create 300 jobs over a four-year period. The Infrastructure Loan Program also provides tax incentives to



ADF International, Inc., which over the term of the loan, would at least equal the total amount of the loan.

LOW INCOME HOUSING IN KALISPELL



The Board's In-State Loan Program provided long-term, fixed-rate financing for the construction of a 40-unit low income housing facility in Kalispell, Montana through the use of its Low Income Housing Tax Credit loan program. The facility has been very well received.



Expanding Health Services in Seeley

INTERCAP leveraged almost \$550,000 loan to help finance a \$1.14 million expansion and renovation of the Seeley-Swan Hospital District's Medical Center.

The project allows the District to provide expanded services offered by Partnership Health Center at the Seeley Lake location. The dental and behavior health services now offered had previously been intermittently available and at the patient's expense. The expansion provides these additional services on a regular and more affordable basis, to greatly enhance the health care opportunities for area residents.



Frenchtown Rural Fire District used INTERCAP financing to purchase a new water tender. One of many equipped and ready units financed through INTERCAP used to extinguish the fires of 2015.

Improving Public Safety around the State

Musselshell County used an INTERCAP loan to replace an aging ambulance that faced expensive major repairs. The new ambulance will help the Ambulance Service continue to meet the needs of residents throughout the large, rural county.



MEMORANDUM

Montana Board of Investments

Department of Commerce

2401 Colonial Drive, 3rd Floor
Helena, MT 59601 (406) 444-0001

To: Audit Committee Members

From: David Ewer, Executive Director

Date: November 17, 2015

Subject: Short Term Investment Program
Local Government Participation

Over the past year, Board staff and Audit Committee members have been reviewing protocol and meeting with local government representatives regarding local government participation in the Short Term Investment Pool (STIP). At its April 7, 2015 meeting, the Board approved a draft local government Resolution Authorizing Participation in the Short Term Investment Pool, including Exhibit A, Part 1, the STIP Participation Information Sheet and Part 2, the Electronic Funds Transfer Authorization Form (the "STIP Resolution"). The attached STIP Resolution has been updated and incorporates the October 6, 2015 Board approved changes to the STIP Investment Policy that moves from using an "amortized cost basis" to a "net asset value basis" (NAV) for a financial reporting purpose.

Recommendations

Staff recommends approval of the following:

1. The attached local government STIP Resolution.
2. Effective January 1, 2016, local governments wishing to participate in STIP must authorize and submit the STIP Resolution to the Board.
3. Authorize Board staff to distribute, after January 1, 2016, the STIP Resolution to all current local government STIP participants.
4. Request local government STIP participants to complete, authorize and return the STIP Resolution to Board staff by June 30, 2016. A follow-up letter will be sent to participants that have not submitted a STIP Resolution by this date.
5. Beginning July 1, 2016, or shortly thereafter, and on an annual basis, submit written negative affirmation to local government STIP participants reflecting the STIP Resolution information the Board has on file as of July 1. This information would, at a minimum, include the name of the local government authorized representative, the name(s) of any local government authorized representative delegate(s), and the name of the local government bank and account number. It will be the responsibility of the local government STIP participant to determine if the information provided in the written negative affirmation is valid and if it is not, to authorize and provide a new STIP Resolution to the Board. If the information is correct, the local government would not need to provide a response to the confirmation request.

Attachments

RESOLUTION AUTHORIZING PARTICIPATION IN THE SHORT TERM INVESTMENT POOL
MONTANA BOARD OF INVESTMENTS

CERTIFICATE AS TO
RESOLUTION NO. _____ AND ADOPTING VOTE

Political Subdivision: _____

Governing Body: _____

Type, date, time and place of meeting: A _____ meeting held on _____
at _____ o'clock ____m. in _____, Montana.

Members present:

Members absent:

I, the undersigned, being the duly qualified and acting recording officer of the political subdivision identified above ("Participant"), certify that the attached RESOLUTION AUTHORIZING PARTICIPATION IN THE BOARD OF INVESTMENTS OF THE STATE OF MONTANA SHORT TERM INVESTMENT POOL AND AUTHORIZING THE EXECUTION AND DELIVERY OF DOCUMENTS RELATED THERETO ("Resolution") and Exhibit A thereto are true and correct copies of the Resolution and Exhibit A on file in the original records of the Participant and in my legal custody; that the Resolution and Exhibit A were duly approved and adopted by the Governing Body of the Participant at the above described meeting, which meeting was attended throughout by the members indicated above, constituting a quorum of the Governing Body, pursuant to public notice of such meeting as required by law; and that the Resolution and Exhibit A have not as of the date hereof been amended or repealed.

WITNESS my hand officially as such recording officer this ____ day of _____, 2015.

By _____
Its _____

RESOLUTION NO. _____

RESOLUTION AUTHORIZING PARTICIPATION IN THE BOARD OF INVESTMENTS OF THE STATE OF MONTANA SHORT TERM INVESTMENT POOL AND AUTHORIZING THE EXECUTION AND DELIVERY OF DOCUMENTS RELATED THERETO

BE IT RESOLVED BY THE _____ (the Governing Body) of _____ (the Participant) AS FOLLOWS:

ARTICLE I

DEFINITIONS

Section 1.01 The following terms will have the meanings indicated below for all purposes of this Resolution unless the context clearly requires otherwise:

Section 1.02 Account shall mean a specific Participant Bank account assigned by the Bank to be used in conducting transactions through the STIP Program.

Section 1.03 Agreement shall mean the agreements of the Participant as contained within this Resolution.

Section 1.04 Authorized Representative shall mean the officer or official of the Participant designated and duly authorized by the Governing Body as set forth below to enable the Participant's participation in the STIP Program.

Section 1.05 Authorized Representative Delegate shall mean any lawful officer, official or employee of the Participant who has been delegated authority by the Authorized Representative as provided in this Resolution to initiate transactions using the Board's STIP Program.

Section 1.06 Bank shall mean a financial institution designated and authorized as provided in this Resolution to send and receive money on behalf of the Participant for purposes of participation in the STIP Program.

Section 1.07 Board shall mean the Board of Investments of the State of Montana, a public body corporate organized and existing under the laws of the State and its successors and assigns.

Section 1.08 Exhibit A (Parts 1 and 2) shall mean the documents attached to and incorporated into this Resolution as provided in Article IV that provides sufficient information necessary for the Participant to participate in STIP, along with sufficient instructions for the Board and its agents to administer and manage the Participant's participation, transactions and shares in the STIP Program.

Section 1.09 Governing Body shall mean the governing body of the above-named political subdivision (Participant) authorized by Montana state law to participate in the STIP Program as further specified in this Resolution.

Section 1.10 Participant shall mean the political subdivision requesting participation in the Board's Short Term Investment Pool.

Section 1.11 Short Term Investment Pool, STIP, or Program shall mean the Board's Short Term Investment Pool Program as authorized by law and as more fully defined and described in the Board's policies and procedures, as may be amended from time to time.

ARTICLE II

SHORT TERM INVESTMENT POOL PARTICIPATION AGREEMENT

Section 2.01 Participation Agreement. By approving and adopting this Resolution and Exhibit A, the Governing Body requests and agrees to participation of Participant in the STIP Program, and agrees that Participant will comply with and be bound by all laws, policies, procedures and participation requirements applicable to the STIP Program, as may be amended from time to time.

Section 2.02 STIP Program Description. The STIP Program is an investment program administered under the direction of the Montana Board of Investments as authorized by the Unified Investment Program. As more fully set forth in Board policies and procedures, STIP is available to state and local governments to serve their short term cash flow and deposit needs and its objectives are to preserve capital and to maintain high liquidity. The Program has the following attributes, as more fully set forth in applicable Board policies, procedures and participation requirements, which are subject to change upon the sole determination of the Board:

- 1) STIP transactions are fixed at \$1 per share;
- 2) STIP interest on pool assets accrues daily;
- 3) STIP earnings distribution method: Interest is distributed at the beginning of the month and can be distributed as cash to the designated Bank or the earnings can be reinvested into STIP;
- 4) Buying or selling shares in STIP requires one (1) business days' notice; transactions for which notice is received after 2:00 p.m. will be processed two (2) business days after receipt of the original notice;
- 5) Access to STIP is only through an electronic, web-based portal; no cash, checks or notifications by fax, phone or email will be accepted;
- 6) STIP's web portal provides real-time information on each account including: investment balances, buys, sells, pending transactions, and transaction notes, as determined by the authorized user; and
- 7) The Board accounts and reports on its financial statement STIP investment on a Net Asset Value (NAV) basis. A NAV per share of a STIP unit will be shown on the Board's website for each month-end period <http://investmentmt.com>.

Section 2.03 Review of Policies, Procedures and Participation Requirements. Participant acknowledges and represents that it has received and reviewed to its satisfaction all Board policies, procedures and participation requirements applicable to the STIP Program.

Section 2.04 Authorized Representative: The Governing Body designates _____, who holds the position of _____ as the Participant's Authorized Representative to make transactions between STIP and the Bank.

The Governing Body: (check one) DOES DOES NOT allow the Authorized Representative to appoint and delete additional Authorized Representative Delegate (s) on behalf of the Participant. Any addition or deletion of an Authorized Representative Delegate requires notice to the Board by the Authorized Representative before transactions will be accepted and processed as directed by the Authorized Representative Delegate.

The Governing Body designates and authorizes the bank identified in Exhibit A attached, (the Bank), having the ABA number identified in Exhibit A attached, as Participant's Bank to send or transfer funds to the State Treasurer for purchase of STIP shares and to deposit distributions of and withdraw proceeds resulting from sales of STIP shares in the Bank's Account Number identified in Exhibit A attached which is a (check one) checking savings account.

The Governing Body: (check one) DOES DOES NOT allow the Authorized Representative to change either the Bank or the Account; if 'DOES' is checked, the Board will notify both the office of the Authorized Representative AND the office of the Governing Body within three (3) business days that such a change has been made.

The Governing Body: (check one) DOES [] DOES NOT [] allow the Authorized Representative to change the earnings distribution method; if DOES NOT is checked, the Governing Body chooses the following earnings distribution method (check one) reinvest cash earnings into STIP [] distribute cash earnings [] to the Bank.

Section 2.05 Change of Authorized Representative. Any change to the Authorized Representative requires a new resolution adopted by the Governing Body; however the absence of an Authorized Representative does not nullify the authority of the Authorized Representative Delegate (s) then in effect and so authorized to make STIP transactions.

Section 2.06 Annual Information. The Board will provide on an annual basis to both the Governing Body and the Authorized Representative the following information as appears on the Board's records:

1. The name of the Authorized Representative;
2. The name (s) of any Authorized Representative Delegate (s); and
3. The name of the Bank and the associated Account Number.

Section 2.07 Effective Date. Participant's Agreement as set forth in this Resolution will take effect when the Certificate As To Resolution and Adopting Vote, this Resolution and Exhibit A, each completed, dated and duly executed, are delivered to and received by the Board and will stay in effect until terminated in writing by the Governing Body.

ARTICLE III

MISCELLANEOUS

Section 3.01 No Guaranteed Return. The Governing Body understands and agrees that there is no minimum or maximum amount of interest rate or any guaranteed rate of return on STIP shares or funds invested in STIP shares.

Section 3.02 Voluntary Participation. By adopting this Resolution, the Governing Body acknowledges that it is not compelled to participate in STIP, and that its participation in STIP is voluntary, and accepts and agrees to the Program, its administration and governance, and its policies, procedures and participation requirements as set forth by law and the Board.

Section 3.03 Responsibility for Participant Mistakes. The Governing Body and Participant agree to hold the State of Montana, the Board, and their members, officials and employees harmless for the acts, omissions and mistakes of the Participant, Governing Body and their members, officials and employees, including but not limited to: Authorized Representative or Authorized Representative Delegate who, for any reason, is not qualified or proper to be listed with the Board as a permissible representative to authorize transactions using the STIP Program; wrong instructions as to amounts or timing of sales or purchases; or missed deadlines.

Section 3.04 No Warranty. The Governing Body and Participant acknowledge and agree that the Board makes no warranty that funds will be immediately available in the event of any failure of a third party or that Governing Body will not suffer losses due to acts of God, or other calamities, or other market dislocations or interruptions.

Section 3.05 Participation Conditions; STIP Administration. The Governing Body and Participant acknowledge and agree that the Board will allow participation in STIP by and conduct STIP business with only those parties it determines are qualified and authorized to participate in the Program and which abide by the Board's policies, procedures and participation requirements; that the Board administers the STIP Program subject to Montana law and prudent fiduciary practices as required by Montana law and Board policy; and that the Board is legally bound to manage the Unified Investment Program, which includes STIP, in accordance with the prudent expert rule as set forth in Montana law.

Section 3.06 STIP Not Insured Against Loss. The Governing Body and Participant understand and acknowledge that the Board's STIP Program is NOT FDIC insured or otherwise insured or guaranteed by the federal government, the State of Montana, the Board or any other entity against investment losses. The Governing Body and Participant further understand and acknowledge that the Board's STIP policy requires maintenance of a reserve fund to offset possible losses and that STIP interest earnings may be used to fund this reserve before the net earnings are distributed to the STIP participants, but that such reserves may not be adequate to cover investment losses.

ARTICLE IV

EXHIBIT A

Section 4.01 Approval and Adoption of Exhibit A. Attached to this Resolution as Exhibit A, Part 1, is the STIP Participation Information Sheet, and Part 2 is the Electronic Funds Transfer Authorization Form, which together provide the instructions and the details required by the Board to enable Participant's participation in the STIP Program. The Governing Body and Participant represent and agree that the attached Exhibit A has been completed and executed by the Participant's Authorized Representative and that Exhibit A must be complete and acceptable to the Board before participation will be allowed in the STIP Program. Exhibit A is hereby incorporated into and made a part of this Resolution, and is approved and adopted by the Governing Body as if set forth fully herein.

APPROVED AND ADOPTED by the _____ this ____ day
of _____, 2015.

By _____
Its _____

Attest:

By _____
Its _____

Exhibit A

PART 2. ELECTRONIC FUNDS TRANSFER AUTHORIZATION FORM

STIP Program Manager		
Montana Board of Investments		
boi_stip@mt.gov		
P.O. Box 200126	Helena, MT 59620-0126	
Phone 406.444.0003	Fax 406.444.4268	

This form must accompany the local government's STIP Participation Agreement and be submitted by an authorized local government representative.

Local Government Name:	
STIP Account #: <i>(For official use only)</i>	

I, the undersigned, a duly authorized representative of the local governing board, hereby authorize the Montana Board of Investments to initiate electronic debit and/or credit to the following account. The authorized representative acknowledges the origination of ACH transactions to the listed account complies with the provisions of U.S. law.

Any sale, purchase, or distribution of funds will be made by Electronic Funds Transfer or wire debiting or crediting the appropriate treasury or shareholder bank account. Please specify the local government depository.

Check one transaction type only.

Checking Account <input type="checkbox"/>		Savings Account <input type="checkbox"/>	
Name of Bank →		Routing/ABA No →	
Address →			
City →		State →	MT
Account Number →		Zip →	

This authority remains in effect until the Montana Board of Investments has received timely written notification from an authorized representative of the local governing board terminating the Authorization.

Signature →		Date →	
Printed Name →		Title →	

Please notify the Montana Board of Investments if you have applied a filter or a block to your account.

ATTACH A VOIDED CHECK FOR THE ABOVE ACCOUNT HERE



Montana Teachers' Retirement System Valuation Results July 1, 2015

Shawn Graham
Executive Director

www.trs.mt.gov



Benefit Financing



- Basic Retirement Funding Equation

$$C + I = B + E$$

C = Contributions

I = Investment Income

B = Benefits Paid

E = Expenses (administration)



Results



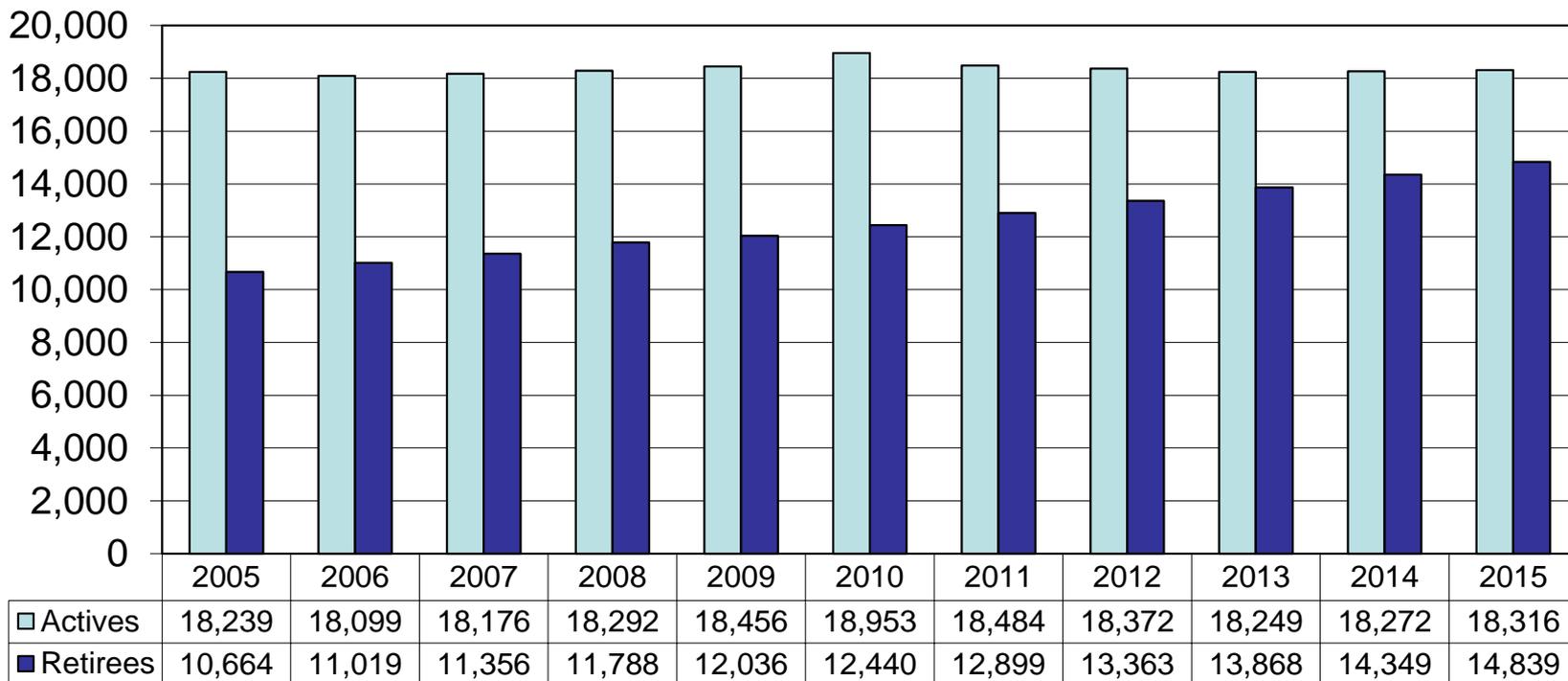
Comments on Valuation



- Asset returns
 - Market asset return 4.57% vs. 7.75% expected (3.18% less than expected).
 - Actuarial asset return 9.59% vs. 7.75% expected (1.84% greater than expected).
- Funded Ratio
 - Funding increased from 65.45% to 67.46%
- Amortization Period
 - Amortization period decreased from 28 to 26 years



Active and Retired Membership



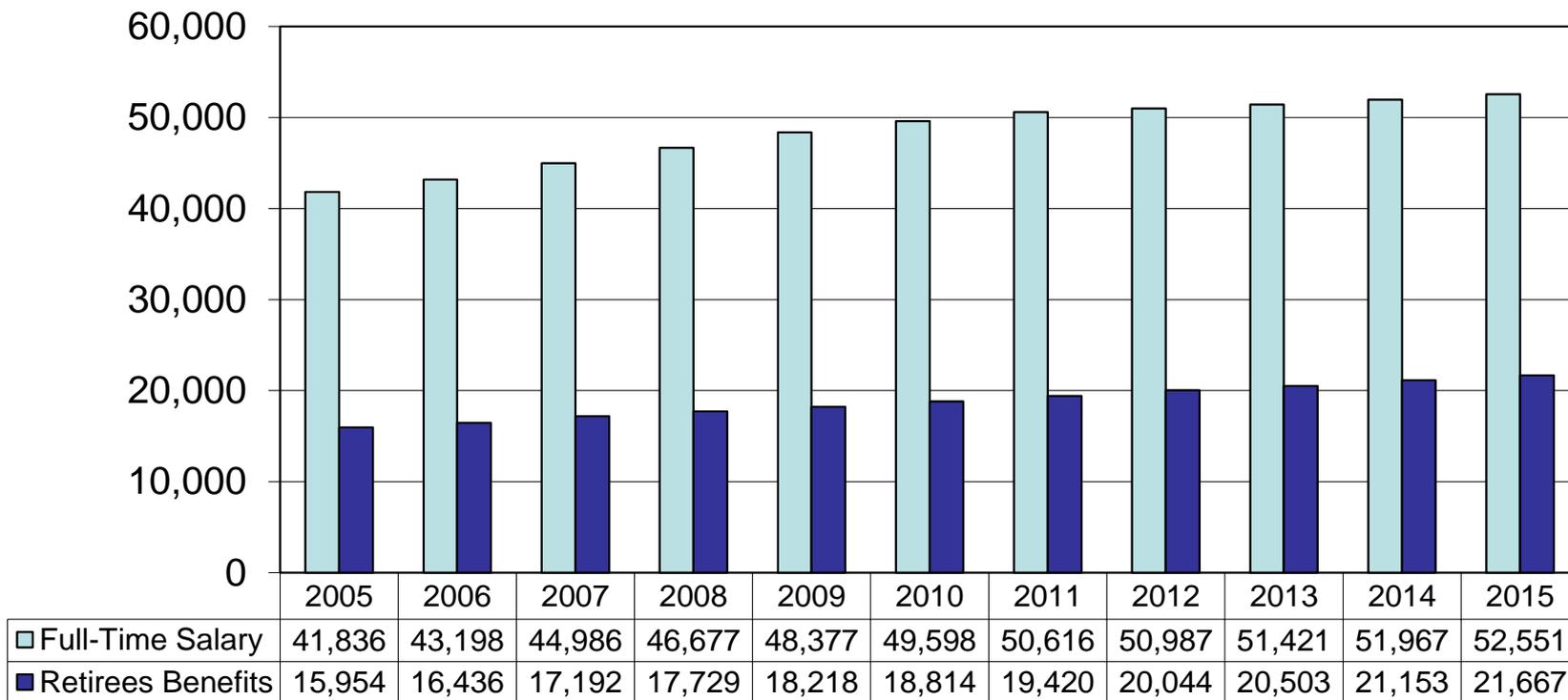
0.0% annual increase for active members since 2005; 0.2% increase for 2015.

3.4% annual increase for retired members since 2005; 3.4% increase for 2015.

0.6 retirees per active 10 years ago; 0.8 retirees per active now.



Average Salary and Benefits

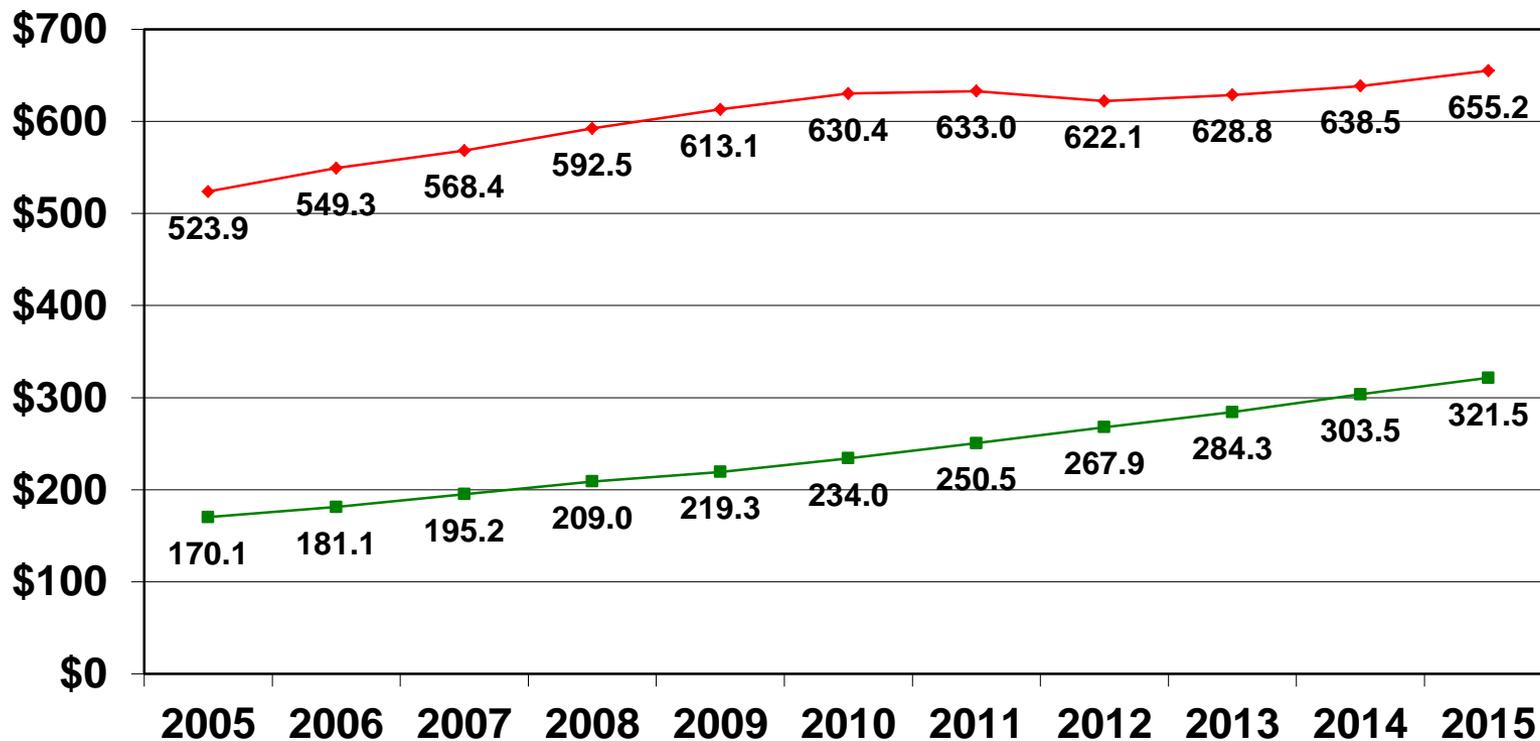


2.3% annual increase for average salary since 2005; 1.1% increase for 2015.

3.1% annual increase for average benefits since 2005; 2.4% increase for 2015.



Payroll & Benefits (Millions)





Assets (\$ Millions)



	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Market Return	8.0%	8.9%	17.6%	(4.9)%	(20.8)%	12.9%	21.7%	2.2%	12.9%	17.1%	4.6%
Actuarial Return	2.7%	8.5%	10.2%	7.2%	(10.3)%	9.8%	(0.1)%	3.2%	12.0%	13.2%	9.6%



Funding Results

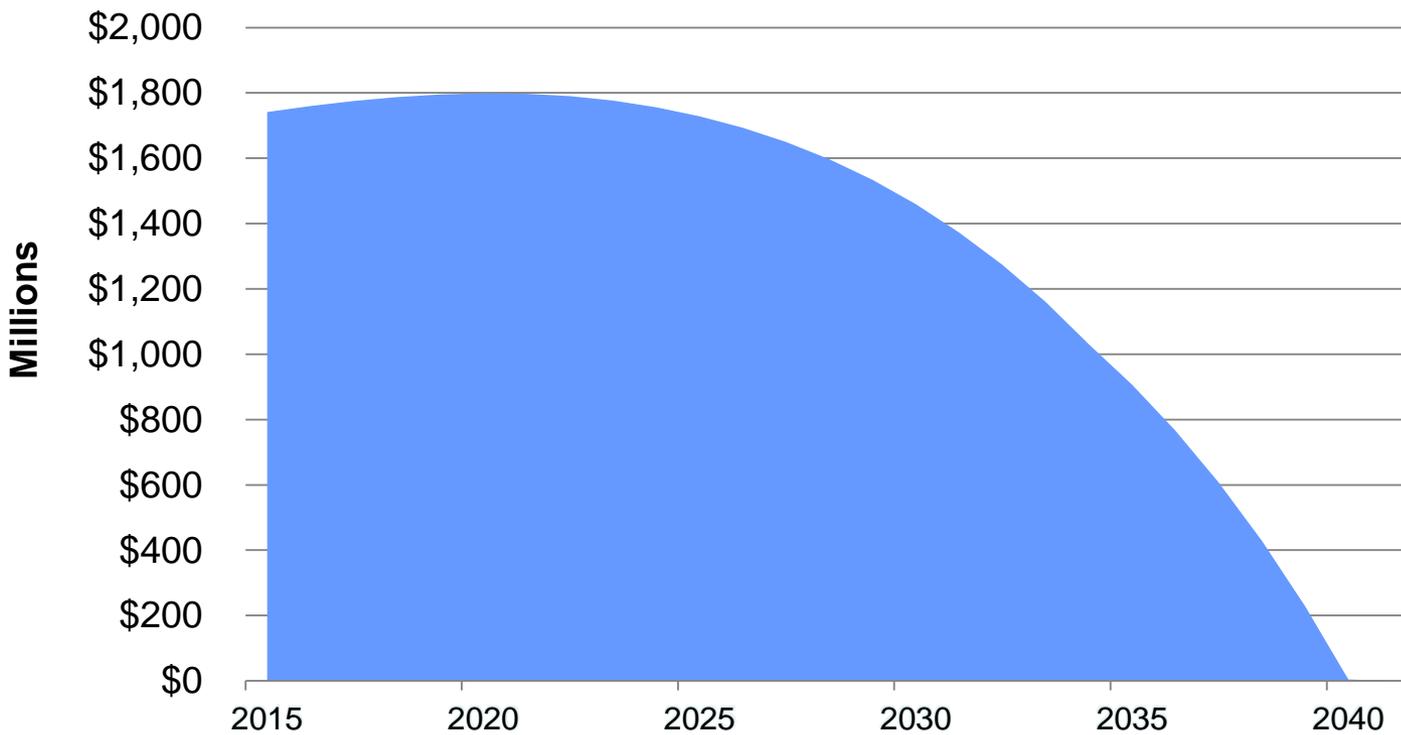


	July 1, 2015 Valuation	July 1, 2014 Valuation
Total Normal Cost Rate	9.21%	9.13%
Less Member Rate	<u>8.15%</u>	<u>8.15%</u>
Employer Normal Cost Rate	1.06%	0.98%
Administrative Expense Load	0.28%	0.31%
Rate to Amortize UAL	<u>9.82%</u>	<u>9.77%</u>
Total Employer Statutory Rate	11.16%	11.06%
Actuarial Accrued Liability	\$5,351.4 million	\$5,191.0 million
Actuarial Value of Assets	\$3,609.8 million	\$3,397.4 million
Unfunded Accrued Liability	\$1,741.6 million	\$1,793.6 million
Funded Ratio	67.46%	65.45%
Amortization Period*	26 Years	28 Years

* Reflects anticipated increase in employer supplemental contribution rate



Progress toward 100% Funding

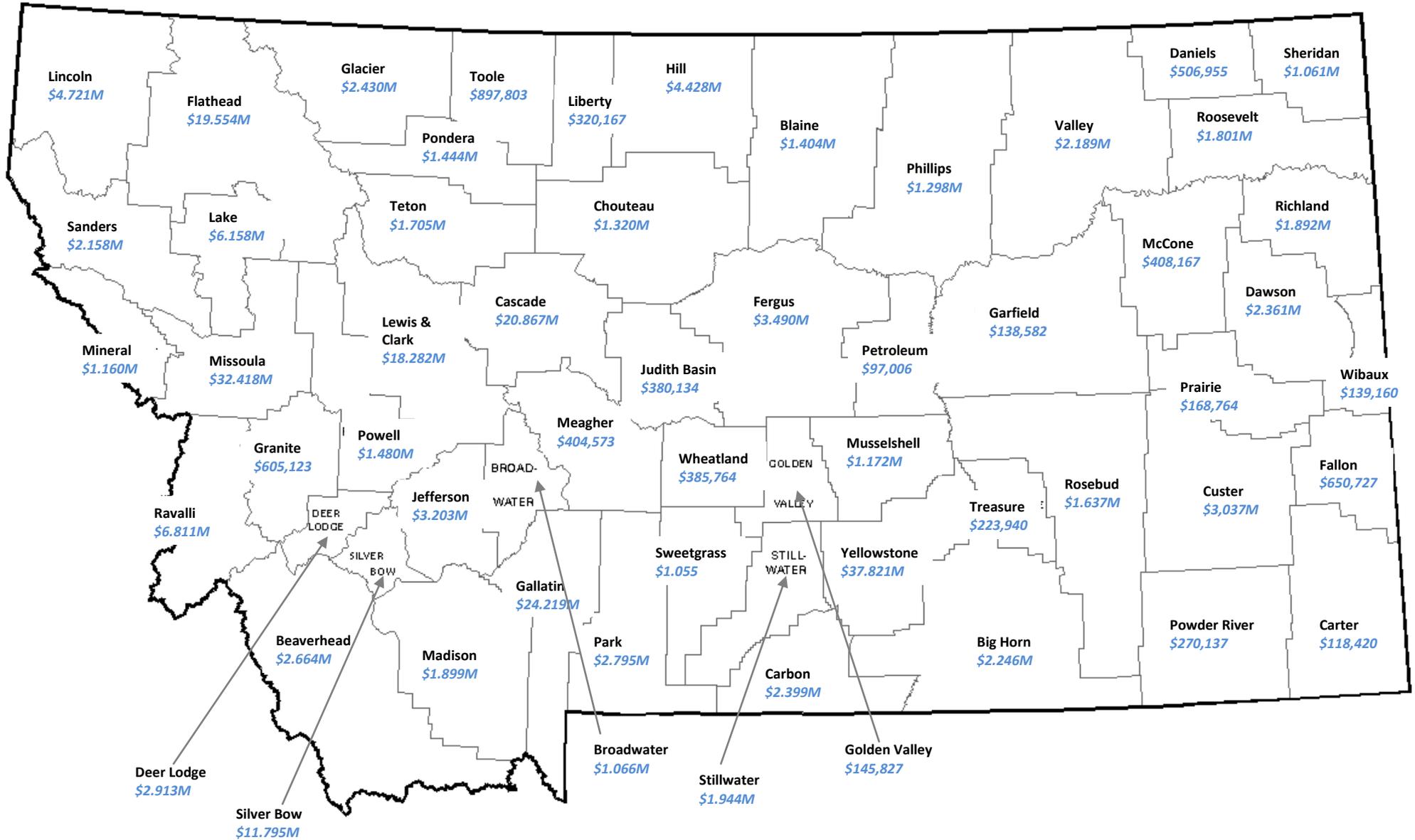


■ Projected UAAL - Level % of Pay



Montana Teachers' Retirement System

Retirement Benefits Paid by County – Fiscal Year 2015



Total Benefits Paid in Montana: \$251,159,293

Total Recipients in Montana: 11, 379

Prepared: October 1, 2015



Montana Teachers' Retirement System

Retirement Benefits Paid by County – Fiscal Year 2015

County	Gross Benefits Paid	# of Benefit Recipients	County	Gross Benefits Paid	# of Benefit Recipients
BEAVERHEAD	\$2,663,924	133	MCCONE	\$408,167	29
BIG HORN	\$2,245,506	108	MEAGHER	\$404,573	23
BLAINE	\$1,404,330	82	MINERAL	\$1,160,302	61
BROADWATER	\$1,066,236	53	MISSOULA	\$35,417,791	1,362
CARBON	\$2,398,985	132	MUSSELSHELL	\$1,172,439	56
CARTER	\$118,420	10	PARK	\$2,795,145	134
CASCADE	\$20,867,273	941	PETROLEUM	\$97,006	7
CHOUTEAU	\$1,320,327	78	PHILLIPS	\$1,298,233	65
CUSTER	\$3,037,177	151	PONDERA	\$1,443,790	82
DANIELS	\$506,955	28	POWDER RIVER	\$270,137	18
DAWSON	\$2,360,911	112	POWELL	\$1,480,182	75
DEER LODGE	\$2,912,665	132	PRAIRIE	\$168,764	12
FALLON	\$650,727	29	RAVALLI	\$6,810,722	379
FERGUS	\$3,489,647	185	RICHLAND	\$1,892,306	95
FLATHEAD	\$19,553,793	957	ROOSEVELT	\$1,801,282	100
GALLATIN	\$24,219,662	961	ROSEBUD	\$1,636,589	94
GARFIELD	\$138,582	10	SANDERS	\$2,157,593	123
GLACIER	\$2,430,148	115	SHERIDAN	\$1,060,535	54
GOLDEN VALLEY	\$145,827	12	SILVER BOW	\$11,794,778	488
GRANITE	\$605,123	32	STILLWATER	\$1,943,730	105
HILL	\$4,428,149	200	SWEET GRASS	\$1,055,412	41
JEFFERSON	\$3,203,249	151	TETON	\$1,705,421	92
JUDITH BASIN	\$380,134	23	TOOLE	\$897,803	50
LAKE	\$6,157,568	301	TREASURE	\$223,940	14
LEWIS AND CLARK	\$18,282,113	791	VALLEY	\$2,188,979	108
LIBERTY	\$320,167	20	WHEATLAND	\$385,764	30
LINCOLN	\$4,721,025	242	WIBAUX	\$139,160	7
MADISON	\$1,899,155	92	YELLOWSTONE	\$37,820,972	1,594

Total Montana:	\$251,159,293	11,379
Other U.S. States:	\$48,307,310	2,888
International:	\$351,905	30
Total:	\$299,818,508	14,297



Summary of Actuarial Valuation Results June 30, 2015

Montana Public Employee Retirement Administration

Dore Schwinden

November 2015



Discussion Topics

Retirement Funding Equation

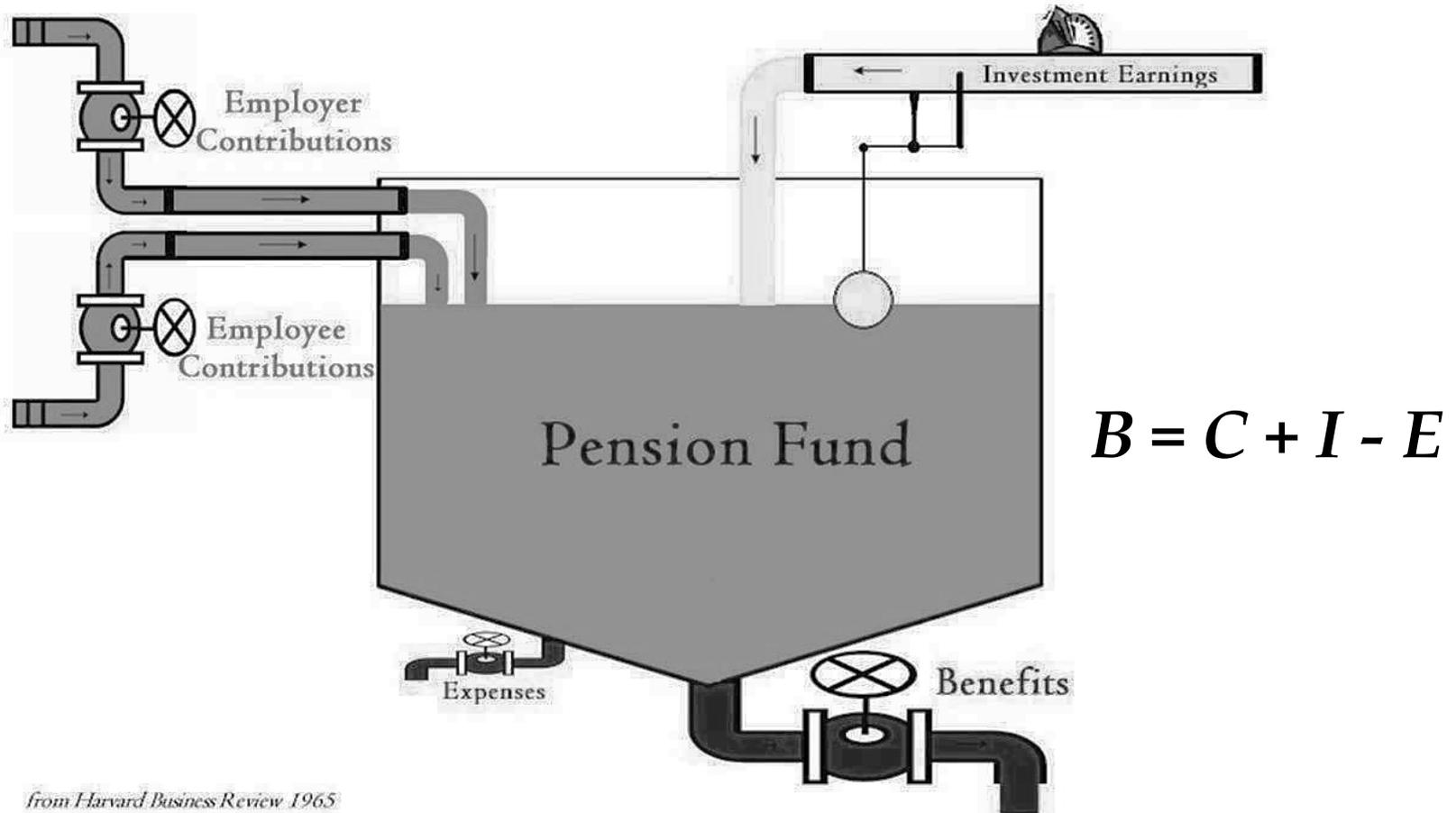
Overall Valuation Results

PERS Summary

Other System Summaries



Retirement Funding



from Harvard Business Review 1965



Overall Results

- **All plans experienced actuarial gains**
 - 6 of 8 plans are actuarially sound
 - PERS is actuarially sound
- **All systems experienced actuarial *investment* gains**
 - Return on market value was 4.5%
 - Actuarial gain due to asset smoothing 9.0 - 9.6%
 - \$85 million gain for PERS; \$181 million gain for all plans
 - Over \$7 billion in total investments, up \$194 million from 2014
- **GABA Settlement PERS-DB**
 - Members hired before July 1, 2007 = 3% GABA
 - Members hired between July 1, 2007 and June 30, 2013 = 1.5% GABA
 - Members hired after July 1, 2013 subject to the sliding scale in HB 454



PERS – Summary of Valuation Results

<u>Participants</u>	<u>FY 2014</u>	<u>FY 2015</u>
Active Members	28,229	28,237
Disabled Members	193	176
Retirees & Beneficiaries	19,888	20,505
Terminated Vested Members	2,825	2,925
Terminated Non-Vested Members	<u>7,666</u>	<u>8,839</u>
Total Participants	58,801	60,682
Annual Salaries of Active Members	\$1,120,939,764	\$1,156,855,431
Average Annual Salary	\$39,709	\$40,969
Annual Retirements	\$302,758,499	\$326,390,329
Average Annual Benefit	\$15,205	\$15,782



PERS – Summary of Valuation Results

<u>Assets & Liabilities (000,000's)</u>	<u>FY 2014</u>	<u>FY 2015</u>
Actuarial Accrued Liability (AAL)	\$6,177.5	\$6,470.3
Actuarial Value of Assets (AVA)	<u>\$4,595.8</u>	<u>\$4,926.5</u>
Unfunded AAL (AAL-AVA)	\$1,581.7	\$1,543.8
Less: PCR-UAL	<u>\$5.9</u>	<u>\$2.6</u>
Net Unfunded Liability	\$1,575.8	\$1,541.2
Funded Ratio (AAL/AVA)	74.4%	76.2%
Statutory Contribution Rate	19.32%	18.79%
Normal Cost Rate	11.63%	11.18%
Available for Amortization	7.42%	7.34%
Years to Amortize	29.3	27.2
Shortfall (Surplus)	(0.09%)	(0.40%)



Other Systems

GWPORS – does not amortize

SRS – does not amortize

HPORS – amortizes in 28.5 years

MPORS – amortizes in 18.3 years

FURS – amortizes in 9.7 years

JRS – actuarial surplus

VFCA – amortizes in 9.3 years



GWPORS – Summary of Valuation Results

<u>Participants</u>	<u>FY 2014</u>	<u>FY 2015</u>
Active Members	955	993
Disabled Members	2	4
Retirees & Beneficiaries	201	227
Terminated Vested Members	87	95
Terminated Non-Vested Members	<u>175</u>	<u>235</u>
Total Participants	1,420	1,554
Annual Salaries of Active Members	\$40,458,127	\$44,713,334
Average Annual Salary	\$42,365	\$45,029
Annual Retirements	\$4,105,807	\$4,720,886
Average Annual Benefit	\$20,817	\$21,081



GWPORS – Summary of Valuation Results

<u>Assets & Liabilities (000,000's)</u>	<u>FY 2014</u>	<u>FY 2015</u>
Actuarial Accrued Liability (AAL)	\$154.6	\$172.1
Actuarial Value of Assets (AVA)	<u>\$129.4</u>	<u>\$145.3</u>
Unfunded AAL (AAL-AVA)	\$25.2	\$26.8
Funded Ratio (AAL/AVA)	83.7%	84.4%
Statutory Contribution Rate	19.56%	19.56%
Normal Cost Rate	18.58%	18.24%
Available for Amortization	0.81%	1.15%
Years to Amortize	Infinite	Infinite
Shortfall	2.41%	1.96%



SRS – Summary of Valuation Results

<u>Participants</u>	<u>FY 2014</u>	<u>FY 2015</u>
Active Members	1,307	1,336
Disabled Members	35	32
Retirees & Beneficiaries	498	545
Terminated Vested Members	73	81
Terminated Non-Vested Members	<u>288</u>	<u>342</u>
Total Participants	2,201	2,336
Annual Salaries of Active Members	\$64,423,961	\$67,881,262
Average Annual Salary	\$44,291	\$50,809
Annual Retirements	\$13,044,129	\$14,432,238
Average Annual Benefit	\$24,772	\$25,256



SRS – Summary of Valuation Results

<u>Assets & Liabilities (000,000's)</u>	<u>FY 2014</u>	<u>FY 2015</u>
Actuarial Accrued Liability (AAL)	\$326.0	\$348.9
Actuarial Value of Assets (AVA)	<u>\$264.9</u>	<u>\$288.3</u>
Unfunded AAL (AAL-AVA)	\$61.1	\$60.6
Funded Ratio (AAL/AVA)	81.3%	82.6%
Statutory Contribution Rate	19.36%	19.36%
Normal Cost Rate	18.29%	18.05%
Available for Amortization	0.90%	1.14%
Years to Amortize	Infinite	Infinite
Shortfall	4.01%	3.48%



HPORS – Summary of Valuation Results

<u>Participants</u>	<u>FY 2014</u>	<u>FY 2015</u>
Active Members	229	241
Disabled Members	8	7
Retirees & Beneficiaries	314	320
Terminated Vested Members	11	11
Terminated Non-Vested Members	<u>14</u>	<u>13</u>
Total Participants	576	592
Annual Salaries of Active Members	\$13,901,207	\$14,502,510
Average Annual Salary	\$60,704	\$60,176
Annual Retirements	\$9,336,474	\$9,891,640
Average Annual Benefit	\$30,279	\$31,554



HPORS – Summary of Valuation Results

<u>Assets & Liabilities (000,000's)</u>	<u>FY 2014</u>	<u>FY 2015</u>
Actuarial Accrued Liability (AAL)	\$183.4	\$192.9
Actuarial Value of Assets (AVA)	<u>\$117.2</u>	<u>\$125.6</u>
Unfunded AAL (AAL-AVA)	\$66.2	\$67.3
Funded Ratio (AAL/AVA)	63.9%	65.1%
Statutory Contribution Rate	49.38%	50.38%
Normal Cost Rate	24.46%	25.26%
Available for Amortization	24.69%	24.89%
Years to Amortize	30.3	28.5
Shortfall	0.14%	(0.72%)



MPORS – Summary of Valuation Results

<u>Participants</u>	<u>FY 2014</u>	<u>FY 2015</u>
Active Members	743	743
Disabled Members	21	21
Retirees & Beneficiaries	695	723
Terminated Vested Members	55	60
Terminated Non-Vested Members	<u>90</u>	<u>103</u>
Total Participants	1,604	1,650
Annual Salaries of Active Members	\$44,453,805	\$45,161,891
Average Annual Salary	\$59,830	\$60,783
Annual Retirements	\$19,815,161	\$21,203,250
Average Annual Benefit	\$27,803	\$28,617



MPORS – Summary of Valuation Results

<u>Assets & Liabilities (000,000's)</u>	<u>FY 2014</u>	<u>FY 2015</u>
Actuarial Accrued Liability (AAL)	\$474.3	\$497.2
Actuarial Value of Assets (AVA)	<u>\$298.7</u>	<u>\$328.0</u>
Unfunded AAL (AAL-AVA)	\$175.6	\$169.2
Funded Ratio (AAL/AVA)	63.0%	66.0%
Statutory Contribution Rate	52.78%	52.78%
Normal Cost Rate	25.65%	25.84%
Available for Amortization	26.93%	26.74%
Years to Amortize	19.6	18.3
Shortfall (Surplus)	(6.36%)	(7.23%)



FURS – Summary of Valuation Results

<u>Participants</u>	<u>FY 2014</u>	<u>FY 2015</u>
Active Members	616	627
Disabled Members	10	9
Retirees & Beneficiaries	585	600
Terminated Vested Members	19	21
Terminated Non-Vested Members	<u>66</u>	<u>71</u>
Total Participants	1,296	1,328
Annual Salaries of Active Members	\$39,494,619	\$41,041,360
Average Annual Salary	\$64,115	\$65,457
Annual Retirements	\$19,207,518	\$20,322,164
Average Annual Benefit	\$32,624	\$33,747



FURS – Summary of Valuation Results

<u>Assets & Liabilities (000,000's)</u>	<u>FY 2014</u>	<u>FY 2015</u>
Actuarial Accrued Liability (AAL)	\$419.0	441.8
Actuarial Value of Assets (AVA)	<u>\$300.9</u>	<u>\$333.6</u>
Unfunded AAL (AAL-AVA)	\$118.1	\$108.2
Funded Ratio (AAL/AVA)	71.8%	75.5%
Statutory Contribution Rate	57.66%	57.66%
Normal Cost Rate	26.51%	26.51%
Available for Amortization	30.96%	30.96%
Years to Amortize	11.3	9.7
Shortfall (Surplus)	(15.35%)	(17.18%)



JRS – Summary of Valuation Results

<u>Participants</u>	<u>FY 2014</u>	<u>FY 2015</u>
Active Members	55	55
Disabled Members	0	0
Retirees & Beneficiaries	67	67
Terminated Vested Members	1	2
Terminated Non-Vested Members	<u>0</u>	<u>0</u>
Total Participants	123	124
Annual Salaries of Active Members	\$6,495,104	\$6,521,161
Average Annual Salary	\$118,093	\$118,567
Annual Retirements	\$3,021,244	\$3,133,947
Average Annual Benefit	\$45,460	\$47,194



JRS – Summary of Valuation Results

<u>Assets & Liabilities (000,000's)</u>	<u>FY 2014</u>	<u>FY 2015</u>
Actuarial Accrued Liability (AAL)	\$50.6	\$51.9
Actuarial Value of Assets (AVA)	<u>\$78.5</u>	<u>\$84.9</u>
Unfunded AAL (AAL-AVA)	\$(27.9)	\$(33.0)
Funded Ratio (AAL/AVA)	155.1%	163.6%
Statutory Contribution Rate	32.81%	32.81%
Normal Cost Rate	24.47%	24.35%
Available for Amortization	8.19%	8.31%
Years to Amortize	0	0
Shortfall (Surplus)	(30.96%)	(34.94%)



VFCA – Summary of Valuation Results

<u>Participants</u>	<u>FY 2014</u>	<u>FY 2015</u>
Active Members	1,935	1,977
Disabled Members	0	0
Retirees & Beneficiaries	1,332	1,371
Terminated Vested Members	939	905
Terminated Non-Vested Members	<u>0</u>	<u>0</u>
Total Participants	4,206	4,253
Annual Salaries of Active Members	n/a	n/a
Average Annual Salary	n/a	n/a
Annual Retirements	\$2,314,164	\$2,377,170
Average Annual Benefit	\$1,737	\$1,734



VFCA – Summary of Valuation Results

<u>Assets & Liabilities (000,000's)</u>	<u>FY 2014</u>	<u>FY 2015</u>
Actuarial Accrued Liability (AAL)	\$38.0	\$44.3
Actuarial Value of Assets (AVA)	<u>\$31.3</u>	<u>\$33.4</u>
Unfunded AAL (AAL-AVA)	\$6.7	\$10.9
Funded Ratio (AAL/AVA)	82.4 %	75.4%
Actual Contributions	\$1.8	\$1.9
Required Contributions	\$0.9	\$0.9
Years to Amortize	5.1	9.3

[Return to Agenda](#)

Executive Director Reports

MEMORANDUM

Montana Board of Investments

Department of Commerce

2401 Colonial Drive, 3rd Floor
Helena, MT 59601 (406) 444-0001

To: Members of the Board
From: David Ewer, Executive Director
Date: November 17, 2015
Subject: Executive Director Reports

1. Member or Other Requests from October Prior Meeting
Please see the memorandum from Marty Tuttle, chief counsel for the Department of Commerce regarding procurement vs. legal service review council for retaining outside legal counsel.
2. Quarterly Cost Report – included in this Tab
3. BOI Snapshot – included in this Tab
4. Securities Litigation Update – see separate memo on this matter in this Tab
5. Resolution 217 – Authorization of Investment Vendors
Board Governance requires staff to annually update the Board with a list of approved investment managers and broker accounts and any changes made since the last review; the update is included in this Tab.
6. Resolution 218 – Delegation of Authority
Resolution 218 authorizes the Deputy Director to perform all functions and duties of the Executive Director if the situation, such as incapacitation requires; no action needed.
7. Resolution 234 – Continuity Resolution of Chief Investment Officer
Resolution 234 authorizes the Executive Director to perform all functions and duties of the Chief Investment Officer if the situation, such as incapacitation requires; no action needed.
8. Annual Report and Financial Statements Status
State law requires this report to be finalized by each December 31st and submitted to the Governor, the legislature and the public. The report has been revised and reformatted for FY 2015. The Audit Committee reviews a checklist of items that must be covered in the report to assure compliance.
9. Governor's Letter – Public Participation
A reminder as to the importance of complying with public participation and open-government requirements. The Board's agenda explicitly calls for public participation and substantive decision actions by the Board are noted in all agendas.

10. 2016 Board Meeting Dates

The proposed 2016 Board Meeting Calendar, aligning as close as possible to previous dates, is included. While six meetings are contemplated, agenda items for October's meeting are open.

11. 2016 Work Plan

This is the plan staff intends to follow subject to directions from the Board, and for every meeting, final board items are assigned, upon consultation of the Chair, as required by the Governance Policy.

DIRECTOR'S OFFICE

MEMORANDUM

To: David Ewer, Executive Director
Montana Board of Investments

From: Marty Tuttle, Chief Legal Counsel
Montana Department of Commerce



Re: Procurement of Outside Legal Services

Date: October 13, 2015

Pursuant to section 18-4-132(3)(f)(iii), MCA and Executive Order 5-93, the employment of attorneys or outside legal counsel is exempted from procurement.

Section 18-4-132(3)(f)(iii), MCA exempts the employment of "an attorney as specified by executive order of the governor" from the procurement requirements set forth in the Montana Procurement Act. On May 18, 1993, Governor Marc Racicot signed Executive Order No. 5-93 re-authorizing the operation of the Legal Services Review Committee. The Committee is vested with the sole authority over the use of private legal counsel by executive branch agencies.

The Legal Services Review Committee reviews all requests of state agencies to engage private legal counsel, and must give prior written approval for all state agency contracts to engage private legal counsel. The Committee is made up of the Director of the Office of Budget and Program Planning (or designee), the Attorney General (or designee) and the legal counsel to the Governor.

The Committee has established forms for the submission of requests, a template contract, and procedures and standards for granting or denying requests for private legal counsel. DOC Legal routinely submits cover letters for such requests to the Committee, and we are happy to assist with drafting any contracts for private legal counsel. Please let me know if you have any questions or concerns.

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State of Montana
Office of the Governor DOCUMENTS COLLECTION



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HELENA, MONTANA 59620

Executive Order No. 5-93

EXECUTIVE ORDER CONTINUING THE LEGAL SERVICES REVIEW PANEL

WHEREAS, within the Executive Branch of state government, agencies utilize the services of private legal counsel on occasion; and

WHEREAS, in 1978 and again in 1981, Executive Orders were issued directing the Executive Branch to review the use of private legal counsel; and

WHEREAS, it is an objective of this administration to make the most effective use of state resources and funding; and

WHEREAS, the Legislature has directed, through House Joint Resolution 25 (1993), that the Attorney General and the Governor study the coordination of legal services in state government.

NOW, THEREFORE, I, MARC RACICOT, Governor of the State of Montana, by virtue of the authority vested in me pursuant to the Constitution and the laws of the State of Montana, do hereby re-authorize the operation of the Legal Services Review

PLEASE RETURN

1 Committee.

2 I. PURPOSE:

3 The purpose of the Legal Services Review Committee is to:

- 4 a. review all requests of state agencies to engage
5 private legal counsel;
6 b. provide prior written approval for all state agency
7 contracts to engage private legal counsel; and
8 c. evaluate and advise the Governor of the use of
9 private legal counsel by state agencies.

10 II. COMPOSITION:

11 The Legal Services Review Committee is made up of the
12 Director of the Office of Budget and Program Planning or a
13 designated representative; the Attorney General or a
14 designated representative; and the legal counsel to the
15 Governor.

16 III. AUTHORITY AND PROCEDURE:

17 The Legal Services Review Committee is vested with the
18 sole and final authority over the use of private legal counsel
19 by executive branch agencies which are directly accountable to
20 the Governor. The Legal Services Review Committee shall
21 establish by issuance of a management memorandum:

- 22 a. the forms for submission of requests for private
23 legal counsel by the agencies;
24 b. the procedures for processing state agency requests
25 for private legal counsel;
26 c. the standards for granting or denying state agency
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requests for private legal counsel; and
d. the standards and procedures for monitoring private legal counsel contracts.

IV. TERMINATION OF PRIOR EXECUTIVE ORDERS:

Any prior Executive Orders relating to the Legal Services Review Committee are hereby superseded by the provisions of this Order.

V. DATE OF EFFECT:

This Order shall take effect for all new contracts and contracts of renewal of legal services on June 1, 1993.

GIVEN under my hand and the GREAT SEAL of the State of Montana, this 18th day of May in the year of our LORD, One Thousand, Nine Hundred and Ninety-Three.

Marc Racicot
MARC RACICOT, Governor

ATTEST:
Mike Cooney
MIKE COONEY, Secretary of State

Management Fees (Unaudited)
for the Quarters ended September 30, 2015 and 2014

Board Fees

<u>Pool</u>	Q1		<u>Change</u>¹
	<u>9/30/2015</u>	<u>9/30/2014</u>	
Retirement Funds Bond Pool (RFBP)	\$ 193,098	\$ 167,040	\$ 26,058
Trust Funds Investment Pool (TFIP)	137,577	116,706	20,871
Montana Domestic Equity Pool (MDEP)	189,546	168,723	20,823
Montana International Equity Pool (MTIP)	170,055	145,401	24,654
Montana Private Equity Pool (MPEP)	274,809	238,395	36,414
Montana Real Estate Pool (MTRP)	171,858	152,214	19,644
Short Term Investment Pool (STIP)	162,237	141,150	21,087
All Other Funds (AOF) Investments Managed	<u>222,615</u>	<u>192,825</u>	<u>29,790</u>
Total	<u>\$ 1,521,795</u>	<u>\$ 1,322,454</u>	<u>\$ 199,341</u>

¹ Board Fees: The change in Board Fees is attributed to the changes in the 2016 cost allocation as compared to the 2015 cost allocation. The changes are associated with increases in personal services and operating expenses allocated to the pools.

Custodial Bank Fees

<u>Pool</u>	Q1		<u>Change</u>²
	<u>9/30/2015</u>	<u>9/30/2014</u>	
Retirement Funds Bond Pool (RFBP)	\$ 47,082	\$ 43,590	\$ 3,492
Trust Funds Investment Pool (TFIP)	36,141	27,927	8,214
Montana Domestic Equity Pool (MDEP)	168,912	160,938	7,974
Montana International Equity Pool (MTIP)	61,614	43,314	18,300
Montana Private Equity Pool (MPEP)	13,188	26,322	(13,134)
Montana Real Estate Pool (MTRP)	10,635	23,433	(12,798)
Short Term Investment Pool (STIP)	61,905	42,549	19,356
All Other Funds (AOF) Investments Managed	<u>34,275</u>	<u>35,277</u>	<u>(1,002)</u>
Total	<u>\$ 433,752</u>	<u>\$ 403,350</u>	<u>\$ 30,402</u>

² Custodian Bank Fees: The change in Custodial Bank Fees is attributed to the changes in the 2015 cost allocation as compared to the 2014 cost allocation. The changes are associated with each pool's holdings value and transaction volume. The increase is also related to a new custodial bank contract effective April 1, 2015. Custodial bank fees increased to \$1,655,000 from \$1,500,000. STIP: In addition to the new custodial bank contract, the increase is related to the web portal annual fee of \$80,000, effective February 12, 2015.

MPEP, MTRP, & AOF: The decrease in fees is due to the new custodial bank agreement which increased the number of alternative funds serviced by the custodial bank to 175 before an additional fee applies. As of September 30, 2015, MBOI had fewer than 175 alternative investment funds serviced by the custodial bank. Under the prior contract the number of funds MBOI had triggered additional fees which are not present in this quarter.

**Management Fees (Unaudited)
for the Quarters ended September 30, 2015 and 2014**

External Manager Fees

<u>Pool</u>	Q1		<u>Change³</u>
	<u>9/30/2015</u>	<u>9/30/2014</u>	
Retirement Funds Bond Pool (RFBP)	\$ 349,816	\$ 389,015	\$ (39,199)
Trust Funds Investment Pool (TFIP)	457,895	476,854	(18,959)
Montana Domestic Equity Pool (MDEP)	2,398,693	2,299,263	99,430
Montana International Equity Pool (MTIP)	942,766	987,996	(45,230)
Montana Private Equity Pool (MPEP)	3,446,800	4,731,912	(1,285,112)
Montana Real Estate Pool (MTRP)	1,101,050	1,439,421	(338,371)
Short Term Investment Pool (STIP)	-	-	-
All Other Funds (AOF) Investments Managed	<u>164,522</u>	<u>163,143</u>	<u>1,379</u>
Total	<u>\$ 8,861,542</u>	<u>\$ 10,487,604</u>	<u>\$ (1,626,062)</u>

³ RFBP: Fees are lower due to termination of an external manager.

TFIP: No significant changes.

MDEP: No significant changes.

MTIP: No significant changes.

MPEP: Fees are lower due to unrecorded fees for the 2015 quarter which were recorded fees for the 2014 quarter. Because reported fees are subject to a lag, they are inconsistent quarter to quarter. Therefore, quarterly fee comparisons are less

MTRP: Fees are lower due to unrecorded fees for the 2015 quarter which were recorded fees for the 2014 quarter. Because reported fees are subject to a lag, they are inconsistent quarter to quarter. Therefore, quarterly fee comparisons are less

AOF: No significant changes.

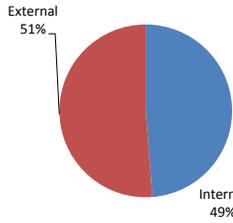
Total Fees

<u>Pool</u>	Q1		<u>Change</u>
	<u>9/30/2015</u>	<u>9/30/2014</u>	
Retirement Funds Bond Pool (RFBP)	\$ 589,996	\$ 599,645	\$ (9,649)
Trust Funds Investment Pool (TFIP)	631,613	621,487	10,126
Montana Domestic Equity Pool (MDEP)	2,757,151	2,628,924	128,227
Montana International Equity Pool (MTIP)	1,174,435	1,176,711	(2,276)
Montana Private Equity Pool (MPEP)	3,734,797	4,996,629	(1,261,832)
Montana Real Estate Pool (MTRP)	1,283,543	1,615,068	(331,525)
Short Term Investment Pool (STIP)	224,142	183,699	40,443
All Other Funds (AOF) Investments Managed	<u>421,412</u>	<u>391,245</u>	<u>30,167</u>
Total	<u>\$ 10,817,089</u>	<u>\$ 12,213,408</u>	<u>\$ (1,396,319)</u>

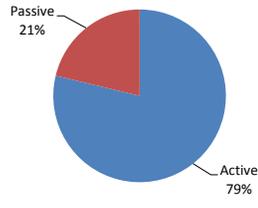
MBOI Snapshot

As of 9/30/2015

MBOI Internal/External

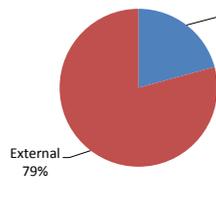


MBOI Active/Passive

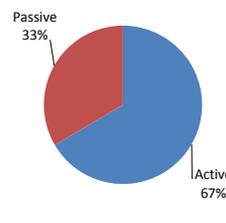


Category	Market Value	Percentage
Internal	\$7,771,439,050	48.75%
External	\$8,161,708,874	51.20%
Active	\$12,547,855,072	78.71%
Passive	\$3,385,292,852	21.23%
Grand Total	\$15,933,147,924	

Pension Internal/External



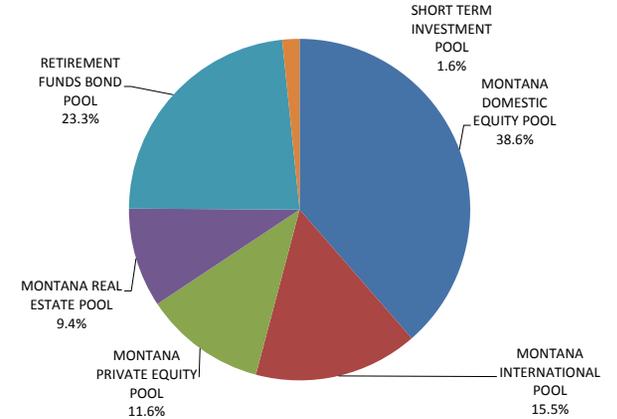
Pension Active/Passive



Category	Market Value	Percentage
Internal	\$2,004,010,473	20.76%
External	\$7,649,283,482	79.24%
Active	\$6,421,777,500	66.52%
Passive	\$3,231,516,455	33.48%
Grand Total	\$9,653,293,955	

Pension by Asset Type

Pension Pool NAV	Market Value	%	Policy Range
MONTANA DOMESTIC EQUITY POOL	\$3,724,578,276	38.58%	28 - 44%
MONTANA INTERNATIONAL POOL	\$1,500,139,157	15.54%	14 - 22%
MONTANA PRIVATE EQUITY POOL	\$1,116,021,619	11.56%	9 - 15%
MONTANA REAL ESTATE POOL	\$908,633,627	9.41%	6 - 10%
RETIREMENT FUNDS BOND POOL	\$2,246,232,346	23.27%	22 - 30%
SHORT TERM INVESTMENT POOL	\$157,688,929	1.63%	1 - 5%
Total	\$9,653,293,955	100.00%	



Investment Pools

Pool Name	Market Value	%
MONTANA DOMESTIC EQUITY POOL	\$3,724,578,276	26.38%
SHORT TERM INVESTMENT POOL	\$2,364,024,870	16.75%
TRUST FUNDS INVESTMENT POOL	\$2,257,234,441	15.99%
RETIREMENT FUNDS BOND POOL	\$2,246,232,346	15.91%
MONTANA INTERNATIONAL POOL	\$1,500,139,157	10.63%
MONTANA PRIVATE EQUITY POOL	\$1,116,021,619	7.91%
MONTANA REAL ESTATE POOL	\$908,633,627	6.44%
Asset Total	\$14,116,864,337	100.00%

Coal Tax Trust

Trust Name	Market Value	%
CST BOND FUND	1,905,057	0.19%
SHORT TERM INVESTMENT POOL	1,905,057	0.19%
ECONOMIC DEVELOPMENT TRUST	87,968,880	8.64%
SHORT TERM INVESTMENT POOL	1,640,529	0.16%
TRUST FUNDS INVESTMENT POOL	86,328,350	8.48%
PERMANENT COAL TRUST	562,706,834	55.28%
IN-STATE LOANS	99,059,334	9.73%
VHLM Mortgages	27,801,382	2.73%
SHORT TERM INVESTMENT POOL	36,438,134	3.58%
TRUST FUNDS INVESTMENT POOL	399,407,983	39.24%
REGIONAL WATER FUND	92,455,568	9.08%
SHORT TERM INVESTMENT POOL	1,639,659	0.16%
TRUST FUNDS INVESTMENT POOL	90,815,908	8.92%
TREASURE STATE ENDOWMENT	272,916,214	26.81%
IN-STATE LOANS	394,152	0.04%
SHORT TERM INVESTMENT POOL	3,450,120	0.34%
TRUST FUNDS INVESTMENT POOL	269,071,942	26.43%
Grand Total	1,017,952,552	100.00%

Pension by Plan

Fund Participant	Market Value	%
PUBLIC EMPLOYEES' RETIREMENT	\$4,823,311,584	49.97%
TEACHERS' RETIREMENT	\$3,520,643,845	36.47%
FIREFIGHTERS' RETIREMENT	\$325,183,968	3.37%
POLICE RETIREMENT	\$319,350,280	3.31%
SHERRIF'S RETIREMENT	\$283,208,869	2.93%
GAME WARDEN'S RETIREMENT	\$143,283,450	1.48%
HIGHWAY PATROL RETIREMENT	\$123,108,158	1.28%
JUDGES' RETIREMENT	\$83,248,289	0.86%
VOL. FIREMANS' RETIREMENT	\$31,955,512	0.33%
Total	\$9,653,293,955	100.00%

Top 10 Non-Pension Accounts

Account Name	Market Value	%
STATE FUND INSURANCE	\$1,454,543,927	29.96%
TREASURERS FUND	\$833,612,057	17.17%
PUBLIC SCHOOL TRUST	\$671,082,656	13.82%
PERMANENT COAL TRUST	\$561,127,109	11.56%
LOCAL GOVERNMENTS	\$448,293,345	9.23%
TREASURE STATE ENDOWMENT	\$272,916,214	5.62%
TOBACCO TRUST	\$196,497,865	4.05%
MONTANA STATE UNIVERSITY	\$178,061,740	3.67%
UCFRB RESTORATION	\$124,031,728	2.55%
UNIVERSITY OF MONTANA	\$114,355,936	2.36%
Total	\$4,854,522,575	100.00%

STIP

Account	# Accounts	% Total	Total Market Value
Total State	306	81.04%	1,915,731,525
Total Local	161	18.96%	448,293,345
Total STIP	467	100.00%	2,364,024,870

Average August STIP Yield: **0.2570%**

Intercep Statistics as of 9/30/15

Loans Outstanding	\$76,614,914
Bonds Outstanding	\$106,445,000
# of Borrowers	173
2014 Loan Rate	1.25%

MEMORANDUM

Montana Board of Investments

Department of Commerce

2401 Colonial Drive, 3rd Floor
Helena, MT 59601 (406) 444-0001

To: Members of the Board
From: David Ewer, Executive Director
Date: November 17, 2015
Subject: Securities Litigation Review

The Board has policies specific to securities litigation (Appendix F of the Governance Manual). In general, the executive director is responsible for overseeing the *process* involving securities litigation matters, which generally fall into two possible subsets: class actions *or* other actions where the Board takes a lead. The Board directs how its staff, attorneys and other agents are to operate depending on class action or other action such as in a lead plaintiff status.

Board policy states, in part: “The Board will delegate to qualified service providers the responsibility to take steps to identify, analyze, pursue and collect upon securities law claims. The duties of each service provider shall be clearly articulated as a matter of contract and the Board shall adopt prudent, documented procedures to monitor the implementation of its policies.”

In meeting this requirement, the Board’s contract with State Street Bank requires: “Contractor will track Board transaction data that will permit the Board to participate in class action litigation and will file for U.S. class action litigation as appropriate on behalf of the Board to participate in class action litigation. Contractor will also be required to feed such data to the Board’s litigation monitoring providers.”

State Street Bank files on the Board’s behalf the necessary documentation to join a class action lawsuit. It provides litigation information updated daily through its web portal. A sample of a partial litigation status report is in Exhibit A (the full report is many pages) along with an explanation of the stages of a class action, class action statuses and a glossary of terms provided by State Street.

For larger claims and as a cross check on securities litigation matters, the Board has two securities class action monitoring firms (as Board policy describes these law firms) to identify and evaluate potential claims that may merit commencing separate litigation or filing motions as lead or co-lead plaintiff, or opting out of a class action settlement. The Board has selected two such “Monitoring Firms,” Barrack, Rodos & Bacine and Bernstein, Litowitz, Berger & Grossmann LLP.

The Board requires that “The Executive Director, the Chief Investment Officer, the Board’s General Legal Counsel, and the Board’s Investment Consultant shall receive reports from the Monitoring Legal Firm, regarding the status of all securities class action litigation matters in which the Board is

or could be a member. The Executive Director shall receive such reports at least monthly and upon each filing of proofs of claim.”

Both law firms provide reports to the Executive Director quarterly. Staff will recommend the policy be changed to allow for quarterly versus monthly reports.

Notable Pending Actions

There is no notable action pending. Neither law firm is currently proposing a possible larger claim action.

Amounts Recently Received

Settlement amounts from securities litigation are sporadic and in some years, nominal.

	<u>FY 2015</u>	<u>FY 2014</u>	<u>FY 2013</u>	<u>FY 2012</u>	<u>FY 2011</u>
Montana Domestic Equity	\$282,206	\$303,119	\$146,222	\$149,429	\$617,009
Montana International Equity	\$4,719	\$7,408	\$56,937	\$64	\$233,840
Trust Fund Bond Pool	\$4,466	\$12,986		\$8,564	\$118,449
State Fund				\$9,665	\$149,643
Total	\$291,391	\$323,513	\$203,159	\$167,722	\$1,118,941

Attachment

-
4. If the Board has suffered losses of \$500,000 or more, and the Board is not pursuing separate litigation or acting as lead or co-lead plaintiff in a class action, the Board may play an enhanced role, which may include review of the terms of any settlement, including applications for legal fees, to determine if the Board should file a comment or objection with respect to the settlement, or opt out of the class. The criteria for deciding whether to opt out are set forth on Attachment 1. The Board is authorized to direct the filing of a comment or objection.
 5. The Board will act only as a passive class member with respect to any claim in which the losses suffered are less than \$500,000. Proofs of claim will be filed on behalf of the Board upon a settlement or final judgment awarding damages in relevant class actions.
 6. The Board delegates to its Audit Committee the decision to seek lead or co-lead plaintiff status or to play an enhanced role in a class action under Paragraphs 3 and 4.
 7. The Executive Director, the Chief Investment Officer, the Board's General Legal Counsel, and the Board's Investment Consultant shall receive reports from the Monitoring Legal Firm, regarding the status of all securities class action litigation matters in which the Board is or could be a member. The Executive Director shall receive such reports at least ~~monthly~~ quarterly and upon each filing of proofs of claim.

III. **Roles and Authority**

1. Board Role and Authority:

- Review staff reports regarding securities litigation matters
- Periodically review and, as appropriate, modify this Policy
- Establish, periodically review and, as appropriate, modify Protocols for implementation of this Policy
- Select a securities class action "Monitoring Firm" to identify and evaluate potential claims and oversee the process for selecting such firm
- Approve, modify or terminate agreements with service providers responsible for implementation of this Policy

2. Audit Committee Role and Authority:

- Authorize commencement of separate litigation or filing of motion for lead plaintiff or co-lead plaintiff status or support for another's application for lead plaintiff status, consistent with this Policy.
- Approve settlement of separate litigation or class action in which the Board is lead plaintiff or co-lead plaintiff, consistent with Board Policy.
- Authorize opting out of a class settlement, consistent with this Policy.
- Authorize filing of objections and comments on settlements, consistent with Board Policy.
- Receive and review staff reports on the status of matters other than passive claim filings.



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Leslie Bornstein Molder
lmolder@barrack.com

October 2, 2015

Via Email

Ms. Angela L. Zimmer
State Street Corporation
980 9th Street
Sacramento, CA 95814

**Re: Securities Class Action Settlements:
Claim Filing Deadlines (11/01/2015 – 11/30/2015)**

Dear Ms. Zimmer:

I am writing to you on behalf of our mutual client, Montana Board of Investments (the "Fund"), regarding upcoming claim filing deadlines in certain settled securities class actions.

As you know, the Fund has asked us to monitor its claim filings in order to ensure that it is filing claims in all settlements in which it is entitled to participate. To that end, we have enclosed a spreadsheet that identifies all securities class action settlements with upcoming claim filing deadlines. Also enclosed is a glossary of terms used in the spreadsheet. The spreadsheet includes, but is not limited to, those settlements for which we believe the Fund is entitled to file a claim, based upon the transaction information available to us. As the Fund's custodian, the information you have available to you may lead you to a different conclusion. Please let us know if the Fund has made a claim in each of the listed settlements and, if so, the dates that you submitted each claim to the claims administrator. You may reach me at lmolder@barrack.com.

If you do not have a claim form for a particular case, please contact Patti Hamer at phamer@barrack.com and she will forward a copy to you. If you have any questions about any of the settlements, please feel free to contact me.

Sincerely,

Leslie Bornstein Molder

LBM:kal
Enclosure

cc: Mr. David Ewer (*Via Email*)
Mr. Tim House (*Via Email*)
PF_MBOI@StateStreet.com

PHILADELPHIA, PA SAN DIEGO, CA NEW YORK, NY CONSHOHOCKEN, PA LANSING, MI NEWARK, NJ

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Montana Board of Investments

Claim Deadlines from 11/01/2015 through 11/30/2015

Company/Case Name (Ticker)	Cusip	Class Period Start	Class Period End	Claim File Deadline Date	Claims Admin	Custodian	Trade Status	Claim Status
Delcath Systems, Inc. (DCTH)	24661P104	4/21/2010	5/2/2013	11/6/2015	Garden City Group, Inc.	State Street Corporation	NACT	N/A
Feihe International, Inc. (ADY)	VARIOUS	10/3/2012	6/28/2013	11/6/2015	Gilardi & Co. LLC	State Street Corporation	NACT	N/A
IntraLinks Holdings, Inc. (IL)	46118H104	2/17/2011	11/10/2011	11/30/2015	KCC Class Action Services	State Street Corporation	NACT	N/A
Longtop Financial Technologies, Inc. (LFT)	54318P108	2/21/2008	5/17/2011	11/10/2015	Garden City Group, Inc.	State Street Corporation	NACT	N/A
Rough Rice Commodity ()		7/8/2008	7/15/2008	11/9/2015	A. B. Data Ltd.	State Street Corporation	NACT	N/A
SinoHub, Inc. (SIH)	VARIOUS	5/17/2010	8/21/2012	11/9/2015	KCC Class Action Services	State Street Corporation	NACT	N/A
TS Multi-Strategy Fund, LP ()		10/21/2006	1/21/2009	11/23/2015	KCC Class Action Services	State Street Corporation	NACT	N/A



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Glossary

Trade Status and Claim Status Terms

ACT — *Transaction Activity in Class Period*

This term means that the information BR&B has electronically retrieved from your fund's custodian shows that, during the period covered by the class action, your fund had transactions in the securities that are the subject of the lawsuit.

ACTFGN — *Activity in Foreign Stock Only*

This term means that the information BR&B has electronically retrieved from your fund's custodian shows that, during the period covered by the class action, your fund had transactions in stock traded on a non-U.S. exchange. Following the U.S. Supreme Court's decision in *Morrison v. National Bank of Australia Ltd.*, ___ U.S. ___, 130 S.Ct. 2869 (2010), courts have dismissed investor claims under the federal securities that are based on purchases of stock on non-U.S. exchanges. We therefore believe that the court in this case will reject claims based on such purchases. Nonetheless, as a courtesy, we have calculated your fund's losses on its investments made through a non-U.S. exchange. The losses are reported in U.S. dollars, even though the transactions were recorded by your fund's custodian in the local currency where the investment occurred. For the purposes of this calculation, we converted each transaction price to U.S. dollars on the date of the transaction.

ACTPFT — *Transaction Activity in Class Period with a Profit*

This term means that the information BR&B has electronically retrieved from your fund's custodian shows that, during the period covered by the class action, your fund's transactions in the securities that are the subject of the class action resulted in a profit.

ACTMBS — *Activity - Mortgage-Backed Securities.*

This term means that the information BR&B has electronically retrieved from your fund's custodian shows that, during the period covered by the class action, your fund had transactions in one or more of the derivative securities that are the subject of the lawsuit. For derivative securities that continued to make principal and interest payments through the end of the class period, BR&B has not calculated your fund's losses.

ARS — *Auction Rate Securities.*

This term means that this case involves auction rate securities ("ARS") underwritten or sold by a sponsoring investment firm, but does not identify the particular securities to which it applies. When the ARS market froze in February 2008, holders who wished to sell their ARS were unable to do so. But most ARS continued to perform. And many ARS were eventually repurchased by the sponsoring investment firm. We do not have sufficient information to identify the particular securities covered by the action or to calculate investment losses, if any."

CF — *Claim has been Filed*

This term means that BR&B has received information that the settlement/claims administrator has received a proof of claim on behalf of your fund.

CFNR — *Claim has been Filed/Ineligible for Recovery*

This term means that BR&B has received information that, while a proof of claim has been filed on your fund's behalf, your fund is not eligible to receive a distribution under the allocation formula contained in the settlement.

CN — *Custodian and/or Client Notified of Upcoming Claim Deadline.* This term means that BR&B has notified your fund and/or its custodian of the upcoming deadline for filing proofs of claim.

CUSTCF — *Custodian has Filed Claim*

This term means that BR&B has received information from your custodian that a proof of claim was filed on behalf of your fund.

D/N/A — *Data Not Available*

This term means that BR&B cannot electronically retrieve information about your fund's transactions in the securities that are the subject of the class action from your fund's custodian for the period covered by the lawsuit because BR&B's access to your fund's historical transaction data is limited by the terms of BR&B's contract with your fund.



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DINCA — *Data Incomplete/Data Shows Transaction Activity in Class Period*

This term means that the information BR&B has electronically retrieved from your fund's custodian does not include data for the entire period covered by the class action because BR&B's access to your fund's transaction data for that period is limited by the terms of BR&B's contract with your fund. To the extent BR&B has access to transaction data within that period, the information BR&B has retrieved shows that, during the period covered by the lawsuit, your fund had transactions in the securities that are the subject of the case.

DINCN — *Data Incomplete/Data Shows No Transaction Activity in Class Period*

This term means that the information BR&B has electronically retrieved from your fund's custodian does not include data for the entire period covered by the class action because BR&B's access to your fund's transaction data for that period is limited by the terms of BR&B's contract with your fund. To the extent BR&B has access to transaction data within that period, the information BR&B has retrieved shows that, during the period covered by the lawsuit, your fund had no transactions in the securities that are the subject of the case.

DINCP — *Data Incomplete/Data Shows a Profit on Transactions in Class Period*

This term means that the information BR&B has electronically retrieved from your fund's custodian does not include data for the entire period covered by the class action because BR&B's access to your fund's transaction data for that period is limited by the terms of BR&B's contract with your fund. To the extent BR&B has access to transaction data within that period, the information BR&B has retrieved shows that, during the period covered by the lawsuit, your fund appears to have had a profit on transactions in the securities that are the subject of the lawsuit.

DINCS — *Data Incomplete/Data Shows only Sales Transactions in Class Period*

This term means that the information BR&B has electronically retrieved from your fund's custodian does not include data for the entire period covered by the class action because BR&B's access to your fund's transaction data for that period is limited by the terms of BR&B's contract with your fund. To the extent BR&B has access to transaction data within that period, the information BR&B has retrieved shows only sales of the securities that are the subject of the lawsuit during that period.

HOLD — *Hold Stock During Class Period*

This term means that the information BR&B has electronically retrieved from your fund's custodian shows that, during the period covered by the class action, your fund held stock in the securities that are the subject of the lawsuit.

NACT — *No Transaction Activity during Class Period*

This term means that the information BR&B has electronically retrieved from your fund's custodian does not show any transactions in the securities that are the subject of the class action for the period covered by the lawsuit.

NC — *No Claim*

This term means that the information BR&B has electronically retrieved from your fund's custodian shows that, during the period covered by the class action, your fund's transactions in the securities that are the subject of the class action resulted in no claim under the settlement allocation formula approved by the court in the action.

NCF — *None/Claim Filed*

This term means that, because a claim has been filed on behalf of your fund with the administrator handling the settlement of the class action lawsuit, your fund need take no further action in this case.

NCOF — *No Claim on File*

This term means that there is no claim on file with the claims administration on your fund's behalf.

NPRCHS — *No Purchases in Class Period*

This term means that the information BR&B has electronically retrieved from your fund's custodian does not show any purchases of securities that are the subject of the class action during the period covered by the lawsuit.

SACT — *Only Sales Transaction Activity in Class Period*

This term means that the information BR&B has electronically retrieved from your fund's custodian shows that, during the period covered by the class action, your fund only sold the securities that are the subject of the lawsuit.

TBF — *Claim Filed*

This term means that BR&B believes that your custodian should file a proof of claim on behalf of your fund by the deadline set by the court. In accordance with BR&B's procedures, unless instructed otherwise by your fund, BR&B has notified (or will notify) your fund's custodian of the upcoming deadline three weeks in advance of the deadline.



CLASS ACTION STATUS						
Docket #	Event Name	Class Period Start Date	Class Period End Date	Event Status	Expiration Date	Claims Administrator
6:03-MD-1512	ELECTRONIC DATA SYS CORP	02/07/2001	09/18/2002	PROOF OF CLAIM	04/19/2006	EPIQ
01-cv-1451-REB-CBS	QWEST COMMUNICATIONS INTERNATI	05/24/1999	07/28/2002	PROOF OF CLAIM	05/02/2006	GILARDI AND CO LLC
00-1990 (SRC)	BRISTOL MYERS SQUIBB CO	10/19/1999	03/20/2002	PROOF OF CLAIM	06/30/2006	GARDEN CITY GROUP INC
02 Civ. 6801(GEL)	AT&T CORP (SALOMON ANALYST)	11/29/1999	06/14/2002	PROOF OF CLAIM	09/12/2006	BERDON CLAIMS ADMINISTRATION
2001-CV-1855(RMB)	NORTEL NETWORKS CORP (I)	10/24/2000	02/15/2001	PROOF OF CLAIM	11/20/2006	GARDEN CITY GROUP INC
C-00-4263 VRW	QUINTUS CORP	11/15/1999	11/15/2000	PROOF OF CLAIM	11/22/2006	BERDON CLAIMS ADMINISTRATION
MDL-1584	Federal Home Loan Mortgage Cor	07/15/1999	11/20/2003	PROOF OF CLAIM	12/07/2006	GARDEN CITY GROUP INC
2:05-CV-05868-AB	PEGASUS COMMUNICATIONS CORP	11/08/2000	06/02/2004	PROOF OF CLAIM	12/13/2006	STRATEGIC CLAIMS SERVICES
C-01-20418-JW(PVT)	CISCO SYSTEMS INC	11/10/1999	02/06/2001	PROOF OF CLAIM	12/21/2006	GILARDI AND CO LLC
02 C 07527	SEARS ROEBUCK + CO	10/24/2001	10/17/2002	PROOF OF CLAIM	01/05/2007	GARDEN CITY GROUP INC
02-CV-72-SPF (FHM)	Williams Companies Inc	07/24/2000	07/22/2002	PROOF OF CLAIM	02/16/2007	GARDEN CITY GROUP INC
C-02-2270-JW(PVT)	VERISIGN INC	01/25/2001	04/25/2002	PROOF OF CLAIM	04/03/2007	GILARDI AND CO LLC
02-CV-271	PNC FINL SVCS GROUP INC	07/19/2001	07/18/2002	PROOF OF CLAIM	05/11/2007	RSM MCGLADREY
02-CV-3692 (JES)	EDISON SCHS INC	11/10/1999	05/14/2002	PROOF OF CLAIM	07/20/2007	GARDEN CITY GROUP INC
21 MC 92 (SAS)	REDIFF COM INDIA LTD ADR	08/11/1998	12/06/2000	PROOF OF CLAIM	09/07/2007	BERDON CLAIMS ADMINISTRATION
3:02-CV-2243-K	TXU CORP	04/26/2001	10/11/2002	PROOF OF CLAIM	09/15/2007	GILARDI AND CO LLC
C2-04-00575(ALM)	CARDINAL HEALTH INC	10/24/2000	07/26/2004	PROOF OF CLAIM	12/13/2007	GILARDI AND CO LLC
02-1335-PB	Tyco International, Ltd.	12/13/1999	06/07/2002	PROOF OF CLAIM	12/28/2007	GARDEN CITY GROUP INC
03-CV-4080 (JFK)	Tyco International Ltd. (Merri	01/22/2002	06/06/2002	PROOF OF CLAIM	12/31/2007	VALLEY FORGE ADMINISTRATIVE S
05-MD-1725	Delphi Corp	03/07/2000	03/03/2005	PROOF OF CLAIM	01/15/2008	GARDEN CITY GROUP INC
5:02-CV-3-DF	RENT-A-CENTER, INC.	04/25/2001	10/08/2001	PROOF OF CLAIM	03/07/2008	EPIQ
H-02-2717	El Paso Corp.	02/22/2000	02/17/2004	PROOF OF CLAIM	05/22/2008	A B DATA LTD
SHARE TRADING INFO FORM	ARISTOCRAT LEISURE	02/19/2002	05/26/2003	PROOF OF CLAIM	06/24/2008	MAURICE BLACKBURN
03 C 04142	Sears Roebuck Acceptance Corp.	10/24/2001	10/17/2002	PROOF OF CLAIM	07/08/2008	COMPLETE CLAIMS SOLUTIONS
4:07-CV-801	HCC Insurance Holdings, Inc	05/03/2005	11/17/2006	PROOF OF CLAIM	07/31/2008	STRATEGIC CLAIMS SERVICES
06 CIV. 1000 (LAP)	AIG SUNAMERICA GLOBAL FING VI	02/08/2001	03/31/2005	PROOF OF CLAIM	08/12/2008	EPIQ
1:05-CV-6279 (AKH)	International Business Machine	04/05/2005	04/14/2005	PROOF OF CLAIM	08/26/2008	A B DATA LTD
04-CV-4697-JRT-FLN	The St. Paul Travelers Compani	01/27/2000	11/16/2004	PROOF OF CLAIM	08/27/2008	GARDEN CITY GROUP INC
06-CV-10933 (MLW)	AMERICAN TOWER CORP	04/01/2002	08/18/2006	PROOF OF CLAIM	09/09/2008	STRATEGIC CLAIMS SERVICES

MEMORANDUM

**Montana Board of Investments
Department of Commerce
2401 Colonial Drive, 3rd Floor
Helena, MT 59601 (406) 444-0001**

To: Board Members
From: David Ewer, Executive Director
Date: November 17, 2015
Subject: Resolution 217 Update

At the November 2007 Board meeting, the Board unanimously approved Resolution No. 217.

Resolution No. 217 *“designates its Executive Director as agent of the Board to deal with investment firms in connection with Board accounts with such firms; and that the investment firms are hereby authorized to deal with the Executive Director or the Executive Director’s designated staff as agents of the Board; to accept all orders for purchases and sales and all instructions given by any of them on behalf of the Board as and for the action of the Board without further inquiry as to their authority; to receive any funds, securities or property for the account of the Board; to sell, assign, transfer or deliver either in bearer form, in street certificates or in such names as said persons or any of them shall direct, any funds, securities or other property held for the account of the Board, to said persons or any of them or as they or any of them shall in writing, or verbally with subsequent confirmation in writing, order; and to send or communicate all confirmation, notices, demands and other communications to them or any of them and to the Attention of the Board of Investments, P.O. Box 200126, Helena, MT 59620-0126.”*

When Resolution 217 was passed, Appendix “A” was created to show all vendors authorized to conduct financial transactions with the Board and all staff authorized to conduct financial transactions with the vendors.

The Board authorized its Executive Director to close any of the accounts listed in the original Appendix “A”, to open new accounts, to designate additional staff members to act on behalf of the Board for the purpose of dealing with investment firms regarding any account, and to remove the authority of any of the named staff members or other staff members designated by him/her to act on behalf of the Board for purposes of dealing with investment firms regarding any account.

The Executive Director shall annually, on or around the regularly scheduled October Board Meeting, provide a report to the Board showing the staff members and the accounts added to or deleted from Appendix A, which information shall include the date on which the addition or deletion occurred.

Clifford A. Sheets was removed and Joseph M. Cullen was added during this period. These changes were made to all Appendix A designated/authorized MBOI staff lists.

For the period of November 2014 to November 2015 the following changes were made to Resolution No. 217, Appendix A.

Note: this list does not include commitments to new funds with existing general partners and/or investment managers.

Broker/Dealer (Fixed Income/STIP) – Brokers added:

- Daiwa Capital Markets America, Inc.

Broker/Dealer (Fixed Income/STIP) – Brokers no longer used by staff and removed from Appendix A:

- CRT Capital Group, LLC

Public Equity Brokers – Brokers added:

- *None*

Public Equity Brokers – Brokers no longer used by staff and removed from Appendix A:

- *None*

Public Equity Managers – Managers added:

- Lazard Asset Management LLC
- Invesco Advisors, Inc.
- Baillie Gifford

Public Equity Managers – Managers no longer used by staff and removed from Appendix A:

- Martin Currie
- Hansberger

Private Equity Managers – Managers added:

- Angeles Equity Partners, LLC

Private Equity Managers – Managers no longer used by staff and removed from Appendix A:

- *None*

Private Real Estate Managers – Investment Managers added:

- Stoltz Management Company
- PCCP Equity VII, LP

Private Real Estate Managers – Managers no longer used by staff and removed from Appendix A:

- *None*

Fixed Income Managers – Managers no longer used by staff and removed from Appendix A:

- Aberdeen Asset Management Inc.

Fixed Income Managers – Investment Managers added:

- *None*

RESOLUTION 218

WHEREAS, the Montana Board of Investments (Board) has delegated certain critical authority and duties to its Executive Director that must be exercised and performed in the absence of the Executive Director; and

WHEREAS, the Executive Director may be incapacitated or temporarily absent from the office under circumstances that render the Executive Director unavailable to exercise such authority and perform such duties,

NOW, THEREFORE:

RESOLVED, that the Executive Director or the Deputy Director shall notify the Board Chairperson immediately at any time the Executive Director, due to incapacity or a temporary absence from the office, is unable to perform his/her duties; and

FURTHER RESOLVED, that "incapacity" means the occurrence of a mental or physical disability rendering the Executive Director incapable of exercising his/her authority and carrying out his/her duties; and

FURTHER RESOLVED, that during an incapacity of the Executive Director, the Deputy Director is hereby designated Acting Executive Director; and

FURTHER RESOLVED, that the Executive Director may, after notifying the Board Chairperson, delegate his/her executive authority to the Deputy Director to serve as Acting Executive Director during periods of official travel or authorized leave away from the Board's office, if in the judgment of the Executive Director, such delegation would be in the best interest of the Board; and

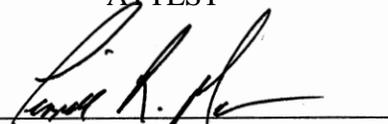
FURTHER RESOLVED, that during any period that the Deputy Director is not available to assume the role of Acting Executive Director pursuant to the provisions of this Resolution, the Chief Investment Officer shall serve as Acting Executive Director; and

FURTHER RESOLVED, that the Acting Executive Director shall operate only within the authority and parameters established in the Board's Governance Policy.

Dated and approved this 6th day of November 2007.

ATTEST

By:


Chairman

Resolution 234
Continuity Resolution for Chief Investment Officer Position

WHEREAS, the Montana Board of Investments (Board) has delegated certain critical authority and duties to its Chief Investment Officer that must be exercised and performed in the absence of the Chief Investment Officer; and

WHEREAS, the Chief Investment Officer may be incapacitated or temporarily absent from the office under circumstances that render the Chief Investment Officer unavailable to exercise such authority and perform such duties,

NOW, THEREFORE:

RESOLVED, that the Executive Director and the Deputy Director shall notify the Board Chairperson immediately at any time the Chief Investment Officer, due to incapacity, unexpected absence or other circumstance, is unable to perform his/her duties; and

FURTHER RESOLVED, that during the period of incapacity, absence, or inability to perform the duties by the Chief Investment Officer, the Executive Director or if necessary as provided under the Board's Resolution 218, the Deputy Director, is hereby designated the Acting Chief Investment Officer and fully empowered to perform all the duties of this position except as further described herein below for *Investment Manager Contracts*; and

FURTHER RESOLVED, that while serving as the Acting Chief Investment Officer, the Executive Director may designate, after consultation with the Board Chairman, a deputy chief investment officer from among the Board's exempt investment staff whose role and authority would be defined at the time; and

FURTHER RESOLVED, that during the time that the Executive Director serves also as the Acting Chief Investment Officer, in order that appropriate checks and balances are preserved for matters *specifically* and *only pertaining to Investment Manager Contracts*, as further prescribed by the Board's Governance Policy, that the oversight responsibilities regarding *Investment Management Contracts* held by the Chief Investment Officer shall be overseen by whomever the Board's portfolio manager is responsible for the relevant asset class involving the particular *Investment Management Contract* issue; and

FURTHER RESOLVED, that so long as the Chief Investment Officer is incapacitated, absent or otherwise unable to perform his/her duties, and during the period that there is an Acting Chief Investment Officer, the Executive Director must specifically update the Board, at its regularly scheduled meetings, regarding all relevant matters pertaining to the need for the continued implementation of this Resolution's delegations; and

FURTHER RESOLVED, that the Acting Chief Investment Officer shall operate only within the authority and parameters established in the Board's Governance Policy, and as otherwise provided by Board policy and statute.

Dated and approved this 25th day of February 2014.

ATTEST

By: 
Chairman

OFFICE OF THE GOVERNOR
STATE OF MONTANA

BRIAN SCHWEITZER
GOVERNOR



JOHN BOHLINGER
LT. GOVERNOR

TO: Executive Branch Officers
Department Directors
Chairs and other Presiding Officers of All Executive Branch Boards,
Bureaus, Commissions, Departments, Authorities, and Agencies

FROM: Governor Brian Schweitzer 

DATE: October 16, 2012

RE: Public participation in agency decisions pursuant to § 2-3-103, MCA

Montana's public participation laws require me, as Governor, "to ensure that each board, bureau, commission, department, authority, agency, or officer of the executive branch of the state" adopts rules, setting forth policies and procedures to facilitate public participation in agency programs and decisions. Sec. 2-3-103(2), MCA. I have written you in past years to remind you of these important statutory obligations, and I take this opportunity to remind you of them again.

Montanans have a constitutional right to participate in the activities of their government. The "Right of Participation" is found at Article II, section 8 of the Montana Constitution, which provides:

The public has the right to expect governmental agencies to afford such reasonable opportunity for citizen participation in the operation of the agencies prior to the final decision as may be provided by law.

This constitutional right is implemented by Montana statutes (Title 2, chapter 3, part 1, MCA) requiring every agency to develop procedures to permit and encourage public participation in agency decisions "that are of significant interest to the public." The statutes require agencies to provide adequate notice to the public and assist public participation. Meeting agendas must include an item allowing public comment on any public matter not on the agenda but within the agency's jurisdiction. Additionally, the agency may not act on any matter that was not included on the agenda and for which public comment on the matter was not allowed. Public comments must be incorporated into the official minutes of the meeting. The district courts may set aside agency decisions not in conformity with the public participation laws where a person's rights have been prejudiced. Model rules to implement these laws are found at ARM §§ 1.3.101 and 1.3.102.

As you know, this Administration takes very seriously the public's right to participate in the decisions of government, and I applaud your efforts to ensure this public right. If you or your agency needs assistance in crafting appropriate guidelines and rules to conform to Montana's public participation laws, feel free to contact my legal counsel, Ann Brodsky, for assistance (444-3558).

2016 CALENDAR

Board Dates Board Packet Mailing

01 New Year's Day
18 M.L. King Day

JANUARY						
S	M	T	W	Th	F	S
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
31						

15 Presidents Day

FEBRUARY						
S	M	T	W	Th	F	S
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29					

25 Good Friday
27 Easter Sunday

MARCH						
S	M	T	W	Th	F	S
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31		

APRIL						
S	M	T	W	Th	F	S
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30

08 Mother's Day
30 Memorial Day

MAY						
S	M	T	W	Th	F	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31				

19 Father's Day

JUNE						
S	M	T	W	Th	F	S
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30		

04 Independence Day

JULY						
S	M	T	W	Th	F	S
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
31						

AUGUST						
S	M	T	W	Th	F	S
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31			

05 Labor Day

SEPTEMBER						
S	M	T	W	Th	F	S
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	

10 Columbus Day
31 Halloween

OCTOBER						
S	M	T	W	Th	F	S
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	31					

08 Election Day
11 Veterans Day
24 Thanksgiving Day

NOVEMBER						
S	M	T	W	Th	F	S
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30			

25 Christmas Day

DECEMBER						
S	M	T	W	Th	F	S
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

Systematic Work and Education Plan 2016 DRAFT

- Feb. 23-24** **Quarterly Meeting**
Quarterly reports and subcommittee meetings
Annual Report and Financial Statements - reception and status
Financial Audit
Ethics
INTERCAP program
Outreach efforts – loan and municipal programs
- April 5** **Non-Quarterly Meeting**
All policy review, scrub and revise
Cash management of state monies
Disaster recovery
Capital market/asset allocation overview
RVK presentation (TBD)
- May 24-25** **Quarterly Meeting**
Quarterly reports and subcommittee meetings
Exempt pay compensation review
Domestic equities
International equities
Staffing level review
Custodial banking relationship
- August 16-17** **Quarterly Meeting**
Quarterly reports and subcommittee meetings
CEM Benchmarking
MBOI Budget and legislative-related action-decision
Internal Controls
Private Equity
Fiscal Year performance through June 30th
RVK presentation (TBD)
- October 4** **Non-Quarterly Meeting**
TBD
- Nov. 15-16** **Quarterly Meeting**
Quarterly reports and subcommittee meetings
Annual report and Financial Statements Submission for FY 2015
Affirm or Reset Asset Allocation
Real Estate and Timber
Resolution 217
Resolution 218
PERS/TRS annual update
2017 Legislative Session issues
Securities litigation status
Proxy voting public equities
Exempt staff annual performance review

24 Month Systematic Work and Education Plan 2015

	Completed	Completed	In-Process	Proposed	
	2013	2014	2015	2016	
		X	X		Accounting Review
	X	X	X	X	Annual report and financial statements
	X	X	X	X	Asset Allocation Range Approval (Board must review/approve annually as per policy)
	X		X	X	Capital Market/Asset Allocation
	X	X	X	X	Audit (Financial)
	X		X		Benchmarks used by Board
	X		X		Board as a rated investment credit, a bond issuer and a credit enhancer
	X	X	X	X	Board member education
	X	X	X	X	Board's budget
	X		X		Board as landlord/tenant holdings
	X		X		Board's website
		X		X	Cash Management of state monies
	X	X	X	X	Cost reporting including CEM, Inc. analysis
		X		X	Custodial bank relationship, performance, continuity
	X		X		Customer relationships (State government)
	X	X		X	Disaster Recovery and other emergency preparedness
	X	X	X	X	Exempt staff performance and raises (HR policy requires annual consideration)
	X	X	X	X	Ethics policy – (Board policy requires annual affirmations)
	X		X		Fixed Income
	X		X		In-state Loan program
		X		X	INTERCAP program
	X	X	X	X	Internal controls
	X	X	X	X	Policy Statements Review (Governance policy requires annual investment policy review)
	X	X	X	X	Legislative session and interim matters
	X	X		X	Outreach efforts for Board - loan and municipal programs
	X	X	X	X	PERS and TRS relationship
		X		X	Private Equity
		X		X	Proxy voting public equities
		X		X	Public Domestic Equities
		X		X	Public International Equities
		X		X	Real Estate and timberland
	X	X	X	X	Resolution 217 update of current Investment Firms (Board policy requires annual update)
	X	X	X	X	Resolution 218 role of deputy director to serve as acting executive if necessary
	X		X		Securities Lending
	X	X	X	X	Securities Litigation
	X	X	X	X	Staffing levels (required biannually in board policy)
	X		X		State Fund as major client

INVESTMENT BENCHMARKING

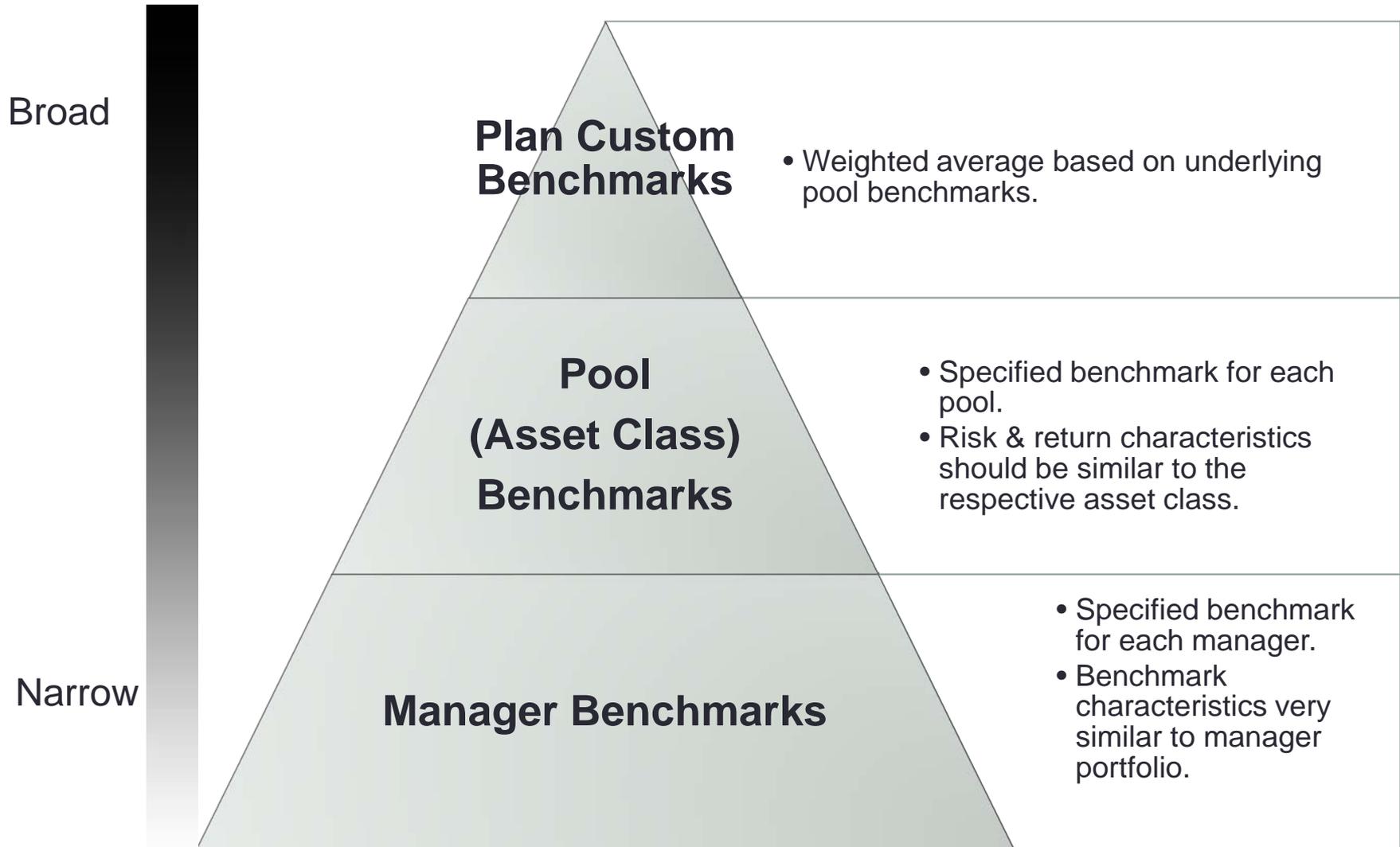
Eron Krpan, CIPM

Uses of Investment Benchmarks

Source: Conover, Broby, and Cariño (2013)

- **Reference points for segments of the sponsor's portfolio**
- **Communication of instructions to the manager**
- **Communication of instructions to a board of directors**
- **Identification and evaluation of current portfolio's risk exposures**
- **Interpretation of past performance and performance attribution**
- **Manager selection and appraisal**

MBOI Benchmark Hierarchy



Properties of a good Benchmark

Source: Bailey, Richards, and Tierney (2007)

- **Unambiguous**
 - The securities and their weights should be observable.
- **Investable**
 - The investor should have the option of passively earning the benchmark return.
- **Measurable**
 - It should be possible to measure the benchmark's return.
- **Appropriate**
 - Should be consistent with the managers investment style and expertise
- **Reflective of Current Investment Opinions**
 - The manager should have opinions on the constituent securities.
- **Specified in Advance**
 - The benchmark must be constructed prior to evaluation.
- **Accountable**
 - The manager should be willing to be held accountable to the benchmark.

Types of Benchmarks

Source: Conover, Broby, and Cariño (2013)

- **Absolute Return Benchmarks**
 - Generally only meets measurability criteria.
Example: Actuarial Rate of 7.75%
- **Market/Style Indexes**
 - Are usually able to meet all criteria. Unfortunately these are not available for alternative asset classes.
Example: S&P 500
- **Custom Security Benchmarks**
 - Custom built security universe to accurately reflect the investment discipline of the investment manager. The manager would ideally select securities from within the universe.
- **Factor Based Benchmarks**
 - Constructed by examining a portfolio's sensitivity to a set of factors.
Example: Benchmark Return = T-Note + (Portfolio Beta)x(S&P500 Return - T-Note)
- **Returns Based Benchmarks**
 - Generally a weighted average of asset class indexes.
Example: Regression analysis of portfolio returns vs asset class specific indices to determine weights.
- **Peer Group Benchmarks**
 - Differences in asset allocation have large effects on performance.
Example: State Street GX Private Equity Index

Plan Custom Benchmarks

Performance Attribution

Understanding the pension performance relative to the plan custom benchmarks.

9/30/2015	Monthly Return	Pool Average Weight	Return Contribution
	A	B	A X B
Montana Domestic Equity Pool	-2.95%	39.0%	-1.15%
Montana International Pool	-4.30%	16.0%	-0.69%
Retirement Funds Bond Pool	0.60%	22.8%	0.14%
Montana Real Estate Pool	0.84%	9.2%	0.08%
Short Term Investment Pool	0.02%	1.8%	0.00%
Montana Private Equity Pool	1.18%	11.2%	0.13%
Monthly Plan Return = Sum A X B			-1.49%
S&P 1500	-2.57%	39.0%	-1.00%
MSCI ACWI Ex US Index IMI	-4.40%	16.0%	-0.70%
Barclays Aggregate Bond	0.68%	22.8%	0.15%
NCREIF ODCE (1 QTR Lag) (NET)	3.58%	9.2%	0.33%
LIBOR 1 MONTH	0.02%	1.8%	0.00%
S&P 1500 + 4% (4% Adjusted for 1 Mo) (1 QTR Lag)	-1.46%	11.2%	-0.16%
Monthly Custom Benchmark Return = Sum A X B			-1.38%
Impact - MDEP			-0.15%
Impact - MTIP	Pool - Pool Benchmark		0.02%
Impact - RFBP	=		-0.02%
Impact - MTRP	Contribution to		-0.25%
Impact - STIP	Excess Return		0.00%
Impact - MPEP			0.30%
Excess Return			-0.11%
*Close approximations of plan and custom benchmark returns to enable attribution analysis. Returns shown are not official.			

Benchmark asset class weights are set to mirror actual asset class weights. This differs from a tactical asset allocation strategy where benchmark weights are defined and the manager has the option of actively overweighting or underweighting asset classes.

Since the MDEP return of -2.95% was less than the -2.57% return of the S&P1500 index, MDEP was responsible for -15 bp of underperformance at the overall plan level during this month.

$$((-2.95\%) - (-2.57\%)) \times 39\% = -0.15\%$$

Plan Custom Benchmarks

Performance Attribution

Understanding the pension performance relative to the plan custom benchmarks.

	9/30/2015	QTD	1 Year	3 Years	5 Years	7 Years	10 Years
Approximate	Public Employees' Retirement - Net	(3.77)	0.89	8.49	9.02	7.25	5.81
Approximate	Public Employees' Custom Benchmark	(3.92)	0.94	9.11	9.70	7.57	6.05
	Impact - MDEP	(0.16)	(0.01)	0.09	(0.05)	(0.00)	(0.15)
	Impact - MTIP	0.05	0.21	0.09	0.04	(0.11)	(0.13)
	Impact - RFBP	(0.04)	0.06	0.18	0.28	0.39	0.21
	Impact - MTRP	0.00	0.02	(0.06)	(0.11)	(0.14)	(0.13)
	Impact - STIP	0.00	(0.00)	(0.00)	0.00	0.00	0.00
	Impact - MPEP	0.31	(0.31)	(0.93)	(0.85)	(0.46)	(0.03)
	Excess Return	0.16	(0.04)	(0.63)	(0.68)	(0.32)	(0.24)
*Close approximations of plan and custom benchmark returns to enable attribution analysis. Returns shown are not official.							

Estimated Excess Return after neutralizing the Private Equity Benchmark							
Privaty Equity Bechmark Return = Private Equity Pool Return							
	Estimated Excess Return	(0.15)	0.27	0.30	0.16	0.14	(0.20)

MDEP

Market Index - S&P 1500

Unambiguous

Investable

Measurable

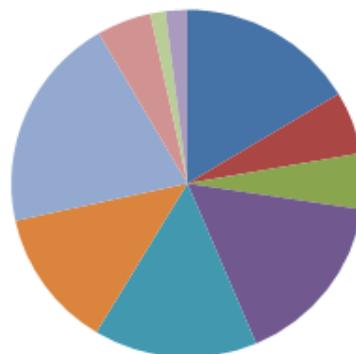
Appropriate

**Reflective of Current
Investment Opinions**

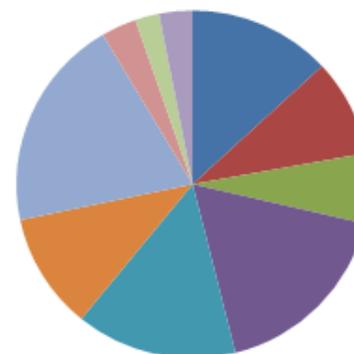
Specified in Advance

Accountable

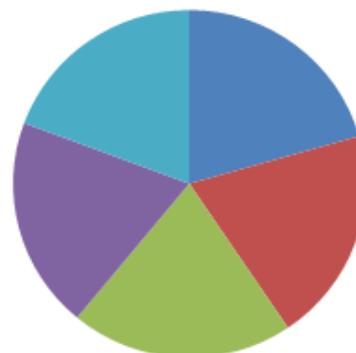
**MDEP
Sector Allocation**



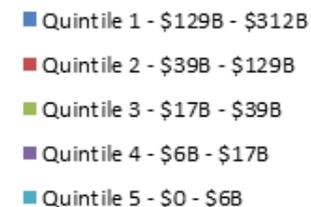
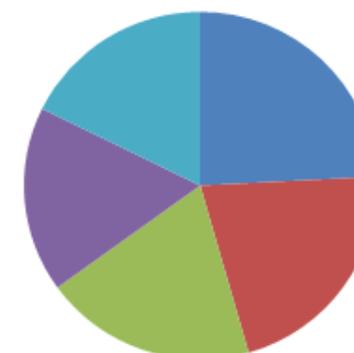
**S&P 1500
Sector Allocation**



**MDEP
Market Cap**



**S&P 1500
Market Cap**



MTIP

Market Index - MSCI ACWI Ex US Index IMI

Unambiguous

Investable

Measurable

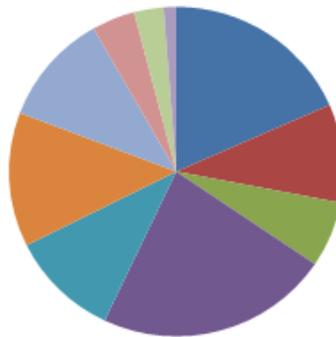
Appropriate

**Reflective of Current
Investment Opinions**

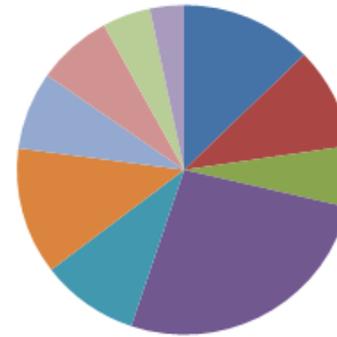
Specified in Advance

Accountable

**MTIP
Sector Allocation**

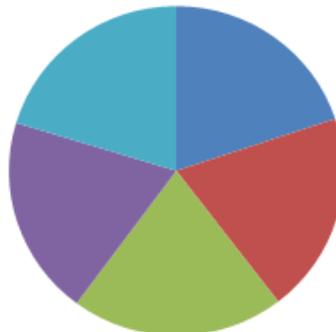


**MSCI ACWI Ex US Index IMI
Sector Allocation**

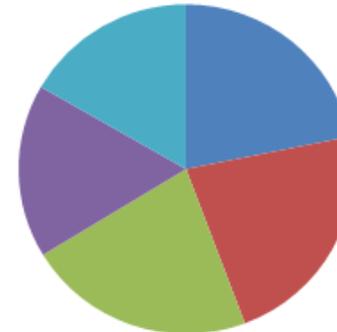


- Consumer Discretionary
- Consumer Staples
- Energy
- Financials
- Health Care
- Industrials
- Information Technology
- Materials
- Telecommunication Services
- Utilities

**MTIP
Market Cap**



**MSCI ACWI Ex US Index IMI
Market Cap**



- Quintile 1 - \$74M - \$13B
- Quintile 2 - \$34M - \$74M
- Quintile 3 - \$14M - \$34M
- Quintile 4 - \$6M - \$14M
- Quintile 5 - \$0 - \$6M

RFBP

Market Index - Barclays Aggregate Bond

Unambiguous

Investable

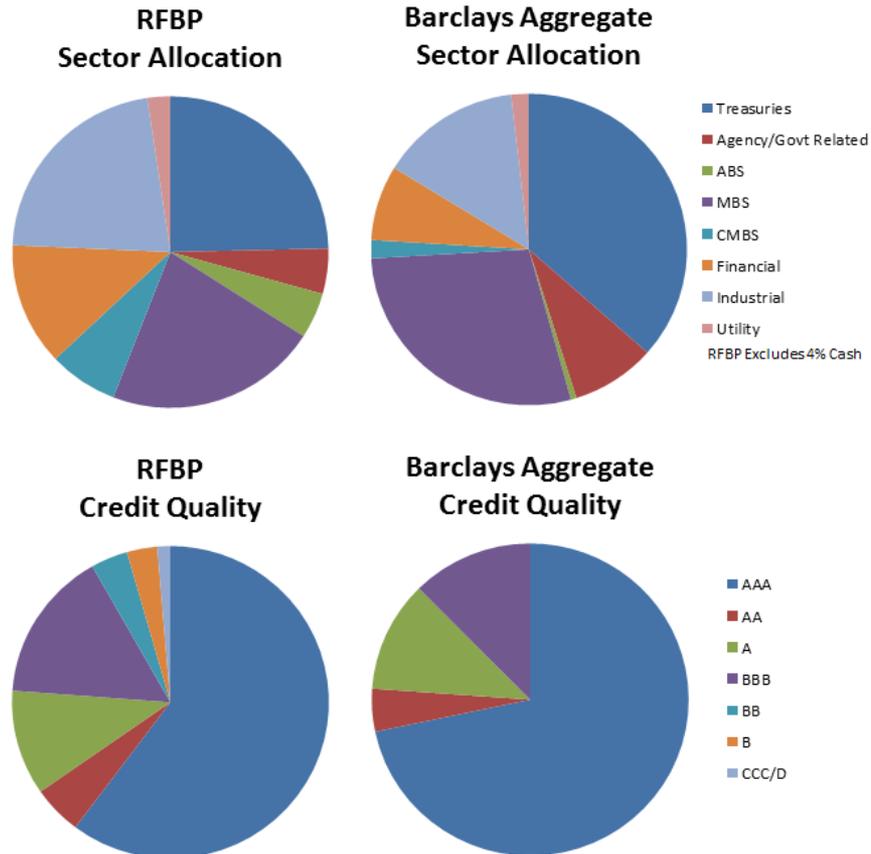
Measurable

Appropriate

Reflective of Current
Investment Opinions

Specified in Advance

Accountable



Portfolio Metrics	RFBP	Merrill U.S. Broad Index
Total Market Value	\$2.24B	\$22.55T
# of issues	967	13166
Effective Duration	5.34	5.41
Spread Duration	5.59	5.72
Yield to Maturity	2.71%	2.24%

Index of 33 open-end commingled funds pursuing a core investment strategy.

MTRP

Quasi Peer Group - NCREIF ODCE (1 QTR LAG) (NET)

Unambiguous

Investable

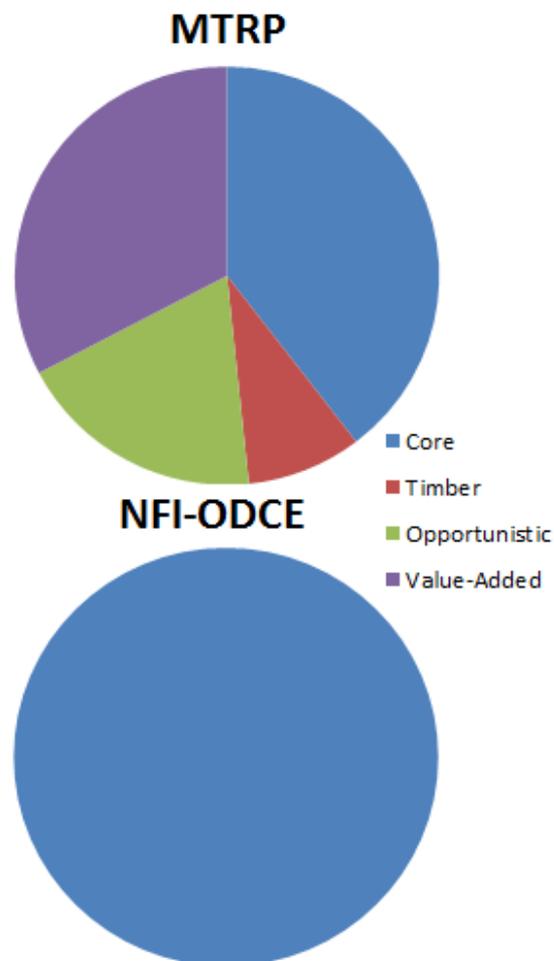
Measurable

Appropriate

Reflective of Current Investment Opinions

Specified in Advance

Accountable



MPEP

Market Index & Absolute Return - S&P 1500 + 4% (1 QTR LAG)

Unambiguous

Investable

Measurable

Appropriate

*Reflective of Current
Investment Opinions*

Specified in Advance

Accountable

- Different Exposures to:
 - Market Return (sensitivity to overall market)
 - Geography
 - Industry
 - FX
 - Capitalization
 - Leverage
- Other Unrelated Factors:
 - 90 day lag
 - Appraisal vs. Market Determined Values
 - J curve effect

Pool & Plan Strategic Positioning

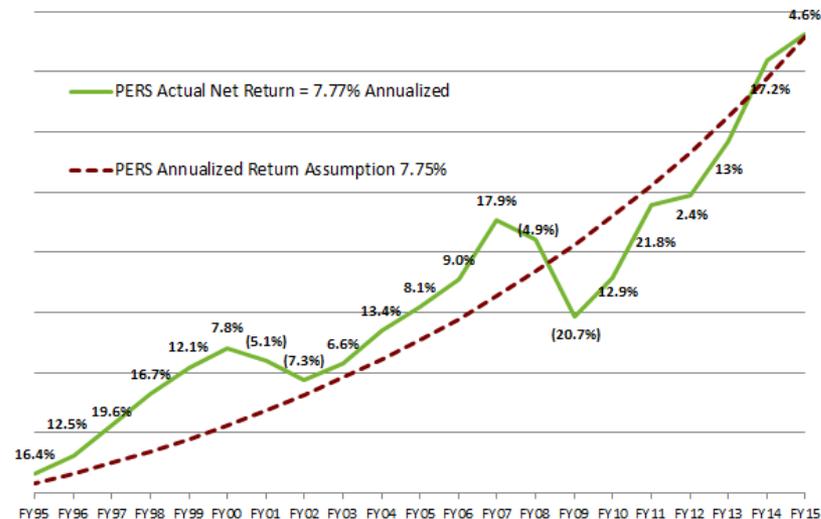
- **Pools vs. Respective Benchmarks**
 - MDEP - Smaller average market cap.
 - MTRP - Holds non-core real estate.
 - RFBP - Slightly more credit risk with high yield.
 - MPEP - Holds private rather than public assets.
 - STIP - Slightly more credit & interest rate risk.

- **Diversification**
 - Individual asset classes seeking higher returns by taking on marginally higher risks become less risky in the context of an overall portfolio.

Actuarial Rate: Are we meeting our goals?

Peer Benchmark: How do we rank among peers?

- PERS vs. Actuarial Rate**



- PERS vs. RVK Peer Group**

Montana Board of Investments Comparative Performance Retirement Plans

As of September 30, 2015

	QTD	CYTD	1 Year	3 Years	5 Years	7 Years	10 Years
Public Employees' Retirement - Net	-3.75	-1.22	0.90	8.50	9.03	7.29	5.82
Public Employees' Benchmark	-3.92	-1.21	0.93	9.08	9.67	7.55	6.04
Difference	0.17	-0.01	-0.03	-0.58	-0.64	-0.26	-0.22
Public Employees' Retirement - Gross	-3.66	-0.88	1.35	9.02	9.59	7.85	6.32
All Public Plans > \$3B Total Fund Median	-4.66	-2.26	-0.65	6.65	7.58	7.13	5.90
Rank	12	14	6	1	1	3	7

Note that gross returns are used in this peer comparison. Net comparisons will be different and likely lower given our higher allocation to more expensive asset classes.

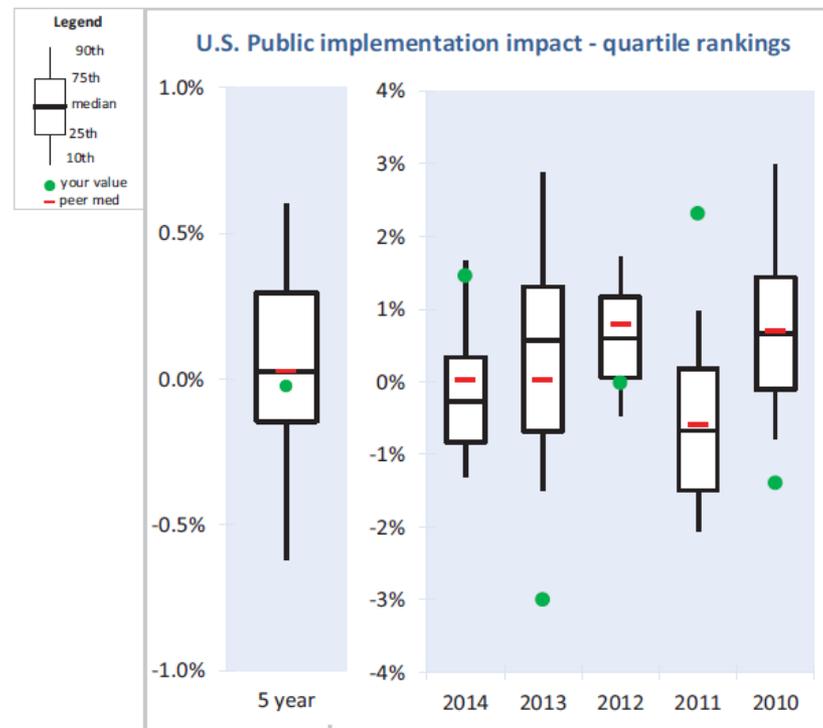


CEM Benchmarking

- **Adjusted Peer Benchmarking**
 - Enables closest comparison of plan performance and costs.

Implementation impact for Montana
Board of Investments

Year	Net Return	Policy Return	Impl. Impact
2014	8.0%	6.6%	1.5%
2013	17.4%	20.4%	(3.0%)
2012	13.2%	13.2%	(0.0%)
2011	2.1%	(0.2%)	2.3%
2010	12.9%	14.3%	(1.4%)
5-year	10.6%	10.6%	(0.0%)



Sources

- Bailey, Jeffery V., Thomas M Richards, and David E. Tierney. 2007. “Evaluating Portfolio Performance.” In *Managing Investment Portfolios: A Dynamic Process*, 3rd edition. Edited by John Maginn, Donald Tuttle, Dennis McLeavey, and Jerald Pinto. Hoboken, NJ: John Wiley & Sons.
- Conover, Mitchell C., Daniel Broby, and David R. Cariño. 2013. “Introduction to Benchmarks” In *CIPM*[®] Program Principles Program Curriculum vol. 1. Charlottesville, VA: CFA Institute



Benchmarking Overview

Montana Board of Investment

November 2015



Topics for Review

1. Evaluate a framework that can help Board members prioritize their review of various metrics for evaluating Plan performance.
2. Review the purpose and limitations of performance metrics that are considered the highest priority for Board Members.
3. Discuss any desired changes or additions to current performance assessment process.

Current MBOI Performance Measurement

Key Performance Areas	Current Method
Strategic Asset Allocation	<ul style="list-style-type: none"> • Annual Return Peer Rankings • Risk-Adjusted Return Peer Rankings
Tactical Asset Allocation	MBOI does not engage in a material amount of tactical allocation, and therefore does not systematically measure the effect of such decisions.
Asset Class Style Biases	MBOI does not currently measure the impact of intentional style biases in the portfolio. However, RVK could provide insight into the impact of style bias if the Board desires.
Manager Selection (Asset Class Level)	<ul style="list-style-type: none"> • Public Market Indices • Public Fund Peer Rankings
Manager Selection (Manager Level)	<ul style="list-style-type: none"> • Public Market Indices • Investment Manager Peer Rankings
Fees	<ul style="list-style-type: none"> • Peer Benchmarking
Liquidity	<ul style="list-style-type: none"> • Pacing Studies

Strategic Asset Allocation (Benchmark #1)

MBOI Performance Summary

(Date Ended June 30, 2015)

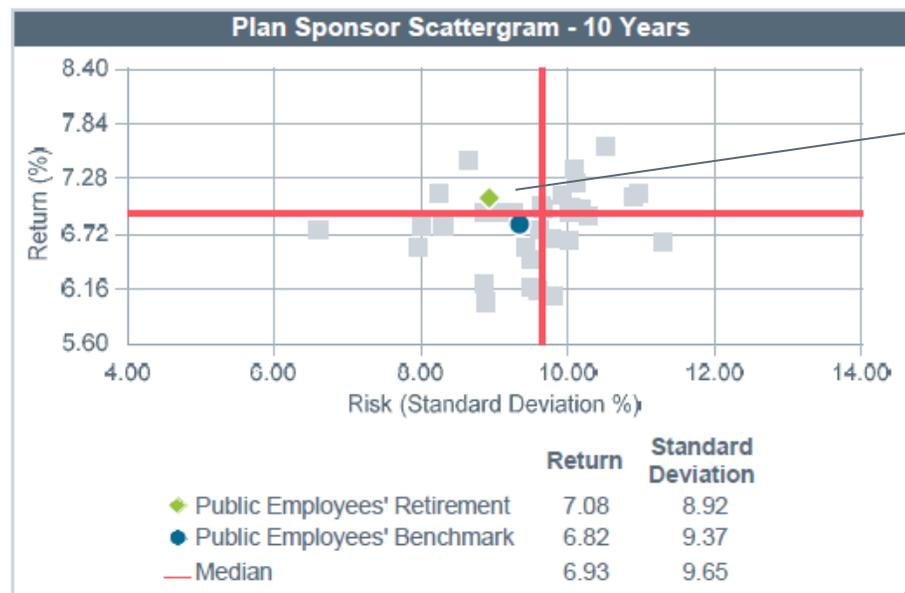
	QTD	CYTD	FYTD	1 Year	3 Years	5 Years	7 Years	10 Years	2014	2013
Public Employees' Retirement - Gross	0.65	2.88	5.06	5.06	12.01	12.13	6.99	7.08	8.61	17.96
All Public Plans > \$3B Total Fund Median	0.42	2.67	3.04	3.04	10.50	10.69	6.40	6.93	6.76	15.03
<i>Rank</i>	27	42	2	2	3	1	25	29	9	10

- ❑ Comparisons to peers provide a rough assessment of the effectiveness of the strategic asset allocation, as asset allocation is typically the primary contributor to return differences relative to peers.
- ❑ MBOI Plans are compared to a universe of other public plans with greater than \$3 billion in assets. Data is provided by BNYMellon and Investment Metrics.
- ❑ \$3 billion in assets provides a cut off that creates a peer group that most closely matches the plan, while still providing a sufficient population of plans against which to compare.

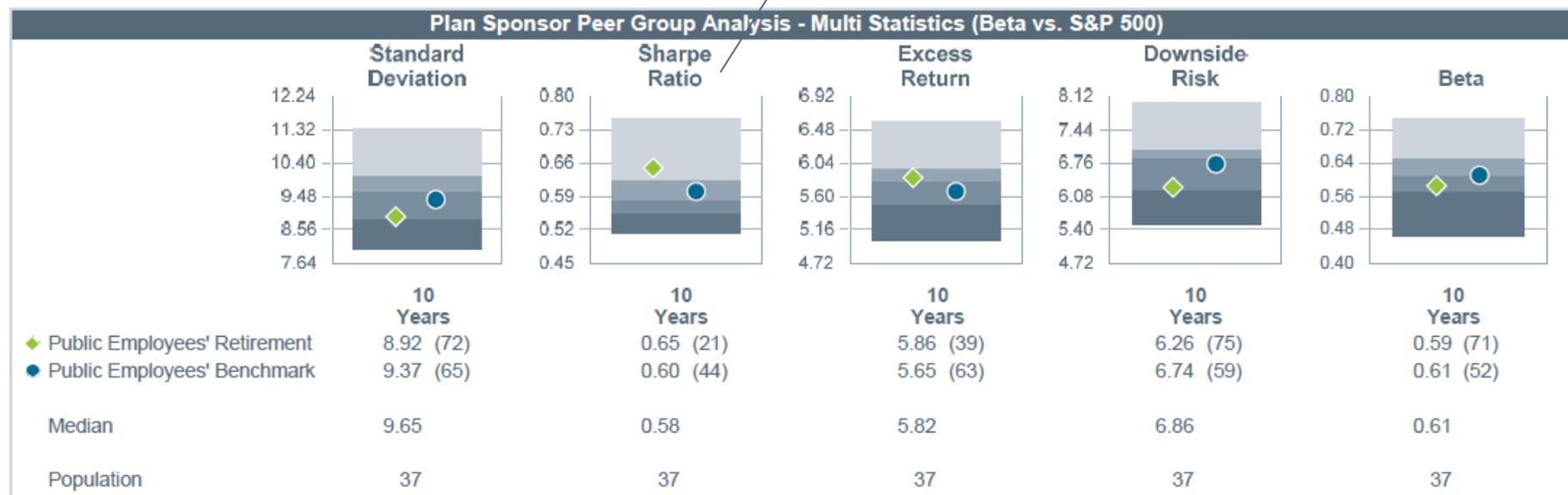
Important Limitations

1. **Restricted Population** – The MBOI peer group is typically limited to roughly 50 peers, which is a relatively small subset of the entire universe of public plans of similar size to MBOI.
2. **Population Variance** – BNYMellon and Investment Metrics continually update their databases each quarter as data arrives. Depending upon when data is submitted, the actual participants in the peer group vary at any given point in time.
3. **Different Objectives & Constraints** – Differences in allocation typically represent differences in investment objectives and constraints (which are uncontrollable), as opposed to the effectiveness of strategic allocation decisions (which are controllable).

Strategic Asset Allocation (Benchmark #2)



- ❑ **Risk vs. Return Grid** – Shows performance of MBOI versus peers in terms of risk and return over a trailing 10-year period. Ideal placement is in the upper left quadrant (i.e., lower risk/higher return relative to peers)
- ❑ **Sharpe Ratio** – A commonly used metric to gauge risk adjusted returns. The objective is to have a higher Sharpe ratio relative to peers.



Performance shown is gross of fees. Calculation is based on monthly performance. Parentheses contain percentile ranks.

Tactical Asset Allocation

- ❑ MBOI does not currently measure the impact of tactical asset allocation, as a majority of “tactical” deployments of capital result from uncontrollable circumstances, such as cash flows from private investments and market movements.
- ❑ A general limitation of tactical allocation measurement is that it is difficult to differentiate decisions that are controllable versus those that are uncontrollable. This limits the usefulness of this measure.
- ❑ This measure is particularly limited at MBOI, as tactical allocation is not done with any degree of scale and is therefore largely frictional.

Asset Class-Level Manager Selection (Traditional Assets)

	QTD	CYTD	FYTD	1 Year	3 Years	5 Years	7 Years	10 Years	2014	2013
Domestic Equity Composite (Net of Fees)	0.25	2.09	7.35	7.35	17.92	17.38	9.42	7.77	12.28	34.19
S&P 1500 Completion Index	0.17	1.56	7.31	7.31	17.47	17.43	9.61	8.10	13.08	32.80
<i>Difference</i>	0.08	0.53	0.04	0.04	0.45	-0.05	-0.19	-0.33	-0.80	1.39

	QTD	CYTD	FYTD	1 Year	3 Years	5 Years	7 Years	10 Years	2014	2013
Domestic Equity Composite (Gross of Fees)	0.32	2.23	7.64	7.64	18.25	17.76	9.81	8.09	12.59	34.61
All Public Plans-US Equity Segment Median	0.25	2.34	7.21	7.21	17.52	17.48	9.54	8.14	11.41	34.03
<i>Rank</i>	91	91	90	90	73	65	48	36	67	79

- ❑ **Investment Manager Selection**—Asset class composites are compared to broad market indices and public fund peers (all public funds) to gauge relative performance in terms of manager selection and style biases (e.g., overweight to small cap equities).
- ❑ **Internal Portfolio Management**—For portfolios that are managed internally (e.g., fixed income), the comparison also reveals the relative effectiveness of internal staff in terms of security selection and style biases.

Important Limitations

1. **Imperfect Measure of Manager Performance**—Deviations from indexes may be a combination of style biases (e.g., large cap bias) and manager performance. This methodology does not distinguish the two factors.
2. **Short Time Horizons**—Every manager underperforms occasionally, and it is important for MBOI not to overemphasize short term underperformance which may not indicate problems with the underlying asset class.

Asset Class Style Bias Analysis (Illustration)

1 Both international equity sub-asset class composites outperform their relevant indices during the quarter due to excess return from investment managers...

Quarterly Sub-Asset Class Performance (Hypothetical Values)

	QTD
Public Fund A - Developed Markets Sub-Composite	0.71
MSCI EAFE Index	0.62
<i>Difference</i>	0.09

	QTD
Public Fund A - Emerging Markets Sub-Composite	-2.65
MSCI Emerging Markets Index	-2.68
<i>Difference</i>	0.03

2 ...but the international equity portfolio as a whole underperforms a broad international equity index.

Quarterly International Equity Composite Performance (Hypothetical Values)

	QTD
Public Fund A International Equity Composite	-0.30
MSCI ACWI ex-US Index	-0.04
<i>Difference</i>	-0.26

3 Style bias analysis reveals that the source of underperformance is attributable to an over-allocation to emerging markets equity relative to a broad international equity index...

Quarterly International Equity Performance Using Index vs. Public Fund A Weightings (Hypothetical Values)

	QTD
International Equity Index Returns Using Public Fund A Weightings (70% Developed/30% Emerging)	-0.37
MSCI ACWI ex-US Index (80% Developed/20% Emerging)	-0.04
<i>Difference</i>	-0.33

Manager Selection – Individual Manager Level

	QTD	CYTD	FYTD	1 Year	3 Years	5 Years	7 Years	10 Years	2014	2013
INTECH Enhanced Plus (SA)	-1.17	1.66	9.30	9.30	17.80	17.84	9.76	N/A	14.91	32.46
S&P 500 index (Cap Wtd)	0.28	1.23	7.42	7.42	17.31	17.34	9.42	7.89	13.69	32.39
<i>Difference</i>	-1.45	0.43	1.88	1.88	0.49	0.50	0.34	N/A	1.22	0.07

	QTD	CYTD	FYTD	1 Year	3 Years	5 Years	7 Years	10 Years	2014	2013
INTECH Enhanced Plus (SA)	-1.09	1.83	9.67	9.67	18.21	18.24	10.13	N/A	15.31	32.92
IM U.S. Large Cap Core Equity (SA+CF) Median	0.25	1.93	8.13	8.13	17.95	17.75	9.74	8.57	13.42	33.28
<i>Rank</i>	85	53	33	33	44	37	35	N/A	25	53

- ❑ Individual manager returns are compared to public indices that are reflective of the underlying strategy, as well as groups of managers with similar investment strategies.
- ❑ Deviations from the benchmark and/or peer group median occur due to combination of the quality of the manager's stock selection, as well as sector biases, such as industry concentration and capitalization weighting.

Important Limitations

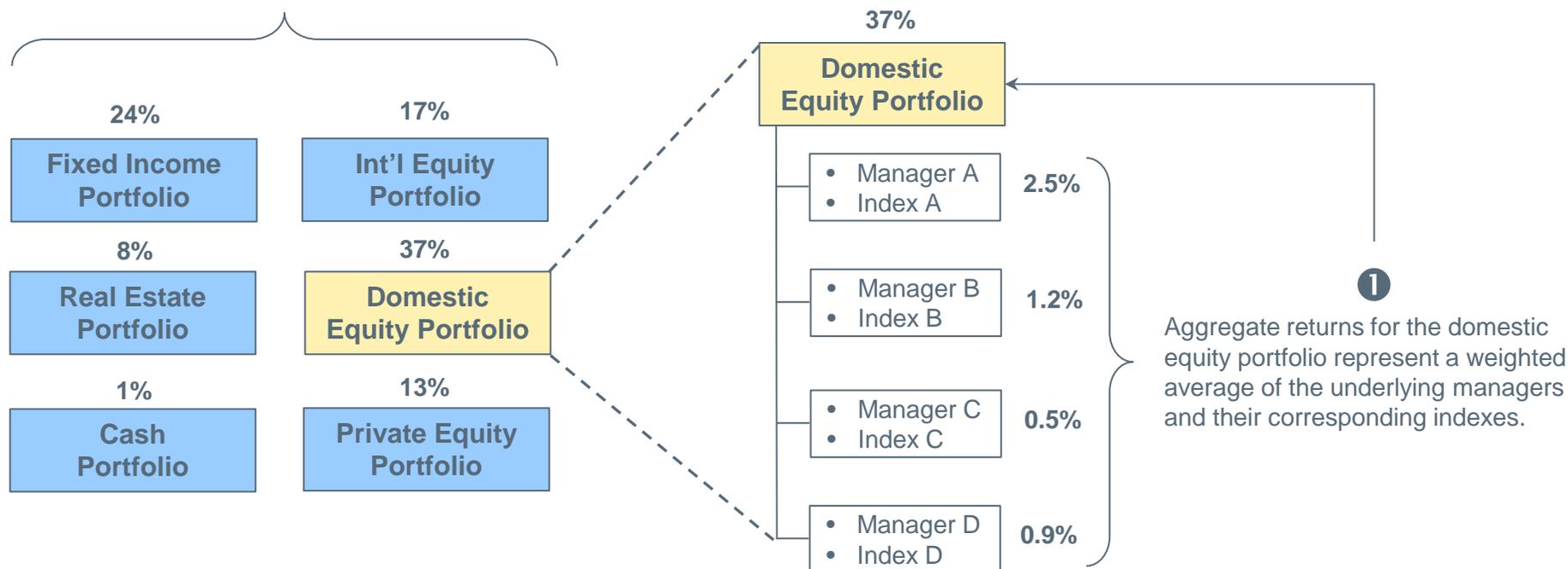
1. **Attribution of Performance**—The drivers (and acceptability) of relative performance are not clearly apparent. More granular analysis is required to reveal why underperformance (or outperformance) occurred, and whether it is acceptable.
2. **Strategy Mismatch**—Managers do not always exclusively invest in securities contained within the index; therefore, benchmarks (even if appropriate at a high level) are not a perfect metric for measuring performance.

Performance Analysis – Roll-Up Process

MBOI Performance Summary (Period Ending June 30, 2015)

	QTD	CYTD	FYTD	1 Year	3 Years	5 Years	7 Years	10 Years	2014	2013
Public Employees' Retirement - Net	0.51	2.62	4.58	4.58	11.47	11.55	6.43	6.59	8.07	17.38
Actual Allocation Index	0.39	2.82	5.15	5.15	11.92	11.89	6.84	6.82	9.08	17.94
<i>Difference</i>	0.12	-0.20	-0.57	-0.57	-0.45	-0.34	-0.41	-0.23	-1.01	-0.56

2 Aggregate returns for each pension plan represents a weighted average of the underlying asset class returns and indices.



Fee Benchmarking



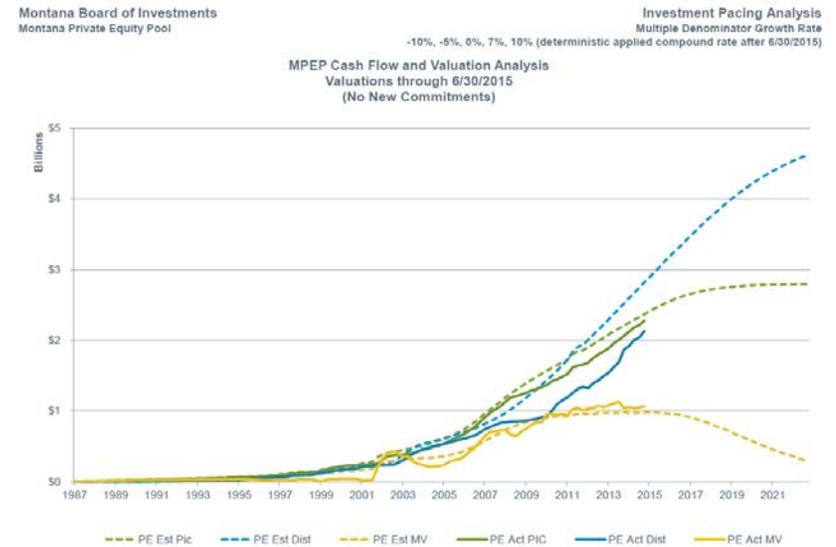
- ❑ MBOI periodically hires a third party to evaluate the total cost of the investment program and benchmark the costs versus similar public funds
- ❑ 2015 study revealed that MBOI's costs (adjusted for its allocation) are lower than peers.
- ❑ The CEM study also reveals detailed cost attribution, which enabled Montana to pinpoint relatively high and low cost areas that can be targeted for improvement.

Liquidity Analysis – Pacing Studies

Investment Pacing Analysis



August 2015



- ❑ RVK works with staff to complete evaluate the expected distributions and required commitments in order to maintain the desired allocation to private equity and real estate.
- ❑ Analysis is conducted every 2 years or as requested.
- ❑ As the pension plan matures, accurate forecasts of distributions and required contributions becomes increasingly important.

Summary of Observations

1. We encourage clients to focus performance measurement on outcome drivers that are controllable and have the potential for high impact.
2. That said, performance measurement is inherently imperfect and quantitative observations must be tempered with qualitative judgment.
3. We believe that MBOI has robust performance evaluation capabilities that are appropriately interpreted.

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Montana Loan Program

MEMORANDUM

Montana Board of Investments

Department of Commerce

2401 Colonial Drive, 3rd Floor
Helena, MT 59601 (406) 444-0001

To: Board of Directors
From: Herb Kulow, CMB
Date: November 17, 2015
Subject: Commercial and Residential Loan Portfolios

As of September 30, 2015, the commercial loan portfolio balance was \$85,239,228, after deducting \$560,000 of other real estate, and represents 97 individual loans or participations. Reservations totaled \$38,728,000 and commitments totaled \$28,632,000. The commercial loan portfolio has a yield of 4.25%, as of September 30, 2015. There was one loan 37 days past due totaling \$98,830.

The following table shows how much of the \$5,000,000 the Legislature originally allocated to the Intermediary Relending Program (IRP) is available.

IRP Availability

Outstanding Balance 3,244,083.11

Unused Commitments

Gallatin - 9856	202,833.33	
Native American - 9900	250,000.00	
MCDC - 9904	250,000.00	
Ravalli County - 9926	176,000.00	
LCCDC - 9927	<u>150,000.00</u>	
Total Unused Commitments		<u>1,028,833.33</u>

Total Outstanding & Unused Commitments 4,272,916.44

Legislative Allocation 5,000,000.00

IRP Available Funds 727,083.56

The residential loan portfolio, as of September 30, 2015, has an outstanding balance of \$8,714,232. There were no outstanding reservations. There were three loans over 90 days past due totaling \$201,716 or 2.31% of the portfolio. All past due loans were FHA guaranteed.

The Veterans Home Mortgage portfolio reflected an outstanding balance, as of September 30, 2015, of \$27,801,382. There were 14 reservations totaling \$2,486,360. There was one loan past due over 90 days totaling \$195,862, which was brought current in early October 2015, and one loan past due under 90 days totaling \$204,662. Past due loans totaled \$400,524 or 1.44% of the portfolio, as of September 30, 2015.

MEMORANDUM

Montana Board of Investments

Department of Commerce

2401 Colonial Drive, 3rd Floor

Helena, MT 59601

(406) 444-0001

To: Members of the Board

From: David Ewer, Executive Director

Date: November 17, 2015

Subject: Consumer Direct Holdings, Inc. and Consumer Direct
Grant Creek Campus, LLC Participation Loan
City of Missoula Infrastructure Loan

Attached please find a memorandum from Herb Kulow, CMB, and loan write-ups for the above two (2) referenced loans.

Recommendation

I concur with Mr. Kulow's recommendation to approve a \$10,000,000 (80%) participation in a total loan request of \$12,500,000 from the Bank of Montana and a \$1,999,920 infrastructure loan to the City of Missoula.

Attachments

MEMORANDUM

Montana Board of Investments

Department of Commerce

2401 Colonial Drive, 3rd Floor
Helena, MT 59601 (406) 444-0001

To: David Ewer, Executive Director

From: Herb Kulow, CMB

Date: November 17, 2015

Subject: Consumer Direct Holdings, Inc. and Consumer Direct Grant Creek Campus, LLC loan
City of Missoula Infrastructure loan

Attached you will find two loan write ups. One is a participation request in the amount of \$10,000,000 (80%) from the Bank of Montana in the total amount of \$12,500,000 for Consumer Direct Holdings, Inc. and Consumer Direct Grant Creek Campus, LLC. The other loan is to be an infrastructure loan in the amount of \$1,999,920 to the City of Missoula for the ultimate benefit to Consumer Direct Holdings, Inc.

I briefly explained the infrastructure loan proposal and made reference to the detailed information found in the participation loan request. I saw no reason to duplicate the information in both write ups.

I recommend approval of a \$10,000,000 (80%) participation in a total loan request of \$12,500,000 from the Bank of Montana.

I recommend approval of a \$1,999,920 infrastructure loan to the City of Missoula.

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Bond Program

INTERCAP Loan Program

Activity Summary

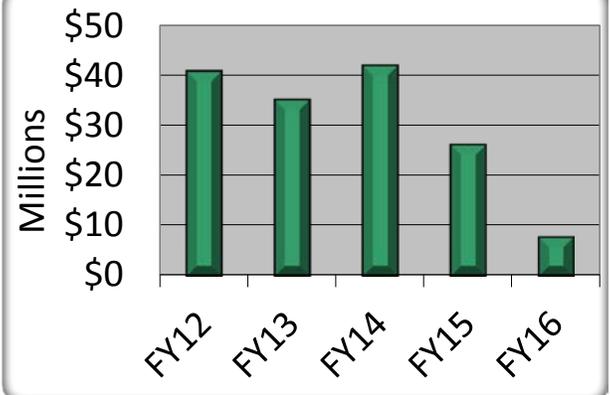
As of September 30, 2015

Since Inception 1987 - September 2015

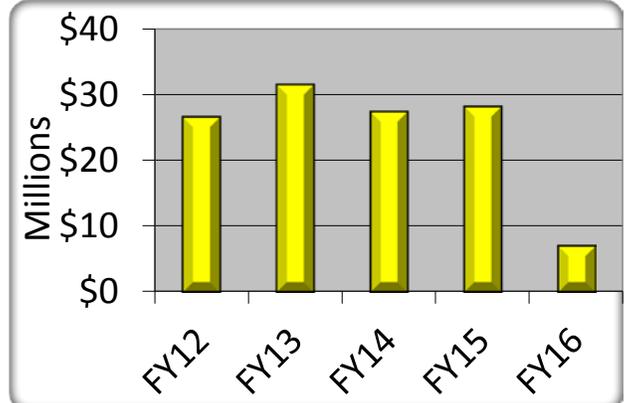
Total Bonds Issued	148,000,000
Total Loan Commitments	499,884,008
Total Loans Funded	463,611,366
Total Bonds Outstanding	106,445,000
Total Loans Outstanding	78,614,914
Loan Commitments Pending	36,272,642

FY2016		
Month	Commitments	Fundings
July-15	\$ 469,035	\$ 2,791,218
August	6,285,661	2,355,011
September	713,361	1,934,323
October	-	-
November	-	-
December	-	-
January	-	-
February	-	-
March	-	-
April	-	-
May	-	-
June-16	-	-
To Date	\$ 7,468,057	\$ 7,080,552

Commitments FY12-FY16



Fundings FY12-FY16



Note: Commitments include withdrawn and expired loans.

Variable Loan Rate History February 16, 2008 - February 15, 2016

February 16, 2008 - February 15, 2009	<u>4.25%</u>	February 16, 2012 - February 15, 2013	<u>1.25%</u>
February 16, 2009 - February 15, 2010	<u>3.25%</u>	February 16, 2013 - February 15, 2014	<u>1.00%</u>
February 16, 2010 - February 15, 2011	<u>1.95%</u>	February 16, 2014 - February 15, 2015	<u>1.00%</u>
February 16, 2011 - February 15, 2012	<u>1.95%</u>	February 16, 2015 - February 15, 2016	<u>1.25%</u>

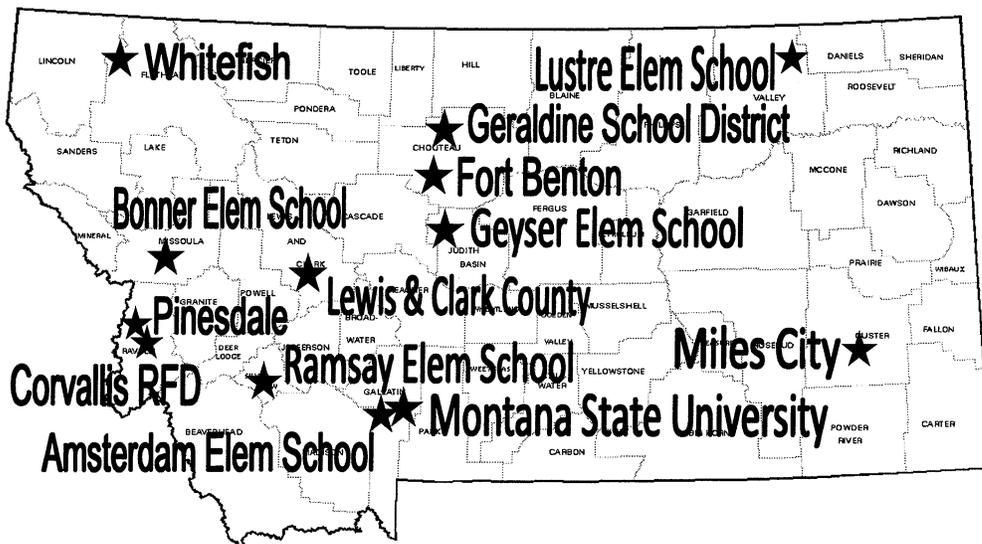
MEMORANDUM

Montana Board of Investments

Department of Commerce
 2401 Colonial Drive, 3rd Floor
 (406) 444-0001

To: Members of the Board
From: Louise Welsh, Sr. Bond Program Officer *Louise Welsh*
Date: November 17, 2015
Subject: INTERCAP Staff Approved Loans Committed

Staff approved the following loans between July 1, 2015 and September 30, 2015.



Borrower:	Ramsay Elementary School District
Purpose:	Technology upgrades
Staff Approval Date:	July 1, 2015
Board Loan Amount:	\$230,000
Other Funding Sources:	\$ 0
Total Project Cost:	\$230,000
Term:	5 years

Borrower: **NEW**	Geyser Elementary School District
Purpose:	Replace roof
Staff Approval Date:	July 28, 2015
Board Loan Amount:	\$ 50,000
Other Funding Sources:	\$ 0
Total Project Cost:	\$ 50,000
Term:	7 years

Borrower:	Lewis & Clark County
Purpose:	Road improvements for Big Valley Cabin Road Rural Improvement District (RID)
Staff Approval Date:	July 28, 2015
Board Loan Amount:	\$ 50,021
Other Funding Sources:	\$ 0
Total Project Cost:	\$ 50,021
Term:	7 years

Borrower:	Lewis & Clark County
Purpose:	Road improvements for Hillview RID
Staff Approval Date:	July 28, 2015
Board Loan Amount:	\$ 78,947
Other Funding Sources:	\$ 0
Total Project Cost:	\$ 78,947
Term:	10 years

Borrower:	Lewis & Clark County
Purpose:	Road improvements for Bridge Creek RID
Staff Approval Date:	July 28, 2015
Board Loan Amount:	\$ 60,067
Other Funding Sources:	\$ 0
Total Project Cost:	\$ 60,067
Term:	10 years

Borrower:	City of Miles City
Purpose:	Street improvements for Special Improvement District #211
Staff Approval Date:	August 3, 2015
Board Loan Amount:	\$ 59,703
Other Funding Sources:	\$ 0
Total Project Cost:	\$ 59,703
Term:	15 years

Borrower: **NEW**	Bonner Elementary School District
Purpose:	Expand cafeteria and improve building entrance and offices
Staff Approval Date:	August 12, 2015
Board Loan Amount:	\$346,000
Other Funding Sources:	\$ 0
Total Project Cost:	\$346,000
Term:	15 years

Borrower: **NEW**	Amsterdam Elementary School District
Purpose:	Expand and improve school building
Staff Approval Date:	August 21, 2015
Board Loan Amount:	\$ 50,000
Other Funding Sources:	\$ 2,099,767
Total Project Cost:	\$ 2,149,767
Term:	1 year

Borrower:	City of Fort Benton
Purpose:	Asphalt grinder
Staff Approval Date:	August 27, 2015
Board Loan Amount:	\$ 104,958
Other Funding Sources:	\$ 0
Total Project Cost:	\$ 104,958
Term:	10 years

Borrower:	Corvallis Rural Fire District
Purpose:	Ladder fire truck
Staff Approval Date:	August 28, 2015
Board Loan Amount:	\$ 125,000
Other Funding Sources:	\$ 0
Total Project Cost:	\$ 125,000
Term:	7 years

Borrower: **NEW**	Geraldine School District
Purpose:	School activity vehicle
Staff Approval Date:	September 2, 2015
Board Loan Amount:	\$ 30,000
Other Funding Sources:	\$ 5,000
Total Project Cost:	\$ 35,000
Term:	5 years

Borrower:	Town of Pinesdale
Purpose:	Street improvement project
Staff Approval Date:	September 4, 2015
Board Loan Amount:	\$ 56,000
Other Funding Sources:	\$ 0
Total Project Cost:	\$ 56,000
Term:	10 years

Borrower: **NEW**	Lustre Elementary School District
Purpose:	Replace school bus
Staff Approval Date:	September 28, 2015
Board Loan Amount:	\$ 52,361
Other Funding Sources:	\$ 30,000
Total Project Cost:	\$ 82,361
Term:	1 year

Borrower:	City of Whitefish
Purpose:	Fire Department self-contained breathing apparatus equipment
Staff Approval Date:	September 29, 2015
Board Loan Amount:	\$ 275,000
Other Funding Sources:	\$ 0
Total Project Cost:	\$ 275,000
Term:	5 years

Montana University System

Borrower:	Montana State University-Bozeman
Purpose:	KUSM public television digital encoding equipment
Staff Approval Date:	September 29, 2015
Board Loan Amount:	\$ 300,000
Other Funding Sources:	\$ 0
Total Project Cost:	\$ 300,000
Term:	5 years

**Montana Board of Investments
INTERCAP Loan Summary and Approval**



Borrower City of Great Falls

Date November 3, 2015

Approval Date _____

The City requests to borrow \$1,540,000 (\$1,400,000 + 10% reserve) to purchase replacement trucks for its solid waste fleet. The loan will be in the form of a revenue bond over a six (6) year period and standard revenue bond conditions will apply. INTERCAP will be the sole funding source for this loan.

Authorization

7-7-4421 Montana Code Annotated (MCA) (1) In addition to the powers that it may now have, any municipality shall have power under this part to: issue its bonds to finance in whole or in part the cost of the acquisition, purchase, construction, reconstruction, improvement, betterment, or extension of any undertaking;

7-7-4402 MCA (3) The term "undertaking" shall mean any one or a combination of the following:...(f)...solid waste management systems...authorized for cities and towns;

7-7-4426 MCA (1) The acquisition, purchase ...of any undertaking may be authorized under this part. (2) Bonds may be authorized to be issued under this part...: (a) without an election;

INTERCAP Debt

The City has participated in the INTERCAP program since 1987, financing over \$1.7 million for various purposes. The City has nine General Fund loans with \$253,734 outstanding. There is \$56,050 left to draw on one of the loans. All loans are current and the latest matures August 2030.

Repayment

The City is pledging revenue from its Sanitation Fund to repay the bond. The Sanitation Fund has no existing debt and annual debt service on the proposed bond will be ~\$292,800. In order to adequately meet the Board's 1.25 debt coverage requirement, the City's Sanitation Fund would need to support ~\$332,800 annually.

At its October 20, 2015 council meeting, the City adopted a resolution to increase its rates by 5%, effective October 27, 2015. The new rates are projected to produce ~\$173,000 in additional revenue from the City's stable customer base. Because older vehicles will be replaced, the City also anticipates vehicle maintenance costs to decrease. These factors, combined with the following Financial Report demonstrate the City can adequately service the proposed debt.

Financial Report – Sanitation Fund

	<u>FY15</u>	<u>FY14</u>
Beginning Fund Balance	\$ 2,027,871	\$ 1,730,252
Revenues	3,296,414	3,664,677
Expenditures	<u>3,252,196</u>	<u>3,367,058</u>
Ending Fund Balance	\$ 2,072,089	\$ 2,027,871
Net Change in Fund Balance	\$ 44,218	\$ 297,619
Fund Balance Cash	\$ 553,222	\$ 288,559
Fund Balance <i>Unassigned</i>	\$ 725,736	\$ 822,389

COMMENTS

FY14 Without the \$401,307 one-time revenue and (\$298,892) depreciation and one-time expense, the net change in fund balance would have been \$195,204.

FY15 Without the (\$187,145) depreciation expense, the net change in fund balance would have been \$231,363.

Recommendation

The City can adequately service the debt. Approval recommended, with the following conditions:

1. The INTERCAP loan will be in the form of a solid waste revenue bond.
2. The reserve account requirement will be 10% of the amount drawn. The reserve account will be funded from bond proceeds.
3. The Borrower will set the budget to maintain an annual 1.25 coverage of net revenue over debt service. Net revenue will be gross revenues of the City's Sanitation Fund less operating and maintenance costs and will not include costs for depreciation or for debt service. The coverage requirement will be on the loan amount, net of the reserve component; the Borrower will not have to maintain the 1.25 coverage on the reserve.
4. The City agrees that if additional bonds are necessary and if they are to be issued and secured by the revenues of the System, the additional bonds will need to meet the reserve requirement and the 1.25 coverage test herein described, otherwise, the additional bonds will be subordinate to the Outstanding Bonds.
5. The City will make semi-annual principal and interest payments (February 15 and August 15).
6. If necessary, the City will increase rates and fees to provide adequate repayment of debt.

Staff Loan Committee Recommendation

David Ewer, Executive Director

[Signature]

Date: 11/14/15

Geri Burton, Deputy Director

[Signature]

Date: 11-3-15

Louise Welsh, Sr. Bond Program Officer

[Signature]

Date: 11/3/15

Julie Flynn, Bond Program Officer

[Signature]

Date: 11-3-15

Board Loan Committee

Jack Prothero, Chairperson – Loan Committee

Yes No Abstain

Kathy Bassette, Member

Yes No Abstain

Terry Cohea, Member

Yes No Abstain

Approval Date: _____

**Montana Board of Investments
Loan Committee
INTERCAP Loan Summary and Approval**



Borrower Montana Department of Transportation (MDT)

Date October 29, 2015

Approval Date _____

MDT requests to borrow \$3,300,000 to finance vehicle purchases for the State Motor Pool (SMP). The loan will be in the form of a general promise to pay of the MDT with a seven (7) year term. MDT estimates it will draw funds in February 2016. MDT plans to purchase 139 vehicles as summarized in the following table. Twenty-six (26) of the total are additional vehicles requested by state agencies for lease. The remaining 113 vehicles will be replacements to the motor pool fleet.

Quantity	Type	Estimated Cost
56	Small SUV 4WD	\$1,272,227
46	Mid-Size 4 Door Sedan	868,885
15	Large Pickup 4WD	413,626
13	Passenger Mini Van	343,149
9	Large SUV 4WD	274,969
Total 139		\$ 3,172,856 ¹

¹Note this is an estimated cost of the vehicles to be purchased. MDT is requesting \$3.3 M in the event actual bids are higher than this estimate.

Authorization

17-5-2001 Montana Code Annotated (MCA) (1) An agency responsible for the procurement and provision of vehicles,using an enterprise fund or an internal service fund...is authorized to enter into contracts, loan agreements, or other forms of indebtedness payable over a term not to exceed seven (7) years for the purpose of financing the cost of the vehicles and equipment and to pledge to the repayment of the indebtedness the revenue of the enterprise fund or internal service fund if: (a) the term of the indebtedness does not exceed the useful life of the items being financed; and (b) at the time that the indebtedness is incurred, the projected revenue of the fund, based on the fees and charges approved by the legislature and other available fund revenue, will be sufficient to repay the indebtedness over the proposed term and to maintain the operation of the enterprise.

INTERCAP Debt

The MDT has been an INTERCAP borrower since 1997 financing nearly \$43 million for SMP vehicles. The Board has authorized loans outstanding not to exceed \$10.5 million to the MDT. If approved, this request will raise MDT's current \$4.9 million outstanding loan balance to \$8.2 million. MDT has four (4) outstanding INTERCAP loans that are current and fully funded.

Repayment

There will be approximately \$549,000 annual debt service on the proposed loan. Each biennium the Legislature approves SMP fees charged to agencies that either lease cars or use the daily-use fleet that is available on a first-come, first-served basis. MDT pledges these fees to repay its INTERCAP loans. The user fees include a loan repayment cost based on INTERCAP's average variable interest rate.

Collateral

Due to the large transactions with the MDT and its fleet rotation, these loans do not use titles as security as is typical with vehicle loans. In lieu of placing liens on individual vehicles, the MDT covenants that there are no liens

on its entire fleet and they are available for sale to satisfy loan obligations, if necessary. Currently, the SMP fleet collateral book value is \$8.8 million, which provides the Board 1.79 collateral coverage in relation to MDT's \$4.9 million outstanding INTERCAP debt. If the full amount of the proposed loan is drawn, MDT will still have sufficient collateral coverage of 1.38. This coverage assumes older vehicles are removed and new vehicles purchased with this loan are added to the fleet collateral book value.

Financial Report

	<u>FY15</u>	<u>FY14</u>
Beginning Fund Balance	\$ 5,865,000	\$ 6,058,000
Revenues	4,443,000	3,855,000
Expenditures	<u>4,382,000</u>	<u>4,048,000</u>
Ending Fund Balance	\$ 5,926,000	\$ 5,865,000
Net Change in Fund Balance	\$ 61,000	\$ (193,000)
Fund Balance Cash	\$ 1,573,000	\$ 985,000
Fund Balance <i>Unrestricted</i>	\$ 968,000	\$ 664,000

COMMENTS:

FY14 Without the \$71,000 one-time revenue and (\$1,132,000) depreciation expense, the net change in fund balance would have been \$868,000.

FY15 Without the \$106,000 one-time revenue and (\$1,488,000) depreciation expense, the net change in fund balance would have been \$1,443,000. The increase in cash from FY14 was due to lower operating expenses and higher fee revenue. SMP users travelled ~700,000 more miles in FY15. Because SMP fees include a per-mile assessment, the increase in travel attributed to the higher cash balance.

Recommendation

The MDT has the resources to service the debt. Approval recommended.

Staff Loan Committee Recommendation

David Ewer, Executive Director _____

Geri Burton, Deputy Director Geri Burton

Julie Flynn, Bond Program Officer Julie Flynn

Date: 10/29/15

Date: 10-29-15

Date: 10-29-15

Board Loan Committee

Jack Prothero, Chairperson – Loan Committee

Kathy Bassette, Member

Terry Cohea, Member

Approval

Yes No Abstain

Yes No Abstain

Yes No Abstain

Approval Date: _____

MEMORANDUM

Montana Board of Investments

Department of Commerce

2401 Colonial Drive, 3rd Floor

(406) 444-0001

To: Members of the Board

From: Louise Welsh, Senior Bond Program Officer 

Date: November 17, 2015

Subject: Additional INTERCAP Bonds - Preliminary Resolution

Staff requests the authorization to issue a new ~\$10 million bond, Series 2017, for the purpose of providing funds for the Board of Investments of the State of Montana (the "Board") INTERCAP Revolving Loan Program (the "Program"). Staff projects the new issuance will take place in conjunction with the Program's bond remarketing period in March 2017 unless the Board directs otherwise.

Factors:

The Program Bond Series 1997 and 1998 are nearing maturity making it difficult to make long-term loans with these funds; thus they are of limited use to the Program. Staff intends to fully redeem Series 1997 in March 2016; one year in advance of its 2017 maturity and work towards a large partial redemption of Series 1998 prior to the 2017 remarketing. Based on the early redemption plan and the Program's historical fundings and repayments, the funds available to loan will be depleted in the 3rd quarter of fiscal year 2017.

Demand governs the bond amount and issuance date. Board Staff requests preauthorization during this November meeting and will finalize the amount and issuance date of the Series 2017 Bond at the Board's November 2017 meeting.

The uncertainty of INTERCAP borrower short-term needs may require the Program to borrow on a temporary basis from the Board's Permanent Coal Tax STIP Fund to make loans in anticipation of the Series 2017 bond issuance. Should the Program borrow from the Board, repayment will occur upon issuance of the Series 2017 bonds.

Bond Authority

With the exception of refundings or issues to purchase tax or revenue anticipation notes, the Board may not have more than \$190 million of its bonds issued and outstanding under the Municipal Finance Consolidation Act of 1983, Title 17, Chapter 5, Part 16, Montana Code Annotated. As shown below, the Board will remain within the statutory limit.

\$109 million Bonds Outstanding*
10 million New Series 2017 Bond Issue
\$119 million

*Rounding to the nearest million, the total includes \$106 million INTERCAP Bonds (less \$9 million Series 1997 full redemption in 2016 and ~\$5 million partial redemption of Series 1998 in 2017), \$10 million Qualified Zone Academy Bonds (QZAB), and \$7 million Qualified School Construction Bonds (QSCB). Only the INTERCAP Bonds are credit enhanced by the Board.

Preliminary Resolution No. 235

The purpose of the attached Preliminary Resolution No. 235 is

- ✓ to give preliminary approval to the issuance of bonds under the Municipal Finance Consolidation Act in an approximate amount of \$10 million.
- ✓ to allow staff to work with the current INTERCAP Program finance team to prepare the necessary documents to accomplish the sale.
- ✓ to authorize the issuance of \$8.5 million bond anticipation notes (BAN) should it be necessary to borrow from the Board as may be required to meet the needs of the Program prior to the issuance of bonds. The BAN will be held within the Permanent Coal Tax STIP Fund and the "BAN Interest Rate" applicable to the principal amount advanced through maturity or earlier prepayment means the Short-Term Investment Pool (STIP) Rate on the date of the advance, except that if on the date of the advance the STIP Rate is less than the INTERCAP Bond Rate, the BAN Interest Rate shall be the INTERCAP Bond Rate on the date of such advance fixed through the date of maturity or earlier prepayment.

A favorable time to issue the Series 2017 bonds would be to market the new issue in conjunction with the remarketing of the outstanding bonds on March 1. The Board's final resolution authorizing the approval of the Series 2017 bonds will take place during the regular Board meeting scheduled in November 2017.

Recommendation

Staff recommends that the Board:

1. Authorize staff to take steps as deemed necessary to issue ~\$10 million in INTERCAP bonds for a term of 25 years;
2. Authorize the issuance of bond anticipation notes;
3. Adopt the INTERCAP Preliminary Resolution No. 235;
4. Authorize the current INTERCAP Program finance team to provide the expertise to issue/underwrite the bonds.

CERTIFICATE AS TO RESOLUTION AND ADOPTING VOTE

I, the undersigned, being the duly qualified and acting recording officer of the Board of Investments of the State of Montana (the "Board"), hereby certify that the attached resolution is a true copy of Resolution No. 235 entitled: "RESOLUTION OF THE BOARD OF INVESTMENTS OF THE STATE OF MONTANA RELATING TO ITS ANNUAL ADJUSTABLE RATE TENDER OPTION MUNICIPAL FINANCE CONSOLIDATION ACT BONDS (INTERCAP REVOLVING PROGRAM), SERIES 2017, AUTHORIZING ISSUANCE AND SALE OF THE SERIES 2017 BONDS AND THE SALE OF BOND ANTICIPATION NOTES IN ANTICIPATION OF THE PROCEEDS OF THE SERIES 2017 BONDS, APPROVING FORM OF DOCUMENTATION AND MAKING CERTAIN FINDINGS AND DETERMINATIONS REGARDING THE SERIES 2017 BONDS AND BOND ANTICIPATION NOTES" (the "Resolution"), on file in the original records of the Board in my legal custody; that the Resolution was duly adopted by the Board at a regular meeting on November 17, 2015 and that the meeting was duly held by the Board and was attended throughout by a quorum, pursuant to call and notice of such meeting given as required by law; and that the Resolution has not as of the date hereof been amended or repealed.

I further certify that, upon vote being taken on the Resolution at said meeting, the following members voted in favor thereof:

_____ ; voted against the same: _____ ;
abstained from voting thereon: _____ ; or were absent: _____ .

WITNESS my hand and seal officially this ___ day of November, 2015

(SEAL)

Executive Director

RESOLUTION NO. 235

RESOLUTION OF THE BOARD OF INVESTMENTS OF THE STATE OF MONTANA RELATING TO ITS ANNUAL ADJUSTABLE RATE TENDER OPTION MUNICIPAL FINANCE CONSOLIDATION ACT BONDS (INTERCAP REVOLVING PROGRAM), SERIES 2017, AUTHORIZING ISSUANCE AND SALE OF THE SERIES 2017 BONDS AND THE SALE OF BOND ANTICIPATION NOTES IN ANTICIPATION OF THE PROCEEDS OF THE SERIES 2017 BONDS, APPROVING FORM OF DOCUMENTATION AND MAKING CERTAIN FINDINGS AND DETERMINATIONS REGARDING THE SERIES 2017 BONDS AND BOND ANTICIPATION NOTES

BE IT RESOLVED by the Board of Investments of the State of Montana (the "Board"), as follows:

Section 1. Recitals.

1.01. General Authority. The Board is authorized by Title 17, Chapter 5, Part 16, Montana Code Annotated (the "Act"), to issue notes and bonds to finance loans or refinance its loans to Montana governmental units and its purchases of their bonds and notes, to establish or replenish revenue securing the payments of its bonds and notes, and to finance all other expenditures of the Board incident to and necessary or convenient to carry out the provisions of the Act. Bonds so issued may be secured by a trust indenture and by a municipal finance consolidation act reserve fund to which the Board may agree to advance monies to restore reserve fund deficiencies. The Board is further authorized to issue temporary notes in anticipation of the sale of its securities. Any bonds or notes so issued shall not constitute a liability or obligation of or a pledge of the faith and credit of the State of Montana (the "State") but are payable solely from the revenues or funds of the Board generated or received by purposes of the Act. Montana governmental units are authorized by various provisions of the Montana Code Annotated to issue bonds, notes or other obligations for the purpose of financing or refinancing the acquisition and installation of equipment, personal and real property improvements or provide temporary financing of projects or for other authorized corporate purposes. The Board is also authorized by Section 17-6-201, M.C.A., to invest funds in its control in bonds or notes issued by the Board. Terms used with initial capital letters herein but not defined have the meanings given to them in the Indenture (as hereinafter defined).

1.02. Outstanding Obligations. Pursuant to the Act, the Board has issued the following series of Annual Adjustable Rate Tender Option Municipal Finance Consolidation Act Bonds (INTERCAP Revolving Program), which are currently outstanding (collectively, the "Outstanding Bonds"):

- \$10,000,000 Annual Adjustable Rate Tender Option Municipal Finance Consolidation Act Bonds (INTERCAP Revolving Program) Series 1997.
- \$12,500,000 Annual Adjustable Rate Tender Option Municipal Finance Consolidation Act Bonds (INTERCAP Revolving Program) Series 1998.

- \$15,000,000 Annual Adjustable Rate Tender Option Municipal Finance Consolidation Act Bonds (INTERCAP Revolving Program) Series 2000.
- \$15,000,000 Annual Adjustable Rate Tender Option Municipal Finance Consolidation Act Bonds (INTERCAP Revolving Program) Series 2003.
- \$18,500,000 Annual Adjustable Rate Tender Option Municipal Finance Consolidation Act Bonds (INTERCAP Revolving Program) Series 2004.
- \$15,000,000 Annual Adjustable Rate Tender Option Municipal Finance Consolidation Act Bonds (INTERCAP Revolving Program) Series 2007.
- \$12,000,000 Annual Adjustable Rate Tender Option Municipal Finance Consolidation Act Bonds (INTERCAP Revolving Program), Series 2010.
- \$12,000,000 Annual Adjustable Rate Tender Option Municipal Finance Consolidation Act Bonds (INTERCAP Revolving Program), Series 2013.

Under the Program, the Board uses the original proceeds of the Bonds to make loans and the repayments of such loans to make more loans. The Bond Program Officer of the Board has informed the Board that additional funds are needed to make loans under the Program. Based on historical data and additional requests for funding during the next 24 months, the Bond Program Officer recommends and requests that the Board issue approximately \$10,000,000 in aggregate principal amount of Annual Adjustable Rate Tender Option Municipal Finance Consolidation Act Bonds (INTERCAP Revolving Program), Series 2017 (the “Series 2017 Bonds”).

The Board would issue its Series 2017 Bonds in a principal amount of approximately \$10,000,000 pursuant to the Indenture of Trust, dated as of March 1, 1991, as amended and supplemented (the “Indenture”), and a Series Supplemental Indenture to be dated on or about March 1, 2017 (the “2017 Supplemental Indenture”), between the Board and U.S. Bank National Association (successor by merger to First Trust Company of Montana National Association), as Trustee (the “Trustee”), and on a parity with the Outstanding Bonds. Proceeds realized from the sale of the Series 2017 Bonds are expected to be applied by the Board to pay and redeem the Board of Investments of the State of Montana Bond Anticipation Notes (INTERCAP Revolving Program), Taxable Series 2015, in the principal amount of up to \$8,500,000 (the “Bond Anticipation Notes”) issued under a Series Supplemental Indenture (the “BAN Supplemental Indenture”), to make loans to eligible borrowers (the “Loans”), to pay costs of issuance, to provide funds, if necessary, to pay interest on the Series 2017 Bonds, and establish reserves for the Series 2017 Bonds and to reimburse the Board for amounts advanced to make loans to eligible borrowers. The proceeds realized from the sale of the Bond Anticipation Notes would be applied by the Board to make Loans to an eligible borrower or eligible borrowers, to pay costs of issuance, and, if necessary, to make a deposit to the Bond Anticipation Note Fund.

1.03. Documents. Proposed forms of the following documents have been placed in the Board files:

- (a) the Indenture; and

(b) the BAN Supplemental Indenture.

The Board hereby approves the BAN Supplemental Indenture in substantially the form submitted herewith, with such changes as are necessary or appropriate, which changes are conclusively approved by the signature thereof by the Executive Director, Deputy Director, and Bond Program Officer, or any two of them, and approves the findings and determinations set forth in the BAN Supplemental Indenture.

Section 2. Authorization. The Board authorizes the Series 2017 Bonds and the Bond Anticipation Notes as provided in the BAN Supplemental Indenture. The Chair of the Board and the Executive Director are authorized and directed to execute and deliver the Bond Anticipation Notes. The Board further authorizes and directs the Executive Director, Deputy Director and Bond Program Officer to proceed with the sale of the Series 2017 Bonds, to work with Piper Jaffray & Co. and D.A. Davidson & Co. (the "Underwriters"), Dorsey & Whitney LLP, as Bond Counsel, and such others as the Board may deem appropriate or as may be required to prepare and present to the Board at subsequent meetings the necessary documents to effectuate the sale, including but not limited to the 2017 Supplemental Indenture relating to the Series 2017 Bonds, the Bond Purchase Agreement, the Remarketing Agreement, the Reserve Fund Resolution, a Preliminary Official Statement and the Agreement Concerning Continuing Disclosure between the Board and the Trustee.

Section 3. Reimbursement. A portion of the proceeds of the Series 2017 Bonds will reimburse the Board for advances made under the Bond Anticipation Notes up to the principal amount so advanced from the Bond Anticipation Notes to fund temporarily the Loans and to pay interest on the Bond Anticipation Notes and associated costs.

PASSED AND APPROVED by the Board of Investments of the State of Montana this 17th day of November, 2015.

Chairman

Attest:

Executive Director

[Return to Agenda](#)

Investment Consultant

EXECUTIVE SUMMARY
QUARTER ENDING SEPTEMBER 30, 2015

Economic and Capital Market Review

The third quarter of 2015 proved to be a challenging period for most asset classes. Weakening economic indicators in China served as the primary driver of a sharp selloff in risk assets. Several other drivers of overall market performance are presented in **Figure 1** below. In addition **Figure 2** presents returns for key market indices.

Figure 1: Drivers of 3rd Quarter Asset Class Performance

Positive Drivers	Negative Drivers
<p>1. Continued Strength in U.S. Real Estate Markets – Steadily improving economic conditions drove a continued decline in vacancy rates and rent growth across major property types. Core real estate (as represented by the NCREIF-ODCE Index) responded by recording its 22nd consecutive positive quarterly return, and has now produced a five-year return of 14.0%.</p> <p>2. Federal Reserve Inaction – The Federal Reserve left interest rates unchanged in September due in part to a weakening global economy. While the delay was welcomed by investors, the Fed reiterated its desire to raise rates later in 2015 if economic data is supportive.</p> <p>3. Interest Rate Declines – Interest rates declined modestly during the quarter due to an investor flight to quality. While returns were only modest, fixed income securities did provide investors with a small buffer against strongly negative returns in equity and commodity markets.</p>	<p>1. Economic Weakness in China – Economic indicators in China weakened, as the nation continues its tumultuous evolution from an investment-oriented to consumption-oriented economy. The slowdown negatively affected a broad set of markets, particularly energy, metals, and emerging market equities.</p> <p>2. Softening of U.S. Economy—While the U.S. economy continued to show strength in comparison to China, it too showed signs of weakness in the third quarter. Manufacturing activity slowed to near contraction, while job growth softened a bit, recording an average of 167,000 new jobs per month in the third quarter.</p> <p>3. Decline of Energy Prices—The persistent oversupply of oil and natural gas placed continued downward pressure on energy prices. U.S. producers finally responded by shutting down rigs. Reduced production is placing strain on energy sectors in U.S. equity, U.S. high yield, and MLPs.</p>

Figure 2: Key Market Index Returns
Period Ending September 30, 2015

Index	Asset Class	October*	QTD	YTD	1 Year	5 Year	10 Year
S&P 500	U.S. Large Cap Equity	8.4	-6.4	-5.3	-0.6	13.3	6.8
Russell 2000	U.S. Small Cap Equity	5.6	-11.9	-7.7	1.3	11.7	6.6
MSCI EAFE (Net)	Int'l Developed Markets	7.8	-10.2	-5.3	-8.7	4.0	3.0
MSCI Emerging Markets (Net)	Int'l Emerging Markets	7.1	-17.9	-15.5	-19.3	-3.6	4.3
Barclays US Agg Bond	U.S. Fixed Income	0.0	1.2	1.1	2.9	3.1	4.6
NCREIF ODCE (Gross)	Private Real Estate	N/A	3.7	11.3	14.9	14.0	6.7
Bloomberg Commodity	Commodities	-0.4	-14.5	-15.8	-26.0	-8.9	-5.7

* October returns are for the period ending October 31, 2015. All other returns are for the period ending September 30, 2015.

MBOI Performance Highlights: Total Fund

Figure 3 shows the performance of the MBOI pension plans, as represented by the Public Employees' Retirement Plan. A short commentary regarding performance at the total fund level is also provided below.

Figure 3: MBOI Total Fund Performance
Period Ending September 30, 2015

	QTD/ FYTD	CYTD	1 Year	3 Years	5 Years	7 Years	10 Years
Public Employees' Retirement - Net	-3.75	-1.22	0.90	8.50	9.03	7.29	5.82
Public Employees' Benchmark	-3.92	-1.21	0.93	9.08	9.67	7.55	6.04
Difference	0.17	-0.01	-0.03	-0.58	-0.64	-0.26	-0.22
Rank	12	14	6	1	1	3	7

RVK Commentary

- **Negative Absolute Returns**—During the third quarter, several major asset classes experienced substantial declines. Headwinds included softening economic activity in China, weak commodity markets, softening of the U.S. economy, and continued anxiety regarding potential increases in U.S. interest rates. While the MBOI fixed income, private equity, and real estate allocations provided some buffer, the negative returns in U.S. and international equity markets led to an overall decline in the retirement plan portfolios.
- **Strengthening of Long Term Peer Rankings**—MBOI rankings against peers continued to improve, most notably over the seven- and ten-year time horizons. MBOI now ranks in the top decile over all annualized periods of one year or more. MBOI has also accomplished this while taking on less risk than its peers. As illustrated on **page 16** of the performance report, over the trailing 10 years, MBOI has produced an annual return of 6.32% vs. 5.90% for peers, while experiencing a lower standard deviation of 9.01% versus 9.67% for peers.
- **Benchmark Underperformance Primarily Attributable to Private Equity Benchmarking**—MBOI has underperformed its total fund benchmark over all trailing periods greater than one quarter. However, as explained on numerous occasions, this underperformance is primarily attributable to the benchmark used to measure private equity performance. One disadvantage of the benchmark is that it tends to indicate underperformance in strong public equity bull markets. This lag is further amplified by the return premium of 4% that is expected ABOVE the return of a public equity benchmark. In short, over the last 10 years, despite strong absolute returns of 10.52% per year, the private equity portfolio has provided a negative drag on relative total fund performance and accounts for the majority of the underperformance relative to the benchmark. While this apparent underperformance can be distracting, we retain our conviction that private equity provides valuable diversification and return enhancement. Illustrating this is the fact that relative to other asset pools in the MBOI portfolio, the private equity portfolio has provided by far the highest absolute return over the trailing 10-year period.

- **Relative Performance Improvement in the Domestic and International Equity Pools**—The domestic and international equity pools, which were a source of underperformance for many years, have continued to improve over the trailing three years. While it is still somewhat early to claim victory on the changes made to the portfolio, the outperformance of both pools (26 basis points for domestic equity and 53 basis points for international equity over the trailing 3 years) is a positive sign.

MBOI Performance Highlights: Asset Class Composites

The performance of the major asset class composites within the MBOI portfolio are summarized on **pages 18-20** of the quarterly performance report. A high level commentary on each asset class is also provided below. Unless stated otherwise, all returns are reported on a net-of-fees basis.

- **Montana Domestic Equity Pool**—The MBOI Domestic Equity Pool returned **-7.09%** for the quarter, trailing the S&P 1500 composite index by 40 basis points. Relative to peers, the pool ranked in the 30th percentile for the quarter. Despite the underperformance over the past quarter, performance has improved notably over the longer term. While it remains early, we continue to gain confidence that the changes made in the portfolio to increase passive exposure in more efficient asset classes (e.g., large cap equity) and select new managers in less efficient sectors (e.g., small cap equity), are paying off. Over the past three years, the domestic equity pool has exceeded the S&P 1500 Composite Index by 26 basis points and ranked in the 23rd percentile relative to peers.
- **Montana International Equity Pool**—The MBOI International Equity Pool returned **-11.60%** for the quarter, outperforming the International Equity Custom Benchmark by 28 basis points. However, relative to peers, the pool ranked in the 64th percentile for the quarter. Similar to domestic equity, the changes in strategy within the international equity portfolio have thus far produced positive results. Over the past three years, the international equity pool has exceeded the benchmark by 53 basis points. However, performance relative to peers continues to lag. In recent years, this is likely due primarily to the relatively high weighting in the pool to emerging market equities. While this sector has struggled over the past three years, we expect this segment of the market to produce higher returns over the longer term.
- **Retirement Funds Bond Pool**—The Retirement Funds Bond Pool returned 1.05% for the quarter, slightly trailing the Barclays US Aggregate Bond Fund by 18 basis points. Despite the negative relative return for the quarter, performance relative to peers and indices remains strong over all other periods. Over ten years, the Retirement Funds Bond Pool has provided 81 basis points of excess return and ranked in the 30th percentile relative to peers.
- **Trust Funds Investment Pool**—The Trust Funds Investment Pool largely mirrored the Retirement Funds Bond Pool, although absolute and relative returns were slightly better due to the presence of real estate in the portfolio, which outperformed bonds.
- **Real Estate Pool**—The Real Estate Pool, which is benchmarked on a lagged basis, returned 3.79% for the quarter, outperforming the NCREIF ODCE Index by 21 basis points. Relative to peers, the pool ranked in the 12th percentile. The real estate pool continues to lag the index over

longer periods for reasons that involve timing of entry into the asset class, as well as material differences between benchmark and portfolio holdings. Nevertheless, performance of the real estate portfolio continues to strengthen, while also providing diversification benefits.

- **Short Term Investment Pool**—The Short Term Investment Pool performed in line for the quarter relative to the 1-Month Libor Index and the iMoney.net Money Fund Median¹. The absolute return of the pool over the past year was only 15 basis points, which is due to extremely low interest rates on the short end of the yield curve. Should the Fed raise short term rates at the end of 2015 or in early 2016, returns in the short term investment pool should show a modest increase.
- **Private Equity Pool**—The Private Equity Pool returned 4.02% for the quarter, which outperformed the S&P 1500 + 4% (one quarter lagged) by 285 basis points. As anticipated, the private equity pool provided some cushion against a sharp decline in public equity markets over the last quarter. In addition, private equity continues to provide valuable diversification and return enhancement for the MBOI pension plans over the long term. Over 10 years, the portfolio has returned 10.52% net of fees, which far exceeds the return of all other asset classes in the portfolio. Relative performance over all trailing periods beyond one quarter has suffered due to the tendency of private equity returns to lag behind public equity returns in strong bull markets. Nevertheless, we retain our conviction that private equity constitutes a valuable asset class in the MBOI portfolio for purposes of diversification and return enhancement.

Overall, the MBOI portfolio continues to perform well and continues to strengthen relative to benchmarks and peers. RVK supports several of the recent changes that were made in order to improve performance. The one caveat that we offer is that while strong double digit returns have been welcome over the past five years, our future return expectations continue to moderate as the U.S. equity bull market ages. The first signs of this aging were witnessed with the negative returns experienced in the third quarter.

¹ The iMoney.net Money Fund Median is reported on a gross of fees basis.



Montana Board of Investments

Investment Performance Analysis

Period Ended: September 30, 2015



Montana Board of Investments
Comparative Performance
Retirement Plans

As of September 30, 2015

	QTD	CYTD	1 Year	3 Years	5 Years	7 Years	10 Years	2014	2013	2012	2011	2010
Public Employees' Retirement - Net	-3.75	-1.22	0.90	8.50	9.03	7.29	5.82	8.07	17.38	13.24	2.13	12.77
Public Employees' Benchmark	-3.92	-1.21	0.93	9.08	9.67	7.55	6.04	9.08	17.94	14.88	1.67	12.44
Difference	0.17	-0.01	-0.03	-0.58	-0.64	-0.26	-0.22	-1.01	-0.56	-1.64	0.46	0.33
Public Employees' Retirement - Gross	-3.66	-0.88	1.35	9.02	9.59	7.85	6.32	8.61	17.96	13.83	2.68	13.44
All Public Plans > \$3B Total Fund Median	-4.66	-2.26	-0.65	6.65	7.58	7.13	5.90	6.76	15.03	13.34	0.96	12.82
Rank	12	14	6	1	1	3	7	9	10	34	26	41
Teachers' Retirement - Net	-3.76	-1.22	0.91	8.51	9.04	7.30	5.82	8.09	17.38	13.24	2.14	12.80
Teachers' Benchmark	-3.93	-1.20	0.94	9.09	9.68	7.56	6.04	9.11	17.94	14.89	1.66	12.45
Difference	0.17	-0.02	-0.03	-0.58	-0.64	-0.26	-0.22	-1.02	-0.56	-1.65	0.48	0.35
Teachers' Retirement - Gross	-3.67	-0.88	1.35	9.03	9.60	7.87	6.31	8.63	17.96	13.84	2.68	13.47
All Public Plans > \$3B Total Fund Median	-4.66	-2.26	-0.65	6.65	7.58	7.13	5.90	6.76	15.03	13.34	0.96	12.82
Rank	13	14	6	1	1	3	7	9	10	34	26	41
Police Retirement - Net	-3.75	-1.22	0.91	8.51	9.03	7.26	5.78	8.07	17.41	13.23	2.10	12.62
Police Benchmark	-3.91	-1.19	0.95	9.09	9.65	7.52	5.97	9.10	17.92	14.80	1.66	12.26
Difference	0.16	-0.03	-0.04	-0.58	-0.62	-0.26	-0.19	-1.03	-0.51	-1.57	0.44	0.36
Police Retirement - Gross	-3.65	-0.88	1.35	9.04	9.58	7.82	6.27	8.61	18.00	13.78	2.65	13.29
All Public Plans > \$3B Total Fund Median	-4.66	-2.26	-0.65	6.65	7.58	7.13	5.90	6.76	15.03	13.34	0.96	12.82
Rank	12	14	6	1	1	3	8	9	10	36	27	43

Net performance shown is net of all manager fees and expenses (Net-All). All Public Plans > \$3B Total Fund Median is reported gross of fees. Benchmark returns reflect unmanaged indices which are not impacted by management fees.

Montana Board of Investments
Comparative Performance
Retirement Plans

As of September 30, 2015

	QTD	CYTD	1 Year	3 Years	5 Years	7 Years	10 Years	2014	2013	2012	2011	2010
Firefighters' Retirement - Net	-3.74	-1.21	0.91	8.51	9.02	7.27	5.80	8.07	17.41	13.22	2.10	12.61
Firefighters' Benchmark	-3.90	-1.19	0.95	9.08	9.65	7.53	5.99	9.10	17.92	14.80	1.66	12.24
Difference	0.16	-0.02	-0.04	-0.57	-0.63	-0.26	-0.19	-1.03	-0.51	-1.58	0.44	0.37
Firefighters' Retirement - Gross	-3.65	-0.87	1.36	9.04	9.58	7.84	6.29	8.61	17.99	13.81	2.64	13.27
All Public Plans > \$3B Total Fund Median	-4.66	-2.26	-0.65	6.65	7.58	7.13	5.90	6.76	15.03	13.34	0.96	12.82
Rank	12	14	6	1	1	3	8	9	10	34	27	43
Sheriffs' Retirement - Net	-3.74	-1.22	0.91	8.48	9.00	7.27	5.80	8.05	17.35	13.19	2.12	12.68
Sheriffs' Benchmark	-3.91	-1.20	0.94	9.07	9.63	7.56	6.02	9.07	17.91	14.84	1.65	12.33
Difference	0.17	-0.02	-0.03	-0.59	-0.63	-0.29	-0.22	-1.02	-0.56	-1.65	0.47	0.35
Sheriffs' Retirement - Gross	-3.65	-0.87	1.36	9.01	9.56	7.84	6.30	8.59	17.93	13.79	2.66	13.34
All Public Plans > \$3B Total Fund Median	-4.66	-2.26	-0.65	6.65	7.58	7.13	5.90	6.76	15.03	13.34	0.96	12.82
Rank	12	14	6	1	1	3	8	9	10	36	27	42
Highway Patrol Retirement - Net	-3.74	-1.22	0.92	8.50	9.03	7.30	5.82	8.08	17.38	13.24	2.12	12.81
Highway Patrol Benchmark	-3.91	-1.20	0.95	9.09	9.67	7.58	6.03	9.10	17.94	14.88	1.65	12.44
Difference	0.17	-0.02	-0.03	-0.59	-0.64	-0.28	-0.21	-1.02	-0.56	-1.64	0.47	0.37
Highway Patrol Retirement - Gross	-3.65	-0.88	1.36	9.03	9.59	7.86	6.32	8.62	17.96	13.84	2.66	13.47
All Public Plans > \$3B Total Fund Median	-4.66	-2.26	-0.65	6.65	7.58	7.13	5.90	6.76	15.03	13.34	0.96	12.82
Rank	12	14	6	1	1	3	7	9	10	34	27	41

Net performance shown is net of all manager fees and expenses (Net-All). All Public Plans > \$3B Total Fund Median is reported gross of fees. Benchmark returns reflect unmanaged indices which are not impacted by management fees.

Montana Board of Investments
Comparative Performance
Retirement Plans

As of September 30, 2015

	QTD	CYTD	1 Year	3 Years	5 Years	7 Years	10 Years	2014	2013	2012	2011	2010
Game Wardens' Retirement - Net	-3.74	-1.21	0.91	8.47	8.99	7.24	5.78	8.03	17.34	13.20	2.09	12.72
Game Wardens' Benchmark	-3.90	-1.20	0.94	9.06	9.63	7.53	6.00	9.06	17.90	14.85	1.64	12.33
Difference	0.16	-0.01	-0.03	-0.59	-0.64	-0.29	-0.22	-1.03	-0.56	-1.65	0.45	0.39
Game Wardens' Retirement - Gross	-3.64	-0.87	1.36	9.00	9.55	7.81	6.27	8.57	17.92	13.79	2.63	13.38
All Public Plans > \$3B Total Fund Median	-4.66	-2.26	-0.65	6.65	7.58	7.13	5.90	6.76	15.03	13.34	0.96	12.82
Rank	12	14	6	1	1	3	8	9	10	35	28	42
Judges' Retirement - Net	-3.74	-1.22	0.91	8.49	9.01	7.29	5.82	8.06	17.36	13.20	2.12	12.76
Judges' Benchmark	-3.91	-1.20	0.94	9.07	9.64	7.56	6.03	9.08	17.92	14.84	1.64	12.39
Difference	0.17	-0.02	-0.03	-0.58	-0.63	-0.27	-0.21	-1.02	-0.56	-1.64	0.48	0.37
Judges' Retirement - Gross	-3.65	-0.88	1.36	9.01	9.57	7.85	6.31	8.60	17.94	13.79	2.66	13.42
All Public Plans > \$3B Total Fund Median	-4.66	-2.26	-0.65	6.65	7.58	7.13	5.90	6.76	15.03	13.34	0.96	12.82
Rank	12	14	6	1	1	3	7	9	10	35	27	41
Volunteer Firefighters' Retirement - Net	-3.76	-1.17	0.97	8.54	9.03	7.29	5.82	8.09	17.42	13.18	2.09	12.99
Volunteer Firefighters' Benchmark	-3.92	-1.19	0.96	9.10	9.67	7.54	6.02	9.11	17.97	14.79	1.70	12.50
Difference	0.16	0.02	0.01	-0.56	-0.64	-0.25	-0.20	-1.02	-0.55	-1.61	0.39	0.49
Volunteer Firefighters' Retirement - Gross	-3.66	-0.83	1.42	9.06	9.59	7.85	6.31	8.63	18.00	13.77	2.63	13.66
All Public Plans > \$3B Total Fund Median	-4.66	-2.26	-0.65	6.65	7.58	7.13	5.90	6.76	15.03	13.34	0.96	12.82
Rank	12	13	6	1	1	3	7	9	10	36	28	36

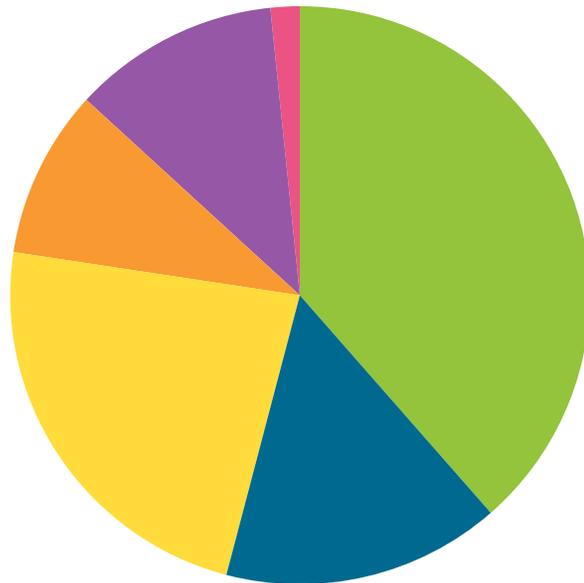
Net performance shown is net of all manager fees and expenses (Net-All). All Public Plans > \$3B Total Fund Median is reported gross of fees. Benchmark returns reflect unmanaged indices which are not impacted by management fees.

**Montana Board of Investments
Asset Allocation by Segment
Retirement Plans**

As of September 30, 2015

	Domestic Equity		International Equity		Domestic Fixed Income		Real Estate		Private Equity		Cash Equivalent		Total Fund	
	(\$)	%	(\$)	%	(\$)	%	(\$)	%	(\$)	%	(\$)	%	(\$)	%
Public Employees' Retirement	1,863,689,926	38.59	751,166,305	15.56	1,126,240,252	23.32	455,719,466	9.44	558,228,037	11.56	74,045,770	1.53	4,829,089,757	49.97
Teachers' Retirement	1,367,395,433	38.79	550,588,413	15.62	826,642,270	23.45	334,467,321	9.49	409,850,410	11.63	35,937,925	1.02	3,524,881,771	36.47
Police Retirement	118,444,901	37.05	47,771,071	14.94	71,591,276	22.39	28,956,970	9.06	35,484,911	11.10	17,468,944	5.46	319,718,073	3.31
Firefighters' Retirement	120,465,515	37.00	48,573,139	14.92	72,800,441	22.36	29,451,146	9.05	36,094,749	11.09	18,173,058	5.58	325,558,048	3.37
Sheriffs' Retirement	109,119,255	38.48	43,948,070	15.50	65,924,340	23.25	26,687,343	9.41	32,682,706	11.53	5,185,508	1.83	283,547,222	2.93
Highway Patrol Retirement	47,609,894	38.63	19,167,515	15.55	28,754,994	23.33	11,637,123	9.44	14,256,802	11.57	1,829,363	1.48	123,255,691	1.28
Game Wardens' Retirement	55,036,620	38.37	22,145,200	15.44	33,247,977	23.18	13,450,045	9.38	16,449,310	11.47	3,124,935	2.18	143,454,087	1.48
Judges' Retirement	32,061,286	38.47	12,907,792	15.49	19,365,505	23.23	7,839,799	9.41	9,595,436	11.51	1,577,869	1.89	83,347,686	0.86
Volunteer Firefighters' Retirement	12,393,548	38.74	4,979,362	15.56	7,485,118	23.40	3,033,615	9.48	3,718,871	11.62	383,404	1.20	31,993,918	0.33
Retirement Plans Total Fund Composite	3,726,216,378	38.55	1,501,246,867	15.53	2,252,052,172	23.30	911,242,828	9.43	1,116,361,231	11.55	157,726,776	1.63	9,664,846,252	100.00

September 30, 2015 : \$9,664,846,252



Segments

- Domestic Equity
- International Equity
- Domestic Fixed Income
- Real Estate
- Private Equity
- Cash Equivalent

**Market Value
(\$)**

3,726,216,378
1,501,246,867
2,252,052,172
911,242,828
1,116,361,231
157,726,776

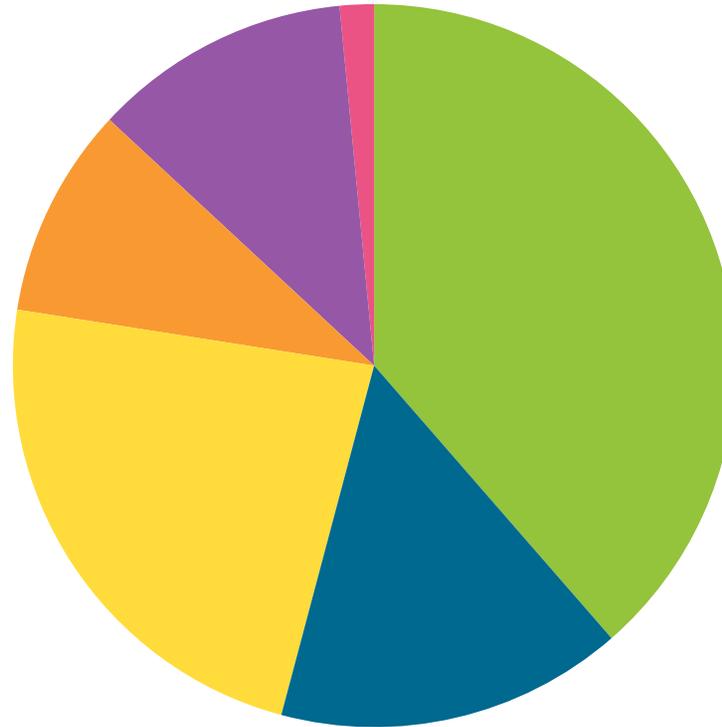
**Allocation
(%)**

38.55
15.53
23.30
9.43
11.55
1.63

Allocations shown may not sum up to 100% exactly due to rounding. Retirement Plan market values may differ from State Street due to uninvested amounts not included in segment totals.



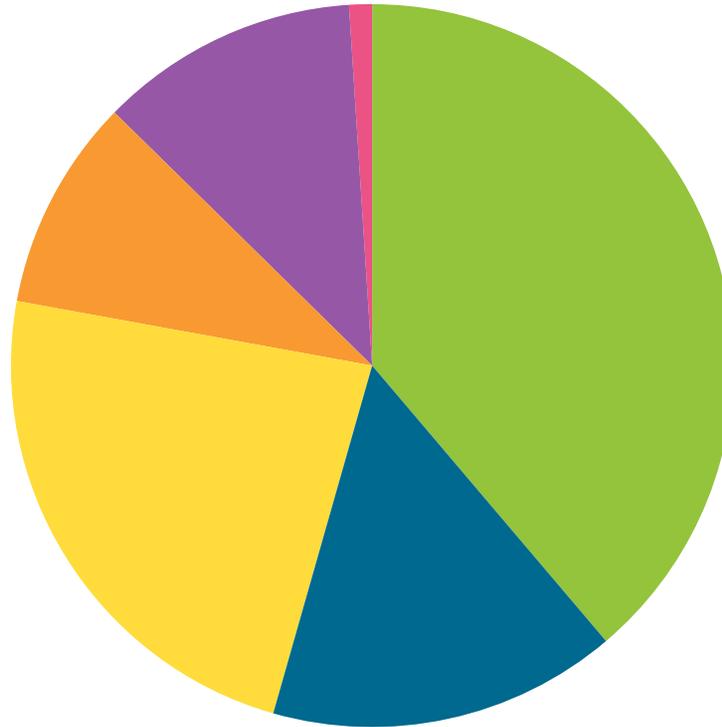
September 30, 2015 : \$4,829,089,756



Segments	Market Value (\$)	Allocation (%)
Domestic Equity	1,863,689,926	38.59
International Equity	751,166,305	15.56
Domestic Fixed Income	1,126,240,252	23.32
Real Estate	455,719,466	9.44
Private Equity	558,228,037	11.56
Cash Equivalent	74,045,770	1.53

Allocations shown may not sum up to 100% exactly due to rounding.

September 30, 2015 : \$3,524,881,771



Segments	Market Value (\$)	Allocation (%)
Domestic Equity	1,367,395,433	38.79
International Equity	550,588,413	15.62
Domestic Fixed Income	826,642,270	23.45
Real Estate	334,467,321	9.49
Private Equity	409,850,410	11.63
Cash Equivalent	35,937,925	1.02

Allocations shown may not sum up to 100% exactly due to rounding.

September 30, 2015 : \$319,718,073



Segments	Market Value (\$)	Allocation (%)
Domestic Equity	118,444,901	37.05
International Equity	47,771,071	14.94
Domestic Fixed Income	71,591,276	22.39
Real Estate	28,956,970	9.06
Private Equity	35,484,911	11.10
Cash Equivalent	17,468,944	5.46

Allocations shown may not sum up to 100% exactly due to rounding.

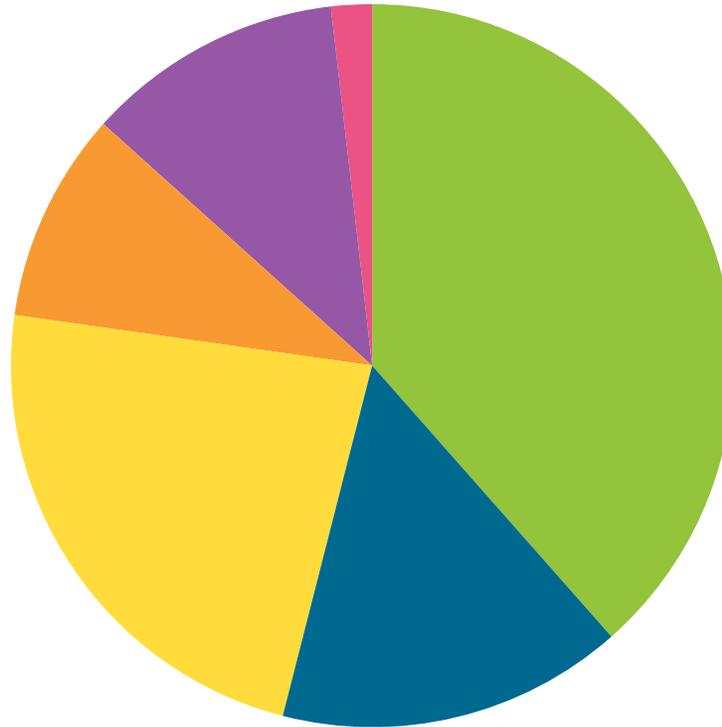
September 30, 2015 : \$325,558,048



Segments	Market Value (\$)	Allocation (%)
Domestic Equity	120,465,515	37.00
International Equity	48,573,139	14.92
Domestic Fixed Income	72,800,441	22.36
Real Estate	29,451,146	9.05
Private Equity	36,094,749	11.09
Cash Equivalent	18,173,058	5.58

Allocations shown may not sum up to 100% exactly due to rounding.

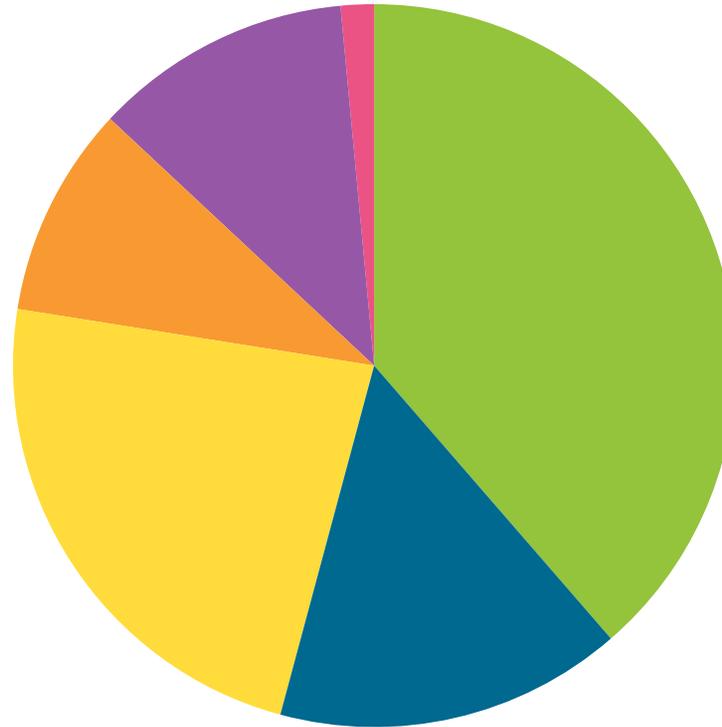
September 30, 2015 : \$283,547,222



Segments	Market Value (\$)	Allocation (%)
Domestic Equity	109,119,255	38.48
International Equity	43,948,070	15.50
Domestic Fixed Income	65,924,340	23.25
Real Estate	26,687,343	9.41
Private Equity	32,682,706	11.53
Cash Equivalent	5,185,508	1.83

Allocations shown may not sum up to 100% exactly due to rounding.

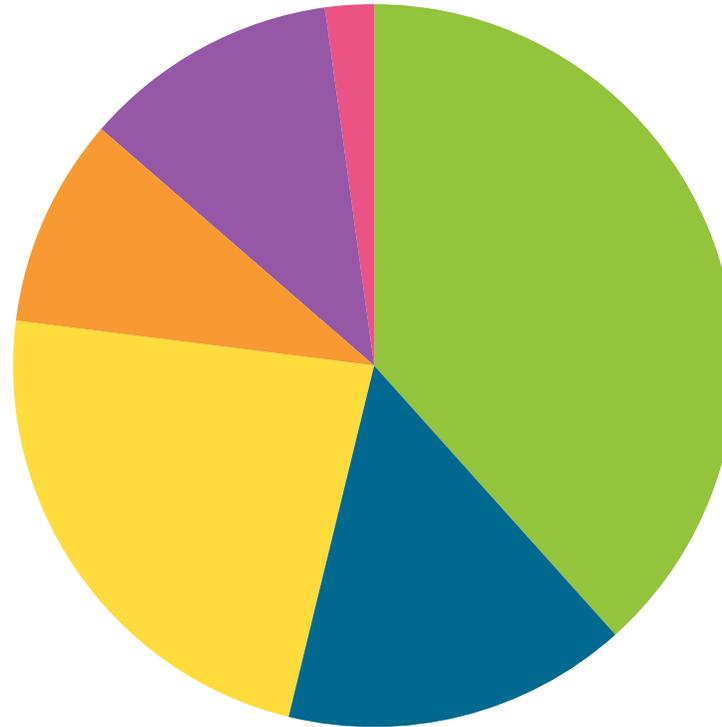
September 30, 2015 : \$123,255,691



Segments	Market Value (\$)	Allocation (%)
Domestic Equity	47,609,894	38.63
International Equity	19,167,515	15.55
Domestic Fixed Income	28,754,994	23.33
Real Estate	11,637,123	9.44
Private Equity	14,256,802	11.57
Cash Equivalent	1,829,363	1.48

Allocations shown may not sum up to 100% exactly due to rounding.

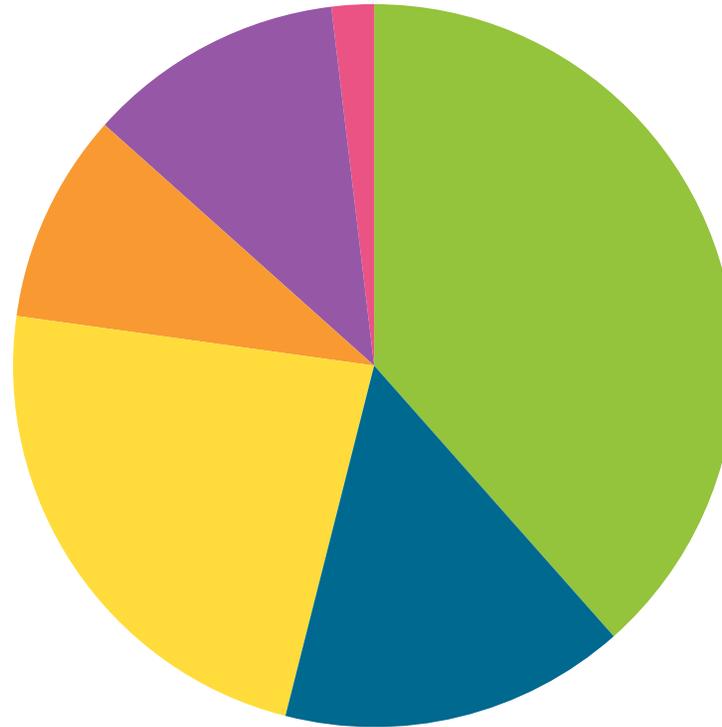
September 30, 2015 : \$143,454,087



Segments	Market Value (\$)	Allocation (%)
Domestic Equity	55,036,620	38.37
International Equity	22,145,200	15.44
Domestic Fixed Income	33,247,977	23.18
Real Estate	13,450,045	9.38
Private Equity	16,449,310	11.47
Cash Equivalent	3,124,935	2.18

Allocations shown may not sum up to 100% exactly due to rounding.

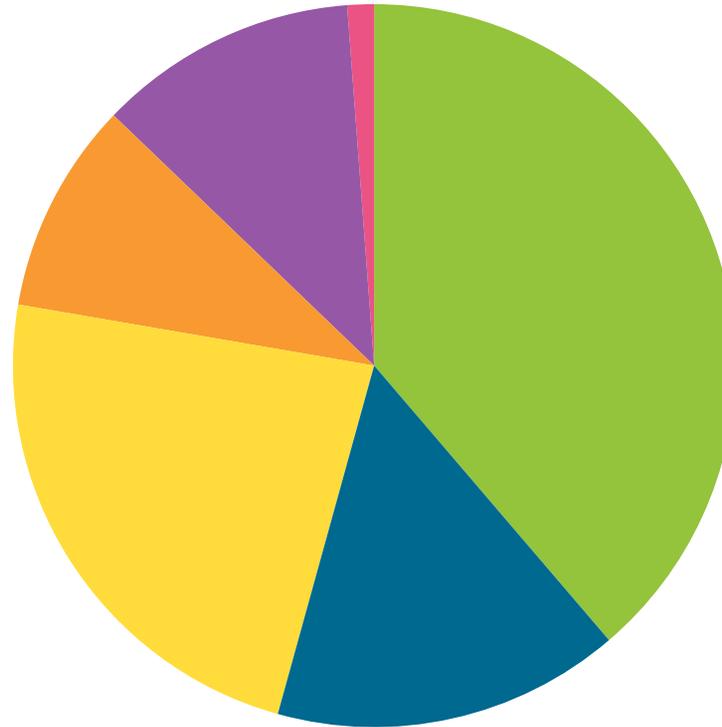
September 30, 2015 : \$83,347,686



Segments	Market Value (\$)	Allocation (%)
Domestic Equity	32,061,286	38.47
International Equity	12,907,792	15.49
Domestic Fixed Income	19,365,505	23.23
Real Estate	7,839,799	9.41
Private Equity	9,595,436	11.51
Cash Equivalent	1,577,869	1.89

Allocations shown may not sum up to 100% exactly due to rounding.

September 30, 2015 : \$31,993,918



Segments	Market Value (\$)	Allocation (%)
Domestic Equity	12,393,548	38.74
International Equity	4,979,362	15.56
Domestic Fixed Income	7,485,118	23.40
Real Estate	3,033,615	9.48
Private Equity	3,718,871	11.62
Cash Equivalent	383,404	1.20

Allocations shown may not sum up to 100% exactly due to rounding.

Montana Board of Investments
Comparative Performance
Investment Pools

As of September 30, 2015

	QTD	CYTD	1 Year	3 Years	5 Years	7 Years	10 Years	2014	2013	2012	2011	2010
Montana Domestic Equity Pool	-7.09	-5.15	-0.35	12.75	13.22	9.88	6.58	12.28	34.19	16.44	0.44	16.37
S&P 1500 Comp Index	-6.69	-5.23	-0.30	12.49	13.34	9.88	6.95	13.08	32.80	16.17	1.75	16.38
Difference	-0.40	0.08	-0.05	0.26	-0.12	0.00	-0.37	-0.80	1.39	0.27	-1.31	-0.01
Montana International Equity Pool	-11.60	-7.09	-10.28	3.18	2.24	2.84	2.44	-4.00	16.39	17.11	-14.63	11.57
International Custom Benchmark	-11.88	-7.84	-11.42	2.65	2.02	3.56	3.21	-4.03	15.62	16.96	-14.07	12.16
Difference	0.28	0.75	1.14	0.53	0.22	-0.72	-0.77	0.03	0.77	0.15	-0.56	-0.59
Retirement Funds Bond Pool	1.05	1.44	3.21	2.47	4.22	6.35	5.45	6.19	-0.95	7.31	7.69	10.32
Barclays US Agg Bond Index	1.23	1.13	2.94	1.71	3.10	4.85	4.64	5.97	-2.02	4.21	7.84	6.54
Difference	-0.18	0.31	0.27	0.76	1.12	1.50	0.81	0.22	1.07	3.10	-0.15	3.78
Trust Funds Investment Pool	1.50	2.36	4.33	3.27	4.75	6.56	5.71	6.96	-0.25	6.99	8.20	8.50
Barclays US Agg Bond Index	1.23	1.13	2.94	1.71	3.10	4.85	4.64	5.97	-2.02	4.21	7.84	6.54
Difference	0.27	1.23	1.39	1.56	1.65	1.71	1.07	0.99	1.77	2.78	0.36	1.96
Real Estate Pool*	3.79	10.90	13.96	11.60	12.08	1.40	N/A	12.13	10.16	9.90	14.19	0.25
NCREIF ODCE Index (Net) (Qtr Lag)	3.58	10.08	13.39	12.07	13.33	2.65	5.86	11.36	11.97	10.47	17.18	6.01
Difference	0.21	0.82	0.57	-0.47	-1.25	-1.25	N/A	0.77	-1.81	-0.57	-2.99	-5.76
Short Term Investment Pool	0.06	0.13	0.15	0.16	0.22	0.37	1.61	0.10	0.19	0.30	0.28	0.30
1 Month LIBOR Index	0.05	0.14	0.18	0.18	0.20	0.28	1.55	0.16	0.19	0.23	0.24	0.27
Difference	0.01	-0.01	-0.03	-0.02	0.02	0.09	0.06	-0.06	0.00	0.07	0.04	0.03
iMoneynet Money Fund (Gross) Median	0.06	0.17	0.22	0.21	0.25	0.39	1.66	0.17	0.22	0.30	0.27	0.34
Difference	0.00	-0.04	-0.07	-0.05	-0.03	-0.02	-0.05	-0.07	-0.03	0.00	0.01	-0.04

Performance shown is net of all manager fees and expenses (Net-All). The NCREIF ODCE Index (Net) performance is lagged by one quarter.
*Performance is based on prior quarter's fair market value adjusted for cash flows during the most recent quarterly period.
Benchmark returns reflect unmanaged indices which are not impacted by management fees.

Montana Board of Investments
 Comparative Performance
 Investment Pools

As of September 30, 2015

	QTD	CYTD	1 Year	3 Years	5 Years	7 Years	10 Years	2014	2013	2012	2011	2010
Private Equity Pool*	4.02	6.96	8.32	13.84	14.87	8.64	10.52	15.47	14.52	14.28	16.11	14.21
S&P 1500 + 4% (Qtr Lag)	1.17	8.85	11.31	21.47	21.43	13.61	12.10	24.43	34.18	4.92	14.92	-2.76
<i>Difference</i>	2.85	-1.89	-2.99	-7.63	-6.56	-4.97	-1.58	-8.96	-19.66	9.36	1.19	16.97

Performance shown is net of all manager fees and expenses (Net-All). The S&P 1500 + 4% performance is lagged by one quarter.

*Performance is based on prior quarter's fair market value adjusted for cash flows during the most recent quarterly period.

Benchmark returns reflect unmanaged indices which are not impacted by management fees.

Montana Board of Investments
Comparative Performance
Investment Pools

As of September 30, 2015

	QTD	CYTD	1 Year	3 Years	5 Years	7 Years	10 Years	2014	2013	2012	2011	2010
Montana Domestic Equity Pool	-7.02	-4.95	-0.07	13.07	13.58	10.27	6.90	12.59	34.61	16.77	0.85	16.88
All Public Plans-US Equity Segment Median	-7.58	-5.29	-0.15	12.38	12.98	9.72	6.82	11.41	34.03	16.57	0.52	18.09
Rank	30	35	50	23	14	25	46	18	39	40	42	71
Population	89	87	87	74	69	57	42	67	79	84	90	84
Montana International Equity Pool	-11.54	-6.94	-10.09	3.46	2.55	3.21	2.80	-3.77	16.80	17.45	-14.32	12.05
All Public Plans-Intl. Equity Segment Median	-11.12	-5.85	-8.90	4.42	3.88	4.57	3.84	-3.00	18.47	18.80	-12.65	12.33
Rank	64	69	73	75	82	86	89	77	72	80	84	59
Population	86	83	82	71	64	52	41	63	74	73	78	73
Retirement Funds Bond Pool	1.08	1.52	3.32	2.59	4.34	6.46	5.53	6.30	-0.83	7.44	7.82	10.44
All Public Plans-US Fixed Income Segment Median	0.26	0.74	1.98	2.15	4.05	6.07	5.06	5.74	-1.35	7.23	7.74	8.05
Rank	19	14	14	36	36	36	30	33	39	48	47	17
Population	84	80	79	72	64	55	42	64	76	83	87	80
Trust Funds Investment Pool	1.51	2.40	4.41	3.37	4.85	6.65	5.78	7.08	-0.14	7.11	8.30	8.58
All Public Plans-US Fixed Income Segment Median	0.26	0.74	1.98	2.15	4.05	6.07	5.06	5.74	-1.35	7.23	7.74	8.05
Rank	5	5	4	15	16	29	21	20	25	52	29	45
Population	84	80	79	72	64	55	42	64	76	83	87	80
Real Estate Pool	3.94	12.09	15.38	13.06	13.69	2.83	N/A	13.51	11.73	11.44	15.96	2.70
All Public Plans-Real Estate Segment Median	3.02	10.47	14.02	13.62	13.79	4.52	6.30	14.67	13.28	12.17	14.05	11.04
Rank	12	12	30	64	51	75	N/A	61	71	65	24	86
Population	42	32	32	25	22	16	10	26	27	20	15	19

Performance shown is gross of fees.

Montana Board of Investments
Comparative Performance
Equity Composites

As of September 30, 2015

	QTD	CYTD	1 Year	3 Years	5 Years	7 Years	10 Years	2014	2013	2012	2011	2010
Domestic Large Cap Equity - Net	-6.46	-5.06	-0.19	12.79	13.30	9.80	N/A	13.82	33.14	16.14	0.54	15.67
S&P 500 Index (Cap Wtd)	-6.44	-5.29	-0.61	12.40	13.34	9.75	6.80	13.69	32.39	16.00	2.11	15.06
Difference	-0.02	0.23	0.42	0.39	-0.04	0.05	N/A	0.13	0.75	0.14	-1.57	0.61
Domestic Large Cap Equity - Gross	-6.43	-4.95	-0.04	12.96	13.53	10.07	N/A	13.99	33.34	16.39	0.87	16.07
IM U.S. Large Cap Equity (SA+CF) Median	-6.82	-5.04	-0.34	13.01	13.41	10.07	7.35	12.89	33.59	15.86	1.18	15.11
Rank	41	49	47	51	47	51	N/A	32	54	43	54	37
Domestic Large Cap Active - Net	-6.58	-4.75	0.51	13.57	13.57	9.97	N/A	14.01	34.90	16.03	-0.10	15.70
S&P 500 Index (Cap Wtd)	-6.44	-5.29	-0.61	12.40	13.34	9.75	6.80	13.69	32.39	16.00	2.11	15.06
Difference	-0.14	0.54	1.12	1.17	0.23	0.22	N/A	0.32	2.51	0.03	-2.21	0.64
Domestic Large Cap Active - Gross	-6.47	-4.41	1.00	14.12	14.10	10.48	N/A	14.56	35.55	16.56	0.35	16.23
IM U.S. Large Cap Equity (SA+CF) Median	-6.82	-5.04	-0.34	13.01	13.41	10.07	7.35	12.89	33.59	15.86	1.18	15.11
Rank	43	43	38	29	35	40	N/A	25	34	39	59	36
Domestic Mid Cap Equity - Net	-8.97	-5.62	-2.53	12.85	12.60	10.66	7.33	6.45	38.18	16.27	1.28	18.15
Russell Mid Cap Index	-8.01	-5.84	-0.25	13.91	13.40	11.38	7.87	13.22	34.76	17.28	-1.55	25.47
Difference	-0.96	0.22	-2.28	-1.06	-0.80	-0.72	-0.54	-6.77	3.42	-1.01	2.83	-7.32
Domestic Mid Cap Equity - Gross	-8.83	-5.20	-1.95	13.50	13.21	11.29	7.86	7.07	38.95	16.83	1.79	18.85
IM U.S. Mid Cap Equity (SA+CF) Median	-8.18	-4.01	1.71	13.97	13.26	11.62	8.62	9.71	36.06	16.31	-1.10	25.00
Rank	63	68	80	55	52	62	79	73	32	45	25	92
Domestic Small Cap Equity - Net	-10.77	-4.57	2.54	13.15	13.08	10.07	7.13	5.44	40.65	15.76	-2.50	24.56
Russell 2000 Index	-11.91	-7.73	1.25	11.02	11.73	8.63	6.55	4.89	38.82	16.34	-4.18	26.86
Difference	1.14	3.16	1.29	2.13	1.35	1.44	0.58	0.55	1.83	-0.58	1.68	-2.30
Domestic Small Cap Equity - Gross	-10.61	-4.07	3.25	13.90	13.85	10.81	7.79	6.16	41.54	16.40	-1.64	25.33
IM U.S. Small Cap Equity (SA+CF) Median	-10.33	-5.57	2.41	13.04	13.47	10.94	7.91	5.31	41.64	16.64	-2.17	28.26
Rank	55	33	42	39	43	52	53	43	52	53	46	72

Net performance shown is net of all manager fees and expenses (Net-All). Gross returns are compared to median performance of similar managers. A peer group of similar managers may not exist for all composites.

Montana Board of Investments
Comparative Performance
Equity Composites

As of September 30, 2015

	QTD	CYTD	1 Year	3 Years	5 Years	7 Years	10 Years	2014	2013	2012	2011	2010
International Large Cap Passive - Net	-12.26	-8.58	-12.13	2.33	1.86	N/A	N/A	-3.70	14.95	16.92	-13.55	10.84
MSCI ACW Ex US Index (Net)	-12.17	-8.63	-12.16	2.34	1.82	3.20	3.03	-3.87	15.29	16.83	-13.71	11.15
Difference	-0.09	0.05	0.03	-0.01	0.04	N/A	N/A	0.17	-0.34	0.09	0.16	-0.31
International Large Cap Passive - Gross	-12.24	-8.53	-12.06	2.41	1.95	N/A	N/A	-3.62	15.05	17.02	-13.48	10.92
International Equity Active - Net	-10.78	-5.27	-7.79	4.78	3.07	3.47	2.26	-4.30	19.23	17.87	-15.39	11.99
MSCI ACW Ex US Index (Net)	-12.17	-8.63	-12.16	2.34	1.82	3.20	3.03	-3.87	15.29	16.83	-13.71	11.15
Difference	1.39	3.36	4.37	2.44	1.25	0.27	-0.77	-0.43	3.94	1.04	-1.68	0.84
International Equity Active - Gross	-10.68	-4.97	-7.40	5.23	3.53	3.96	2.71	-3.90	19.75	18.36	-14.98	12.59
IM International Large Cap Core Equity (SA+CF) Median	-9.81	-4.01	-6.72	6.64	5.41	5.46	4.40	-3.73	23.08	19.47	-12.21	11.24
Rank	74	67	62	74	87	87	100	51	74	67	82	33
International Value - Net	-11.32	-9.23	-12.24	3.63	1.95	2.19	N/A	-1.49	17.15	15.88	-15.46	9.91
MSCI ACW Ex US Val Index (Net)	-13.60	-11.33	-16.16	1.00	0.86	2.50	2.37	-5.10	15.04	16.97	-13.20	7.84
Difference	2.28	2.10	3.92	2.63	1.09	-0.31	N/A	3.61	2.11	-1.09	-2.26	2.07
International Value - Gross	-11.20	-8.88	-11.78	4.21	2.53	2.79	N/A	-0.94	17.82	16.55	-14.96	10.60
IM International Large Cap Value Equity (SA+CF) Median	-10.52	-5.41	-8.59	5.91	4.42	4.77	4.17	-3.99	23.22	17.88	-10.69	10.80
Rank	63	89	85	74	81	90	N/A	17	77	64	78	53
International Growth - Net	-11.45	-4.96	-6.38	3.68	2.82	3.40	N/A	-6.15	18.55	18.37	-14.99	10.86
MSCI ACW Ex US Grth Index (Net)	-10.77	-5.95	-8.12	3.63	2.74	3.85	3.64	-2.65	15.49	16.67	-14.21	14.45
Difference	-0.68	0.99	1.74	0.05	0.08	-0.45	N/A	-3.50	3.06	1.70	-0.78	-3.59
International Growth - Gross	-11.31	-4.62	-5.93	4.16	3.32	3.93	N/A	-5.72	19.09	18.89	-14.56	11.56
IM International Large Cap Growth Equity (SA+CF) Median	-9.36	-2.67	-4.98	6.26	5.42	5.95	5.08	-3.38	21.03	19.70	-11.39	13.16
Rank	82	65	62	85	90	86	N/A	77	69	59	80	62
International Small Cap - Net	-8.13	0.40	-3.01	8.27	6.13	6.62	N/A	-4.87	25.30	18.64	-15.36	24.34
MSCI ACWI Ex US Sm Cap Index IMI (Net)	-10.02	-2.54	-6.42	5.51	3.85	7.67	5.13	-4.03	19.73	18.52	-18.50	25.21
Difference	1.89	2.94	3.41	2.76	2.28	-1.05	N/A	-0.84	5.57	0.12	3.14	-0.87
International Small Cap - Gross	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
IM International Small Cap Equity (SA+CF) Median	-6.29	3.73	1.86	12.01	9.41	10.37	6.95	-3.14	31.01	23.48	-13.62	23.75
Rank	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Gross of fees performance is not available (N/A) for the International Small Cap composite which currently consists of DFA Intl Sm Co;I (DFISX), BlackRock ACWI Ex-US Small Cap (CF), Templeton Investment Counsel (SA), and American Century Investment Mgmt (SA).

Net performance shown is net of all manager fees and expenses (Net-All). Gross returns are compared to median performance of similar managers. A peer group of similar managers may not exist for all composites.

Montana Board of Investments
Comparative Performance
Equity Sub Composites

As of September 30, 2015

	QTD	CYTD	1 Year	3 Years	5 Years	7 Years	10 Years	2014	2013	2012	2011	2010
Domestic Large Cap Passive - Net	-6.42	-5.22	-0.52	12.45	13.40	9.87	6.83	13.73	32.41	16.06	2.20	15.22
S&P 500 Index (Cap Wtd)	-6.44	-5.29	-0.61	12.40	13.34	9.75	6.80	13.69	32.39	16.00	2.11	15.06
Difference	0.02	0.07	0.09	0.05	0.06	0.12	0.03	0.04	0.02	0.06	0.09	0.16
Domestic Large Cap Passive - Gross	-6.42	-5.21	-0.51	12.47	13.41	9.87	6.90	13.74	32.42	16.07	2.21	15.23
IM U.S. Large Cap Index Equity (SA+CF) Median	-6.76	-5.27	-0.59	12.44	13.35	9.82	6.90	13.35	32.47	16.23	1.61	15.53
Rank	33	31	34	48	34	47	49	17	60	56	22	58
Domestic Large Cap Enhanced - Net	-5.75	-3.85	1.19	12.91	13.86	10.18	N/A	13.19	32.89	16.87	1.94	17.19
S&P 500 Index (Cap Wtd)	-6.44	-5.29	-0.61	12.40	13.34	9.75	6.80	13.69	32.39	16.00	2.11	15.06
Difference	0.69	1.44	1.80	0.51	0.52	0.43	N/A	-0.50	0.50	0.87	-0.17	2.13
Domestic Large Cap Enhanced - Gross	-5.67	-3.62	1.50	13.26	14.21	10.52	N/A	13.54	33.31	17.21	2.25	17.55
IM U.S. Large Cap Core Equity (SA+CF) Median	-6.63	-4.65	-0.02	12.95	13.65	10.14	7.40	13.42	33.26	15.66	1.95	14.85
Rank	28	32	32	45	37	38	N/A	48	49	30	47	19
Domestic Large Cap 130/30 - Net	-7.41	-5.66	-0.16	14.24	14.02	10.48	N/A	14.84	36.94	18.42	-1.74	13.68
S&P 500 Index (Cap Wtd)	-6.44	-5.29	-0.61	12.40	13.34	9.75	6.80	13.69	32.39	16.00	2.11	15.06
Difference	-0.97	-0.37	0.45	1.84	0.68	0.73	N/A	1.15	4.55	2.42	-3.85	-1.38
Domestic Large Cap 130/30 - Gross	-7.26	-5.20	0.49	14.98	14.77	11.21	N/A	15.59	37.83	19.18	-1.05	14.44
IM U.S. Large Cap Core Equity (SA+CF) Median	-6.63	-4.65	-0.02	12.95	13.65	10.14	7.40	13.42	33.26	15.66	1.95	14.85
Rank	65	62	45	16	23	19	N/A	22	13	14	77	58

Net performance shown is net of all manager fees and expenses (Net-All). Gross returns are compared to median performance of similar managers. A peer group of similar managers may not exist for all composites.

Montana Board of Investments
Comparative Performance
Domestic Equity Managers

As of September 30, 2015

	QTD	CYTD	1 Year	3 Years	5 Years	7 Years	10 Years	2014	2013	2012	2011	2010	Since Incep.	Inception Date
Domestic Large Cap Equity														
Analytic Investors 130/30 (SA) - Net	-3.88	-2.94	2.67	13.71	14.83	9.70	N/A	13.33	35.22	17.38	3.13	10.59	6.78	03/01/2008
S&P 500 Index (Cap Wtd)	-6.44	-5.29	-0.61	12.40	13.34	9.75	6.80	13.69	32.39	16.00	2.11	15.06	7.27	
Difference	2.56	2.35	3.28	1.31	1.49	-0.05	N/A	-0.36	2.83	1.38	1.02	-4.47	-0.49	
Analytic Investors 130/30 (SA) - Gross	-3.78	-2.61	3.14	14.25	15.39	10.27	N/A	13.88	35.86	17.94	3.70	11.21	7.34	03/01/2008
IM U.S. Large Cap Core Equity (SA+CF) Median	-6.67	-4.68	-0.02	12.98	13.62	10.20	7.38	13.42	33.26	15.66	1.90	14.84	7.73	
Rank	10	21	19	27	14	47	N/A	42	26	23	32	86	64	
BlackRock Equity Idx Fund A (CF) - Net	-6.44	-5.24	-0.54	12.45	13.39	9.86	6.89	13.73	32.41	16.05	2.19	15.19	3.89	05/01/2000
S&P 500 Index (Cap Wtd)	-6.44	-5.29	-0.61	12.40	13.34	9.75	6.80	13.69	32.39	16.00	2.11	15.06	3.81	
Difference	0.00	0.05	0.07	0.05	0.05	0.11	0.09	0.04	0.02	0.05	0.08	0.13	0.08	
BlackRock Equity Idx Fund A (CF) - Gross	-6.44	-5.23	-0.53	12.46	13.41	9.87	6.90	13.74	32.42	16.06	2.22	15.20	3.89	05/01/2000
IM U.S. Large Cap Index Equity (SA+CF) Median	-6.69	-5.27	-0.58	12.44	13.34	9.82	6.87	13.35	32.47	16.23	1.61	15.53	3.89	
Rank	46	36	38	50	32	45	44	18	59	56	21	60	48	
Domestic Equity Pool SPIF - Net	-6.63	-5.84	-1.35	12.15	13.17	9.44	6.48	13.13	31.85	17.26	1.81	15.35	7.54	07/01/2003
S&P 500 Index (Cap Wtd)	-6.44	-5.29	-0.61	12.40	13.34	9.75	6.80	13.69	32.39	16.00	2.11	15.06	7.88	
Difference	-0.19	-0.55	-0.74	-0.25	-0.17	-0.31	-0.32	-0.56	-0.54	1.26	-0.30	0.29	-0.34	
Domestic Equity Pool SPY - Net	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	-2.53	09/01/2015
S&P 500 Index (Cap Wtd)	-6.44	-5.29	-0.61	12.40	13.34	9.75	6.80	13.69	32.39	16.00	2.11	15.06	-2.47	
Difference	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	-0.06	
INTECH Enhanced Plus (SA) - Net	-4.44	-2.85	3.23	13.62	14.28	10.42	N/A	14.91	32.46	14.89	4.33	15.44	7.29	06/01/2006
S&P 500 Index (Cap Wtd)	-6.44	-5.29	-0.61	12.40	13.34	9.75	6.80	13.69	32.39	16.00	2.11	15.06	6.77	
Difference	2.00	2.44	3.84	1.22	0.94	0.67	N/A	1.22	0.07	-1.11	2.22	0.38	0.52	
INTECH Enhanced Plus (SA) - Gross	-4.36	-2.60	3.58	14.01	14.67	10.80	N/A	15.31	32.92	15.28	4.68	15.82	7.66	06/01/2006
IM U.S. Large Cap Core Equity (SA+CF) Median	-6.67	-4.68	-0.02	12.98	13.62	10.20	7.38	13.42	33.26	15.66	1.90	14.84	7.34	
Rank	14	21	16	31	22	28	N/A	26	53	58	20	34	35	

Net performance shown is net of all manager fees and expenses (Net-All). Gross returns are compared to median performance of similar managers. A peer group of similar managers may not exist for all funds.

Montana Board of Investments
Comparative Performance
Domestic Equity Managers

As of September 30, 2015

	QTD	CYTD	1 Year	3 Years	5 Years	7 Years	10 Years	2014	2013	2012	2011	2010	Since Incep.	Inception Date
T. Rowe U.S. Research (SA) - Net	-6.24	-4.22	0.44	12.69	13.54	10.14	N/A	12.58	33.23	16.42	1.67	13.90	7.25	06/01/2006
S&P 500 Index (Cap Wtd)	-6.44	-5.29	-0.61	12.40	13.34	9.75	6.80	13.69	32.39	16.00	2.11	15.06	6.77	
Difference	0.20	1.07	1.05	0.29	0.20	0.39	N/A	-1.11	0.84	0.42	-0.44	-1.16	0.48	
T. Rowe U.S. Research (SA) - Gross	-6.16	-4.01	0.74	13.03	13.88	10.48	N/A	12.92	33.63	16.77	1.98	14.25	7.59	06/01/2006
IM U.S. Large Cap Core Equity (SA+CF) Median	-6.67	-4.68	-0.02	12.98	13.62	10.20	7.38	13.42	33.26	15.66	1.90	14.84	7.34	
Rank	36	39	40	49	46	38	N/A	59	45	36	50	59	37	
J.P. Morgan 130/30 (SA) - Net	-8.69	-6.66	-1.21	14.38	13.69	11.38	N/A	15.38	37.55	18.64	-3.38	14.73	8.92	03/01/2008
S&P 500 Index (Cap Wtd)	-6.44	-5.29	-0.61	12.40	13.34	9.75	6.80	13.69	32.39	16.00	2.11	15.06	7.27	
Difference	-2.25	-1.37	-0.60	1.98	0.35	1.63	N/A	1.69	5.16	2.64	-5.49	-0.33	1.65	
J.P. Morgan 130/30 (SA) - Gross	-8.52	-6.16	-0.50	15.20	14.51	12.18	N/A	16.21	38.53	19.48	-2.65	15.55	9.70	03/01/2008
IM U.S. Large Cap Core Equity (SA+CF) Median	-6.67	-4.68	-0.02	12.98	13.62	10.20	7.38	13.42	33.26	15.66	1.90	14.84	7.73	
Rank	85	75	59	15	27	8	N/A	15	11	12	86	37	9	
Domestic Mid Cap Equity														
Artisan Partners (SA) - Net	-10.17	-9.70	-8.20	9.60	10.62	9.40	N/A	2.12	37.20	12.02	6.93	14.99	6.57	03/01/2007
Russell Mid Cap Val Index	-8.04	-7.66	-2.07	13.69	13.15	10.53	7.42	14.75	33.46	18.51	-1.38	24.75	5.78	
Difference	-2.13	-2.04	-6.13	-4.09	-2.53	-1.13	N/A	-12.63	3.74	-6.49	8.31	-9.76	0.79	
Artisan Partners (SA) - Gross	-10.02	-9.26	-7.60	10.32	11.36	10.17	N/A	2.79	38.11	12.79	7.69	15.82	7.33	03/01/2007
IM U.S. Mid Cap Value Equity (SA+CF) Median	-8.33	-6.03	-1.53	14.07	13.09	11.43	8.32	11.95	35.31	17.14	-0.96	22.30	7.10	
Rank	72	82	92	92	85	82	N/A	96	35	86	1	93	43	
BlackRock Mid Cap Eq Idx A (CF) - Net	-8.50	-4.67	1.39	13.11	12.94	11.17	8.30	9.75	33.51	17.90	-1.72	26.65	8.57	01/01/2005
S&P Mid Cap 400 Index (Cap Wtd)	-8.50	-4.66	1.40	13.12	12.93	11.15	8.25	9.77	33.50	17.88	-1.73	26.64	8.52	
Difference	0.00	-0.01	-0.01	-0.01	0.01	0.02	0.05	-0.02	0.01	0.02	0.01	0.01	0.05	
BlackRock Mid Cap Eq Idx A (CF) - Gross	-8.48	-4.61	1.48	13.21	13.03	11.25	8.37	9.85	33.62	18.00	-1.65	26.72	8.64	01/01/2005

Net performance shown is net of all manager fees and expenses (Net-All). Gross returns are compared to median performance of similar managers. A peer group of similar managers may not exist for all funds.

Montana Board of Investments
Comparative Performance
Domestic Equity Managers

As of September 30, 2015

	QTD	CYTD	1 Year	3 Years	5 Years	7 Years	10 Years	2014	2013	2012	2011	2010	Since Incep.	Inception Date
Iridian Asset Management (SA) - Net	-10.05	-7.37	-3.57	N/A	N/A	N/A	N/A	12.84	N/A	N/A	N/A	N/A	12.39	05/01/2013
Russell Mid Cap Val Index	-8.04	-7.66	-2.07	13.69	13.15	10.53	7.42	14.75	33.46	18.51	-1.38	24.75	8.74	
Difference	-2.01	0.29	-1.50	N/A	N/A	N/A	N/A	-1.91	N/A	N/A	N/A	N/A	3.65	
Iridian Asset Management (SA) - Gross	-9.87	-6.84	-2.82	N/A	N/A	N/A	N/A	13.73	N/A	N/A	N/A	N/A	13.27	05/01/2013
IM U.S. Mid Cap Value Equity (SA+CF) Median	-8.33	-6.03	-1.53	14.07	13.09	11.43	8.32	11.95	35.31	17.14	-0.96	22.30	9.57	
Rank	70	58	68	N/A	N/A	N/A	N/A	26	N/A	N/A	N/A	N/A	12	
Nicholas Investment Partners (SA) - Net	-9.83	-4.90	-4.17	N/A	N/A	N/A	N/A	8.01	N/A	N/A	N/A	N/A	10.92	05/01/2013
Russell Mid Cap Grth Index	-7.99	-4.15	1.45	13.97	13.58	12.12	8.09	11.90	35.74	15.81	-1.65	26.38	11.00	
Difference	-1.84	-0.75	-5.62	N/A	N/A	N/A	N/A	-3.89	N/A	N/A	N/A	N/A	-0.08	
Nicholas Investment Partners (SA) - Gross	-9.66	-4.38	-3.46	N/A	N/A	N/A	N/A	8.82	N/A	N/A	N/A	N/A	11.74	05/01/2013
IM U.S. Mid Cap Growth Equity (SA+CF) Median	-8.19	-2.72	2.99	13.44	13.53	11.65	8.99	8.39	36.37	15.03	-1.27	26.73	11.59	
Rank	68	73	92	N/A	N/A	N/A	N/A	43	N/A	N/A	N/A	N/A	46	
TimesSquare Capital Mgmt. (SA) - Net	-7.23	-1.81	1.73	13.76	13.00	11.69	N/A	5.69	37.79	19.19	-1.37	18.48	8.15	03/01/2007
Russell Mid Cap Grth Index	-7.99	-4.15	1.45	13.97	13.58	12.12	8.09	11.90	35.74	15.81	-1.65	26.38	7.36	
Difference	0.76	2.34	0.28	-0.21	-0.58	-0.43	N/A	-6.21	2.05	3.38	0.28	-7.90	0.79	
TimesSquare Capital Mgmt. (SA) - Gross	-7.07	-1.31	2.43	14.55	13.79	12.49	N/A	6.42	38.75	20.03	-0.64	19.33	8.93	03/01/2007
IM U.S. Mid Cap Growth Equity (SA+CF) Median	-8.19	-2.72	2.99	13.44	13.53	11.65	8.99	8.39	36.37	15.03	-1.27	26.73	8.31	
Rank	28	33	56	30	46	28	N/A	70	35	14	44	90	33	

Net performance shown is net of all manager fees and expenses (Net-All). Gross returns are compared to median performance of similar managers. A peer group of similar managers may not exist for all funds.

Montana Board of Investments
Comparative Performance
Domestic Equity Managers

As of September 30, 2015

	QTD	CYTD	1 Year	3 Years	5 Years	7 Years	10 Years	2014	2013	2012	2011	2010	Since Incep.	Inception Date
Domestic Small Cap Equity														
Alliance Bernstein (SA) - Net	-14.72	-5.92	-3.09	9.71	N/A	N/A	N/A	-1.61	45.22	N/A	N/A	N/A	8.06	04/01/2012
Russell 2000 Grth Index	-13.06	-5.47	4.04	12.85	13.26	10.44	7.67	5.60	43.30	14.59	-2.91	29.09	11.14	
Difference	-1.66	-0.45	-7.13	-3.14	N/A	N/A	N/A	-7.21	1.92	N/A	N/A	N/A	-3.08	
Alliance Bernstein (SA) - Gross	-14.52	-5.28	-2.21	10.71	N/A	N/A	N/A	-0.71	46.52	N/A	N/A	N/A	9.03	04/01/2012
IM U.S. Small Cap Growth Equity (SA+CF) Median	-11.56	-4.01	3.80	13.40	14.33	11.80	8.22	3.85	46.28	14.75	-1.63	29.01	11.78	
Rank	86	57	89	84	N/A	N/A	N/A	80	50	N/A	N/A	N/A	85	
DFA US Small Cap Trust (CF) - Net	-9.43	-5.33	3.60	13.34	13.75	10.71	7.62	4.75	42.42	18.20	-2.07	29.73	12.15	03/01/2003
Russell 2000 Index	-11.91	-7.73	1.25	11.02	11.73	8.63	6.55	4.89	38.82	16.34	-4.18	26.86	10.72	
Difference	2.48	2.40	2.35	2.32	2.02	2.08	1.07	-0.14	3.60	1.86	2.11	2.87	1.43	
DFA US Small Cap Trust (CF) - Gross	-9.35	-5.07	3.97	13.74	14.15	11.08	7.99	5.12	42.90	18.59	-1.70	30.17	12.45	03/01/2003
IM U.S. Small Cap Core Equity (SA+CF) Median	-9.68	-4.75	3.41	13.93	13.84	10.66	7.91	6.54	41.46	17.06	-1.55	28.28	12.23	
Rank	43	55	44	55	48	47	48	62	44	36	51	36	41	
iShares S&P SC 600 Index ETF (IJR) - Net	-9.29	-5.63	3.61	12.95	14.00	N/A	N/A	5.77	41.21	16.49	0.74	N/A	14.00	10/01/2010
S&P Sm Cap 600 Index (Cap Wtd)	-9.27	-5.49	3.81	13.02	14.04	10.17	7.65	5.76	41.31	16.33	1.02	26.31	14.04	
Difference	-0.02	-0.14	-0.20	-0.07	-0.04	N/A	N/A	0.01	-0.10	0.16	-0.28	N/A	-0.04	
Voya Investment Management (SA) - Net	-12.89	-6.17	1.54	N/A	N/A	N/A	N/A	5.41	N/A	N/A	N/A	N/A	9.02	05/01/2013
Russell 2000 Grth Index	-13.06	-5.47	4.04	12.85	13.26	10.44	7.67	5.60	43.30	14.59	-2.91	29.09	10.47	
Difference	0.17	-0.70	-2.50	N/A	N/A	N/A	N/A	-0.19	N/A	N/A	N/A	N/A	-1.45	
Voya Investment Management (SA) - Gross	-12.69	-5.56	2.43	N/A	N/A	N/A	N/A	6.35	N/A	N/A	N/A	N/A	9.99	05/01/2013
IM U.S. Small Cap Growth Equity (SA+CF) Median	-11.56	-4.01	3.80	13.40	14.33	11.80	8.22	3.85	46.28	14.75	-1.63	29.01	11.15	
Rank	64	62	62	N/A	N/A	N/A	N/A	30	N/A	N/A	N/A	N/A	66	

Net performance shown is net of all manager fees and expenses (Net-All). Gross returns are compared to median performance of similar managers. A peer group of similar managers may not exist for all funds.

Montana Board of Investments
Comparative Performance
Domestic Equity Managers

As of September 30, 2015

	QTD	CYTD	1 Year	3 Years	5 Years	7 Years	10 Years	2014	2013	2012	2011	2010	Since Incep.	Inception Date
Metropolitan West Capital Mgmt (SA) - Net	-11.63	-7.56	-0.49	N/A	N/A	N/A	N/A	7.45	N/A	N/A	N/A	N/A	7.81	05/01/2013
Russell 2000 Val Index	-10.73	-10.06	-1.60	9.18	10.17	6.81	5.35	4.22	34.52	18.05	-5.50	24.50	5.21	
Difference	-0.90	2.50	1.11	N/A	N/A	N/A	N/A	3.23	N/A	N/A	N/A	N/A	2.60	
Metropolitan West Capital Mgmt (SA) - Gross	-11.42	-6.93	0.41	N/A	N/A	N/A	N/A	8.43	N/A	N/A	N/A	N/A	8.78	05/01/2013
IM U.S. Small Cap Value Equity (SA+CF) Median	-9.83	-6.67	0.59	12.41	12.72	10.46	7.70	5.35	38.36	17.47	-3.26	27.71	8.63	
Rank	75	53	53	N/A	N/A	N/A	N/A	20	N/A	N/A	N/A	N/A	46	
Vaughan Nelson Mgmt. (SA) - Net	-9.16	-1.51	5.38	15.53	13.83	11.67	N/A	9.09	39.30	15.36	-3.61	24.21	9.42	03/01/2007
Russell 2000 Val Index	-10.73	-10.06	-1.60	9.18	10.17	6.81	5.35	4.22	34.52	18.05	-5.50	24.50	3.57	
Difference	1.57	8.55	6.98	6.35	3.66	4.86	N/A	4.87	4.78	-2.69	1.89	-0.29	5.85	
Vaughan Nelson Mgmt. (SA) - Gross	-8.97	-0.91	6.24	16.49	14.79	12.63	N/A	10.00	40.47	16.32	-2.77	25.27	10.36	03/01/2007
IM U.S. Small Cap Value Equity (SA+CF) Median	-9.83	-6.67	0.59	12.41	12.72	10.46	7.70	5.35	38.36	17.47	-3.26	27.71	6.62	
Rank	36	5	9	5	17	18	N/A	10	38	61	48	65	4	

Gross of fees performance is not available (N/A) for the following funds: Domestic Equity Pool SPIF and iShares S&P SC 600 Index ETF (IJR).

The current annual expense ratios for the Domestic Equity Pool SPIF and the iShares S&P SC 600 Index ETF (IJR) are 0.15% and 0.12%, respectively.

Net performance shown is net of all manager fees and expenses (Net-All). Gross returns are compared to median performance of similar managers. A peer group of similar managers may not exist for all funds.

Montana Board of Investments
Comparative Performance
International Equity Managers

As of September 30, 2015

	QTD	CYTD	1 Year	3 Years	5 Years	7 Years	10 Years	2014	2013	2012	2011	2010	Since Incep.	Inception Date
International Developed Large Cap Equity														
Acadian Asset Non-US Equity (SA) - Net	-11.30	-10.35	-13.21	3.57	3.91	2.94	N/A	0.00	17.60	18.66	-10.60	13.90	-0.22	11/01/2006
MSCI ACW Ex US Val Index (Net)	-13.60	-11.33	-16.16	1.00	0.86	2.50	2.37	-5.10	15.04	16.97	-13.20	7.84	0.03	
Difference	2.30	0.98	2.95	2.57	3.05	0.44	N/A	5.10	2.56	1.69	2.60	6.06	-0.25	
Acadian Asset Non-US Equity (SA) - Gross	-11.18	-9.99	-12.75	4.12	4.48	3.52	N/A	0.52	18.22	19.37	-10.10	14.57	0.35	11/01/2006
IM International Large Cap Value Equity (SA+CF) Median	-10.76	-5.59	-8.76	5.68	4.36	4.74	4.12	-4.02	23.20	17.91	-10.74	10.81	1.96	
Rank	60	92	86	74	47	82	N/A	13	77	34	38	33	91	
Baillie Gifford (SA) - Net	-11.84	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	-13.92	06/01/2015
MSCI ACW Ex US Grth Index (Net)	-10.77	-5.95	-8.12	3.63	2.74	3.85	3.64	-2.65	15.49	16.67	-14.21	14.45	-13.10	
Difference	-1.07	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	-0.82	
Baillie Gifford (SA) - Gross	-11.72	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	-13.76	06/01/2015
IM International Large Cap Growth Equity (SA+CF) Median	-9.38	-2.68	-5.00	6.31	5.41	5.90	5.00	-3.38	20.95	19.71	-11.34	13.07	-11.51	
Rank	86	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	86	
BlackRock ACWI Ex-US SuperFund A (CF) - Net	-12.15	-8.46	-12.00	2.52	2.01	N/A	N/A	-3.73	15.51	17.07	-13.54	11.36	5.57	06/01/2009
MSCI ACW Ex US Index (Net)	-12.17	-8.63	-12.16	2.34	1.82	3.20	3.03	-3.87	15.29	16.83	-13.71	11.15	5.38	
Difference	0.02	0.17	0.16	0.18	0.19	N/A	N/A	0.14	0.22	0.24	0.17	0.21	0.19	
BlackRock ACWI Ex-US SuperFund A (CF) - Gross	-12.14	-8.41	-11.93	2.60	2.10	N/A	N/A	-3.65	15.61	17.17	-13.46	11.44	5.66	06/01/2009
International Equity Pool SPIF - Net	-9.48	-4.73	-7.97	5.63	3.52	2.85	N/A	-5.66	20.79	17.97	-13.22	5.93	2.56	12/01/2005
MSCI EAFE Index (Net)	-10.23	-5.28	-8.66	5.63	3.98	3.77	2.97	-4.90	22.78	17.32	-12.14	7.75	3.08	
Difference	0.75	0.55	0.69	0.00	-0.46	-0.92	N/A	-0.76	-1.99	0.65	-1.08	-1.82	-0.52	
International Equity Pool EAFE - Net	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	-1.26	09/01/2015
MSCI EAFE Index (Net)	-10.23	-5.28	-8.66	5.63	3.98	3.77	2.97	-4.90	22.78	17.32	-12.14	7.75	-5.08	
Difference	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.82	
Invesco (SA) - Net	-11.04	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	-13.74	06/01/2015
MSCI ACW Ex US Grth Index (Net)	-10.77	-5.95	-8.12	3.63	2.74	3.85	3.64	-2.65	15.49	16.67	-14.21	14.45	-13.10	
Difference	-0.27	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	-0.64	
Invesco (SA) - Gross	-10.88	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	-13.54	06/01/2015
IM International Large Cap Growth Equity (SA+CF) Median	-9.38	-2.68	-5.00	6.31	5.41	5.90	5.00	-3.38	20.95	19.71	-11.34	13.07	-11.51	
Rank	76	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	82	

Net performance shown is net of all manager fees and expenses (Net-All). Gross returns are compared to median performance of similar managers. A peer group of similar managers may not exist for all funds.

Montana Board of Investments
Comparative Performance
International Equity Managers

As of September 30, 2015

	QTD	CYTD	1 Year	3 Years	5 Years	7 Years	10 Years	2014	2013	2012	2011	2010	Since Incep.	Inception Date
Lazard Asset Management (SA) - Net	-11.26	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	-12.76	06/01/2015
MSCI ACW Ex US Val Index (Net)	-13.60	-11.33	-16.16	1.00	0.86	2.50	2.37	-5.10	15.04	16.97	-13.20	7.84	-16.16	
Difference	2.34	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.40	
Lazard Asset Management (SA) - Gross	-11.14	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	-12.61	06/01/2015
IM International Large Cap Value Equity (SA+CF) Median	-10.76	-5.59	-8.76	5.68	4.36	4.74	4.12	-4.02	23.20	17.91	-10.74	10.81	-12.99	
Rank	59	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	44	
International Developed Small Cap Equity														
American Century Investment Mgmt (SA) - Net	-5.40	5.12	2.06	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	-3.51	03/01/2014
MSCI ACW Ex US Sm Cap Grth Index (Net)	-9.41	-0.37	-3.90	5.46	4.24	7.55	4.94	-3.59	18.52	16.87	-17.86	27.30	-4.64	
Difference	4.01	5.49	5.96	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1.13	
American Century Investment Mgmt (SA) - Gross	-5.20	5.78	2.93	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	-2.68	03/01/2014
IM International Small Cap Growth Equity (SA+CF) Median	-5.63	4.79	4.09	11.72	8.77	10.29	6.81	-3.62	30.90	23.35	-14.53	23.86	-1.34	
Rank	48	48	54	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	65	
BlackRock ACWI Ex-US Small Cap (CF) - Net	-10.07	-2.30	-6.02	5.71	N/A	N/A	N/A	-3.84	19.87	N/A	N/A	N/A	5.75	02/01/2012
MSCI ACWI Ex US Sm Cap Index IMI (Net)	-10.02	-2.54	-6.42	5.51	3.85	7.67	5.13	-4.03	19.73	18.52	-18.50	25.21	5.57	
Difference	-0.05	0.24	0.40	0.20	N/A	N/A	N/A	0.19	0.14	N/A	N/A	N/A	0.18	
BlackRock ACWI Ex-US Small Cap (CF) - Gross	-10.03	-2.18	-5.85	5.90	N/A	N/A	N/A	-3.67	20.08	N/A	N/A	N/A	5.93	02/01/2012
DFA Intl Sm Co;l (DFISX) - Net	-7.97	0.62	-3.64	8.57	6.25	7.60	5.30	-6.29	27.49	18.75	-15.36	23.91	7.29	11/01/2004
MSCI Wrld Ex US Sm Cap Index (Net)	-8.03	-0.34	-3.71	7.48	5.74	7.71	4.23	-5.35	25.55	17.48	-15.81	24.51	6.52	
Difference	0.06	0.96	0.07	1.09	0.51	-0.11	1.07	-0.94	1.94	1.27	0.45	-0.60	0.77	

Net performance shown is net of all manager fees and expenses (Net-All). Gross returns are compared to median performance of similar managers. A peer group of similar managers may not exist for all funds.

Montana Board of Investments
Comparative Performance
International Equity Managers

As of September 30, 2015

	QTD	CYTD	1 Year	3 Years	5 Years	7 Years	10 Years	2014	2013	2012	2011	2010	Since Incep.	Inception Date
Templeton Investment Counsel (SA) - Net	-8.87	-0.94	-2.62	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	-3.19	03/01/2014
MSCI ACW Ex US Sm Cap Val Index (Net)	-10.66	-4.70	-8.91	5.53	3.44	7.75	5.28	-4.49	20.92	20.15	-19.12	23.15	-7.59	
Difference	1.79	3.76	6.29	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	4.40	
Templeton Investment Counsel (SA) - Gross	-8.65	-0.28	-1.73	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	-2.31	03/01/2014
IM International Small Cap Value Equity (SA+CF) Median	-7.82	2.78	-1.91	11.27	8.67	10.40	6.94	-3.91	30.97	23.58	-13.53	24.07	-2.65	
Rank	71	78	41	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	45	
International Emerging Equity														
BlackRock Emerging Mkts (CF) - Net	-17.92	-15.68	-19.51	-5.52	N/A	N/A	N/A	-2.49	-2.79	N/A	N/A	N/A	-4.43	02/01/2012
MSCI Emg Mkts Index (USD) (Net)	-17.90	-15.48	-19.28	-5.27	-3.57	2.56	4.27	-2.19	-2.60	18.23	-18.42	18.88	-4.18	
Difference	-0.02	-0.20	-0.23	-0.25	N/A	N/A	N/A	-0.30	-0.19	N/A	N/A	N/A	-0.25	
BlackRock Emerging Mkts (CF) - Gross	-17.88	-15.55	-19.34	-5.32	N/A	N/A	N/A	-2.30	-2.57	N/A	N/A	N/A	-4.23	02/01/2012

Gross of fees performance is not available (N/A) for the following funds: International Equity Pool SPIF and DFA Intl Sm Co;I (DFISX).
The current annual expense ratios for the International Equity Pool SPIF and the DFA Intl Sm Co;I (DFISX) are 0.18% and 0.53%, respectively.

Net performance shown is net of all manager fees and expenses (Net-All). Gross returns are compared to median performance of similar managers. A peer group of similar managers may not exist for all funds.

Montana Board of Investments
Comparative Performance
Fixed Income Managers

As of September 30, 2015

	QTD	CYTD	1 Year	3 Years	5 Years	7 Years	10 Years	2014	2013	2012	2011	2010	Since Incep.	Inception Date
Core Internal Bond Portfolio	1.52	1.73	3.82	2.31	3.97	6.14	5.31	6.82	-2.02	6.07	8.20	9.97	6.72	04/01/1995
Barclays US Agg Bond Index	1.23	1.13	2.94	1.71	3.10	4.85	4.64	5.97	-2.02	4.21	7.84	6.54	5.85	
Difference	0.29	0.60	0.88	0.60	0.87	1.29	0.67	0.85	0.00	1.86	0.36	3.43	0.87	
Core Internal Bond Portfolio	1.52	1.73	3.82	2.31	3.97	6.14	5.31	6.82	-2.02	6.07	8.20	9.97	6.72	04/01/1995
IM U.S. Broad Market Core FI (SA+CF)	1.15	1.26	3.02	1.99	3.56	5.55	5.06	6.16	-1.56	5.78	7.84	7.22	6.18	
Rank	8	15	5	26	21	25	28	24	74	46	25	8	7	
Trust Funds Bond Portfolio	1.57	1.87	3.80	2.56	4.09	6.04	5.36	6.79	-1.43	6.15	8.16	8.07	6.39	10/01/1995
Barclays US Agg Bond Index	1.23	1.13	2.94	1.71	3.10	4.85	4.64	5.97	-2.02	4.21	7.84	6.54	5.59	
Difference	0.34	0.74	0.86	0.85	0.99	1.19	0.72	0.82	0.59	1.94	0.32	1.53	0.80	
Trust Funds Bond Portfolio	1.57	1.87	3.80	2.56	4.09	6.04	5.36	6.79	-1.43	6.15	8.16	8.07	6.39	10/01/1995
IM U.S. Broad Market Core FI (SA+CF)	1.15	1.26	3.02	1.99	3.56	5.55	5.06	6.16	-1.56	5.78	7.84	7.22	5.92	
Rank	8	9	5	14	17	29	25	25	42	43	26	26	9	
Neuberger Berman High Yield (SA) - Net	-4.87	-2.85	-3.52	3.28	5.81	N/A	N/A	1.93	7.78	15.90	4.07	16.27	7.27	01/01/2010
Barclays US Hi Yld - 2% Issuer Cap Index	-4.83	-2.43	-3.40	3.52	6.14	10.02	7.26	2.46	7.44	15.78	4.96	14.94	7.31	
Difference	-0.04	-0.42	-0.12	-0.24	-0.33	N/A	N/A	-0.53	0.34	0.12	-0.89	1.33	-0.04	
Neuberger Berman High Yield (SA) - Gross	-4.76	-2.52	-3.09	3.74	6.28	N/A	N/A	2.38	8.26	16.42	4.54	16.83	7.75	01/01/2010
IM U.S. High Yield Bonds (SA+CF) Median	-3.86	-0.90	-1.57	4.17	6.48	9.45	7.31	2.74	7.55	15.38	5.27	15.03	7.69	
Rank	72	80	72	66	61	N/A	N/A	57	31	30	64	22	44	

Net performance shown is net of all manager fees and expenses (Net-All).
Gross returns are compared to median performance of similar managers.

Montana Board of Investments
Comparative Performance
Fixed Income Managers

As of September 30, 2015

	QTD	CYTD	1 Year	3 Years	5 Years	7 Years	10 Years	2014	2013	2012	2011	2010	Since Incep.	Inception Date
Reams Asset Core Plus (SA) - Net	1.06	1.49	2.91	1.96	4.07	6.71	N/A	4.47	-0.85	8.64	7.54	9.27	6.71	10/01/2008
Barclays US Unv Bond Index	0.68	0.98	2.33	1.89	3.36	5.19	4.80	5.56	-1.35	5.53	7.40	7.16	5.19	
Difference	0.38	0.51	0.58	0.07	0.71	1.52	N/A	-1.09	0.50	3.11	0.14	2.11	1.52	
Reams Asset Core Plus (SA) - Gross	1.10	1.62	3.08	2.13	4.25	6.90	N/A	4.65	-0.68	8.83	7.72	9.47	6.90	10/01/2008
IM U.S. Broad Market Core+ FI (SA+CF)	0.28	0.71	2.09	2.37	4.20	6.56	5.50	6.20	-0.58	8.05	7.39	8.97	6.56	
Rank	12	9	12	73	46	37	N/A	90	54	41	38	40	37	
Post High Yield Plus (SA) - Net	-2.26	0.94	0.87	6.42	7.87	N/A	N/A	4.99	10.19	16.97	2.60	14.96	10.40	06/01/2009
Barclays US Hi Yld - 2% Issuer Cap Index	-4.83	-2.43	-3.40	3.52	6.14	10.02	7.26	2.46	7.44	15.78	4.96	14.94	10.41	
Difference	2.57	3.37	4.27	2.90	1.73	N/A	N/A	2.53	2.75	1.19	-2.36	0.02	-0.01	
Post High Yield Plus (SA) - Gross	-2.11	1.39	1.48	7.06	8.52	N/A	N/A	5.62	10.85	17.67	3.22	15.65	11.07	06/01/2009
IM U.S. High Yield Bonds (SA+CF) Median	-3.86	-0.90	-1.57	4.17	6.48	9.45	7.31	2.74	7.55	15.38	5.27	15.03	10.43	
Rank	16	12	10	4	3	N/A	N/A	3	10	14	82	37	25	
Post Trad'l High Yield LP (CF) - Gross	-2.18	1.45	2.23	6.92	8.49	N/A	N/A	6.01	9.98	18.62	3.08	14.48	10.17	09/01/2009
IM U.S. High Yield Bonds (SA+CF) Median	-3.86	-0.90	-1.57	4.17	6.48	9.45	7.31	2.74	7.55	15.38	5.27	15.03	9.06	
Rank	16	11	7	4	4	N/A	N/A	3	13	10	83	67	16	

Trust Funds Bond Portfolio and Post Trad'l High Yield LP (CF) are part of the Trust Fund Investment Pool.

Net performance shown is net of all manager fees and expenses (Net-All).
Gross returns are compared to median performance of similar managers.

Montana Board of Investments
Comparative Performance
Trust Accounts

As of September 30, 2015

	QTD	CYTD	1 Year	3 Years	5 Years	7 Years	10 Years	2014	2013	2012	2011	2010
Abandoned Mine Trust	0.37	1.02	1.50	1.12	1.49	3.63	3.11	1.49	0.63	2.82	1.49	3.31
Big Sky Economic Development Fund	1.47	2.33	4.27	3.21	4.64	6.42	5.59	6.77	-0.22	6.72	8.13	8.48
Butte Area One Restoration	0.89	1.53	2.59	1.82	2.61	N/A	N/A	3.57	-0.08	3.68	4.61	5.13
Clark Fork River Restoration	1.00	1.73	2.99	2.12	3.05	N/A	N/A	4.26	-0.12	4.36	5.33	5.78
Coal Tax Cultural Trust Fund	1.47	2.30	4.24	3.20	4.64	6.42	5.61	6.79	-0.23	6.76	8.09	8.42
Coal Tax Park Acquisition	1.46	2.29	4.20	3.15	4.61	6.40	5.58	6.66	-0.25	6.78	8.10	8.43
East Helena Compensation Fund	0.67	1.08	1.94	N/A	N/A	N/A	N/A	3.01	-0.13	N/A	N/A	N/A
Endowment for Children	1.38	2.16	4.07	3.09	4.54	6.26	N/A	6.66	-0.28	6.69	8.00	8.26
FWP License Account	0.22	0.56	0.73	0.58	0.86	1.65	2.48	0.59	0.42	1.64	1.08	2.01
FWP Mitigation Trust Fund	0.34	0.91	1.36	1.04	1.44	3.56	2.97	1.37	0.61	2.85	1.46	3.21
FWP Real Property Trust	1.41	2.21	4.07	3.05	4.44	6.16	5.42	6.47	-0.24	6.51	7.76	8.06
Group Benefits	0.47	1.26	1.66	0.97	1.28	2.61	3.02	1.17	0.32	2.22	1.43	3.13
Montana Pole	1.22	1.92	3.49	2.61	3.79	5.39	4.90	5.44	-0.17	5.50	6.61	7.07
Montana Tech-UM Agency Funds	0.11	0.21	0.31	0.28	0.40	0.69	1.82	0.35	0.17	0.57	0.66	0.75
Montana State University	0.23	0.38	0.62	0.50	0.73	1.14	2.13	0.85	0.12	1.07	1.23	1.40
MT BOI - Clark Fork Site	1.30	2.04	3.61	2.63	3.68	N/A	N/A	5.37	-0.09	5.23	6.23	6.68
MT BOI UOFM Other	0.71	1.51	2.06	1.42	1.77	2.37	2.95	2.57	-0.12	2.54	2.21	2.79
MUS Group Insurance	0.49	1.41	1.95	1.00	N/A	N/A	N/A	1.30	0.17	1.56	N/A	N/A
Older Montanans Trust	1.45	2.22	4.09	3.10	3.99	5.96	N/A	6.57	-0.23	6.01	5.85	8.45
Permanent Coal Trust Excl Crp	1.28	2.40	4.09	3.47	4.62	5.75	5.34	6.14	0.99	6.29	7.16	7.09
PERS Defined Cont Disability	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Resource Indemnity Trust	1.49	2.34	4.32	3.25	4.70	6.44	5.61	6.94	-0.27	6.86	8.18	8.12
Smelter Hill Up Restorative	0.60	1.13	1.83	1.32	1.77	N/A	N/A	2.49	0.01	2.47	2.83	2.80
State Fund Insurance	0.26	1.58	3.06	3.44	4.45	6.31	5.21	5.00	3.11	7.25	5.26	8.63
Streamside Tailings Operable Unit	1.36	2.15	3.99	2.95	4.21	5.68	5.23	6.22	-0.21	6.14	7.20	7.35
Tobacco Trust Fund	1.49	2.34	4.32	3.24	4.66	6.46	5.64	6.89	-0.27	6.77	8.12	8.45
Treasurers	0.09	0.27	0.33	0.25	0.28	0.43	1.65	0.19	0.23	0.31	0.31	0.34
Treasure State Endowment	1.48	2.34	4.29	3.24	4.67	6.45	5.64	6.84	-0.21	6.76	8.14	8.48
Treasure State Reg. Water System	1.47	2.33	4.28	3.21	4.65	6.43	5.60	6.80	-0.22	6.73	8.13	8.48
Trust and Legacy Account	1.49	2.34	4.32	3.25	4.66	6.44	5.61	6.92	-0.26	6.78	8.04	8.42
UCFRB Assess/Litig Cost Rec	1.43	2.14	3.94	3.01	4.24	6.14	5.41	6.40	-0.24	6.45	6.87	7.47
UCFRB Restoration Fund	1.40	2.18	3.99	2.99	4.37	6.06	5.37	6.28	-0.20	6.43	7.66	8.22
Upper Blackfoot Response	0.57	1.05	1.56	0.99	1.31	N/A	N/A	1.59	0.13	1.60	2.30	N/A
Weed Control Trust	1.49	2.34	4.32	3.26	4.54	6.45	5.33	6.94	-0.23	6.69	7.42	7.71
Wildlife Habitat Trust	1.39	2.21	4.01	3.06	4.44	6.15	5.43	6.49	-0.24	6.46	7.74	8.07
Zortman/Landusky LT H20	0.38	1.33	2.14	0.96	3.16	5.90	5.77	1.78	-0.51	5.47	11.21	12.62
Z/L Long Term H20 Trust Fund	0.36	1.57	2.26	0.83	2.71	4.84	5.67	1.76	-0.96	3.91	11.64	10.79

Performance shown is gross of fees.

Performance Notes:

All gross and net performance data is provided by State Street Analytics (SSA). Reported gross returns for the retirement plans prior to July 1, 2002 are net of all fees.

Gross performance for the retirement plans is calculated with fee accruals provided by Montana's Accounting department.

Retirement Plan Custom Benchmarks are provided by State Street Bank and are calculated daily using actual allocations.

Effective May 2014, ING rebranded to Voya. The ING Investment Management (SA) has been updated to Voya Investment Management (SA) to reflect the change.

Index Notes:

The Montana International Custom Benchmark consists of 100% MSCI EAFE Index (Net) through 10/31/2006, 100% MSCI ACW Ex US Index (Net) through 6/30/2007, 92.5% MSCI ACW Ex US Index (Net) and 7.5% MSCI ACW Ex US SC IM Index (Net) through 2/28/2014, and 100% MSCI ACWI ex-US IMI thereafter.

Gross of fees performance is not available (N/A) for the following funds: Domestic Equity Pool SPIF, iShares S&P SC 600 Index ETF (IJR), International Equity Pool SPIF, and DFA Intl Sm Co;l (DFISX). The current annual expense ratios are 0.15%, 0.14%, 0.18%, and 0.53%, respectively.

PORTLAND

CHICAGO

NEW YORK

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Investment Activity

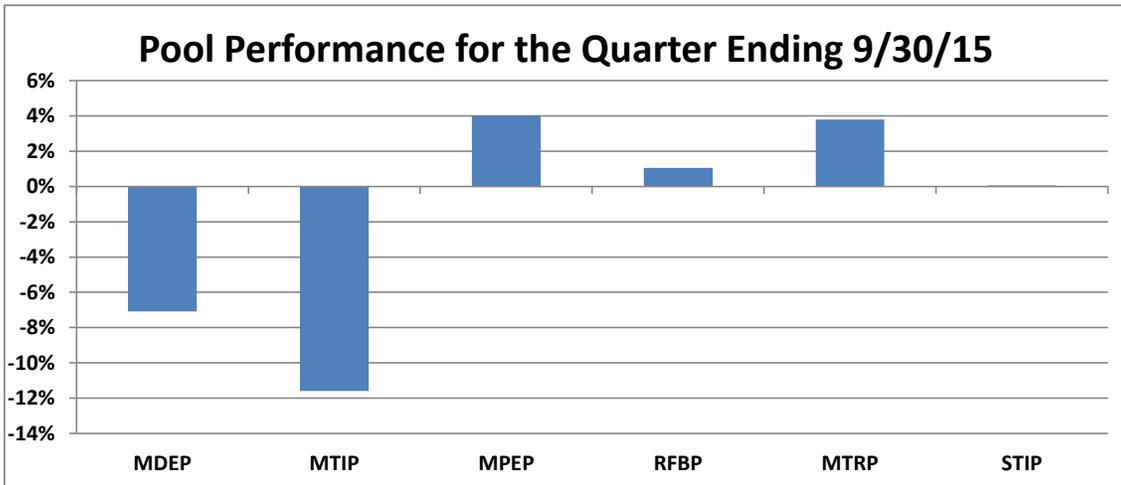
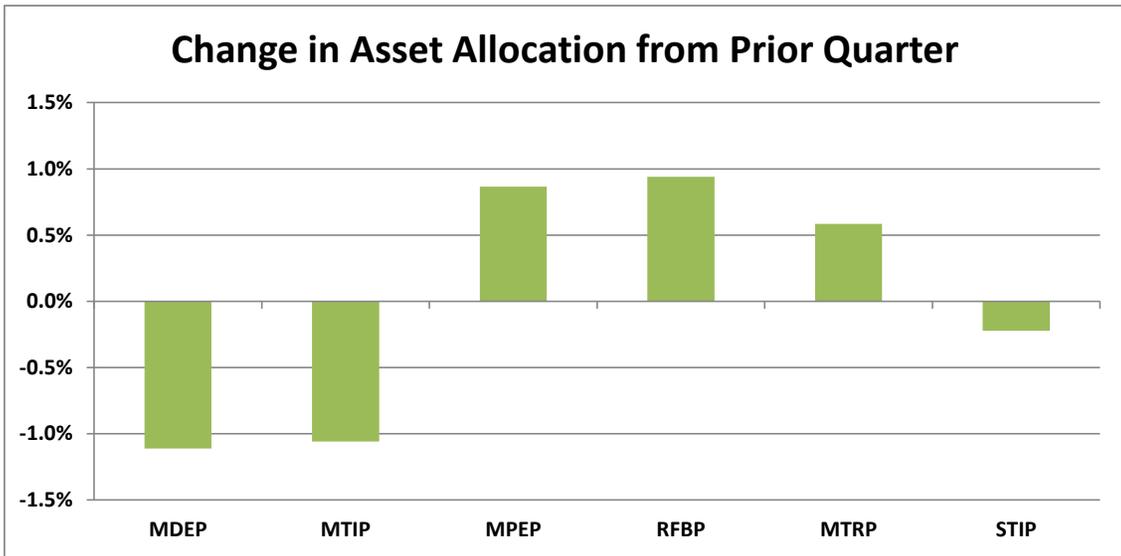
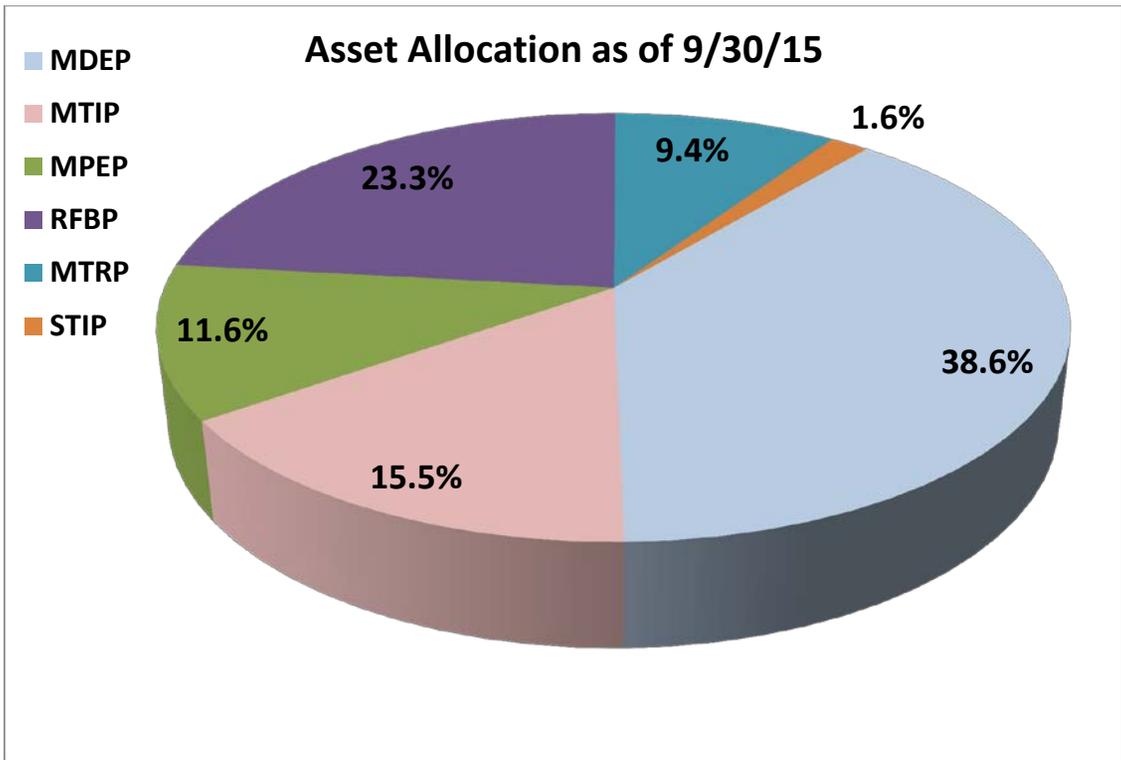
ALLOCATION REPORT

Retirement Systems Asset Allocations as of 6/30/15								
<u>Pension Fund</u>	<u>MDEP</u>	<u>MTIP</u>	<u>MPEP</u>	<u>Total Equity</u>	<u>RFBP</u>	<u>MTRP</u>	<u>STIP</u>	<u>Total Assets</u>
PUBLIC EMPLOYEES	39.7%	16.6%	10.7%	67.1%	22.3%	8.8%	1.8%	\$ 5,043,555,251
TEACHERS	39.7%	16.6%	10.7%	66.9%	22.3%	8.8%	1.9%	\$ 3,673,410,066
POLICE	39.8%	16.6%	10.7%	67.1%	22.4%	8.9%	1.6%	\$ 320,795,082
SHERIFFS	39.6%	16.6%	10.7%	66.8%	22.3%	8.8%	2.1%	\$ 294,953,421
FIREFIGHTERS	39.7%	16.6%	10.7%	67.0%	22.3%	8.8%	1.8%	\$ 326,320,594
HIGHWAY PATROL	39.8%	16.6%	10.7%	67.2%	22.4%	8.9%	1.6%	\$ 128,238,951
GAME WARDENS	39.6%	16.5%	10.7%	66.8%	22.3%	8.8%	2.1%	\$ 147,980,448
JUDGES	39.6%	16.6%	10.7%	66.9%	22.3%	8.8%	2.0%	\$ 86,698,207
VOL FIREFIGHTERS	37.6%	15.7%	10.1%	63.5%	21.2%	8.4%	6.9%	\$ 33,908,011
TOTAL	39.7%	16.6%	10.7%	67.0%	22.3%	8.8%	1.9%	\$ 10,055,860,031
Approved Range	28 - 44%	14 - 22%	9 - 15%	58 - 72%	22 - 30%	6-10%	1 - 5%	

Retirement Systems Asset Allocations as of 9/30/15								
<u>Pension Fund</u>	<u>MDEP</u>	<u>MTIP</u>	<u>MPEP</u>	<u>Total Equity</u>	<u>RFBP</u>	<u>MTRP</u>	<u>STIP</u>	<u>Total Assets</u>
PUBLIC EMPLOYEES	38.6%	15.6%	11.6%	65.8%	23.3%	9.4%	1.5%	\$ 4,823,311,584
TEACHERS	38.8%	15.6%	11.6%	66.1%	23.4%	9.5%	1.0%	\$ 3,520,643,845
POLICE	37.1%	14.9%	11.1%	63.1%	22.4%	9.0%	5.5%	\$ 319,350,280
SHERIFFS	38.5%	15.5%	11.5%	65.6%	23.2%	9.4%	1.8%	\$ 283,208,869
FIREFIGHTERS	37.0%	14.9%	11.1%	63.1%	22.3%	9.0%	5.6%	\$ 325,183,968
HIGHWAY PATROL	38.7%	15.6%	11.6%	65.8%	23.3%	9.4%	1.5%	\$ 123,108,158
GAME WARDENS	38.4%	15.4%	11.5%	65.3%	23.1%	9.4%	2.2%	\$ 143,283,450
JUDGES	38.5%	15.5%	11.5%	65.5%	23.2%	9.4%	1.9%	\$ 83,248,289
VOL FIREFIGHTERS	38.8%	15.6%	11.6%	66.0%	23.4%	9.5%	1.2%	\$ 31,955,512
TOTAL	38.6%	15.5%	11.6%	65.7%	23.3%	9.4%	1.6%	\$ 9,653,293,955
Approved Range	28 - 44%	14 - 22%	9 - 15%	58 - 72%	22 - 30%	6-10%	1 - 5%	

Change From Last Quarter								
<u>Pension Fund</u>	<u>MDEP</u>	<u>MTIP</u>	<u>MPEP</u>	<u>Total Equity</u>	<u>RFBP</u>	<u>MTRP</u>	<u>STIP</u>	<u>Total Assets</u>
PUBLIC EMPLOYEES	-1.1%	-1.1%	0.9%	-1.3%	0.9%	0.6%	-0.2%	(220,243,667)
TEACHERS	-0.8%	-1.0%	1.0%	-0.8%	1.1%	0.6%	-0.9%	(152,766,221)
POLICE	-2.7%	-1.7%	0.4%	-4.0%	0.0%	0.2%	3.9%	(1,444,803)
SHERIFFS	-1.1%	-1.0%	0.9%	-1.3%	1.0%	0.6%	-0.3%	(11,744,552)
FIREFIGHTERS	-2.7%	-1.7%	0.4%	-3.9%	0.0%	0.2%	3.8%	(1,136,626)
HIGHWAY PATROL	-1.2%	-1.1%	0.8%	-1.4%	0.9%	0.6%	-0.1%	(5,130,793)
GAME WARDENS	-1.2%	-1.1%	0.8%	-1.5%	0.9%	0.6%	0.1%	(4,696,998)
JUDGES	-1.1%	-1.1%	0.8%	-1.3%	0.9%	0.6%	-0.1%	(3,449,918)
VOL FIREFIGHTERS	1.1%	-0.2%	1.5%	2.5%	2.2%	1.1%	-5.7%	(1,952,499)
TOTAL	-1.1%	-1.1%	0.9%	-1.3%	0.9%	0.6%	-0.2%	(402,566,076)

Allocations During Quarter					
<u>MDEP</u>	<u>MTIP</u>	<u>MPEP</u>	<u>Total Equity</u>	<u>RFBP</u>	<u>MTRP</u>
\$20,000,000	\$29,000,000	(\$1,000,000)	\$48,000,000	(\$6,000,000)	(\$5,000,000)
Net New Investments for Quarter					\$37,000,000



Montana Board of Investments

Asset Allocation - Public Funds (DB) \$3B to \$20B & >30% Equity

Periods Ending September 30, 2015

	% Tot Equity		% US Equity		% Int'l Equity		% Fixed Inc.		% Cash Equiv		% Real Estate		% Pvt. Equity	
High	90.63		74.28		28.60		42.46		52.39		13.90		28.99	
Median	53.61		33.31		18.27		18.47		4.16		4.60		13.97	
Low	31.36		14.52		1.41		1.01		0.74		0.05		2.49	
Observations	25		25		25		25		24		22		22	
PUBLIC EMPLOYEES RET SYS	54.15	46	38.59	39	15.56	69	23.32	27	1.53	85	9.44	27	11.56	66
TEACHERS RETIREMENT SYS	54.41	43	38.79	39	15.62	66	23.45	27	1.02	91	9.49	27	11.63	65

Note: all zero allocations to an asset class have been removed.

Montana Board of Investments

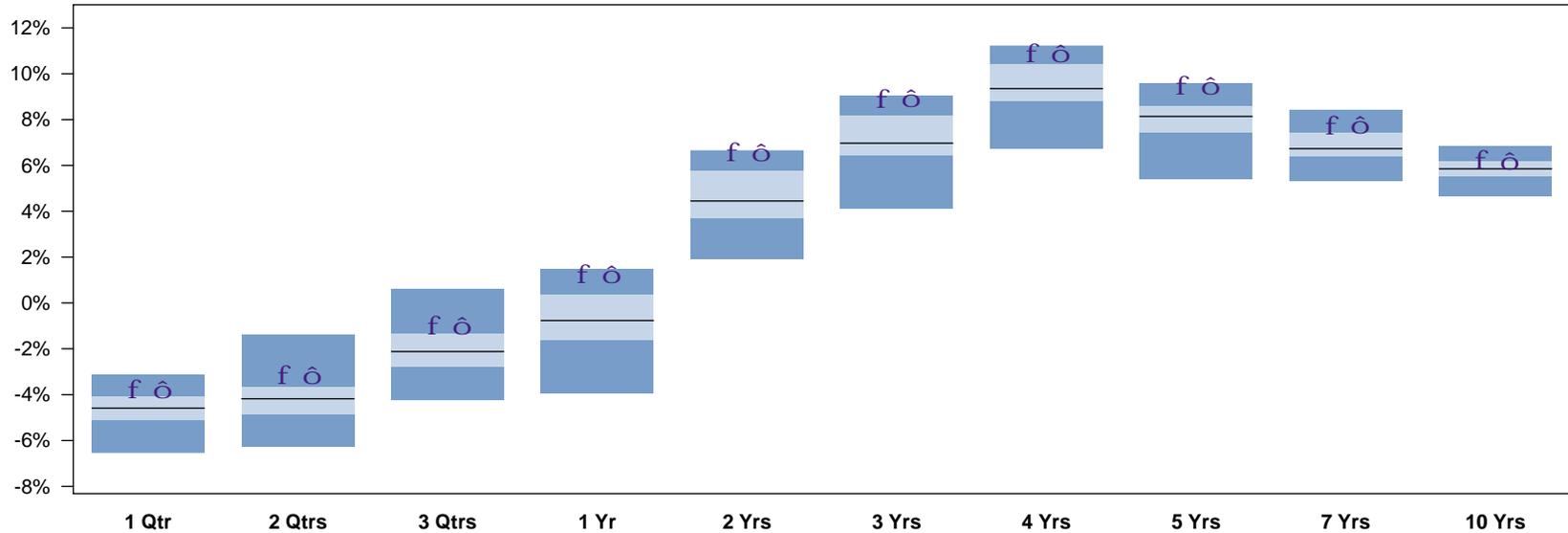
Public Funds (DB) \$3B to \$20B & >30% Equity (SSE)

PERIOD ENDING September 30, 2015

Total Returns



STATE STREET



	1 Qtr	2 Qtrs	3 Qtrs	1 Yr	2 Yrs	3 Yrs	4 Yrs	5 Yrs	7 Yrs	10 Yrs										
5th Percentile	-3.11	-1.40	0.61	1.46	6.66	9.06	11.23	9.59	8.42	6.83										
25th Percentile	-4.06	-3.67	-1.33	0.37	5.79	8.19	10.44	8.63	7.44	6.17										
50th Percentile	-4.59	-4.18	-2.12	-0.77	4.45	6.97	9.35	8.14	6.73	5.85										
75th Percentile	-5.13	-4.87	-2.81	-1.63	3.67	6.43	8.81	7.44	6.40	5.52										
95th Percentile	-6.54	-6.25	-4.23	-3.94	1.90	4.13	6.76	5.42	5.32	4.68										
No. of Obs	25	25	25	25	23	23	22	22	22	22										
f PUBLIC EMPLOYEES RE	-3.66	12	-3.03	12	-0.88	17	1.35	9	6.66	6	9.02	10	10.99	10	9.59	6	7.85	19	6.32	14
o TEACHERS RETIREMEN	-3.67	13	-3.04	13	-0.88	16	1.36	8	6.68	5	9.03	9	11.00	9	9.60	5	7.87	18	6.31	17

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Private Equity & Real Estate

MEMORANDUM

Montana Board of Investments

Department of Commerce
2401 Colonial Drive, 3rd Floor
Helena, MT 59601 (406) 444-0001

To: Members of the Board
From: Ethan Hurley, Portfolio Manager – Alternative Investments
Date: November 17, 2015
Subject: Montana Private Equity Pool (MPEP)

Following this memo are the items listed below:

- (i) **Montana Private Equity Pool Review:**
Comprehensive overview of the private equity portfolio for the quarter ended June 30.
- (ii) **New Commitments:**
The table below summarizes the investment decisions made by staff since the last board meeting. Three new \$20M commitments were made to Angeles Equity Partners I, LP, Audax Private Equity V, LP and Gridiron Capital Fund III, LP. Investment briefs summarizing these funds and the general partners follow.

Fund Name	Vintage	Subclass	Sector	Amount	Date
Angeles Equity Partners I, LP	2015	Buyout	Diversified	\$20M	5/1/15
Audax Private Equity V, LP	2015	Buyout	Diversified	\$20M	9/18/15
Gridiron Capital Fund III, LP	2015	Buyout	Diversified	\$20M	10/9/15

- (iii) **Portfolio Index Comparison:**
Table comparing the performance of the private equity portfolio to the State Street Global Exchange Private Equity Index™.

Montana Board of Investments

Private Equity Board Report

Q2 2015

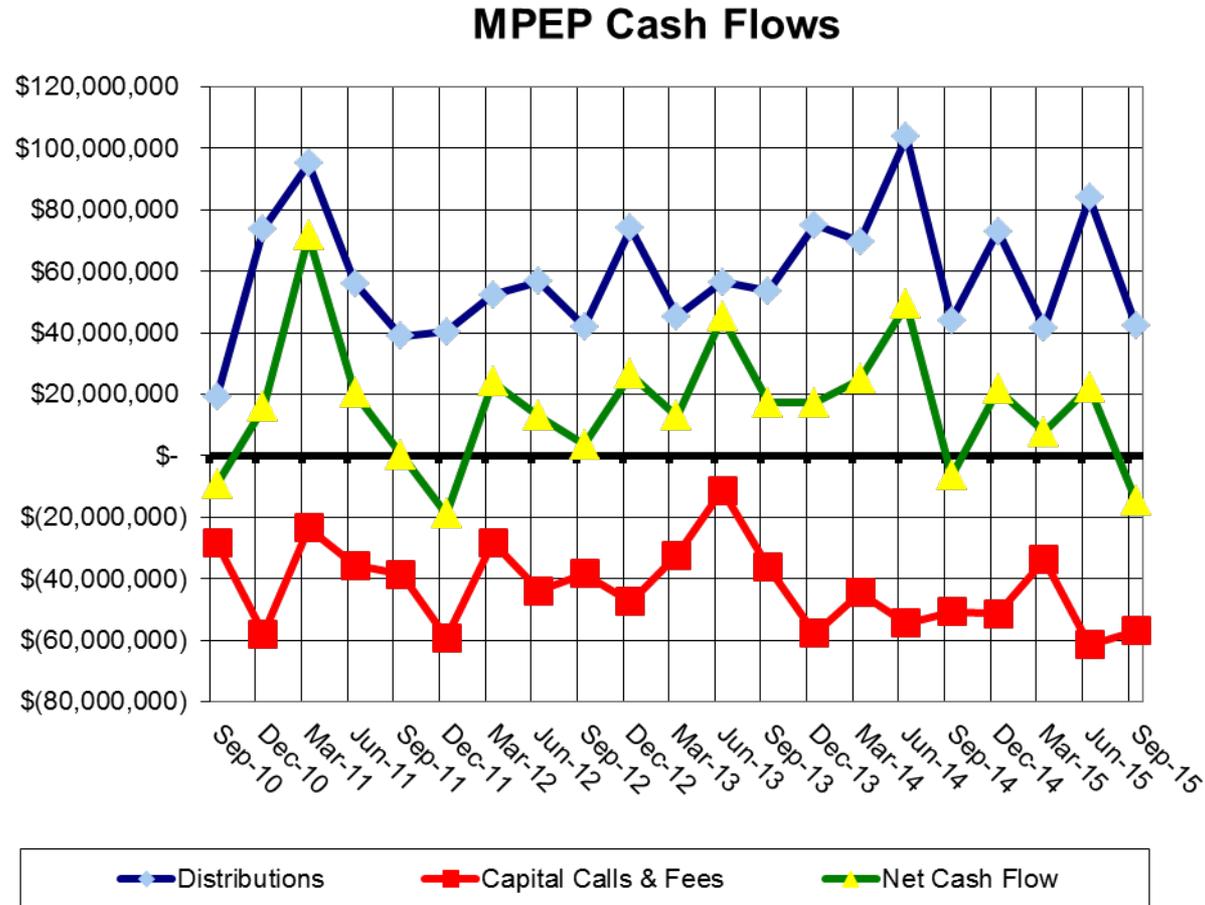
Due to, among other things, the lack of a valuation standard in the private equity industry, differences in the pace of investment across funds and the understatement of returns in the early years of a fund's life, the internal rate of return information may not accurately reflect current or expected future returns, and the internal rates of return and all other disclosures with respect to the Partnerships have not been prepared, reviewed or approved by the Partnerships, the General Partners, or any other affiliates.

Contents

- **Quarterly Cash Flow Chart**
- **Strategy – Total Exposure Chart**
- **Industry – Market Value Exposure Chart**
- **Geography – Total Exposure Chart**
- **Investment Vehicle – Total Exposure Chart**
- **Periodic Return Comparison**
- **LPs by Family of Funds Table**

MPEP Quarterly Cash Flow

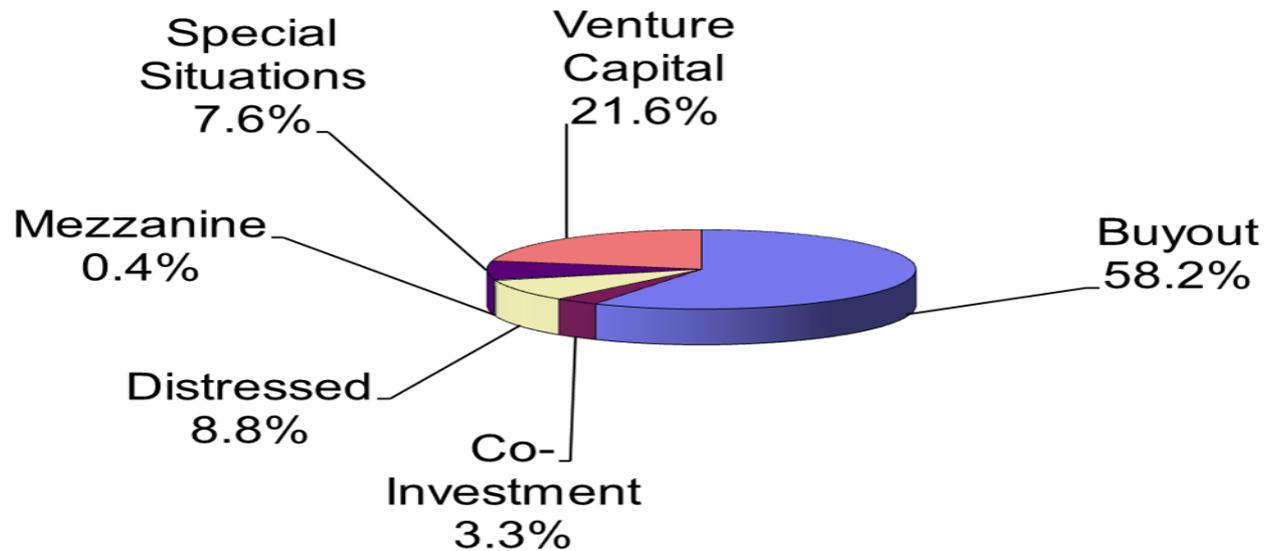
September 30, 2010 through September 30, 2015



Net cash flow for the quarter ending 9/30/15 was negative. Broadly speaking relative to 2Q15, the total number of US leveraged buyout transactions for the period ending 3Q15 was up slightly to 35 from 34, with absolute dollars transacted down 5.6%. The US IPO market decreased in 3Q15 as market volatility picked up and investors synthesized the impact of slowing growth in China and other global macro-economic and geopolitical concerns. There were a total of 45 IPOs in 3Q15, down from the 75 companies that went out in 2Q15, a decrease of 40% in volume. In total \$7.3B in proceeds were raised, down 44% compared to the \$13B raised 2Q15.

Q2 2015 Strategy – Total Exposure

(Since inception through June 30, 2015)

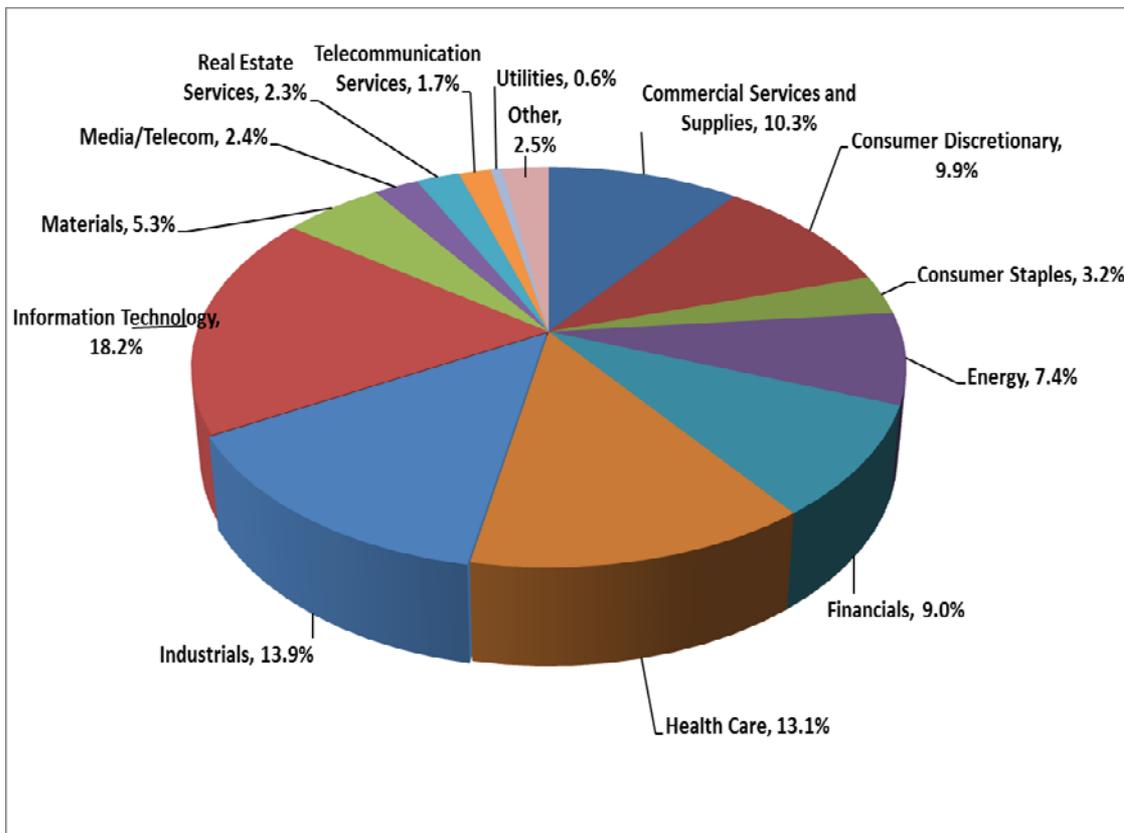


Strategy	Remaining Commitments	Percentage	Market Value	Percentage	Total Exposure	Percentage
Buyout	\$409,784,216	68.9%	\$570,426,786	52.4%	\$980,211,001	58.2%
Co-Investment	\$9,413,777	1.6%	\$46,693,708	4.3%	\$56,107,485	3.3%
Distressed	\$36,506,856	6.1%	\$111,793,188	10.3%	\$148,300,044	8.8%
Mezzanine	\$285,721	0.0%	\$6,162,494	0.6%	\$6,448,215	0.4%
Special Situations	\$77,722,941	13.1%	\$50,781,086	4.7%	\$128,504,028	7.6%
Venture Capital	\$60,725,123	10.2%	\$303,490,142	27.9%	\$364,215,265	21.6%
Total	\$594,438,633	100.0%	\$1,089,347,405	100.0%	\$1,683,786,038	100.0%

The portfolio is well diversified by strategy, with the most significant strategy weight consisting of Buyout at 58.2% of total exposure. When combined with Co-Investment and Special Situations, the overall exposure to Buyout is approximately 69%. Given that the timing of investments and realizations are controlled by the fund manager, it is not possible to precisely predict the future direction of the portfolio's exposure to any given strategy. Staff intends to continue to allocate commitments across strategies in every vintage year, subject to the availability of quality managers. Commitments to Distressed, and other private equity strategies will be made on a more opportunistic basis and thus should continue to account for a less significant portion of the total portfolio exposure.

Q2 2015 Industry – Market Value Exposure

(Since inception through June 30, 2015)

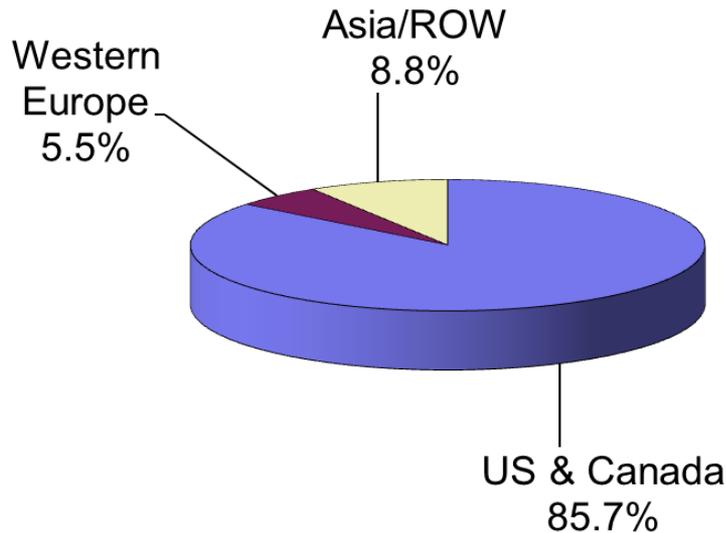


Industry	Investments, At Market Value	Percentage
Information Technology	195,791,721	18.2%
Industrials	150,097,670	13.9%
Health Care	141,298,229	13.1%
Commercial Services and Supplies	110,606,844	10.3%
Consumer Discretionary	107,090,363	9.9%
Financials	97,134,318	9.0%
Energy	79,339,363	7.4%
Materials	57,518,139	5.3%
Consumer Staples	34,619,332	3.2%
Other	26,983,797	2.5%
Media/Telecom	25,984,412	2.4%
Real Estate Services	24,989,260	2.3%
Telecommunication Services	18,555,015	1.7%
Utilities	6,522,374	0.6%
Total	1,076,530,838	100%

The portfolio is broadly diversified by industry with the information technology, industrials, healthcare, commercial services and supplies and consumer discretionary sectors representing the five largest industry exposures at approximately 65% of total assets. With the exception of energy and the information technology-related industries, the portfolio's underlying managers tend to be multi-sector investors. Therefore, composition of the portfolio by industry is and will continue to primarily be a function of a manager's industry expertise and success in sourcing deals rather than a function of staff's desire to over or underweight a specific industry.

Q2 2015 Geography – Total Exposure

(Since inception through June 30, 2015)



The portfolio's predominate geographic exposure is to developed North America, representing 85.7% of the market value and uncalled capital domiciled in or targeted for the US and Canada. No significant divergence from this is expected in the near-term. Targeted international investments will continue to be made largely through fund-of-funds given existing constraints on internal resources.

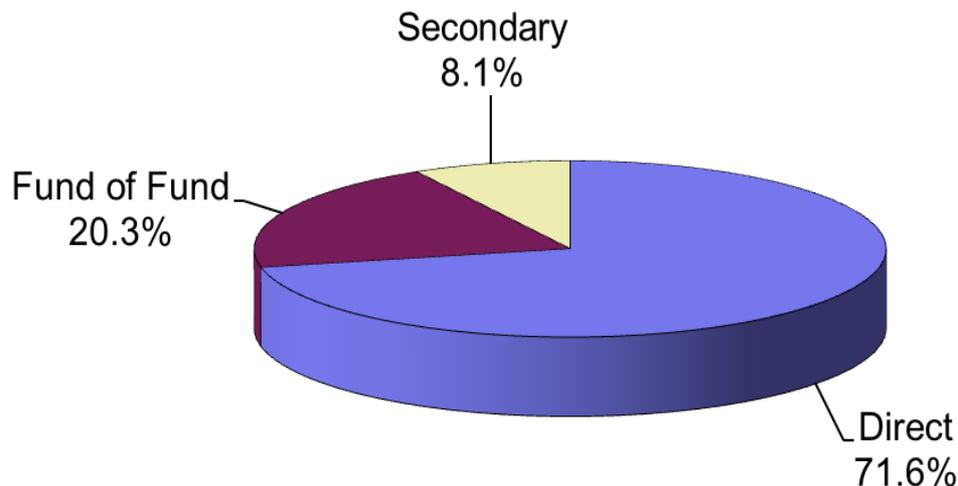
Geography	Remaining Commitments (1)	Percentage	Market Value (2)	Percentage	Total Exposure	Percentage
US & Canada	\$ 543,407,087	91.4%	\$ 888,132,162	82.5%	\$ 1,431,539,249	85.7%
Western Europe	\$ 14,207,340	2.4%	\$ 78,179,818	7.3%	\$ 92,387,158	5.5%
Asia/ROW	\$ 36,824,207	6.2%	\$ 110,218,857	10.2%	\$ 147,043,063	8.8%
Total	\$ 594,438,633	100.0%	\$ 1,076,530,838	100.0%	\$ 1,670,969,471	100.0%

(1) Remaining commitments are based upon the investment location of the partnerships.

(2) Market Value represents the aggregate market values of the underlying investment companies of the partnerships.

Q2 2015 Investment Vehicle – Total Exposure

(Since inception through June 30, 2015)



The portfolio is invested primarily through direct private equity commitments. To the extent the quality of managers invested with directly is comparable to the quality of managers available through a fund-of-funds, a direct strategy should outperform fund-of-funds due to a reduced fee burden. In the medium-term, the portfolio is likely to continue to depend upon fund-of-funds managers for targeted international investments as well as for maintaining its core allocation to domestic venture capital. Longer term it is the intention of staff to leverage the fund-of-funds relationships to slowly, but not entirely move away from this model in order to access more of these specialized managers directly and to reduce overall costs. Non-venture domestic exposure will be accessed directly.

Investment Vehicle	Remaining Commitments	Percentage	Market Value	Percentage	Total Exposure	Percentage
Direct	\$ 483,171,800	81.3%	\$ 722,327,238	66.3%	\$ 1,205,499,039	71.6%
Fund of Fund	\$ 82,054,808	13.8%	\$ 260,187,995	23.9%	\$ 342,242,803	20.3%
Secondary	\$ 29,212,025	4.9%	\$ 106,832,171	9.8%	\$ 136,044,196	8.1%
Total	\$ 594,438,633	100.0%	\$ 1,089,347,405	100.0%	\$ 1,683,786,038	100.0%

Q2 2015 1 – 3 – 5 – 7 – 10 Year Periodic Return Comparison

Description	Current					1 Year Return	3 Year Return	5 Year Return	7 Year Return	10 Year Return
	Count	Ending Market Value	Inv Multiple	Annual. ROR	DVA Contr to IRR	Annual. ROR				
Total	163	1,089,347,405	1.51	12.62	12.62	8.66	14.03	15.16	8.62	10.19
<i>Adams Street Funds</i>	34	96,009,100	1.63	12.22	2.33	4.19	12.13	14.36	5.80	9.56
<i>ASP - Direct VC Funds</i>	4	18,929,136	1.83	16.18	0.61	0.55	19.82	27.53	8.89	11.30
<i>ASP - Secondary Funds</i>	7	6,586,854	1.66	41.45	0.28	21.51	7.27	14.17	7.35	11.73
<i>ASP - U.S. Partnership Funds</i>	14	62,134,274	1.56	9.84	1.27	5.43	11.04	11.81	5.37	8.55
<i>ASP Non-US Partnership Funds</i>	9	8,358,836	1.59	10.13	0.17	(3.79)	7.48	9.60	0.80	10.81
<i>Buyout</i>	50	409,229,079	1.63	12.75	5.62	11.99	19.19	18.96	11.46	12.79
<i>Co-Investment</i>	3	46,693,708	1.47	10.34	0.36	12.68	17.23	16.86	8.67	N/A
<i>Distressed</i>	11	111,482,048	1.46	26.81	1.38	(0.15)	11.36	13.73	11.22	9.81
<i>Mezzanine</i>	4	5,901,185	1.36	7.44	0.11	(16.07)	6.59	3.68	2.72	5.42
<i>Non-US Private Equity</i>	11	110,351,063	1.22	6.42	0.42	8.18	10.16	12.27	2.32	4.63
<i>Secondary</i>	8	100,245,317	1.50	13.34	1.13	9.40	12.76	14.49	9.53	11.67
<i>Special Situations</i>	10	52,132,051	1.19	5.68	0.35	(2.66)	3.11	8.08	3.36	5.57
<i>Venture Capital</i>	31	157,303,854	1.51	15.66	0.92	14.93	12.96	13.97	11.01	9.44

1.) Due to, among other things, the lack of a valuation standard in the private equity industry, differences in the pace of investment across funds and the understatement of returns in the early years of a fund's life, the internal rate of return information does not accurately reflect current or expected future returns, and the internal rates of return and all other disclosures with respect to the Partnerships have not been prepared, reviewed or approved by the Partnerships, the General Partners, or any other affiliates.

As of 6/30/15, the portfolio's since inception net investment multiple and net IRR results were relatively flat: 1.51x and 12.62% compared to 1.51x and 12.53% last quarter. As of quarter end, all strategy categories performed approximately in-line relative to last quarter's performance.

Q2 2015 LPs by Family of Funds

Description	Vintage Year	Since Inception									
		Capital Committed	Capital Contributed for Investment	Management Fees	Remaining Commitment	% Capital Contributed/C ommitted	Capital Distributed	Ending Market Value	Net IRR	Investment Multiple	Total Exposure
LP's By Family of Funds (Active)											
Total		2,356,212,084	1,641,950,642	143,291,469	594,438,633	75.77	1,532,148,145	1,089,347,405	11.09	1.47	1,683,786,038
Adams Street Partners											
Adams Street Partners Fund - U.S.		295,356,964	264,836,214	29,875,091	12,732,960	99.78	357,445,164	96,009,100	7.82	1.54	108,742,060
Adams Street - 2002 U.S. Fund, L.P.	2002	34,000,000	29,524,926	2,843,074	1,632,000	95.20	39,317,204	13,330,114	9.00	1.63	14,962,114
Adams Street - 2003 U.S. Fund, L.P.	2003	20,000,000	17,432,500	1,567,500	1,000,000	95.00	20,227,328	9,559,438	8.40	1.57	10,559,438
Adams Street - 2004 U.S. Fund, L.P.	2004	15,000,000	13,044,725	1,205,275	750,000	95.00	13,819,772	7,422,525	7.47	1.49	8,172,525
Adams Street - 2005 U.S. Fund, L.P.	2005	25,000,000	21,771,247	1,966,253	1,262,500	94.95	19,294,307	15,487,292	7.31	1.47	16,749,792
Adams Street Partners Fund - Non-U.S.											
Adams Street - 2002 Non-U.S. Fund, L.P.	2002	19,156,819	17,158,444	1,657,747	716,000	98.22	21,977,435	7,087,931	9.36	1.54	7,803,931
Adams Street - 2004 Non-U.S. Fund, L.P.	2004	6,000,000	5,278,524	487,476	234,000	96.10	8,373,203	1,556,372	12.12	1.72	1,790,372
Adams Street - 2005 Non-U.S. Fund, L.P.	2005	5,000,000	4,360,416	405,084	234,500	95.31	4,541,458	2,167,780	6.73	1.41	2,402,280
Brinson Non-U.S. Trust-2000 Primary Fund	2000	5,000,000	4,362,685	389,815	247,500	95.05	3,529,763	2,860,571	5.51	1.34	3,108,071
Brinson Non-U.S. Trust-2001 Primary Fund	2001	1,815,207	1,815,207	215,843	0	111.89	3,201,008	299,810	11.81	1.72	299,810
Brinson Non-U.S. Trust-2001 Primary Fund	2001	1,341,612	1,341,612	159,529	0	111.89	2,332,003	203,398	11.86	1.69	203,398
Brinson Partnership Trust - Non-U.S.											
Brinson Non-U.S. Trust-1999 Primary Fund	1999	6,652,664	6,501,986	791,054	231,648	109.63	11,504,650	1,293,324	13.28	1.75	1,524,972
Brinson Non-U.S. Trust-2002 Primary Fund	2002	1,524,853	1,509,661	181,317	96,162	110.89	2,590,285	214,590	10.77	1.66	310,752
Brinson Non-U.S. Trust-2002 Primary Fund	2002	1,696,452	1,696,452	201,721	0	111.89	2,595,364	368,144	8.50	1.56	368,144
Brinson Non-U.S. Trust-2002 Secondary	2002	637,308	637,308	75,781	0	111.89	1,517,617	22,419	25.99	2.16	22,419
Brinson Non-U.S. Trust-2003 Primary Fund	2003	1,896,438	1,802,863	225,502	93,575	106.96	3,687,375	395,763	20.20	2.01	489,338
Brinson Non-U.S. Trust-2004 Primary Fund	2004	897,613	855,702	106,733	41,911	107.22	1,114,009	292,408	7.95	1.46	334,319
Brinson Partnership Trust - U.S.											
Adams Street Global Oppty Secondary Fund	2004	175,547,481	159,402,386	19,844,188	7,140,812	102.11	231,304,468	41,828,476	7.35	1.52	48,969,288
Adams Street V, L.P.	2003	25,000,000	20,223,749	1,651,251	3,125,000	87.50	27,200,563	5,860,950	11.04	1.51	8,985,950
Brinson Partners - 1998 Primary Fund	1998	40,000,000	34,633,912	5,486,088	0	100.30	43,663,718	16,632,388	6.08	1.50	16,632,388
Brinson Partners - 1999 Primary Fund	1999	7,161,019	7,122,251	840,141	38,768	111.19	10,819,769	175,607	6.44	1.38	214,375
Brinson Partners - 1999 Primary Fund	1999	8,346,761	7,998,817	988,670	347,944	107.68	9,870,913	518,704	2.47	1.16	866,648
Brinson Partners - 2000 Primary Fund	2000	20,064,960	19,096,394	2,332,455	985,390	106.80	27,827,244	1,704,781	5.69	1.38	2,690,171
Brinson Partners - 2001 Primary Fund	2001	15,496,322	15,019,461	1,661,282	666,114	107.64	20,609,078	3,212,006	5.87	1.43	3,878,120
Brinson Partners - 2002 Primary Fund	2002	16,297,079	15,783,921	1,743,665	513,158	107.55	26,152,115	2,663,983	11.18	1.64	3,177,141
Brinson Partners - 2002 Secondary Fund	2002	2,608,820	2,545,315	274,582	110,228	108.09	4,438,323	509,869	12.73	1.75	620,097
Brinson Partners - 2003 Primary Fund	2003	15,589,100	14,784,432	1,642,607	804,668	105.38	21,293,692	4,336,506	9.61	1.56	5,141,174
Brinson Partners - 2003 Secondary Fund	2003	1,151,151	1,094,757	113,427	56,394	104.95	2,481,325	193,616	22.66	2.21	250,010
Brinson Partners - 2004 Primary Fund	2004	8,832,269	8,339,121	870,276	493,148	104.27	11,051,396	3,723,318	8.59	1.60	4,216,466
BVCF IV, L.P.	1999	15,000,000	12,760,256	2,239,744	0	100.00	25,896,332	2,296,748	7.71	1.88	2,296,748

Q2 2015 LPs by Family of Funds – Continued

Description	Vintage Year	Since Inception									
		Capital Committed	Capital Contributed for Investment	Management Fees	Remaining Commitment	% Capital Contributed/C ommitted	Capital Distributed	Ending Market Value	Net IRR	Investment Multiple	Total Exposure
Affinity Asia Capital		35,000,000	15,618,221	3,020,373	16,560,804	53.25	17,005,639	14,344,135	16.33	1.68	30,904,939
Affinity Asia Pacific Fund III, L.P.	2006	15,000,000	11,730,375	2,211,955	1,273,819	92.95	16,827,434	6,324,171	13.86	1.66	7,597,990
Affinity Asia Pacific Fund IV, L.P.	2013	20,000,000	3,887,846	808,417	15,286,984	23.48	178,205	8,019,964	58.56	1.75	23,306,948
American Securities LLC		55,000,000	22,718,879	1,707,086	30,574,035	44.41	2,177,074	33,128,994	21.75	1.45	63,703,029
American Securities Partners VI, L.P.	2011	35,000,000	22,718,879	1,707,086	10,574,035	69.79	2,177,074	33,128,994	21.75	1.45	43,703,029
American Securities Partners VII, L.P.	2014	20,000,000	0	0	20,000,000	-	-	0	N/A	0.00	20,000,000
ArcLight Energy Partners		90,000,000	52,714,046	3,997,463	33,288,514	63.01	69,135,304	14,096,583	11.36	1.47	47,385,097
ArcLight Energy Partners Fund II, L.P.	2004	25,000,000	19,895,920	1,278,260	3,825,820	84.70	33,842,794	350,806	16.79	1.61	4,176,626
ArcLight Energy Partners Fund III, L.P.	2006	25,000,000	19,731,712	1,871,989	3,396,322	86.41	31,063,637	1,938,990	8.00	1.53	5,335,312
ArcLight Energy Partners Fund V, L.P.	2011	20,000,000	13,086,414	847,214	6,066,372	69.67	4,228,873	11,806,787	7.99	1.15	17,873,159
ArcLight Energy Partners Fund VI, L.P.	2015	20,000,000	0	0	20,000,000	-	-	0	N/A	0.00	20,000,000
Audax		25,000,000	17,751,914	132,094	7,115,992	71.54	2,388,103	19,548,815	20.68	1.23	26,664,807
Audax Private Equity Fund IV, L.P.	2012	25,000,000	17,751,914	132,094	7,115,992	71.54	2,388,103	19,548,815	20.68	1.23	26,664,807
Avenue Investments		35,000,000	33,123,011	2,086,886	0	100.60	46,063,536	256,776	10.93	1.32	256,776
Avenue Special Situations Fund V, LP	2007	35,000,000	33,123,011	2,086,886	0	100.60	46,063,536	256,776	10.93	1.32	256,776
Axiom Asia Private Capital		50,000,000	27,429,356	2,345,725	20,263,403	59.55	4,002,652	35,670,635	12.73	1.33	55,934,038
Axiom Asia Private Capital II, LP	2009	25,000,000	18,088,937	1,598,116	5,351,431	78.75	4,002,644	24,249,858	12.91	1.44	29,601,289
Axiom Asia Private Capital III, LP	2012	25,000,000	9,340,419	747,609	14,911,972	40.35	8	11,420,777	11.59	1.13	26,332,749
Black Diamond Capital Management		25,000,000	20,282,279	1,647,546	3,070,175	87.72	2,355,487	25,160,202	11.83	1.25	28,230,377
BDCM Opportunity Fund III, L.P.	2011	25,000,000	20,282,279	1,647,546	3,070,175	87.72	2,355,487	25,160,202	11.83	1.25	28,230,377
Carlyle Partners		60,000,000	50,344,362	5,316,895	5,472,075	92.77	85,580,575	16,792,106	11.97	1.84	22,264,181
Carlyle Partners IV, L.P.	2005	35,000,000	31,395,087	1,701,010	2,801,627	94.56	65,234,917	4,993,212	13.87	2.12	7,794,839
Carlyle U.S. Growth Fund III, L.P.	2006	25,000,000	18,949,275	3,615,885	2,670,448	90.26	20,345,658	11,798,894	7.48	1.42	14,469,342
Cartesian Capital Group, LLC		20,000,000	8,354,882	1,214,026	10,453,100	47.84	2,242,840	8,802,662	8.35	1.15	19,255,762
Pangaea Two, L.P.	2012	20,000,000	8,354,882	1,214,026	10,453,100	47.84	2,242,840	8,802,662	8.35	1.15	19,255,762
CCMP Associates		55,000,000	36,054,231	3,214,469	16,670,445	71.40	31,793,054	30,609,148	14.35	1.59	47,279,593
CCMP Capital Investors II, L.P.	2006	30,000,000	26,211,322	2,595,231	2,172,619	96.02	31,742,109	19,692,241	14.72	1.79	21,864,860
CCMP Capital Investors III, L.P.	2013	25,000,000	9,842,909	619,238	14,497,826	41.85	50,945	10,916,907	5.11	1.05	25,414,733
Centerbridge		77,500,000	49,464,134	2,693,644	25,889,710	67.30	14,595,645	47,629,704	7.94	1.19	73,519,414
Centerbridge Capital Partners II, L.P.	2011	25,000,000	20,275,719	1,482,575	3,285,734	87.03	455,108	23,788,539	5.02	1.11	27,074,273
Centerbridge Capital Partners III, L.P.	2014	20,000,000	1,217,599	53,425	18,728,976	6.36	-	1,303,345	3.34	1.03	20,032,321
Centerbridge Special Credit Partners	2009	12,500,000	10,847,580	280,880	1,875,000	89.03	14,140,537	2,918,225	12.56	1.53	4,793,225
Centerbridge Special Credit Partners II	2012	20,000,000	17,123,236	876,764	2,000,000	90.00	-	19,619,595	4.39	1.09	21,619,595
CIVC Partners		25,000,000	17,249,575	2,472,317	5,500,256	78.89	21,867,894	13,532,387	36.48	1.79	19,032,643
CIVC Partners Fund IV, L.P.	2010	25,000,000	17,249,575	2,472,317	5,500,256	78.89	21,867,894	13,532,387	36.48	1.79	19,032,643

Q 2015 LPs by Family of Funds – Continued2

Description	Vintage Year	Since Inception									
		Commitment	Capital Contributed for Investment	Management Fees	Remaining Commitment	%Capital Contributed/C Committed	Capital Distributed	Ending Market Value	Net IFR	Investment Multiple	Total Exposure
Energy Investors Funds											
EIF US Power Fund IV, L.P.	2011	25,000,000	10,775,157	1,627,428	12,624,397	49.61	2,069,809	15,354,273	16.30	1.40	27,978,670
Eureka Capital Partners											
Eureka III, L.P.	2012	20,000,000	3,081,184	900,000	16,240,572	19.91	1,652,540	6,677,325	166.92	2.09	22,917,897
GI Partners											
GI Partners IV	2014	20,000,000	5,326,799	514,741	14,175,181	29.21	-	5,209,435	-15.53	0.89	19,384,616
Gridiron Capital											
Gridiron Capital Fund II, LP	2011	15,000,000	12,923,959	800,920	1,334,743	91.50	3,939,375	14,195,696	14.79	1.32	15,530,439
Guardian Capital Partners											
Guardian Capital Partners Fund II, L.P.	2014	20,000,000	2,900,648	422,607	16,742,230	16.62	(42,230)	2,700,327	-34.03	0.80	19,442,557
HarbourVest											
Dover Street VII L.P.	2008	86,823,772	63,251,810	3,250,415	20,845,838	76.59	40,595,806	53,095,562	11.72	1.41	73,941,400
Dover Street VIII LP	2012	20,000,000	17,717,808	1,345,717	950,000	95.32	17,964,173	11,008,428	12.46	1.52	11,958,428
HarbourVest Direct 2007 Fund	2007	25,000,000	14,649,881	356,324	10,000,000	60.02	4,412,647	16,693,324	43.02	1.41	26,693,324
HarbourVest Intl Private Equity Fund VI	2008	20,000,000	18,270,379	879,621	850,000	95.75	14,795,638	14,635,459	10.00	1.54	15,485,459
Highway 12 Ventures											
Highway 12 Venture Fund II, L.P.	2008	21,823,772	12,613,742	668,753	9,045,838	60.86	3,423,348	10,758,351	1.43	1.07	19,804,189
Highway 12 Ventures											
Highway 12 Venture Fund II, L.P.	2006	10,000,000	8,191,489	1,926,361	0	101.18	3,507,203	9,628,157	5.16	1.30	9,628,158
HKW Capital Partners											
HKW Capital Partners IV, L.P.	2012	10,000,000	8,191,489	1,926,361	0	101.18	3,507,203	9,628,157	5.16	1.30	9,628,158
Industry Ventures											
Industry Ventures Fund IV, L.P.	2012	20,000,000	7,374,220	412,900	12,490,702	38.94	865,088	6,909,121	-0.16	1.00	19,399,823
Industry Ventures											
Industry Ventures Fund IV, L.P.	2005	20,000,000	9,204,662	899,474	300,001	101.04	8,638,932	3,495,833	4.12	1.20	3,795,834
JCF											
J.C. Flowers II, L.P.	2006	10,000,000	9,204,662	899,474	300,001	101.04	8,638,932	3,495,833	4.12	1.20	3,795,834
JCF											
J.C. Flowers II, L.P.	2006	25,000,000	23,134,341	1,188,295	752,112	97.29	1,621,477	7,478,761	-13.00	0.37	8,230,873
Joseph Littlejohn & Levy											
JLL Partners Fund V, L.P.	2005	25,000,000	22,938,056	1,222,499	839,445	96.64	29,233,694	12,452,449	11.78	1.73	13,291,894
Kinderhook Capital											
Kinderhook Capital Fund IV, L.P.	2014	20,000,000	2,800,000	152,174	17,047,826	14.76	-	2,542,545	-19.92	0.86	19,590,371
KKR											
KKR European Fund, L. P.	1999	20,000,000	2,800,000	152,174	17,047,826	14.76	-	2,542,545	-19.92	0.86	19,590,371
KKR											
KKR European Fund, L. P.	1999	25,000,000	25,000,000	1,646,730	0	106.59	61,557,717	288,829	19.82	2.32	288,829
Lexington Capital Partners											
Lexington Capital Partners V, L.P.	2001	25,000,000	25,000,000	1,646,730	0	106.59	61,557,717	288,829	19.82	2.32	288,829
Lexington Capital Partners VI-B, L.P.	2005	155,000,000	133,331,580	8,432,742	13,310,224	91.46	156,589,945	59,496,947	13.63	1.52	72,807,171
Lexington Capital Partners VII, L.P.	2009	50,000,000	46,997,565	2,759,053	243,382	99.51	78,357,791	5,576,830	18.34	1.69	5,820,212
Lexington Middle Market Investors II, LP	2008	50,000,000	46,023,173	3,159,471	817,356	98.37	48,021,550	20,052,057	7.19	1.38	20,869,413
Lexington Capital Partners											
Lexington Capital Partners VII, L.P.	2009	45,000,000	31,660,478	2,119,985	11,294,083	75.07	24,114,322	27,305,628	17.92	1.52	38,599,711
Lexington Middle Market Investors II, LP	2008	10,000,000	8,650,364	394,233	955,403	90.45	6,096,282	6,562,432	14.03	1.40	7,517,835

Q2 2015 LPs by Family of Funds - Continued

Description	Vintage Year	Since Inception									
		Commitment	Capital Contributed for Investment	Management Fees	Remaining Commitment	%Capital Contributed/C	Capital Distributed	Ending Market Value	Net IFR	Investment Multiple	Total Exposure
Matlin Patterson		30,000,000	25,404,328	2,547,147	2,048,525	93.17	14,435,139	21,516,278	5.55	1.29	23,564,803
MatlinPatterson Global Opps. Ptrns. III	2007	30,000,000	25,404,328	2,547,147	2,048,525	93.17	14,435,139	21,516,278	5.55	1.29	23,564,803
MHR Institutional Partners		25,000,000	12,960,367	2,984,140	9,055,493	63.78	12,666,484	15,654,186	8.84	1.78	24,709,679
MHR Institutional Partners III, L.P.	2006	25,000,000	12,960,367	2,984,140	9,055,493	63.78	12,666,484	15,654,186	8.84	1.78	24,709,679
Montlake Capital		15,000,000	11,796,499	2,453,501	750,000	95.00	5,044,872	12,135,490	4.21	1.21	12,885,490
Montlake Capital II, L.P.	2007	15,000,000	11,796,499	2,453,501	750,000	95.00	5,044,872	12,135,490	4.21	1.21	12,885,490
Neuberger Berman Group, LLC		55,000,000	44,634,860	2,951,671	8,563,777	86.52	36,722,947	32,058,249	10.50	1.45	40,622,026
NB Co-Investment Partners, L.P.	2006	35,000,000	30,423,365	2,228,383	3,261,529	93.29	33,479,738	14,192,352	8.80	1.46	17,453,881
NB Strategic Co-Investment Partners II	2012	20,000,000	14,211,495	723,288	5,302,248	74.67	3,243,209	17,865,897	31.78	1.41	23,168,145
Northgate Capital Partners		45,000,000	29,310,000	990,000	14,700,000	67.33	5,595,520	39,102,242	19.91	1.48	53,802,242
Northgate V, L.P.	2010	30,000,000	22,140,000	660,000	7,200,000	76.00	5,595,520	30,810,027	21.03	1.60	38,010,027
Northgate Venture Partners VI, L.P.	2012	15,000,000	7,170,000	330,000	7,500,000	50.00	-	8,292,215	9.69	1.11	15,792,215
Oak Hill Capital Partners		45,000,000	38,828,744	5,107,180	2,069,651	97.64	52,038,200	18,253,869	10.16	1.60	20,323,520
Oak Hill Capital Partners II, L.P.	2005	25,000,000	22,636,187	2,417,305	129,419	100.21	37,859,623	3,771,829	10.00	1.66	3,901,248
Oak Hill Capital Partners III, L.P.	2008	20,000,000	16,192,557	2,689,875	1,940,232	94.41	14,178,578	14,482,040	10.51	1.52	16,422,272
Oaktree Capital Partners		120,000,000	111,771,528	5,010,986	3,519,679	97.32	180,662,286	9,970,920	41.62	1.63	13,490,599
Oaktree Opportunities Fund VIII, L.P.	2009	10,000,000	9,590,550	574,159	19,679	101.65	8,465,096	5,611,211	9.72	1.38	5,630,890
OCM Opportunities Fund IVb, L.P.	2002	75,000,000	73,086,225	1,913,775	0	100.00	121,581,315	177,522	44.89	1.62	177,522
OCM Opportunities Fund VIIb, L.P.	2008	35,000,000	29,094,754	2,523,052	3,500,000	90.34	50,615,874	4,182,187	17.15	1.73	7,682,187
Odyssey Partners Fund III		70,000,000	31,386,334	4,510,154	33,308,518	51.28	67,560,172	17,671,543	25.71	2.37	50,980,061
Odyssey Investment Partners III, L.P.	2004	25,000,000	20,377,216	1,995,716	2,627,068	89.49	43,389,716	7,446,226	24.44	2.27	10,073,294
Odyssey Investment Partners IV, L.P.	2008	20,000,000	10,941,905	2,014,507	6,248,593	64.78	24,170,456	10,234,160	30.83	2.66	16,482,753
Odyssey Investment Partners Fund V, LP	2014	25,000,000	67,213	499,931	24,432,856	2.27	-	(8,843)	N/A	(0.02)	24,424,013
Opus Capital Venture Partners		10,000,000	3,163,903	1,062,500	5,773,597	42.26	349,473	4,435,934	5.27	1.13	10,209,531
Opus Capital Venture Partners VI, LP	2011	10,000,000	3,163,903	1,062,500	5,773,597	42.26	349,473	4,435,934	5.27	1.13	10,209,531
Performance Venture Capital		25,000,000	19,405,653	1,791,376	3,802,971	84.79	4,771,823	29,898,603	16.32	1.64	33,701,574
Performance Venture Capital II	2008	25,000,000	19,405,653	1,791,376	3,802,971	84.79	4,771,823	29,898,603	16.32	1.64	33,701,574
Pine Brook Partners		25,000,000	10,439,304	1,073,890	13,541,734	46.05	42,580	10,882,374	-5.75	0.95	24,424,108
Pine Brook Fund II, L.P.	2013	25,000,000	10,439,304	1,073,890	13,541,734	46.05	42,580	10,882,374	-5.75	0.95	24,424,108
Portfolio Advisors		70,000,000	52,060,861	3,774,554	14,411,436	79.76	35,434,061	51,885,127	8.88	1.56	66,296,563
Port. Advisors Fund IV (B), L.P.	2006	30,000,000	21,505,513	1,618,696	6,875,791	77.08	13,464,329	25,197,214	8.26	1.67	32,073,005
Port. Advisors Fund IV (E), L.P.	2006	15,000,000	10,682,658	935,148	3,382,194	77.45	6,449,832	8,486,567	4.54	1.29	11,868,761
Port. Advisors Fund V (B), L.P.	2008	10,000,000	6,732,849	590,625	2,793,273	73.23	3,956,595	8,650,561	12.31	1.72	11,443,834
Portfolio Advisors Secondary Fund, L.P.	2008	15,000,000	13,139,841	630,085	1,360,178	91.80	11,563,305	9,550,785	15.82	1.53	10,910,963

Q2 2015 LPs by Family of Funds - Continued

Description	Vintage Year	Since Inception									
		Commitment	Capital Contributed for Investment	Management Fees	Remaining Commitment	%Capital Contributed/C ommitted	Capital Distributed	Ending Market Value	Net IRR	Investment Multiple	Total Exposure
Quintana Energy Partners		15,000,000	14,316,819	1,793,757	482,042	107.40	8,611,701	6,651,971	0.32	0.95	7,134,013
Quintana Energy Partners Fund I, L.P.	2006	15,000,000	14,316,819	1,793,757	482,042	107.40	8,611,701	6,651,971	0.32	0.95	7,134,013
Siguler Guff & Company		50,000,000	36,569,574	1,812,713	11,750,000	76.76	24,334,416	31,930,712	11.06	1.47	43,680,712
Siguler Guff Small Buyout Opportunities	2007	25,000,000	22,286,393	1,470,895	1,375,000	95.03	21,930,329	16,982,032	11.64	1.64	18,357,032
Siguler Guff Small Buyout Opps Fund II	2011	25,000,000	14,283,181	341,819	10,375,000	58.50	2,404,088	14,948,680	8.31	1.19	25,323,680
Southern Capital		15,000,000	10,078,189	843,699	4,078,782	72.81	-	9,962,905	-9.90	0.91	14,041,687
Southern Capital Fund III, L.P.	2013	15,000,000	10,078,189	843,699	4,078,782	72.81	-	9,962,905	-9.90	0.91	14,041,687
Spire Capital Partners		15,000,000	4,206,919	857,595	9,938,099	33.76	-	4,418,499	-20.61	0.87	14,356,598
Spire Capital Partners III	2014	15,000,000	4,206,919	857,595	9,938,099	33.76	-	4,418,499	-20.61	0.87	14,356,598
Sterling Capital Partners		20,000,000	8,684,948	993,575	10,375,650	48.39	2,307,657	8,378,531	8.09	1.10	18,754,181
Sterling Capital Partners IV	2012	20,000,000	8,684,948	993,575	10,375,650	48.39	2,307,657	8,378,531	8.09	1.10	18,754,181
Summit Ventures		20,000,000	12,749,484	428,488	6,900,000	65.89	2,019,730	13,831,225	15.32	1.20	20,731,225
Summit Partners Growth Equity Fund VIII	2011	20,000,000	12,749,484	428,488	6,900,000	65.89	2,019,730	13,831,225	15.32	1.20	20,731,225
TA Associates, Inc.		10,000,000	8,195,159	704,841	1,100,000	89.00	3,475,000	9,980,002	19.08	1.51	11,080,002
TA XI, L.P.	2010	10,000,000	8,195,159	704,841	1,100,000	89.00	3,475,000	9,980,002	19.08	1.51	11,080,002
Tenaya Capital		35,000,000	14,284,814	1,089,777	19,625,409	43.93	(0)	16,456,758	4.36	1.07	36,082,167
Tenaya Capital VI, L.P.	2012	20,000,000	14,284,814	1,089,777	4,625,409	76.87	(0)	16,456,758	4.36	1.07	21,082,167
Tenaya Capital VII, L.P.	2014	15,000,000	0	0	15,000,000	-	-	0	N/A	0.00	15,000,000
Tenex Capital Management		20,000,000	12,195,812	906,811	6,959,947	65.51	318,961	19,758,928	20.75	1.53	26,718,875
Tenex Capital Partners LP	2012	20,000,000	12,195,812	906,811	6,959,947	65.51	318,961	19,758,928	20.75	1.53	26,718,875
Terra Firma Capital Partners		25,432,997	22,088,563	3,281,938	79,548	99.75	509,028	14,558,218	-8.72	0.59	14,637,766
Terra Firma Capital Partners III, L.P.	2007	25,432,997	22,088,563	3,281,938	79,548	99.75	509,028	14,558,218	-8.72	0.59	14,637,766
Thayer Hidden Creek Management, L.P.		45,000,000	25,233,145	2,637,595	17,455,958	61.93	5,215,488	32,790,963	15.10	1.36	50,246,921
HCI Equity Partners III, LP	2008	20,000,000	17,741,868	1,833,801	751,029	97.88	5,215,488	25,399,318	17.11	1.56	26,150,347
HCI Equity Partners IV, LP	2013	25,000,000	7,491,277	803,794	16,704,929	33.18	-	7,391,645	-19.70	0.89	24,096,574
The Catalyst Capital Group		30,000,000	14,108,888	1,059,381	14,895,452	50.56	950,289	16,385,866	14.84	1.14	31,281,318
Catalyst Fund IV Parallel, L.P.	2014	15,000,000	5,830,500	169,500	9,000,000	40.00	41,743	6,082,097	7.06	1.02	15,082,097
Catalyst Fund LP IV	2012	15,000,000	8,278,388	889,881	5,895,452	61.12	908,546	10,303,769	15.04	1.22	16,199,221
Trilantic Capital Partners		51,098,351	18,126,519	2,304,595	30,748,410	39.98	11,221,157	14,965,910	11.12	1.28	45,714,320
Trilantic Capital Partners IV L.P.	2007	11,098,351	8,563,368	1,137,588	1,512,802	87.41	11,157,738	5,628,347	15.76	1.73	7,141,149
Trilantic Capital Partners V L.P.	2013	20,000,000	6,019,672	1,050,044	12,973,337	35.35	63,419	5,936,979	-11.55	0.85	18,910,316
Trilantic Energy Partners (NA) LP	2014	20,000,000	3,543,479	116,963	16,262,271	18.30	-	3,400,584	-6.61	0.93	19,662,855
Veritas Capital		45,000,000	28,533,173	524,971	15,941,856	64.57	-	41,623,863	16.53	1.43	57,565,719
The Veritas Capital Fund IV, L.P.	2010	25,000,000	24,066,553	450,046	483,401	98.07	-	37,224,620	16.70	1.52	37,708,021
Veritas Capital Fund V, L.P.	2014	20,000,000	4,466,620	74,925	15,458,455	22.71	-	4,399,243	-11.05	0.97	19,807,698
Welsh, Carson, Anderson & Stowe		75,000,000	68,694,908	5,487,431	1,000,000	98.91	90,978,838	23,934,881	8.88	1.55	24,934,881
Welsh, Carson, Anderson & Stowe IV, LP	2004	25,000,000	22,908,401	1,841,599	250,000	99.00	26,346,717	5,901,185	5.50	1.30	6,151,185
Welsh, Carson, Anderson & Stowe IX, L.P.	2000	25,000,000	22,704,505	2,045,495	250,000	99.00	38,248,543	3,948,696	11.95	1.70	4,198,696
Welsh, Carson, Anderson & Stowe X, L.P.	2005	25,000,000	23,082,002	1,600,337	500,000	98.73	26,383,578	14,085,000	8.09	1.64	14,585,000
White Deer		25,000,000	6,546,339	1,186,301	17,267,360	30.93	1	5,146,850	-29.32	0.67	22,414,210
White Deer Energy II L.P.	2013	25,000,000	6,546,339	1,186,301	17,267,360	30.93	1	5,146,850	-29.32	0.67	22,414,210

1.) Due to, among other things, the lack of a valuation standard in the private equity industry, differences in the pace of investment across funds and the understatement of returns in the early years of a fund's the internal rate of return information does not accurately reflect current or expected future returns, and the internal rates of return and all other disclosures with respect to the Partnerships have not been pre-reviewed or approved by the Partnerships, the General Partners, or any other affiliates.

No new commitments were added to the list since 1Q15.

IRR Benchmark Comparison (Since 1980) As of June 30, 2015

By Investment Focus

Description	PIC	Client	DPI	Client	RVPI	Client	TVPI	Client	IRR	Client
Buyout	0.83	0.77	1.01	1.03	0.52	0.48	1.53	1.51	12.86	11.78
Venture Capital	0.88	0.80	0.94	0.82	0.67	0.78	1.61	1.60	14.33	15.87
Private Debt	0.85	0.84	0.97	1.04	0.45	0.41	1.42	1.45	11.47	20.09
Pooled IRR	0.84	0.79	1.00	1.01	0.53	0.50	1.53	1.51	12.96	12.62

By Origin

Description	PIC	Client	DPI	Client	RVPI	Client	TVPI	Client	IRR	Client
US	0.84	0.79	1.05	1.05	0.52	0.49	1.57	1.54	13.32	12.91
Non-US	0.84	0.79	0.85	0.73	0.57	0.57	1.42	1.30	11.43	7.53
Pooled IRR	0.84	0.79	1.00	1.01	0.53	0.50	1.53	1.51	12.96	12.62

By Vintage Year

Description	PIC	Client	DPI	Client	RVPI	Client	TVPI	Client	IRR	Client
1990	1.00	1.04	2.46	2.41	0.00	0.00	2.46	2.41	18.60	27.63
1991	1.03	1.07	2.51	2.29	0.00	0.00	2.51	2.29	23.47	24.24
1992	1.04	0.00	2.42	0.00	0.00	0.00	2.42	0.00	25.74	0.00
1993	1.04	1.03	2.48	2.23	0.00	0.00	2.48	2.23	26.33	23.25
1994	0.97	0.00	3.01	0.00	0.00	0.00	3.01	0.00	33.67	0.00
1995	0.97	0.00	2.04	0.00	0.00	0.00	2.04	0.00	23.47	0.00
1996	1.00	1.12	1.86	1.65	0.01	0.00	1.87	1.65	17.85	14.80
1997	0.99	1.05	1.52	1.89	0.01	0.00	1.53	1.89	9.63	15.19
1998	0.98	1.11	1.40	1.33	0.01	0.02	1.42	1.35	7.44	6.01
1999	0.93	1.04	1.27	1.91	0.03	0.05	1.30	1.96	5.51	14.85
2000	0.99	1.03	1.53	1.44	0.08	0.12	1.60	1.56	10.59	8.89
2001	1.03	1.01	1.72	1.60	0.10	0.10	1.83	1.70	16.91	13.87
2002	0.98	1.00	1.70	1.50	0.15	0.14	1.84	1.64	19.68	25.15
2003	0.99	1.00	1.71	1.16	0.27	0.39	1.98	1.55	17.97	7.68
2004	1.03	0.92	1.52	1.35	0.24	0.28	1.77	1.63	14.07	12.27
2005	1.01	0.97	1.27	1.22	0.35	0.40	1.62	1.62	9.96	9.58
2006	1.00	0.90	0.90	0.94	0.48	0.43	1.39	1.37	6.53	6.39
2007	0.97	0.96	0.89	0.73	0.62	0.55	1.52	1.28	9.86	6.24
2008	0.95	0.83	0.79	0.91	0.71	0.63	1.49	1.55	12.68	14.27
2009	0.95	0.81	0.68	0.68	0.87	0.80	1.54	1.48	14.84	14.15
2010	0.90	0.84	0.39	0.41	1.04	1.21	1.43	1.61	14.37	22.47
2011	0.79	0.71	0.33	0.34	1.03	0.93	1.35	1.27	17.25	13.18
2012	0.65	0.57	0.21	0.12	1.04	1.12	1.25	1.24	16.56	16.46
2013	0.47	0.39	0.08	0.01	1.03	0.96	1.11	0.97	10.64	-3.59
2014	0.26	0.16	0.04	0.00	0.98	0.90	1.02	0.90	3.33	-22.34
2015	0.09	0.00	0.02	0.00	0.93	0.00	0.96	0.00	-11.76	N/A
Pooled IRR	0.84	0.79	1.00	1.01	0.53	0.50	1.53	1.51	12.96	12.62

Based on data compiled from 2,492 Private Equity funds, including fully liquidated partnerships, formed between 1980 to 2015.

IRR: Pooled Average IRR is net of fees, expenses and carried interest.

Data Source: State Street Global Exchange.

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MEMORANDUM

Montana Board of Investments

Department of Commerce
2401 Colonial Drive, 3rd Floor
Helena, MT 59601 (406) 444-0001

To: Members of the Board
From: Ethan Hurley, Portfolio Manager – Alternative Investments
Date: November 17, 2015
Subject: Montana Real Estate Pool (MTRP)

The table below summarizes the investment decision made by staff since the last board meeting. One additional commitment of \$15M was made to PCCP Equity VII, LP. An investment brief summarizing this fund and the general partner follows.

Fund Name	Vintage	Subclass	Property Type	Amount	Date
PCCP Equity VII, LP	2015	Opportunistic	Diversified	\$15M	8/21/15

Following these fund descriptions is the comprehensive review of the MTRP for the quarter ended June 30.

Montana Board of Investments

Real Estate Board Report

Q2 2015

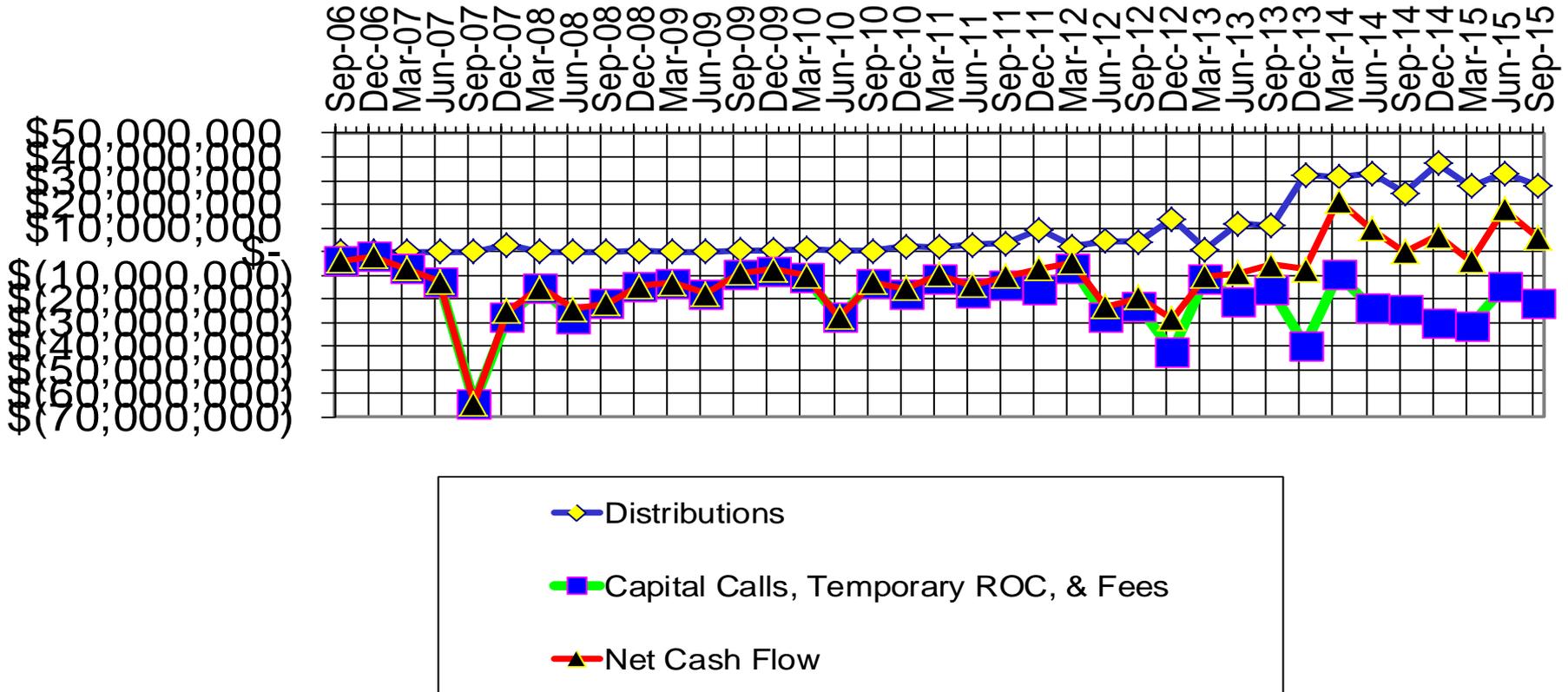
Due to, among other things, the lack of a valuation standard in the real estate private equity industry, differences in the pace of investment across funds and the understatement of returns in the early years of a fund's life, the internal rate of return information may not accurately reflect current or expected future returns, and the internal rates of return and all other disclosures with respect to the Partnerships have not been prepared, reviewed or approved by the Partnerships, the General Partners, or any other affiliates.

Contents

- **Quarterly Cash Flow Chart**
- **Strategy – Total Exposure Chart**
- **Geography – Total Exposure Chart**
- **Property Type – Market Value Exposure Chart**
- **Time Weighted Returns**
- **Internal Rates of Return**
- **Commitment Summary**
- **Leverage**

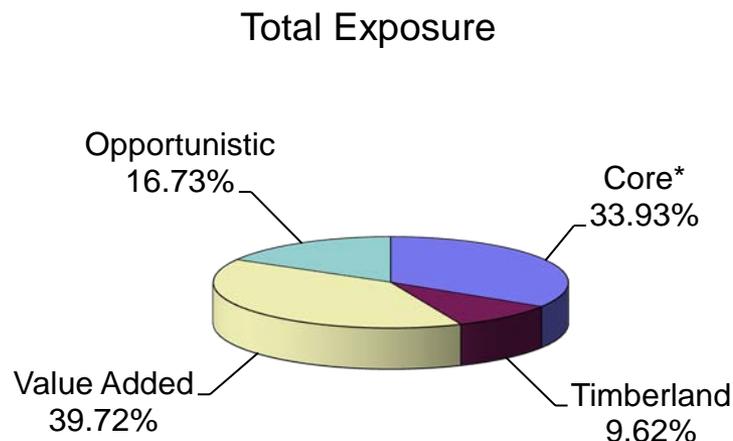
Quarterly Cash Flows through June 30, 2015

Montana RE Cash Flows Through 9/30/15 (Non Core)



Net cash flow for the quarter ending 9/30/15 was positive making 3Q15 the 5th quarter in the last seven with positive net cash flow.

Q2 2015 Strategy – Total Exposure



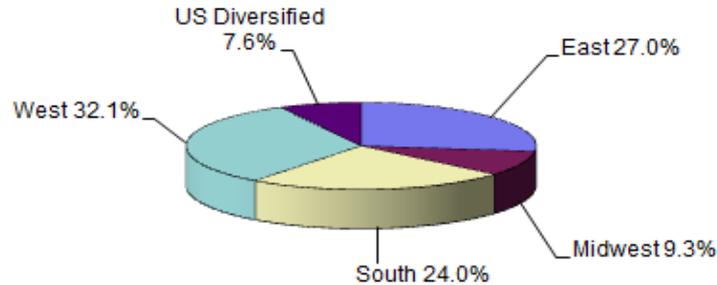
Strategy	Remaining Commitments	Percentage	Net Asset Value	Percentage	Total Exposure	Percentage
Core*	\$0	0.00%	\$368,069,659	41.00%	\$368,069,659	33.92%
Timberland	\$8,463,000	4.52%	\$95,960,091	10.69%	\$104,423,091	9.62%
Value Added	\$120,880,961	64.54%	\$310,122,919	34.54%	\$431,003,879	39.71%
Opportunistic	\$57,941,385	30.94%	\$123,601,663	13.77%	\$181,543,047	16.73%
Total	\$187,285,345	100.00%	\$897,754,331	100.00%	\$1,085,039,677	100.00%

* Includes MT Office Portfolio

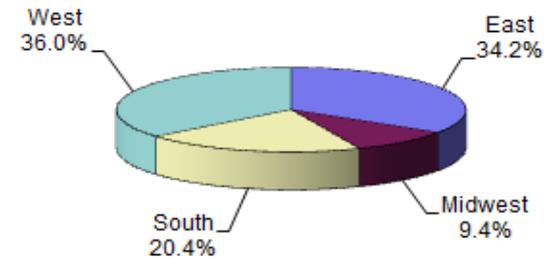
Core real estate dominates assets in the ground at approximately 41% and includes the directly owned Montana office buildings. Timberland, being the most recent addition to the real estate portfolio, represents approximately 11% of the portfolio's total NAV and approximately 10% of the aggregate exposure which includes unfunded commitments. Value Added and Opportunistic account for approximately 35% and 14% of NAV respectively.

Q2 2015 Geography – Total Exposure

Montana United States Portfolio



NCREIF Index



	East	Midwest	South	West	US Diverse	Non-US	Total
Montana US Value ²	\$379.5	\$131.0	\$337.5	\$450.8	\$107.5		\$1,406.3
Montana US Total ¹	27.0%	9.3%	24.0%	32.1%	7.6%		100.0%
NCREIF Value ^{2,3}	151,403	41,865	90,328	159,444			\$443,040
NCREIF ¹	34.2%	9.4%	20.4%	36.0%			100.0%
Difference	-7.2%	-0.1%	3.6%	-3.9%	7.6%		

Montana Total Value ²	\$379.5	\$131.0	\$337.5	\$450.8	\$107.5	\$109.9	\$1,516.3
Montana Total ¹	25.0%	8.6%	22.3%	29.6%	7.1%	7.2%	100.0%

1) Diversification percentages are based on the Gross Market Value, which represents the MBOI share of the partnerships' interests in properties exclusive of any underlying debt used to acquire each property.

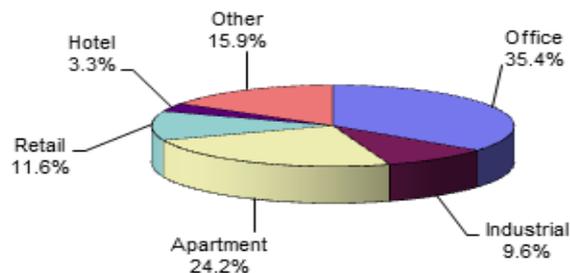
2) Values shown are in Millions.

3) The NCREIF gross market values represent the total gross asset values of the participating funds exclusive of any underlying debt.

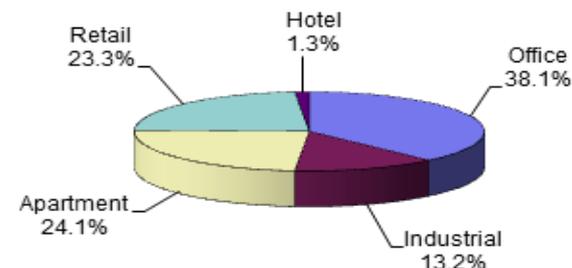
The geographic mix of the real estate portfolio is fairly aligned with NCREIF, although exposures in the West at 32.1% and East at 27.0% are 3.9% and 7.2% less than the index respectively. Approximately 8% of the portfolio is broadly diversified across the remainder of the US and the portfolio's international exposure represents approximately 7% of the mix.

Q2 2015 Property Type – Market Value Exposure

Montana United States Portfolio



NCREIF Index



	Office	Industrial	Apartment	Retail	Hotel	Other ²	Total
Montana US Value ³	\$497.2	\$134.8	\$340.9	\$162.7	\$46.9	\$223.8	\$1,406.3
Montana US Total	35.4%	9.6%	24.2%	11.6%	3.3%	15.9%	100.0%
NCREIF Value ^{3,4}	168,679	58,683	106,719	103,099	5,859		\$443,040
NCREIF ¹	38.1%	13.2%	24.1%	23.3%	1.3%		100.0%
Difference	-2.7%	-3.7%	0.2%	-11.7%	2.0%	15.9%	
Montana Non-US Value ³	\$26.2	\$0.0	\$10.7	\$9.0	\$7.5	\$56.6	\$109.9
Montana Non-US Total	23.9%	0.0%	9.7%	8.2%	6.8%	51.5%	100.0%
Montana Total Value ³	\$523.4	\$134.8	\$351.7	\$171.7	\$54.3	\$280.4	\$1,516.3
Montana Total ¹	34.5%	8.9%	23.2%	11.3%	3.6%	18.5%	100.0%

Note: Due to limited GP reporting for Liquid Realty holdings values have been rolled forward from the prior reporting cycle.

1) Diversification percentages are based on the Gross Market Value, which represents the MBOI share of the partnerships' interests in properties exclusive of any underlying debt used to acquire each property.

2) Total U.S. Other includes \$96,925,988 in mixed-use assets, \$0 in healthcare/senior living, \$8,083,551 in land, \$0 in storage,

\$11,029,971 in debt assets, \$206,363 in parking, \$396,572 in manufactured assets, \$103,428,516 in timber, \$515,349 in other assets, and \$85,244 in entertainment.

3) Values shown are in Millions.

4) The NCREIF gross market values represent the total gross asset values of the participating funds exclusive of any underlying debt. This amount differs from the index total due to rounding in the NCREIF report.

The real estate portfolio is well diversified across the major property types and is underweight relative to NCREIF in Office, Retail, and Industrial and overweight in Apartments and Hotels. At approximately 16%, Other represents the portfolio's exposure to Timberland, Mixed-Use properties, Land, Manufactured Housing, Storage, Parking, Senior Living and Healthcare related properties. As has been noted in the past, composition of the portfolio by property type is and will continue to be primarily a function of a manager's expertise and success in sourcing deals rather than a function of staff's desire to over or underweight a specific property type.

Q2 2015 Time Weighted

	Current Quarter			Year to Date		1 - Year		3 - Year		5 - Year		7 - Year		Inception	
	NAV	Net	Gross	Net	Gross	Net	Gross	Net	Gross	Net	Gross	Net	Gross	Net	Gross
Clarion Lion Properties Fund	22,312,993	4.43%	4.71%	7.79%	8.37%	16.83%	18.07%	12.45%	13.57%	15.01%	16.13%	0.91%	1.96%	3.02%	4.09%
INVESCO Core Real Estate-USA	47,968,674	5.01%	5.25%	8.21%	8.69%	15.31%	16.35%	12.53%	13.54%	13.73%	14.74%	2.88%	3.82%	3.17%	4.11%
JP Morgan Strategic Properties Fund	157,573,158	3.45%	3.68%	7.28%	7.79%	12.26%	13.36%	12.82%	13.95%	13.46%	14.59%	3.65%	4.69%	4.37%	5.43%
TIAA-CREF Asset Management Core Property	46,402,240	2.72%	2.89%	5.62%	5.96%	11.48%	12.23%	-	-	-	-	-	-	10.16%	10.97%
UBS-Trumbull Property Fund	74,338,042	2.65%	2.91%	5.43%	5.98%	11.48%	12.64%	9.77%	10.93%	11.05%	12.16%	-	-	11.51%	12.61%
Core Total	348,595,107	3.45%	3.69%	6.81%	7.31%	12.73%	13.79%	11.72%	12.81%	12.95%	14.03%	2.11%	3.12%	3.95%	4.98%
Montana Office Portfolio ¹	19,474,552	8.36%	8.36%	8.36%	8.36%	8.36%	8.36%	7.08%	7.08%	-	-	-	-	7.05%	7.05%
Timberland Total	95,960,091	0.37%	0.61%	1.60%	2.17%	5.75%	6.89%	6.83%	7.90%	-	-	-	-	5.75%	6.72%
Value Added Total	310,122,919	5.55%	6.85%	7.62%	9.48%	18.53%	23.30%	14.35%	18.23%	12.47%	15.62%	5.20%	8.11%	5.12%	8.60%
Opportunistic Total	123,601,663	4.14%	4.96%	6.07%	7.49%	14.12%	17.56%	11.45%	14.39%	14.98%	17.84%	-7.38%	-4.18%	-7.31%	-3.82%
Total Portfolio	897,754,331	4.04%	4.72%	6.44%	7.53%	14.02%	16.65%	11.95%	14.24%	12.73%	14.79%	1.05%	3.08%	2.79%	5.08%
Benchmark															
NCREIF	443,039,736,613		3.14%		6.83%		12.98%		11.63%		12.72%		-		9.28%
NFI-ODCE (NET)	139,370,700,000	3.58%		6.84%		13.39%		12.07%		13.33%		-		7.60%	

1) The value for the Montana Office Portfolio is provided by the MBOI and is taken "as-is".

The Total Portfolio turned in a strong quarter as general real estate market conditions continue to stabilize and show signs of improvement. The Q1 Total Portfolio return outperformed Q1 by 173bps. Core, Value Add and Opportunistic all outperformed relative to Q1 by 20bps, 359bps and 229bps respectively. Timberland underperformed relative to Q1 by 86bps, but nevertheless, remained in positive territory. 7-yr. returns remain weak given the lagged downturn of real estate vs. other risk assets, which resulted in most real estate markets bottoming around Q1'10.

Q2 2015 Internal Rates of Return

	NAV	Current Quarter Net	Year to Date Net	1 - Year Net	3 - Year Net	5 - Year Net	7 - Year Net	Inception Net
Montana Office Portfolio	19,474,552	8.36%	8.32%	8.30%	7.03%	-	-	6.76%
Molpus Woodlands Fund III, LP	46,446,091	0.19%	0.48%	6.55%	7.82%	-	-	6.46%
ORM Timber Fund III, LLC	21,858,192	-0.41%	3.14%	3.66%	-	-	-	3.21%
RMS Forest Growth III LP	27,655,808	1.31%	2.33%	6.89%	6.39%	-	-	5.95%
Timberland	95,960,091	0.37%	1.60%	6.03%	6.75%	-	-	5.90%
ABR Chesapeake Fund III	13,500,200	2.16%	3.22%	8.58%	6.57%	6.39%	3.15%	3.32%
ABR Chesapeake Fund IV	21,456,870	1.57%	1.79%	9.97%	9.65%	-	-	10.30%
AG Core Plus Realty Fund II	1,332,104	6.95%	6.52%	7.64%	15.31%	16.47%	9.14%	8.54%
AG Core Plus Realty Fund III	27,266,142	14.85%	16.56%	28.94%	23.56%	-	-	20.65%
AG Core Plus Realty Fund IV, L.P.	1,692,640	-5.96%	-	-	-	-	-	-5.96%
Apollo Real Estate Finance Corp.	3,751,049	9.20%	8.85%	4.56%	2.10%	0.62%	-2.26%	-1.67%
AREFIN Co-Invest	46,426.00	-	-	-	-	-	-	8.50%
BPG Investment Partnership IX	22,371,605	6.86%	8.81%	16.61%	-	-	-	18.05%
CBRE Strategic Partners US Value Fund 6	21,022,158	3.86%	6.01%	18.71%	-	-	-	15.13%
CBRE Strategic Partners US Value Fund 7	11,810,757	1.55%	0.81%	-	-	-	-	-2.27%
DRA Growth & Income Fund VI	7,341,957	4.13%	5.48%	81.69%	19.98%	19.33%	11.35%	10.91%
DRA Growth & Income Fund VII	30,783,201	2.33%	6.05%	13.95%	15.48%	-	-	15.54%
DRA Growth and Income Fund VIII	5,519,017	3.82%	5.51%	-	-	-	-	8.99%
Five Arrows Securities V, L.P.	16,837,660	-1.97%	0.65%	11.85%	15.44%	13.67%	12.68%	11.82%
Harbert US Real Estate Fund V, LP	12,237,394	1.72%	0.30%	-	-	-	-	10.91%
Hudson RE Fund IV Co-Invest	398,973	2.07%	2.80%	8.79%	20.54%	11.49%	6.88%	6.67%
Hudson Realty Capital Fund IV	5,160,163	5.18%	4.11%	8.19%	0.45%	0.53%	-5.32%	-4.43%
Landmark Real Estate Partners VI	11,320,778	1.54%	5.17%	12.46%	18.57%	-	-	26.22%
Realty Associates Fund VIII	13,907,008	6.04%	9.36%	15.37%	8.76%	5.57%	-2.34%	-1.57%
Realty Associates Fund IX	17,657,762	4.42%	7.70%	14.69%	11.41%	11.82%	-	11.14%
Realty Associates Fund X	21,619,497	3.99%	7.15%	14.07%	-	-	-	13.49%
Stockbridge Value Fund, LP	22,057,747	11.96%	14.38%	28.76%	-	-	-	20.96%
Stockbridge Value Fund II, LP	12,764,890	6.85%	-	-	-	-	-	6.50%
Strategic Partners Value Enhancement Fund	8,266,921	24.99%	25.95%	35.46%	9.29%	12.19%	1.33%	2.03%
Value Added	310,122,919	5.51%	7.48%	18.36%	14.25%	13.00%	7.79%	7.63%
AG Realty Fund VII L.P.	6,388,584	2.30%	1.54%	21.17%	24.05%	17.35%	15.38%	13.76%
AG Realty Fund VIII L.P.	18,147,470	11.50%	11.60%	23.58%	18.40%	-	-	14.75%
ARC (GP1) Ltd ³	3,365,180	-0.22%	17.52%	7.32%	5.10%	9.75%	-1.09%	-1.28%
Beacon Capital Strategic Partners V	5,298,005	4.95%	2.43%	14.93%	5.96%	9.73%	-8.29%	-7.81%
Carlyle Europe Real Estate Partners III	11,598,883	12.04%	5.77%	-4.00%	-6.09%	0.19%	-4.79%	-5.39%
CIM Fund III, L.P.	36,969,234	2.07%	5.74%	8.55%	14.38%	16.86%	13.26%	11.90%
GEM Realty Fund IV	6,055,846	6.09%	22.49%	39.15%	23.68%	21.90%	-	20.99%
GEM Realty Fund V	5,909,124	2.47%	6.43%	10.75%	-	-	-	-2.93%
JER Real Estate Partners IV	5,238	-	-	-	-	-	-	-5.65%
MGP Asia Fund III, LP	19,284,742	0.25%	-0.83%	16.53%	12.77%	24.00%	6.63%	6.27%
MSREF VI International	5,869,404	1.60%	2.56%	3.69%	6.86%	11.23%	-16.53%	-17.61%
O'Connor North American Property Partners II	4,709,953	0.55%	1.05%	35.95%	18.72%	12.69%	-2.21%	-2.58%
Opportunistic	123,601,663	4.14%	5.95%	13.94%	11.13%	14.16%	1.51%	0.66%
Total	549,159,225	4.38%	6.12%	14.74%	11.97%	12.23%	5.33%	4.90%

1) The value for the Montana Office Portfolio is provided by the MBOI and is taken "as-is" per their request.

2) This asset was sold. As such, only the Since Inception return is considered meaningful.

3) ARC (GP1) Ltd was formerly known as Liquid Realty IV.

Returns for Value Add, Opportunistic and the Total Portfolio were all higher vs. Q1 by 361bps, 229bps and 267bps respectively. Timberland underperformed relative to Q1 by 86bps. Nevertheless, all risk categories turned in positive quarters.

Q2 2015 Commitment Summary

Vintage Year	Commitment	Capital		Since Inception			NAV %	Total Exposure	Total Exposure%	Investment Multiple	
		Contributed ¹	Contributed %	Remaining Commitment	Capital Distributed	Net Asset Value					
Core	275,000,000	275,000,000	100%	-	60,504,408	348,595,107	38.83%	348,595,107	32.13%	1.41	
Clarion Lion Properties Fund	2006	45,000,000	45,000,000	100%	-	33,235,908	22,312,993	2.49%	22,312,993	2.06%	1.17
INVESCO Core Real Estate-USA	2007	45,000,000	45,000,000	100%	-	10,016,563	47,968,674	5.34%	47,968,674	4.42%	1.22
JP Morgan Strategic Property Fund	2007	95,000,000	95,000,000	100%	-	1,759,599	157,573,158	17.55%	157,573,158	14.52%	1.57
TIAA-CREF Asset Management Core Property	2013	40,000,000	40,000,000	100%	-	3,268,840	46,402,240	5.17%	46,402,240	4.28%	1.23
UBS-Trumbull Property Fund	2010	50,000,000	50,000,000	100%	-	12,223,497	74,338,042	8.28%	74,338,042	6.85%	1.63
Montana Office Portfolio	2011	17,674,045	17,674,045	100%	-	3,518,351	19,474,552	2.17%	19,474,552	1.79%	1.30
Timberland	99,457,253	90,994,253	91%	8,463,000	10,269,236	95,960,091	10.69%	104,423,091	9.62%	1.16	
Molpus Woodlands Fund III, LP ²	2011	44,664,311	44,664,311	100%	-	7,712,368	46,446,091	5.17%	46,446,091	4.28%	1.21
ORM Timber Fund III, LLC	2012	30,000,000	21,537,000	72%	8,463,000	783,895	21,858,192	2.43%	30,321,192	2.79%	1.05
RMS Forest Growth III LP	2011	24,792,942	24,792,942	100%	-	1,772,972	27,655,808	3.08%	27,655,808	2.55%	1.18
Value Added	532,232,000	411,351,039	77%	120,880,961	200,865,684	310,122,919	34.54%	431,003,879	39.72%	1.21	
ABR Chesapeake Fund III	2006	20,000,000	20,000,000	100%	-	11,393,378	13,500,200	1.50%	13,500,200	1.24%	1.23
ABR Chesapeake Fund IV	2010	30,000,000	24,000,000	80%	6,000,000	7,530,172	21,456,870	2.39%	27,456,870	2.53%	1.18
AG Core Plus Realty Fund II	2007	20,000,000	16,625,976	83%	3,374,024	18,575,113	1,332,104	0.15%	4,706,128	0.43%	1.19
AG Core Plus Realty Fund III	2011	35,000,000	24,395,288	70%	10,604,712	6,159,593	27,266,142	3.04%	37,870,854	3.49%	1.36
AG Core Plus Realty Fund IV, L.P.	2015	20,000,000	1,800,000	9%	18,200,000	-	1,692,640	0.19%	19,892,640	1.83%	0.94
Apollo Real Estate Finance Corp.	2007	10,000,000	10,000,000	100%	-	5,562,800	3,751,049	0.42%	3,751,049	0.35%	0.92
AREFIN Co-Invest	2008	8,336,000	8,336,000	100%	-	11,633,356	46,426	0.01%	46,426	0.00%	1.39
BPG Investment Partnership IX	2013	30,000,000	24,510,704	82%	5,489,296	6,648,183	22,371,605	2.49%	27,860,901	2.57%	1.18
CBRE Strategic Partners US Value Fund 6	2011	20,000,000	19,538,146	98%	461,854	4,953,297	21,022,158	2.34%	21,484,012	1.98%	1.30
CBRE Strategic Partners US Value Fund 7	2014	25,000,000	11,808,806	47%	13,191,194	29,990	11,810,757	1.32%	25,001,951	2.30%	0.99
DRA Growth & Income Fund VI	2007	24,696,000	22,655,319	92%	2,040,681	23,908,991	7,341,957	0.82%	9,382,638	0.86%	1.22
DRA Growth & Income Fund VII	2011	30,000,000	28,362,000	95%	1,638,000	8,647,135	30,783,201	3.43%	32,421,201	2.99%	1.31
DRA Growth and Income Fund VIII, LLC	2014	25,000,000	5,354,555	21%	19,645,445	278,176	5,519,017	0.61%	25,164,462	2.32%	1.07
Five Arrows Securities V, L.P.	2007	30,000,000	29,349,827	98%	650,173	24,539,487	16,837,660	1.88%	17,487,833	1.61%	1.33
Harbert US Real Estate Fund V, LP	2014	20,000,000	11,814,326	59%	8,185,674	652,419	12,237,394	1.36%	20,423,068	1.88%	1.05
Hudson RE Fund IV Co-Invest	2008	10,000,000	10,000,000	100%	-	14,510,882	398,973	0.04%	398,973	0.04%	1.48
Hudson Realty Capital Fund IV	2007	15,000,000	15,000,000	100%	-	5,704,961	5,160,163	0.57%	5,160,163	0.48%	0.72
Landmark Real Estate Partners VI	2011	20,000,000	16,489,606	82%	3,510,394	15,035,943	11,320,778	1.26%	14,831,172	1.37%	1.58
Realty Associates Fund VIII	2007	20,000,000	20,000,000	100%	-	4,079,771	13,907,008	1.55%	13,907,008	1.28%	0.89
Realty Associates Fund IX	2009	20,000,000	20,000,000	100%	-	10,679,559	17,657,762	1.97%	17,657,762	1.63%	1.41
Realty Associates Fund X	2012	20,000,000	20,000,000	100%	-	1,613,336	21,619,497	2.41%	21,619,497	1.99%	1.16
Stockbridge Value Fund, LP	2011	25,000,000	19,661,189	79%	5,338,811	5,513,005	22,057,747	2.46%	27,396,558	2.52%	1.36
Stockbridge Value Fund II, LP	2014	35,000,000	12,449,298	36%	22,550,702	431,796	12,764,890	0.00%	35,000,000	3.23%	1.06
Strategic Partners Value Enhancement Fund	2007	19,200,000	19,200,000	100%	-	12,784,341	8,266,921	0.92%	8,266,921	0.76%	1.09
Opportunistic	269,713,046	211,771,661	79%	57,941,385	89,574,343	123,601,663	13.77%	181,543,047	16.73%	0.97	
AG Realty Fund VII L.P.	2007	20,000,000	16,054,000	80%	3,946,000	15,999,103	6,388,584	0.71%	10,334,584	0.95%	1.39
AG Realty Fund VIII L.P.	2011	20,000,000	15,415,668	77%	4,584,332	1,907,120	18,147,470	2.02%	22,731,802	2.10%	1.29
AG Realty Fund IX, L.P.	2015	20,000,000	-	0%	20,000,000	-	-	0.00%	20,000,000	1.84%	-
ARC (GP1) Ltd ³	2011	18,818,203	18,818,202	100%	1	16,140,739	3,365,180	0.37%	3,365,180	0.31%	0.94
Beacon Capital Strategic Partners V	2007	23,750,000	22,500,000	95%	1,250,000	9,199,812	5,298,005	0.59%	6,548,005	0.60%	0.64
Carlyle Europe Real Estate Partners III ⁴	2007	30,994,690	26,525,011	86%	4,469,679	8,724,338	11,598,883	1.29%	16,068,561	1.48%	0.75
CIM Fund III, L.P.	2007	25,000,000	25,000,000	100%	-	5,479,290	36,969,234	4.12%	36,969,234	3.41%	1.52
GEM Realty Fund IV	2010	15,000,000	11,550,000	77%	3,450,000	8,833,469	6,055,846	0.67%	9,505,846	0.88%	1.26
GEM Realty Fund V	2013	20,000,000	5,943,750	30%	14,056,250	157,563	5,909,124	0.66%	19,965,374	1.84%	0.98
JER Real Estate Partners - Fund IV	2007	7,506,175	7,506,175	100%	-	3,833,807	5,238	0.00%	5,238	0.00%	0.51
MGP Asia Fund III, LP	2007	26,143,978	19,997,082	76%	6,146,896	8,418,178	19,284,742	2.15%	25,431,638	2.34%	1.37
MSREF VI International ⁵	2007	27,500,000	27,500,000	100%	-	2,152,403	5,869,404	0.65%	5,869,404	0.54%	0.28
O'Connor North American Property Partners II ⁶	2008	15,000,000	14,961,772	100%	38,228	8,728,521	4,709,953	0.52%	4,748,181	0.44%	0.88
Montana Real Estate		1,194,076,344	1,006,790,999	84%	187,285,345	364,732,022	897,754,331		1,085,039,677		1.21

1) Capital contributed does not include contributions for expenses outside of the commitment amounts.

2) GP's reflects \$0 unfunded as the investment period has expired.

3) ARC (GP1) Ltd was formerly known as Liquid Realty IV. GP gave a voluntary reduction to Montana on 3/24/2014

4) Carlyle Europe III's Commitment amount is converted to USD by using the EUR exchange rate from 10/9/2007, the date Montana committed to the fund. The current unfunded capital is based on this figure less the cumulative USD activity.

5) Morgan Stanley has the ability to call a 10% reserve from the investors. The full reserve, \$2.5 million, was called on 5/21/2009.

6) GP's unfunded is \$0 but they have the right to call an additional 10% of original commitment.

Recent commitments not showing include Equus Investment Partnership Fund X, LP, Stoltz Real Estate Fund V, LP and PCCP Equity Fund VII, LP.

Q2 2015 Leverage

	<u>Q3 2014</u>	<u>Q4 2014</u>	<u>Q1 2015</u>	<u>Q2 2015</u>
Core	22.40%	23.84%	23.36%	22.78%
Timber	3.76%	5.62%	5.63%	5.63%
Non-Core (Total)	56.36%	56.02%	55.55%	56.26%
Total	42.94%	43.11%	42.36%	42.54%
Non-Core Breakout:				
Opportunistic	46.49%	44.53%	44.62%	43.10%
Value Add	60.52%	60.33%	59.06%	60.21%

The portfolio remains moderately leveraged and well within all policy constraints.

MEMORANDUM

Montana Board of Investments

Department of Commerce
2401 Colonial Drive, 3rd Floor
Helena, MT 59601 (406) 444-0001

To: Members of the Board

From: Ethan Hurley, Portfolio Manager – Alternative Investments

Date: November 17, 2015

Subject: Private Equity and Private Real Estate Partnership Focus Lists – Quarterly update

The Partnership Focus Lists (PFL) for private equity (MPEP) and private real estate (MTRP) are shown below. No new funds have been added since the last Board meeting. Net Asset Values shown are as of 6/30/2015.

MPEP Partnership Focus List November 2015

Partnership	Strategy	Reason	Net Asset Value	Inclusion Date
J.C. Flowers II, L.P.	Buyout	Performance	\$7,478,760	August 2010
Terra Firma Capital Partners III, L.P.	Buyout	Performance, Risk Management	\$13,930,022	August 2010

MTRP Partnership Focus List November 2015

Partnership	Strategy	Reason	Net Asset Value	Inclusion Date
JER Real Estate Partners IV, L.P.	Opportunistic	Risk Management, Staff Turnover, Performance	\$5,238	August 2010
ARC (GP1) Ltd. (fka Liquid Realty Partners IV, L.P.)	Opportunistic	Staff Turnover	\$3,365,180 as of 3/31/15	August 2010
Morgan Stanley Real Estate Fund VI International-TE, L.P.	Opportunistic	Performance, Risk Management, Staff Turnover	\$5,869,404	August 2010
Strategic Partners Value Enhancement Fund, L.P.	Value-Added	Performance, Platform Stability	\$8,266,921	November 2010
Hudson Realty Capital Fund IV, L.P.	Value-Added	Performance	\$5,160,163	May 2011
O'Connor North American Property Partners II, L.P.	Opportunistic	Performance, Platform Stability	\$4,709,963	May 2011
Beacon Capital Strategic Partners V, LP	Opportunistic	Performance, Platform Stability	\$5,298,005	August 2012
Carlyle European Real Estate Partners III, LP	Opportunistic	Performance, Staff Turnover	\$11,664,463	October 2014

Partnership Focus List Background

The purpose of the Partnership Focus Lists (PFL's) is to detail those MPEP and MTRP partnerships for which Staff has concerns regarding their ability to realize appropriate relative private investment returns over the life of the partnership. Factors which may trigger such concerns include, but are not limited to, the following:

- Changes in key personnel
- General Partner misconduct
- Adverse regulatory, macroeconomic, or capital market developments
- Financial distress at the partnership's sponsor or in the Limited Partner base
- A material departure from partnership strategy
- Risk management deficiencies (inappropriate use of leverage, investment pace, portfolio diversification, etc.)
- An ineffective sourcing effort
- Performance relative to benchmarks
- Performance relative to peers

Staff also considers partnership maturity when deciding which funds to include on the PFL. Unseasoned partnerships are not being included on the list simply because they are in the J-curve, and mature partnerships that are substantially realized are excluded from PFL consideration.

It is important to understand that unlike public equity managers, our contractual commitments to private equity and closed-end private real estate partnerships cannot be terminated or transitioned to a different manager except under unique circumstances specified in the contract and then usually only with agreement among a super-majority of all LP's. Therefore, readers of the PFLs should not expect that partnerships listed will see their managers replaced, outstanding commitments rescinded, or other action that as a legal or practical matter may be difficult to implement.

The PFLs are administered by the MBOI's Alternative Investments Staff (AIS), who meet at least quarterly to review and recommend changes to the lists. While all AIS are responsible for providing input into the composition of the PFLs, final decision making authority over which partnerships to include rests with the MBOI's Chief Investment Officer.

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FIXED INCOME

FIXED INCOME OVERVIEW & STRATEGY

Nathan Sax, CFA, Portfolio Manager

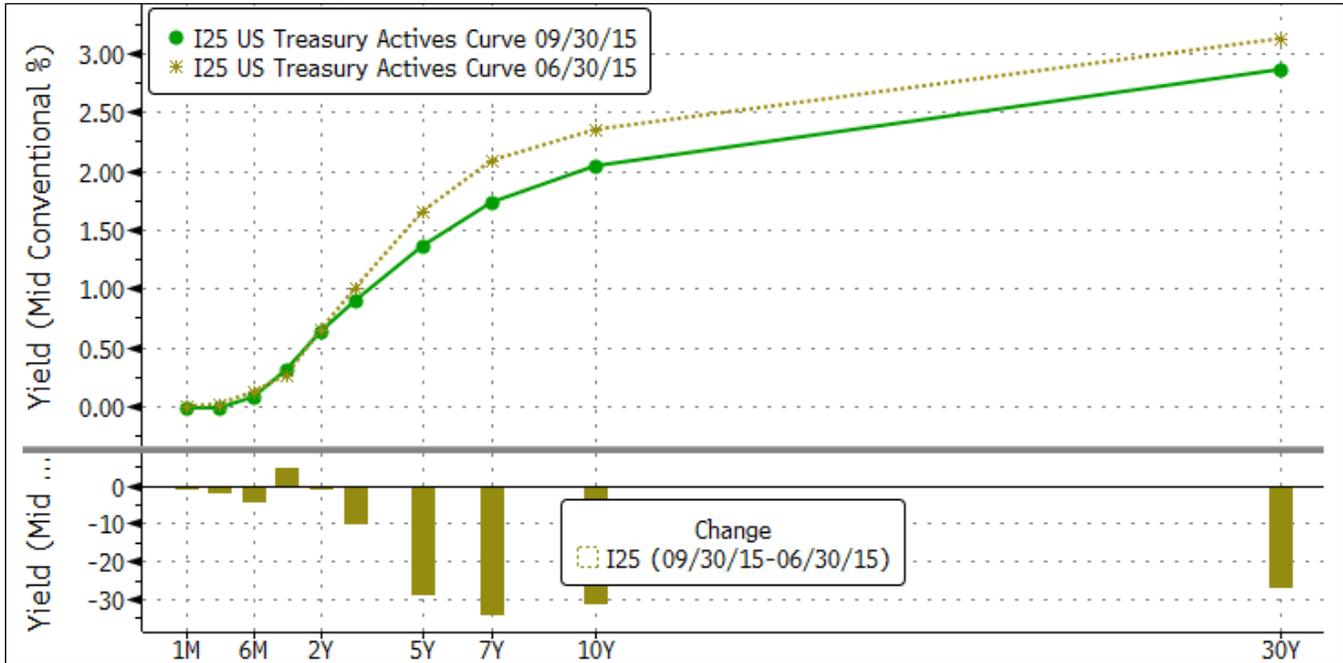
November 17, 2015

RETIREMENT & TRUST FUNDS BOND POOLS

Strategy/Economic Commentary

The yield on the benchmark U. S. Treasury 10-year note ended the third quarter at a yield of 2.04%. That was 31 basis points lower than the prior quarter's 2.35%. A much anticipated rise in the Federal Funds rate has been delayed because of weakness in the U.S. economy.

3Q15 Historical Yield Curve – Quarterly Comparison



Source: Bloomberg

Real GDP is forecast to come in at 2.5% year over year. CPI is expected to run at a 0.2% annual rate for the year. According to the *Blue Chip Economic Indicators*, consumer spending has been solid. There has been weakness in exports and the manufacturing sector because of strength in the U.S. dollar and softer-than-expected demand from overseas.

Japan's economy is expected to grow at +0.7% in 2015 and 1.3% in 2016. China, the world's second largest economy, has been a source of worry since the drop in commodity prices. Their growth rate is still reported at roughly 6.9%; however, investors are skeptical about the integrity of financial data emanating from China. The consensus is that their actual rate of growth is somewhere between 3.0% and 5.5% but no one really knows.

The *Blue Chip* consensus forecast for 2016 yields is 80 basis points on 3-month Treasury Bills and 2.70% for 10-year Treasury notes. The unemployment rate is forecast to run at 4.8% by the end of next year.

As shown in the following graph, High Yield option-adjusted spreads have gapped out to 6.30%, easily eclipsing the recent wides of 5.52% late in 2014. In comparison, Investment Grade bond spreads were +145 on June 30, and ended the third quarter at +169.

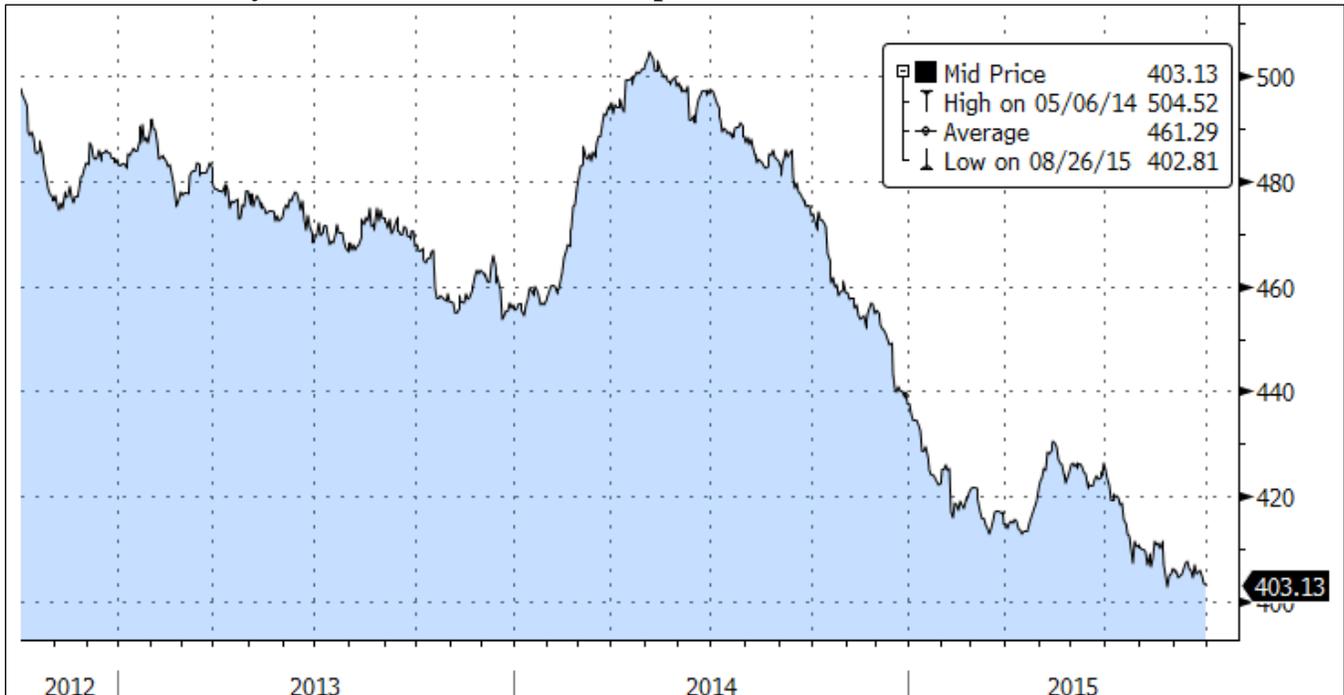
Barclays U.S. High Yield 2% Issuer Cap, Average OAS – 09/30/14 to 09/30/15



Source: Bloomberg

The CRB Index is a measure of 22 basic commodities including: oil, metals, livestock, foodstuffs and textiles. As shown in the following graph, commodities have declined dramatically since mid-2014 led by oil and industrial metals over concerns about weak international markets and increased oil supply.

Commodity Research Bureau BLS/US Spot All Commodities – 09/30/12 to 09/30/15



Source: Bloomberg

Concluding Comments

As the Fed ponders higher short-term rates, the rate of inflation continues to flounder despite repeated exhortations from the Fed that they expect to move toward a 2% rate of inflation. Higher short-term rates, combined with a strong dollar, might dampen inflation and economic growth enough to tip the U.S. into recession. A return to more “normal” interest rates may allow the central bank more room to ease in the face of weak economic conditions; however, they appear slow to take on that risk.

Exhibit A

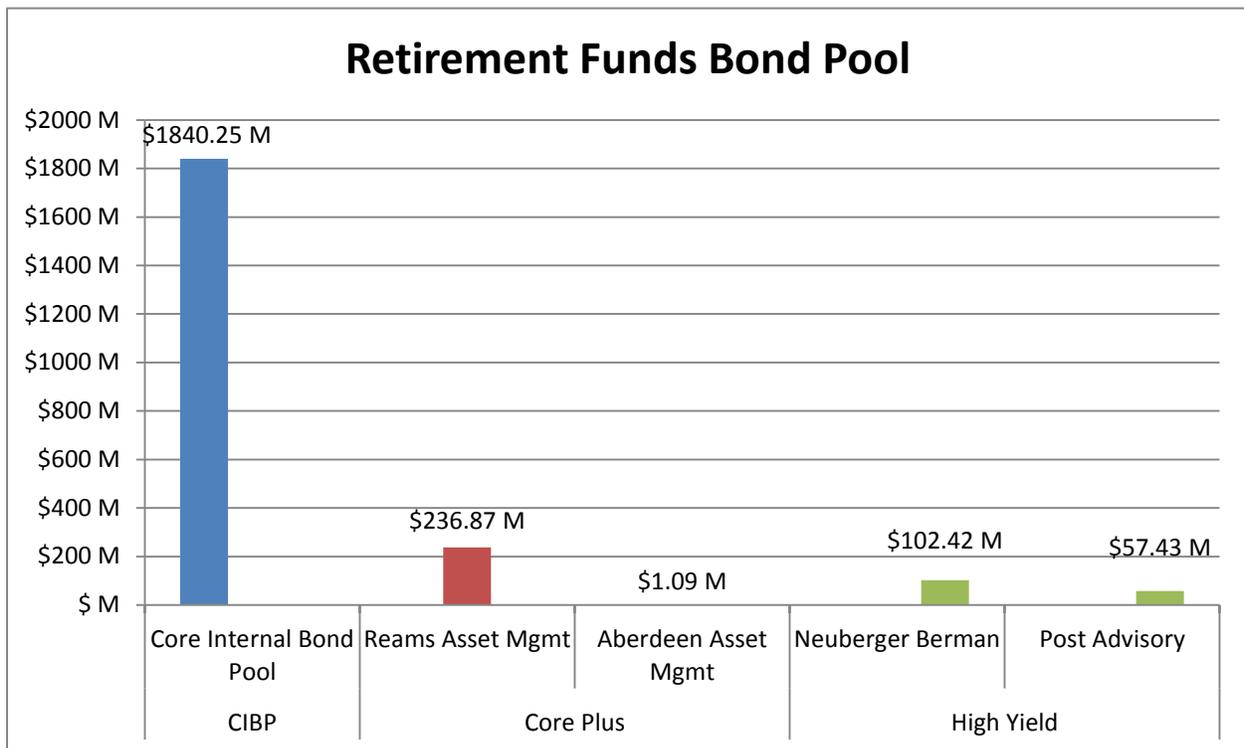


Exhibit B

Portfolio Characteristics - Retirement Funds Bond Pool: September 30, 2015

Portfolio Metrics

	RFBP	Merrill U.S. Broad Index
Total Market Value	\$2.24B	\$22.55T
# of issues	967	13,166
Effective Duration	5.34	5.41
Spread Duration	5.59	5.72
Yield to Maturity	2.71%	2.24%
Average Quality	A1	Aa1

Sector Weights

	RFBP	Barclays Aggregate	Difference
Treasuries	23.63%	36.49%	-12.86%
Agency/Govt Related	4.51%	8.62%	-4.11%
ABS	4.54%	0.57%	3.97%
MBS	20.93%	28.36%	-7.43%
CMBS	6.79%	1.89%	4.90%
Financial	12.21%	7.79%	4.42%
Industrial	21.06%	14.42%	6.64%
Utility	2.25%	1.80%	0.45%
Cash	4.03%	0.06%	3.97%
Other	0.04%	0.00%	0.04%

Credit Quality (Moody's)

	RFBP	Barclays Aggregate	Difference
AAA	60.24%	71.70%	-11.46%
AA	5.06%	4.43%	0.63%
A	10.89%	11.48%	-0.59%
BBB	15.61%	12.39%	3.22%
BB	3.77%	0.00%	3.77%
B	3.10%	0.00%	3.10%
CCC/D	1.33%	0.00%	1.33%

* Internal ratings have been applied to certain bonds.

Exhibit C

Portfolio Characteristics - Core Internal Bond Pool: September 30, 2015

Portfolio Metrics

	CIBP	Merrill U.S. Broad Index
Total Market Value	\$1.84B	\$22.55T
# of issues	306	13,166
Effective Duration	5.62	5.41
Spread Duration	5.92	5.72
Yield to Maturity	2.47%	2.24%
Average Quality	Aa3	Aa1
Tracking Error (Annualized)	0.47%	

Sector Weights

	CIBP	Barclays Aggregate	Policy Range
Treasuries	24.44%	36.49%	15-45%
Agency/Govt Related	5.55%	8.62%	5-15%
ABS	5.53%	0.57%	0-7%
MBS	24.39%	28.36%	20-40%
CMBS	7.65%	1.89%	0-12%
Financial	11.67%	7.79%	
Industrial	16.16%	14.42%	
Utility	2.62%	1.80%	
TOTAL Corporate	30.45%	24.01%	10-40%
Cash	1.99%	0.06%	

Credit Quality (Moody's)

	CIBP	Barclays Aggregate	Difference
AAA	64.50%	71.70%	-7.20%
AA	6.03%	4.43%	1.60%
A	10.75%	11.48%	-0.73%
BBB	17.43%	12.39%	5.04%
BB	1.29%	0.00%	1.29%
B	0.00%	0.00%	0.00%
CCC/D	0.00%	0.00%	0.00%

Duration Distribution

	CIBP	Merrill U.S. Broad Index	Difference
0 - 1	4.84%	1.44%	3.40%
1 - 3	22.71%	31.93%	-9.22%
3 - 5	28.13%	31.37%	-3.24%
5 - 7	22.57%	13.17%	9.40%
7 - 10	10.42%	8.26%	2.16%
10+	11.33%	13.83%	-2.50%

* Internal ratings have been applied to certain bonds.

Exhibit D

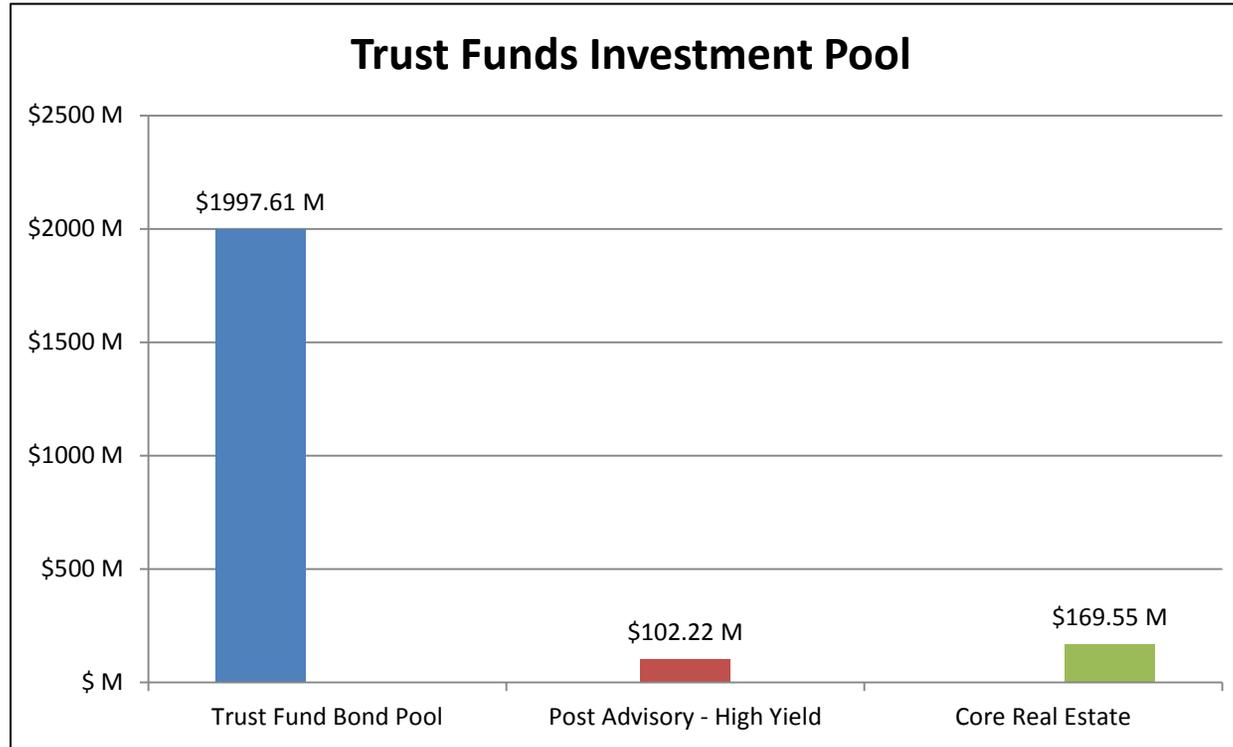


Exhibit E

TFIP Asset Class	Policy Range	TFIP - 09/30/15
High Yield	0-10%	6.77%
Core Real Estate	0-8%	7.33%
Core (U.S. Investment Grade)	0-100%	85.90%

Exhibit F

Portfolio Characteristics - Trust Funds Bond Pool: September 30, 2015

Portfolio Metrics

	TFBP	Merrill U.S. Broad Index
Total Market Value	\$2.00B	\$22.55T
# of issues	326	13,166
Effective Duration	5.54	5.41
Spread Duration	5.88	5.72
Yield to Maturity	2.55%	2.24%
Average Quality	Aa3	Aa1
Tracking Error (Annualized)	0.47%	

Sector Weights

	TFBP	Barclays Aggregate	Policy Range
Treasuries	23.78%	36.49%	15-45%
Agency/Govt Related	4.62%	8.62%	5-15%
ABS	5.15%	0.57%	0-7%
MBS	25.10%	28.36%	20-40%
CMBS	8.10%	1.89%	0-12%
Financial	11.63%	7.79%	
Industrial	16.54%	14.42%	
Utility	3.32%	1.80%	
TOTAL Corporate	31.49%	24.01%	10-40%
Cash	1.76%	0.06%	

Credit Quality (Moody's)

	TFBP	Barclays Aggregate	Difference
AAA	65.90%	71.70%	-5.80%
AA	3.22%	4.43%	-1.21%
A	11.13%	11.48%	-0.35%
BBB	17.67%	12.39%	5.28%
BB	2.05%	0.00%	2.05%
B	0.00%	0.00%	0.00%
CCC/D	0.03%	0.00%	0.03%

Duration Distribution

	TFBP	Merrill U.S. Broad Index	Difference
0 - 1	7.14%	1.44%	5.70%
1 - 3	20.89%	31.93%	-11.04%
3 - 5	26.46%	31.37%	-4.91%
5 - 7	22.06%	13.17%	8.89%
7 - 10	12.31%	8.26%	4.05%
10+	11.14%	13.83%	-2.69%

* Internal ratings have been applied to certain bonds.

BELOW INVESTMENT GRADE FIXED INCOME HOLDINGS (INTERNALLY MANAGED)

September 30, 2015

(in millions)

	Par	Book	Market	Price	Name	Coupon %	Maturity	Rating M/S&P	Comments
A	\$3.000	\$3.043	\$2.138	\$71.27	Teck Resources Limited	3.000	03/01/19	Ba1/BB	Teck was downgraded in Sept. of 2015 due to stress in the Metals and Mining industry along with required continuing capital expenditures for tar sands development
A	\$10.000	\$10.470	\$10.235	\$102.35	Edgewell Personal Care	4.700	05/19/21	Ba1/BB	Edgewell is the survivor of the Energizer company after the spinoff of the battery and light units. The company was downgraded in August of 2015 due to reduced size and product diversity.
	\$17.000	\$17.440	\$14.119	\$83.05	Talen Energy Supply	4.600	12/15/21	Ba3/BB-	In June of 2014 PPL announced its intention to spin out PPL Energy Supply into a new corporation to be combined with the generation assets of a private equity company and renamed Talen Energy Supply. The rating agencies downgraded PPL Energy Supply in anticipation of higher leverage and the removal of PPL parent support.
	\$30.000	\$30.000	\$33.824	\$112.75	DOT Headquarters II Lease	6.001	12/07/21	NR/BB+	The bond was insured by XL Capital which has defaulted. However, lease payments are guaranteed by the US govt and the bond is collateralized by the building.
	\$5.000	\$4.784	\$3.900	\$78.00	American Presidents Co	8.000	01/15/24	NR/NR	Downgraded to below investment grade in December of 1997 due to high leverage and overall stress in the industry. The rating was dropped in August of 1999 when the company was acquired by NOL. NOL is wholly owned by AAA rated TEMASEK which will likely continue support.
	<u>\$10.000</u>	<u>\$0.000</u>	<u>\$1.030</u>	<u>\$10.30</u>	Lehman Brothers	5.500	05/25/10	NR/NR	Currently in default and liquidation
	<u>\$75.000</u>	<u>\$65.737</u>	<u>\$65.246</u>						
A = Additions since 06/30/15									
D = Deletions since 06/30/15									
None									
<u>In default</u>									
	\$10.000	\$0.000	\$1.030	\$10.300	Lehman Brothers	5.500	05/25/10	NR/NR	Currently in default and liquidation

Treasurer's Fund

Richard Cooley, CFA, Portfolio Manager

November 17, 2015

The fund totaled \$833 million as of September 30, 2015, consisting of approximately one half general fund monies and the balance in various other state operating accounts. There were no security purchases in the third quarter. Current securities holdings total \$140 million. The investment policy for the fund limits security holdings to 50% of the projected General Fund FYE balance of the current period. The October projected General Fund FYE balance was \$494 million.

Short Term Investment Pool (STIP)

Richard Cooley, CFA, Portfolio Manager
November 17, 2015

During the third quarter money market yields were flat as the Federal Reserve continued its seven year-old policy of low fed funds rates. Three month Libor rates were 4 basis points higher and one month Libor rates increased by less than 1 basis point during the quarter. The stability in Libor rates reflects the continuation of a good market tone and funding conditions for the large international banks. Credit spreads were slightly wider during the quarter, as depicted by the spread between three month Treasury bills and three month Libor rates (TED spread). This spread ended the second quarter at about 34 basis points, an increase of 7 basis points for the quarter.

TED Spread (09/30/14 – 09/30/15)



Source: Bloomberg

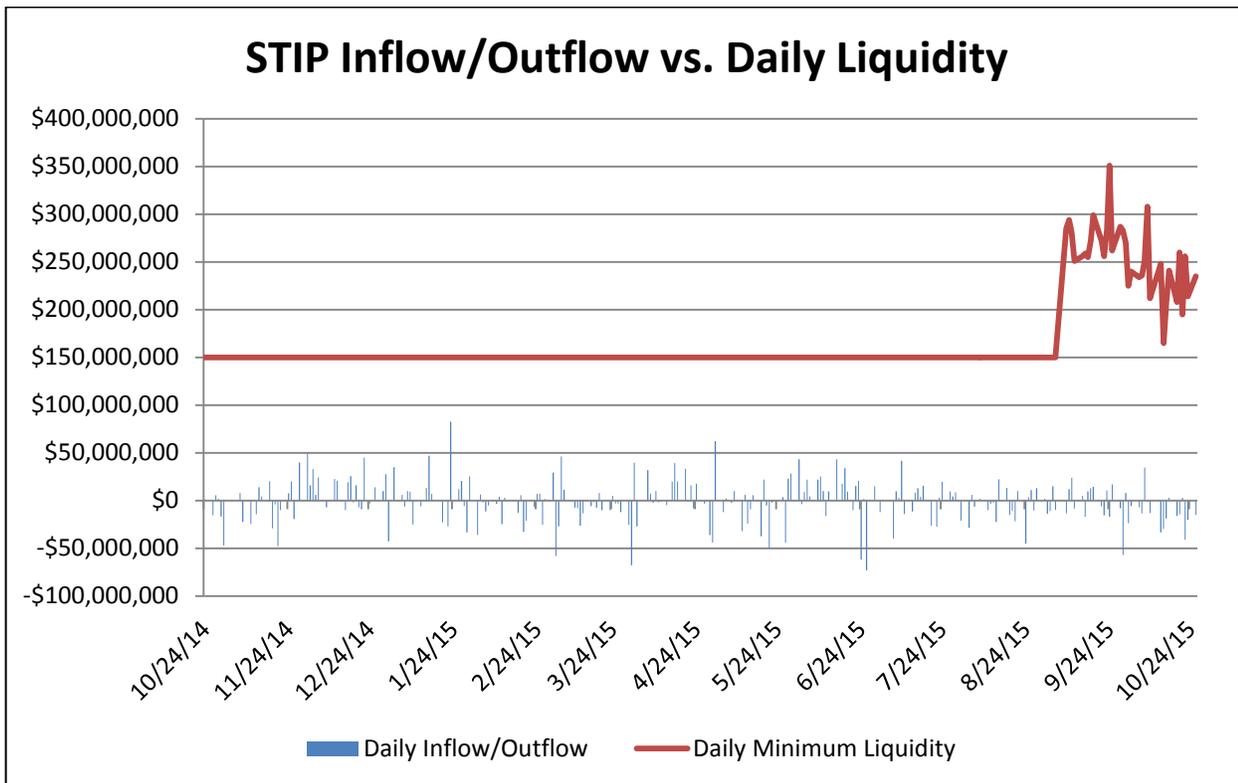
The STIP portfolio is currently well diversified and is operating within all the guidelines adopted by the Board at the November 2012 meeting. Daily liquidity is at a minimum of \$150 million and weekly liquidity is at a minimum of \$250 million.

During the third quarter we purchased \$25 million of floating rate agencies. We also purchased \$75 million of floating rate Yankee CDs and corporate notes and \$25 million of fixed rate Yankee CDs.

The net daily yield on STIP is currently 0.29% as compared with the current one-month LIBOR rate of 0.19% and current fed funds target rate of 0.0%-0.25%. The portfolio asset size is currently \$2.22 billion, down from three months ago. All charts below are as of October 27, 2015.

Short Term Investment Pool (STIP)

	STIP	Policy Range
Average Days to Maturity	48 Days	Maximum 60 Days
Asset Backed Commercial Paper (ABCP)	18.2%	40% Maximum
Corporate Commercial Paper, Bonds, Notes	31.8%	40% Maximum
Certificates of Deposit	29.2%	30% Maximum
U.S. Government Agency Securities	11.4%	65% Maximum
Money Market Funds	8.2%	15% Maximum
Net Daily Yield	0.29%	1 Month LIBOR = 0.19%
Total Portfolio Size	\$2.22B	
Operating Within All Guidelines?	YES	



STIP Performance (09/30/15)

	1 Year	3 Year	5 Year	10 Year
STIP Net of Fees/Reserve	0.15%	0.16%	0.22%	1.61%
iMoneynet First Tier Instit. (Gross)	0.22%	0.21%	0.25%	1.66%
LIBOR 1 Month Index	0.18%	0.18%	0.20%	1.55%

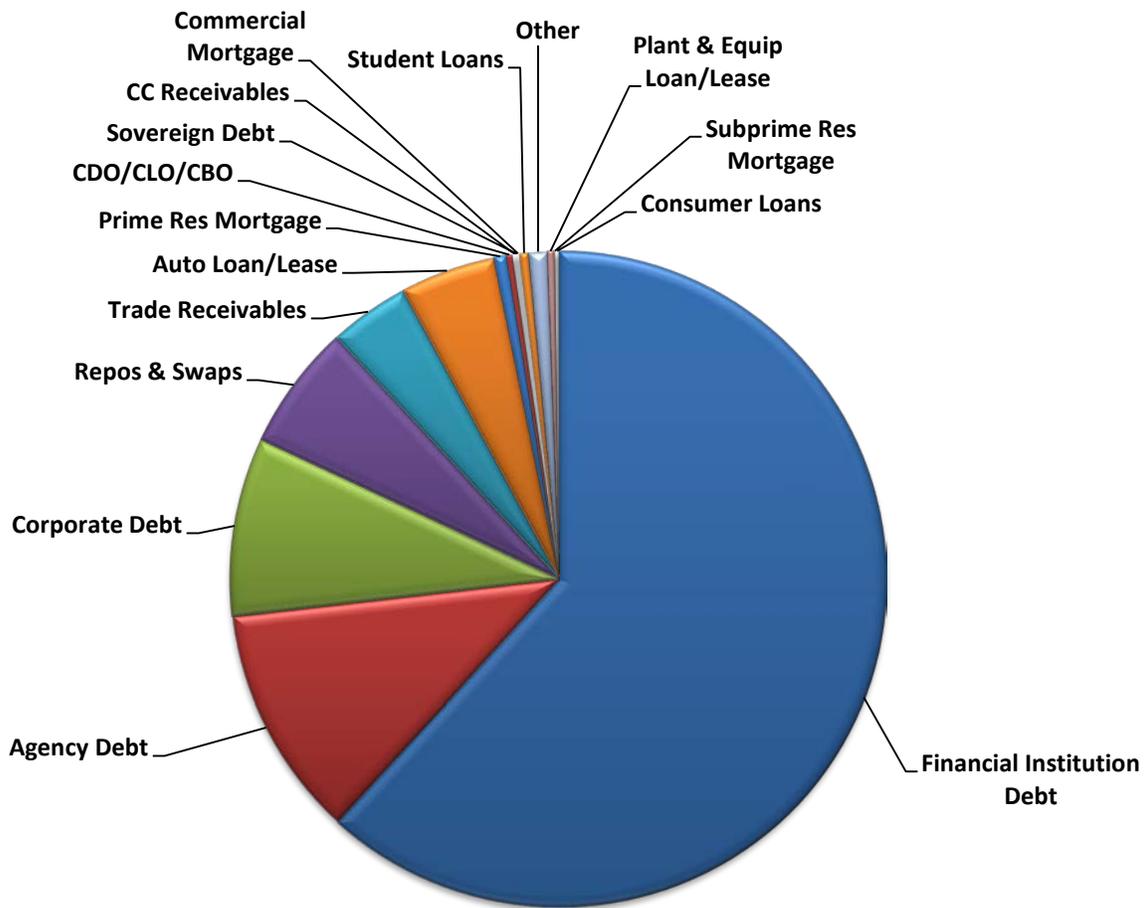
STIP Reserve Impact

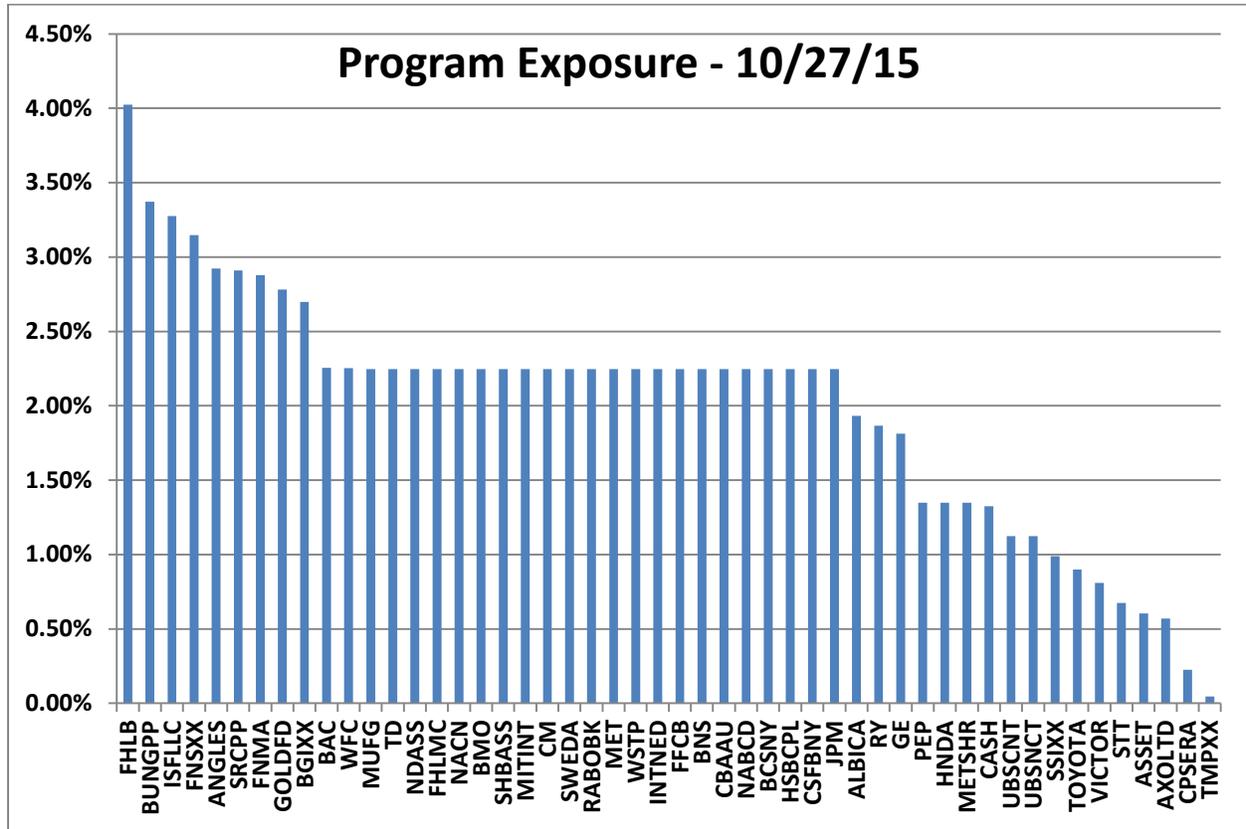
	3Q15	2Q15
Daily Reserve (\$)	\$8,000	\$8,000
Daily Reserve (bp)	12	12
Avg STIP Portfolio	\$2.45B	\$2.47B
STIP Quarter End Net Portfolio Yield	0.25%	0.23%

Residual assets from the former SIV's

	2Q15	3Q15	Change
Book value	\$27,821,400	\$26,377,006	(\$1,444,394)
Reserve	\$28,591,361	\$29,435,971	\$844,610

Portfolio Composition by Sector - 10/27/15





State Fund Insurance

Richard Cooley, CFA, Portfolio Manager
November 17, 2015

The table below lays out the basic characteristics of the State Fund fixed income portfolio in comparison to a Merrill Lynch index. The Merrill Lynch index serves as a proxy for the account's actual benchmark, the Barclays Capital Government/Credit Intermediate Index.

Benchmark Comparison Analysis						
State Fund vs. Merrill US Corp and Govt, 1-10 Yrs on 09/30/2015						
Summary Characteristics						
	Price	Coupon	Current Yield	Yield to Maturity	Effective Duration	Effective Spread
Portfolio	103.78	3.18	3.08	1.77	3.61	0.66
Benchmark	103.63	2.68	2.61	1.73	3.92	0.54
Difference	0.15	0.50	0.47	0.04	-0.31	0.12

The portfolio has an overweight in agencies, asset backed securities (ABS) and corporate bonds and is underweighted in Treasuries. The sector table on the following page provides more detail on the differences between the portfolio and the benchmark. The portfolio has a slightly shorter duration than the benchmark.

Spread product ended the third quarter mixed as compared to the end of the previous quarter. Agency spreads were narrower by 1 basis point at 17 basis points and corporate spreads widened by 24 basis points from 145 basis points to 169 basis points. During the quarter, the ten year Treasury yield decreased by 31 basis points from 2.35% to 2.04%.

The total fixed income (including STIP) portion of the account outperformed the benchmark by 12 basis points during the September quarter and outperformed by 36 basis points over one year. Longer term performance is +58 basis points for the past three years, +81 basis points for the past five years and +41 basis points for the past ten years (ended September 30, 2015).

As a reminder, the primary investment objective is to maximize investment income consistent with safety of principal.

During the September quarter, there were purchases of \$23 million of corporate bonds in the 3 to 10 year part of the curve. There were no transactions in equity fund units or core real estate during the quarter.

The portfolio has a 4 basis point yield advantage over the benchmark. Client preferences include keeping the STIP balance in a 1-5 percent range (2.58% on 9/30/15) and limiting holdings rated lower than A3 or A- to 25 percent of fixed income, at the time of purchase, (21.3% on 9/30/15).

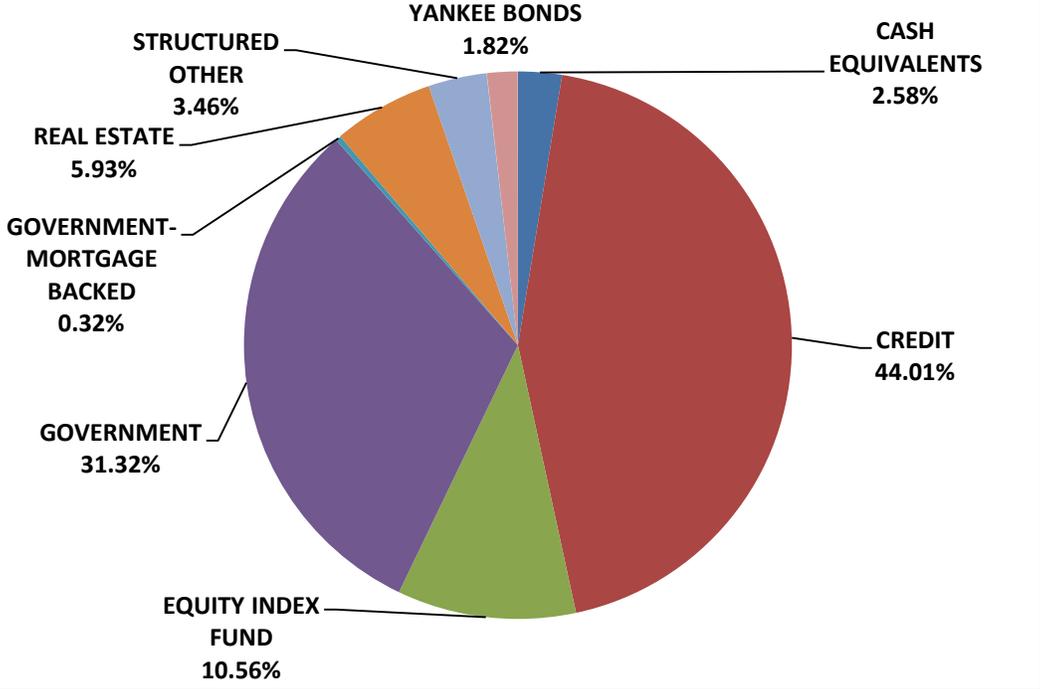
State Fund vs. Merrill US Corp and Govt 1-10 Yrs on 09/30/2015			
	SF Portfolio (%)	Benchmark (%)	Difference
Treasuries	16.32	58.38	-42.06
Agencies & Govt Related	23.34	11.27	12.06
Total Government	39.66	69.64	-30.00
Mortgage Backed	0.39	0.00	0.39
Asset Backed	4.12	0.00	4.12
CMBS	0.00	0.00	0.00
Securitized	4.51	0.00	4.51
Financial	26.14	10.16	15.98
Industrial	22.84	18.51	4.32
Utility	3.79	1.68	2.11
Total Corporates	52.77	30.35	22.41
Other	0.00	0.00	0.00
Cash	3.06	0.00	3.06
Total	100.00	100.00	

The following sector breakout is a look at the entire State Fund account including the S&P 500 and ACWI ex-U.S. equity holdings. The policy range for equities is currently 8%-12%. This is a client preference as the maximum allowed by statute is 25% of book value.

The last page is the monthly performance report from State Street. The custom composite index is an asset-weighted index that holds the same weights as the portfolio in each of the underlying benchmarks. The fixed income returns have been over the benchmark due to an overweight in spread product versus the benchmark.

9/30/2015 State Fund By Sector			
	<u>Security Name</u>	<u>Market Value</u>	<u>%</u>
	CASH	37,493,855	2.58%
CASH EQUIVALENTS		37,493,855	2.58%
	BANKS	145,475,568	10.00%
	COMMUNICATIONS	15,555,292	1.07%
	ENERGY	39,145,012	2.69%
	GAS/PIPELINES	5,790,325	0.40%
	INSURANCE	82,240,054	5.65%
	OTHER FINANCE	120,501,617	8.28%
	RETAIL	17,318,360	1.19%
	TRANSPORTATION	29,913,058	2.06%
	UTILITIES	49,915,416	3.43%
	ENERGY	5,239,080	0.36%
	INDUSTRIAL	127,847,200	8.79%
	TRANSPORTATION	1,138,563	0.08%
CREDIT		640,079,545	44.01%
	EQUITY	153,639,118	10.56%
EQUITY INDEX FUND		153,639,118	10.56%
	TREASURY NOTES/BONDS	198,311,350	13.63%
	AGENCY	257,222,508	17.68%
GOVERNMENT		455,533,858	31.32%
	FHLMC	2,806,322	0.19%
	FNMA	1,916,043	0.13%
GOVERNMENT-MORTGAGE BACKED		4,722,365	0.32%
	REAL ESTATE	86,213,098	5.93%
REAL ESTATE		86,213,098	5.93%
	OTHER STRUCTURED	50,397,082	3.46%
STRUCTURED OTHER		50,397,082	3.46%
	OTHER MINOR	26,465,006	1.82%
YANKEE BONDS		26,465,006	1.82%
STATE FUND BY SECTOR		1,454,543,927	100.00%

9/30/2015 State Fund By Sector



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MDEP & MTIP

Montana Domestic Equity Pool
Rande R. Muffick, CFA, Portfolio Manager
November 17, 2015

9/30/2015 Domestic Stock Pool By Manager			
<u>Manager Name</u>	<u>Market Value</u>	<u>%</u>	<u>Approved</u> <u>Range</u>
BLACKROCK EQUITY INDEX FUND	2,106,429,270	56.55%	
SPDR S+P 500 ETF TRUST	20,121,150	0.54%	
STATE STREET SPIF ALT INV	7,084,809	0.19%	
STATE STREET BANK + TRUST CO	1,584,514	0.04%	
LARGE CAP PASSIVE Total	2,135,219,743	57.32%	45-70%
INTECH INVESTMENT MANAGEMENT	123,281,785	3.31%	
T ROWE PRICE ASSOCIATES INC	324,669,910	8.72%	
LARGE CAP ENHANCED Total	447,951,695	12.03%	8-12%
ANALYTIC INVESTORS MU3B	121,940,211	3.27%	
JP MORGAN ASSET MGMT MU3E	318,182,558	8.54%	
130-30 Total	440,122,770	11.82%	8-12%
COMBINED LARGE CAP Total	3,023,294,208	81.16%	72-90%
ARTISAN MID CAP VALUE	119,852,145	3.22%	
BLACKROCK MIDCAP EQUITY IND FD	71,985,316	1.93%	
IRIDIAN ASSET MANAGEMENT MU3V	62,066,669	1.67%	
NICHOLAS INVESTMENT PARTNERS	61,627,947	1.65%	
TIMESQUARE CAPITAL MGMT	141,618,716	3.80%	
MID CAP Total	457,150,793	12.27%	6-17%
ALLIANCE BERNSTEIN SMALL CAP3R	32,900,725	0.88%	
DIMENSIONAL FUND ADVISORS INC	71,284,585	1.91%	
ISHARES CORE S+P SMALL CAP ETF	5,797,408	0.16%	
MET WEST CAPITAL MGT MU3W	24,438,641	0.66%	
VAUGHAN NELSON INV	78,445,210	2.11%	
VOYA INVESTMENT MANAGEMENT	31,668,838	0.85%	
SMALL CAP Total	244,535,406	6.56%	3-11%
MDEP Total	3,724,980,407	100.00%	

The table above displays the Montana Domestic Equity Pool (MDEP) allocation at quarter end across market cap segments and manager styles. At this time, all weightings are within the approved ranges.

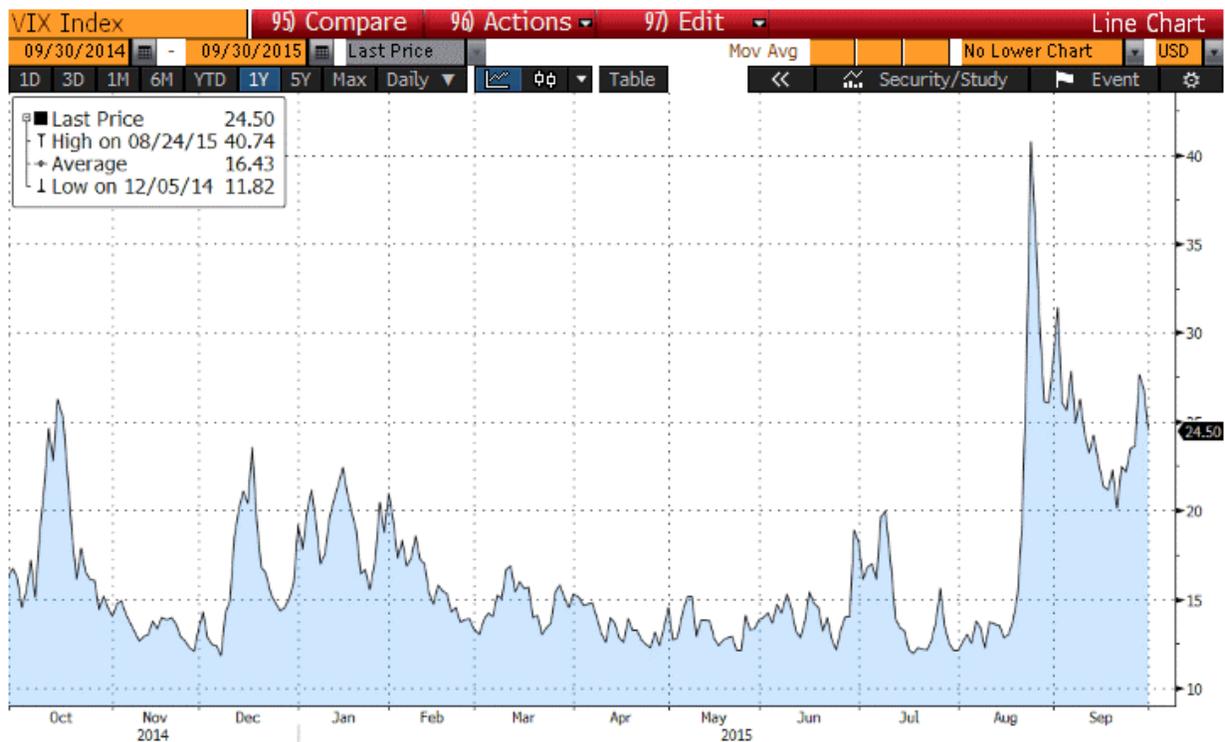
In the third quarter, domestic stocks experienced their biggest quarterly decline in four years. Concerns about the possibility of a China-led global slowdown colliding with a tightening Federal Reserve sent stocks tumbling. Energy and materials stocks, which are considered to be closely tied to China's demand for commodities, endured the largest declines. Even so called defensive stocks were sold off within the healthcare sector though, as worries about new price controls on drugs resurfaced as a political battleground for the upcoming presidential election.

US Market Environment												
3Q 2015										Last Twelve Months		
	Value	Neutral	Growth					Value	Neutral	Growth		
Large	-8.4%	-6.8%	-5.3%				Large	-4.4%	-0.6%	3.2%		
Mid	-8.0%	-8.0%	-8.0%				Mid	-2.1%	-0.3%	1.5%		
Small	-10.7%	-11.9%	-13.1%				Small	-1.6%	1.3%	4.0%		

The Standard & Poor's 500 Index declined -6.4% on a total return basis in the quarter. Yet the other major benchmarks fared even worse, with small cap stocks experiencing the largest losses. The S&P 600 Index dropped -9.3% and the broader Russell 2000 Index declined -11.9%. Returns for the mid cap stocks landed in the middle of the carnage as the S&P 400 Index lost -8.5%.

Comparisons between growth and value performances varied. Large cap growth outperformed large cap value, but the style performances were basically even when considering the mid cap stocks. Within the small caps value bested growth.

Active management industry wide struggled during the broad-based sell off. For example, according to data available through JP Morgan, only 33% of domestic equity mutual funds beat their benchmarks. Active manager performance was particularly difficult within growth mandates where 80% to 90% of active managers within mid cap and large cap growth managers underperformed their respective benchmarks in the quarter. Active small cap growth managers did however fare somewhat better with more than 50% of them besting their benchmarks.



Domestic stocks were in a trading range for the first half of the quarter, but then hit an inflection point in August when China devalued its currency in a surprise announcement. The move shook investor confidence with fears of a severe slowdown in the Chinese economy. As the domestic market sold off, the VIX vaulted into the 40s for the first time in four years.

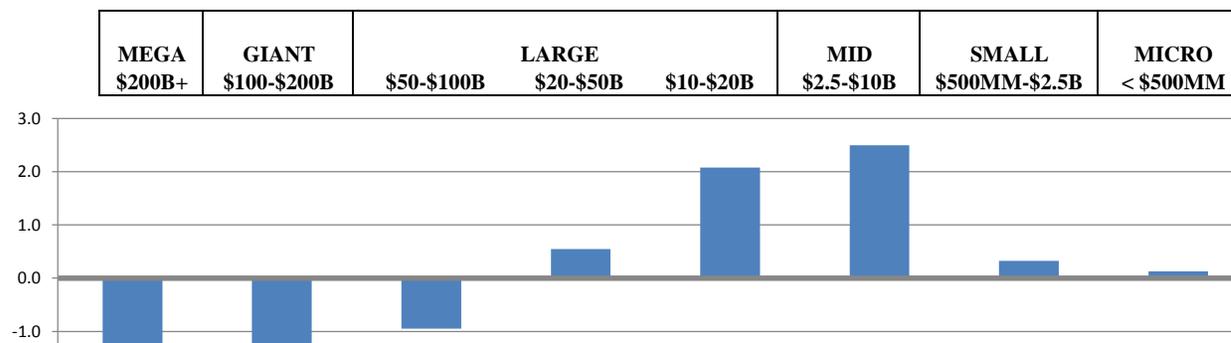
MDEP underperformed by 40 basis points in the quarter, reflecting the struggles of the actively managed portfolios. Only the large cap enhanced, small cap core, and small cap value style buckets outperformed. The JP Morgan 130/30 portfolio, which has done so well through the years and is the largest active weight in the domestic pool, had a difficult quarter as well.

The strategy going forward is to continue overweight positions within the mid cap and small cap allocations. The active/passive weights are expected to remain approximately the same.

DOMESTIC EXPOSURE-MARKET CAP %

September 30, 2015

MANAGERS	MEGA	GIANT	LARGE			MID	SMALL	MICRO	WTD AVG MARKET CAP (\$B)
	\$200B+	\$100-\$200B	\$50-\$100B	\$20-\$50B	\$10-\$20B	\$2.5-\$10B	\$500MM-\$2.5B	< \$500MM	
Alliance Bernstein	--	--	--	--	--	55.5	40.8	3.7	3,089.0
Analytic Investors, Inc	13.3	18.4	20.7	32.0	8.2	10.8	-4.6	--	92,462.0
Artisan Partners	--	--	--	9.7	30.2	53.7	6.4	--	10,510.8
Dimensional Fund Advisors	--	--	--	--	--	25.6	61.0	13.4	1,791.7
INTECH Investment Management	9.4	12.8	10.1	38.1	20.6	9.1	--	--	78,473.9
Iridian Asset Mgmt	--	--	--	16.6	19.2	57.1	7.1	--	12,109.3
J.P. Morgan	15.9	12.9	25.9	30.7	8.7	2.6	0.7	0.1	116,093.3
Met West Capital Mgt	--	--	--	--	--	39.1	59.7	1.2	2,425.6
Nicholas Investment Partners	--	--	--	17.9	30.7	49.3	2.0	--	12,117.3
T. Rowe Associates	19.0	19.9	18.1	20.9	14.9	7.1	0.1	--	121,801.8
TimesSquare Cap Mgmt	--	--	--	9.1	40.4	47.5	3.0	--	10,778.4
Vaughan Nelson Mgmt	--	--	--	--	--	56.3	43.4	0.3	2,845.2
Voya Investment Management	--	--	--	--	--	43.3	54.5	2.2	2,568.9
BlackRock S&P 500 Index Fund	17.4	23.3	17.9	23.1	12.2	5.2	--	--	127,403.5
BlackRock Midcap Equity Index Fund	--	--	--	--	4.0	79.9	13.9	--	4,848.2
Domestic Equity Pool SPIF	18.6	22.4	18.1	23.3	12.3	5.3	--	--	127,018.4
Domestic Equity Pool SPY	18.6	22.4	18.1	23.3	12.3	5.3	--	--	127,018.4
iShares S&P 600 Index ETF	--	--	--	--	--	15.2	78.4	6.4	1,594.4
ALL DOMESTIC EQUITY PORTFOLIOS	13.8	17.3	15.1	21.3	13.4	14.0	4.0	0.3	101.0
Benchmark: S&P Composite 1500	16.6	19.9	16.1	20.7	11.3	11.5	3.7	0.2	113.6
Over/underweight(-)	-2.8	-2.6	-0.9	0.5	2.1	2.5	0.3	0.1	



DOMESTIC EXPOSURE-SECTOR %

September 30, 2015

MANAGERS

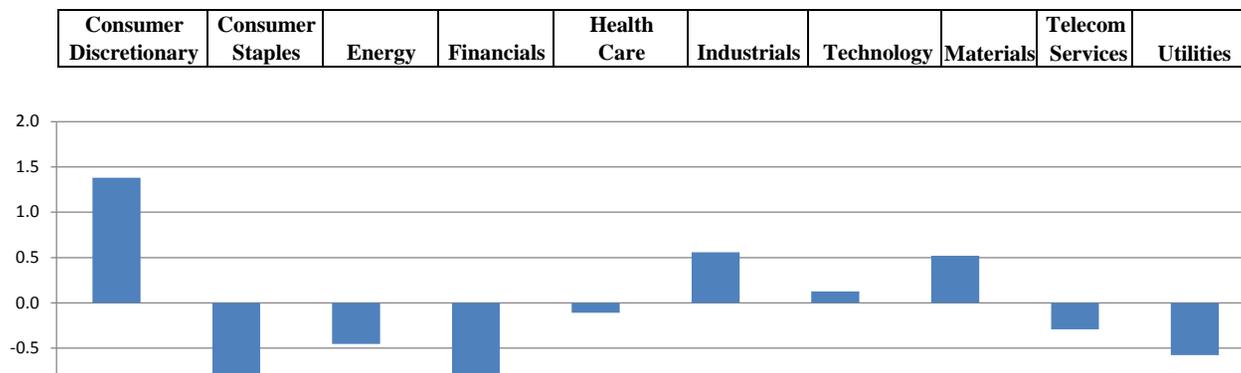
	Consumer Discretionary	Consumer Staples	Energy	Financials	Health Care	Industrials	Technology	Materials	Telecom Services	Utilities
Alliance Bernstein	16.1	1.3	2.3	7.1	26.1	14.4	30.0	2.6	--	--
Analytic Investors, Inc	11.4	10.9	8.0	14.7	13.7	9.5	19.6	5.1	3.2	2.4
Artisan Partners	18.7	1.6	6.6	26.1	--	15.6	18.0	8.0	--	5.4
Dimensional Fund Advisors	18.2	4.8	2.4	20.5	10.0	17.1	17.3	4.5	1.0	4.2
INTECH Investment Management	13.4	11.4	3.1	16.8	16.2	11.3	16.4	4.1	1.2	6.2
Iridian Asset Mgmt	17.4	3.6	5.8	1.6	11.6	19.2	13.7	27.2	--	--
J.P. Morgan	18.3	4.0	6.7	19.5	16.1	7.2	23.9	2.1	--	-0.1
Met West Capital Mgt	13.0	7.7	9.5	29.6	10.1	17.0	9.6	1.5	--	1.9
Nicholas Investment Partners	32.6	4.8	0.9	14.3	9.5	12.0	20.5	4.0	1.4	--
T. Rowe Associates	13.3	9.8	6.2	16.0	14.5	10.0	20.7	3.9	2.0	3.6
TimesSquare Cap Mgmt	21.8	3.6	1.6	9.1	12.9	25.5	19.8	1.6	4.1	--
Vaughan Nelson Mgmt	16.7	--	1.7	23.5	19.4	16.7	13.5	7.4	--	--
Voya Investment Management	18.6	1.8	1.3	8.6	22.7	15.4	26.1	4.4	--	--
BlackRock S&P 500 Index Fund	13.0	9.8	6.9	16.4	14.5	10.0	20.3	2.8	2.4	3.1
BlackRock Midcap Equity Index Fund	13.5	4.3	3.3	25.8	9.0	14.6	15.8	6.4	0.2	4.9
Domestic Equity Pool SPIF	13.1	9.9	6.9	16.5	14.7	10.1	20.4	2.8	2.4	3.1
Domestic Equity Pool SPY	13.1	9.9	6.9	16.5	14.7	10.1	20.4	2.8	2.4	3.1
iShares S&P 600 Index ETF	14.7	2.8	2.5	24.8	13.2	16.3	16.0	4.6	0.8	4.3

All Domestic Equity Portfolios

Benchmark: S&P Composite 1500

Over/underweight(-)

All Domestic Equity Portfolios	14.6	8.2	6.1	16.7	14.1	11.2	20.1	3.7	1.9	2.7
Benchmark: S&P Composite 1500	13.2	9.3	6.5	17.6	14.2	10.6	19.9	3.2	2.2	3.3
Over/underweight(-)	1.4	-1.1	-0.5	-0.9	-0.1	0.6	0.1	0.5	-0.3	-0.6



DOMESTIC PORTFOLIO CHARACTERISTICS

September 30, 2015

MANAGERS	Market Value	Number of Securities	3Yr Historical EPS Growth	Price/Earnings	Price/Book	Dividend Yield
Alliance Bernstein	32,919,171	105	21.1	26.4	3.5	0.4
Analytic Investors, Inc	123,694,628	146	17.1	12.9	2.8	2.8
Artisan Partners	120,270,916	60	7.4	14.0	1.4	2.1
Dimensional Fund Advisors	71,281,068	1,980	15.2	17.8	1.8	1.3
INTECH Investment Management	123,438,101	361	14.0	18.2	2.7	1.9
Iridian Asset Mgmt	61,886,052	43	8.6	14.6	3.5	1.3
J.P. Morgan	324,314,535	281	10.4	16.6	2.2	1.6
Met West Capital Mgt	24,445,366	65	13.3	16.8	1.6	2.2
Nicholas Investment Partners	60,154,244	101	21.1	17.4	3.4	0.6
T. Rowe Associates	325,466,850	247	11.4	18.5	2.4	2.0
TimesSquare Cap Mgmt	141,544,267	74	17.4	20.5	3.5	0.9
Vaughan Nelson Mgmt	78,264,731	66	8.2	18.5	1.9	1.2
Voya Investment Management	31,555,733	156	7.8	22.8	2.7	0.8
BlackRock S&P 500 Index Fund	2,107,523,239	507	10.8	18.0	2.4	2.2
BlackRock Midcap Equity Index Fund	71,985,311	403	14.5	19.6	2.1	1.7
Domestic Equity Pool SPIF	7,085,000	505	10.8	18.0	2.4	2.2
Domestic Equity Pool SPY	20,230,000	505	10.8	18.0	2.4	2.2
iShares S&P 600 Index ETF	5,817,000	601	18.5	20.3	1.8	1.5

All Domestic Equity Portfolios

3,731,876,214	2,978	11.5	17.6	2.4	2.0
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BENCHMARKS

S&P Composite 1500	1,506	11.3	18.1	2.3	2.2
S&P/Citigroup 1500 Pure Growth	326	29.7	22.1	3.1	1.0
S&P/Citigroup 1500 Pure Value	376	31.5	13.9	1.0	1.9
S&P 500	505	10.8	18.0	2.4	2.2
Russell 1000	1,031	11.4	18.1	2.4	2.1
Russell 1000 Growth	642	14.0	20.8	4.5	1.6
Russell 1000 Value	689	8.7	15.8	1.6	2.7
Russell Midcap	829	14.0	19.0	2.2	1.8
Russell Midcap Growth	502	14.7	21.4	4.5	1.1
Russell Midcap Value	557	13.2	17.1	1.5	2.5
Russell 2000	1,955	14.9	18.0	1.9	1.5
Russell 2000 Growth	1,155	15.0	22.8	3.7	0.8
Russell 2000 Value	1,308	14.9	15.2	1.2	2.3

Montana International Equity Pool
Rande R. Muffick, CFA, Portfolio Manager
November 17, 2015

9/30/2015 International Stock Pool By Manager			
Manager Name	Market Value	%	Approved Range
MONEY MARKET FD FOR EBT	154	0.00%	
STATE STREET BANK + TRUST CO	9,853,827	0.65%	
CASH EQUIVALENT	9,853,981	0.65%	
BLACKROCK ACWI EX US SUPERFUND	934,326,358	62.05%	
BLACKROCK MSCI EM MKT FR FD B	27,728,536	1.84%	
EAFE STOCK PERFORMANCE INDEX	7,185,608	0.48%	0-5%
ISHARES MSCI EAFE ETF	17,190,268	1.14%	
PASSIVE Total	986,430,770	65.51%	42-66%
ACADIAN ACWI EX US VALUE	90,485,069	6.01%	
BERNSTEIN ACWI EX	161,476	0.01%	
LAZARD INTERNATIONAL VALUE	84,414,788	5.61%	
VALUE Total	175,061,333	11.63%	
BAILLIE GIFFORD INT L GROWTH	79,322,609	5.27%	
HANSBERGER INTL EQUITY GROWTH	122,271	0.01%	
INVESCO INTERNATIONAL GROWTH	79,414,609	5.27%	
MARTIN CURRIE ACWI X	146,191	0.01%	
GROWTH Total	159,005,680	10.56%	
AMERICAN CENTURY INV MGMT	28,725,676	1.91%	
BLACKROCK ACWI EX US SMALL CAP	26,058,930	1.73%	
DFA INTERNATIONAL SMALL COMPA	74,203,028	4.93%	
TEMPLETON INVESTMENT COUNSEL	46,229,158	3.07%	
SMALL CAP Total	175,216,792	11.64%	8-16%
MU38 TRANSITION ACCOUNT	127,087	0.01%	
TRANSITION TOTAL	127,087	0.01%	
MTIP Total	1,505,695,642	100.00%	

The table above displays the Montana International Equity Pool (MTIP) allocation at quarter end across market cap segments and manager styles. At this time, all weightings are within the approved ranges.

International equity markets declined sharply in the quarter and similar to the U.S. market posted their worst quarterly returns in four years. The two key drivers of the selloff were the economic slowdown in China and therefore its ripple effects within the global economy and the uncertainty of U.S. Federal Reserve interest rate hikes coinciding with the potential global slowdown. Emerging market currencies, oil, and other commodities all experienced sharp declines as a result.

Losses were sizeable across all country markets. Within developed markets, some of the most sizeable country markets experienced the largest declines. For instance, Japan dropped due to poor economic reports and a possible looming recession. Australia reflected the country's heavy

exposure to the commodities businesses. And Hong Kong was a victim of its close relationship with mainland China.

Emerging markets experienced the worst of the declines as there were a number of factors pressuring these markets including China's surprise devaluation of the yuan, geopolitical problems in Turkey, and Brazil's currency weakness. The worst performing country markets within emerging markets were Brazil, China, Indonesia, and Greece.

Non-US Developed Market Environment												
3Q 2015										Last Twelve Months		
	Value	Neutral	Growth							Value	Neutral	Growth
Mid Large	-12.5%	-11.0%	-9.4%						Mid Large	-15.6%	-11.4%	-6.7%
Mid	-9.8%	-8.8%	-8.2%						Mid	-6.9%	-4.8%	-3.3%
Small	-8.8%	-8.0%	-7.3%						Small	-6.6%	-3.7%	-0.8%
Emerging Market Environment												
3Q 2015										Last Twelve Months		
	Value	Neutral	Growth							Value	Neutral	Growth
Mid Large	-19.2%	-18.3%	-17.3%						Mid Large	-22.6%	-19.5%	-16.3%
Mid	-18.6%	-15.8%	-13.6%						Mid	-23.5%	-18.1%	-13.4%
Small	-16.8%	-16.7%	-16.5%						Small	-16.5%	-15.2%	-14.0%

A look at the stock return matrixes in this report shows high double digit losses across all market capitalizations and styles. Large cap value within emerging market stocks declined almost -20% as the biggest decliner. Yet within EM the selloff can be characterized as broad based and severe.

Within developed markets the small capitalization stocks fared the best with declines of between -7% and -9%. These relative performances compared to the larger caps probably reflected investors wanting to raise cash quickly during the sell off and thus they chose to sell the more liquid larger cap stocks to a greater degree.



A look at the DXY chart for the past twelve months shows the U.S. dollar moved within a trading range of about 4% last quarter following its strong ascent since the middle of calendar year 2014. Most of the dollar move occurred between June 2014 and March 2015 where it appreciated 20% during that period of time. Although the dollar's relationships to most major currencies could be said to have stabilized since March, the Federal Reserve is ready to ratchet U.S. interest rates higher. With that said, it is likely the dollar will at least keep its relative levels that have been seen this quarter.

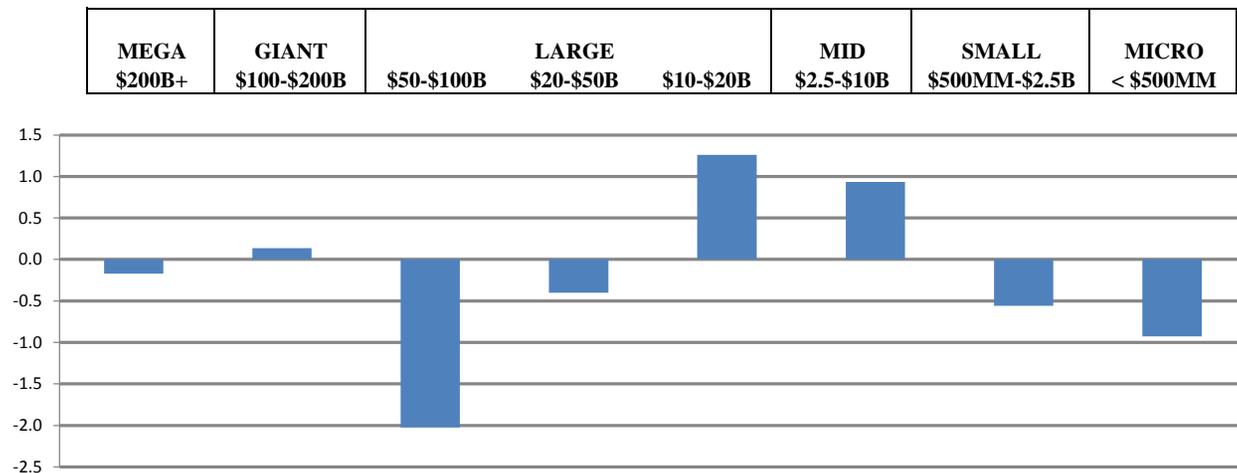
MTIP outperformed by 28 basis points for the quarter. Areas of active management that contributed to the outperformance were in large cap value, small cap core, small cap growth, and small cap value. Only the large cap growth bucket underperformed. The small cap performance was particularly noteworthy as the ability to carry active managers in this space continues to pay off handsomely.

Going forward, the strategy is to continue the active/passive weights in their current amounts and to maintain the small cap overweight versus the benchmark.

INTERNATIONAL EXPOSURE-MARKET CAP %

September 30, 2015

Managers	MEGA \$200B+	GIANT \$100-\$200B	LARGE			MID \$2.5-\$10B	SMALL \$500MM-\$2.5B	MICRO < \$500MM	WTD AVG MARKET CAP (\$B)
			\$50-\$100B	\$20-\$50B	\$10-\$20B				
Acadian Asset Management	2.4	1.6	13.8	17.3	17.1	21.6	17.5	8.8	19.2
American Century Invt Mgmt	--	--	--	--	0.4	49.8	46.0	3.3	2.2
Baillie Gifford	2.1	11.2	4.2	22.8	23.1	31.9	4.9	--	27.7
DFA International Small Cap	--	--	--	0.0	--	30.8	54.5	14.6	1.7
Invesco	0.8	12.0	12.8	31.3	32.5	9.9	--	--	37.6
Lazard Asset Mgmt LLC	4.5	13.6	16.2	19.3	20.0	22.8	4.1	--	38.4
Templeton Invt Counsel LLC	--	--	--	--	--	34.9	59.0	6.2	1.6
BlackRock ACWI Ex US Superfund A	3.2	9.1	20.2	24.9	18.3	21.3	1.9	--	40.1
BlackRock Emerging Market Fund look through	2.2	10.4	3.0	19.5	23.2	34.1	6.9	0.2	19.9
BlackRock Intl Small Cap Index look through	--	--	--	--	--	26.0	61.3	11.8	1.5
Intl Equity Pool EAFE	3.8	9.7	24.9	25.8	17.4	17.9	0.4	--	46.5
Intl Equity Pool SPIF	3.8	9.7	24.9	25.8	17.4	17.9	0.4	--	46.5
ALL INTERNATIONAL EQUITY PORTFOLIOS	2.7	8.1	15.7	21.3	17.3	23.1	9.4	0.7	33.3
International Custom Benchmark	2.8	8.0	17.7	21.7	16.0	22.2	9.9	1.7	34.8
Over/underweight(-)	-0.2	0.1	-2.0	-0.4	1.3	0.9	-0.6	-0.9	



INTERNATIONAL EXPOSURE-SECTOR %

September 30, 2015

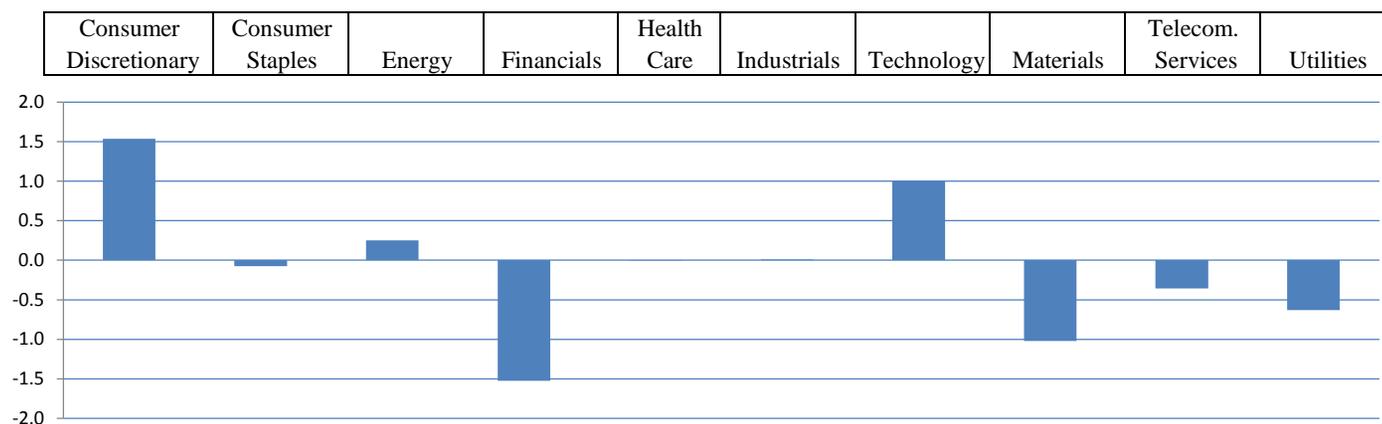
MANAGERS

Acadian Asset Management
 American Century Invst Mgmt
 Baillie Gifford
 DFA International Small Cap
 Invesco
 Lazard Asset Mgmt LLC
 Templeton Invst Counsel LLC
 BlackRock ACWI Ex US Superfund A
 BlackRock Emerging Market Fund look through
 BlackRock Intl Small Cap Index look through
 Intl Equity Pool EAFE
 Intl Equity Pool SPIF

Consumer Discretionary	Consumer Staples	Energy	Financials	Health Care	Industrials	Technology	Materials	Telecom. Services	Utilities
7.2	3.1	13.7	30.3	10.4	12.5	10.7	4.7	4.8	2.3
24.5	6.1	2.5	13.5	10.9	18.1	12.8	5.2	1.6	2.2
20.9	20.6	3.1	17.8	10.2	13.5	10.9	3.0	--	--
20.3	6.7	3.8	15.2	6.4	24.8	8.7	10.1	1.7	2.2
25.3	9.9	4.3	19.9	9.5	10.7	15.9	3.2	--	0.6
15.5	10.3	6.4	25.2	11.4	11.7	6.8	3.7	7.7	1.6
30.1	7.6	3.4	16.1	6.9	17.7	13.7	3.0	--	--
11.8	10.8	6.2	27.0	9.5	11.0	7.3	6.6	5.2	3.5
9.3	8.8	7.5	28.4	2.9	7.3	18.0	6.6	7.3	3.4
17.2	6.7	3.0	21.5	7.6	20.3	10.1	9.4	1.1	2.2
13.1	12.0	4.8	25.7	11.8	12.5	4.8	6.6	4.9	3.8
13.1	12.0	4.8	25.7	11.8	12.5	4.8	6.6	4.9	3.8

All International Equity Portfolios
International Custom Benchmark
 Over/underweight(-)

14.2	10.3	6.1	25.0	9.3	12.4	8.7	6.0	4.3	2.8
12.7	10.3	5.8	26.5	9.3	12.4	7.7	7.1	4.7	3.4
1.5	-0.1	0.3	-1.5	0.0	0.0	1.0	-1.0	-0.4	-0.6



INTERNATIONAL PORTFOLIO CHARACTERISTICS

September 30, 2015

	Market Value	Number of Securities	3Yr Hist EPS Growth	Price/Earnings	Price/Book	Dividend Yield
International Accounts with look throughs	1,479,347,003	8,304	11.5	14.2	1.6	3.06

International Equity Managers

Acadian Asset Management	90,597,638.3	466	13.8	10.4	1.2	3.1
American Century Invt Mgmt	29,015,123.8	117	24.6	25.8	3.2	1.3
Baillie Gifford	79,584,963.4	79	16.2	15.7	2.2	2.1
Lazard Asset Mgmt LLC	83,957,872.9	74	12.5	15.0	2.1	3.3
Invesco	80,769,391.3	77	7.9	14.4	2.1	3.0
DFA International Small Cap	73,981,786.5	4,027	12.7	14.9	1.4	2.6
Templeton Invt Counsel LLC	46,180,244.2	121	10.4	15.0	1.6	2.5
BlackRock ACWI Ex US Superfund A	934,308,303.5	1,879	10.6	14.3	1.5	3.2
BlackRock Emerging Market Fund look through	27,730,571.0	855	11.8	11.6	1.4	3.0
BlackRock Intl Small Cap Index look through	26,017,917.9	4,258	16.2	15.4	1.4	2.5
Intl Equity Pool EAFE	17,190.0	913	9.3	15.1	1.5	3.3
Intl Equity Pool SPIF	7,186,000.0	913	9.3	15.1	1.5	3.3

Benchmarks

MSCI AC World ex USA IMI	6083.00	11.17	14.40	1.49	3.15
MSCI All Country World Ex-United States	1843.00	10.48	14.27	1.50	3.25
MSCI All Country World Ex-United States Growth	1087.00	15.32	17.67	2.33	2.27
MSCI All Country World Ex-United States Value	998.00	5.39	11.84	1.09	4.27
MSCI EAFE Small Cap	2139.00	17.41	16.03	1.51	2.46
MSCI World Ex-United States Small Cap	2372.00	17.61	16.02	1.48	2.52
MSCI All Country Pacific	932.00	19.92	12.25	1.27	2.91
MSCI Europe	442.00	2.12	16.16	1.69	3.56

INTERNATIONAL EQUITY
Region and Market Exposure
September 30, 2015

Developed Countries	Aggregate Int'l Portfolio Weight (%)	MSCI ACWI ex US IMI	difference	3 Month Return	FYTD Return	Calendar YTD Return	1 yr Return
Asia/Pacific	24.0%	25.0%	-0.97%				
Australia	4.46%	4.58%		-16.2%	-16.2%	-20.8%	-24.7%
Hong Kong	2.16%	2.17%		-17.6%	-17.6%	-9.8%	-7.8%
Japan	16.33%	17.09%		-11.6%	-11.6%	-0.4%	-2.9%
New Zealand	0.15%	0.18%		-9.3%	-9.3%	-21.4%	-16.4%
Singapore	0.94%	1.00%		-20.0%	-20.0%	-22.5%	-24.2%
European Union	24.9%	25.4%	-0.42%				
Austria	0.29%	0.20%		-6.9%	-6.9%	-3.1%	-8.6%
Belgium	1.03%	1.00%		-7.4%	-7.4%	-2.5%	-2.4%
Denmark	1.49%	1.36%		-1.9%	-1.9%	14.4%	7.2%
Finland	1.01%	0.68%		-6.4%	-6.4%	-8.2%	-10.2%
France	5.89%	6.77%		-6.4%	-6.4%	-3.3%	-9.0%
Germany	6.24%	6.17%		-10.0%	-10.0%	-9.4%	-9.5%
Ireland	0.30%	0.37%		-1.4%	-1.4%	11.0%	13.9%
Italy	1.85%	2.03%		-4.4%	-4.4%	5.3%	-7.9%
Netherlands	1.79%	1.92%		-9.3%	-9.3%	-3.6%	-5.2%
Portugal	0.15%	0.13%		-9.6%	-9.6%	-4.3%	-25.1%
Spain	2.20%	2.42%		-11.7%	-11.7%	-13.6%	-21.0%
Sweden	2.70%	2.32%		-7.1%	-7.1%	-6.8%	-9.3%
Non-EU Europe	6.7%	7.1%	-0.39%				
Norway	0.53%	0.53%		-16.8%	-16.8%	-15.9%	-34.9%
Switzerland	6.16%	6.56%		-7.1%	-7.1%	-3.4%	-5.4%
North America	6.4%	6.5%	-0.04%				
Canada	5.91%	6.46%		-15.4%	-15.4%	-22.0%	-26.9%
USA	0.51%	0.00%		-7.8%	-7.8%	-6.7%	-2.4%
United Kingdom	15.6%	15.0%	0.69%				
United Kingdom	15.64%	14.95%		-10.4%	-10.4%	-9.1%	-12.9%
Other							
Other	0.71%	0.51%					
DEVELOPED TOTAL	78.46%	79.38%	-0.92%				
Emerging & Frontier Market Countries							
Asia/Pacific	13.8%	14.7%	-0.82%				
China	4.40%	4.76%		-23.7%	-23.7%	-12.7%	-7.9%
India	1.47%	1.91%		-6.4%	-6.4%	-5.7%	-5.5%
Indonesia	0.40%	0.45%		-25.0%	-25.0%	-35.8%	-35.7%
South Korea	3.23%	3.34%		-11.9%	-11.9%	-8.1%	-16.1%
Malaysia	0.50%	0.66%		-18.6%	-18.6%	-26.5%	-35.5%
Philippines	0.39%	0.30%		-11.8%	-11.8%	-10.6%	-10.2%
Taiwan	2.93%	2.73%		-18.5%	-18.5%	-15.8%	-15.5%
Thailand	0.52%	0.51%		-17.8%	-17.8%	-19.9%	-25.6%
European Union	0.5%	0.5%	0.02%				
Czech Republic	0.03%	0.04%		-5.5%	-5.5%	-11.0%	-24.0%
Greece	0.04%	0.07%		-26.6%	-26.6%	-43.0%	-59.3%
Hungary	0.04%	0.05%		-3.1%	-3.1%	18.5%	3.4%
Poland	0.38%	0.31%		-10.8%	-10.8%	-15.2%	-26.6%
Non-EU Europe	0.6%	0.7%	-0.10%				
Russia	0.59%	0.70%		-17.0%	-17.0%	5.3%	-30.7%
Latin America/Caribbean	2.9%	2.5%	0.34%				
Brazil	1.40%	1.15%		-34.1%	-34.1%	-41.5%	-50.7%
Chile	0.25%	0.25%		-13.5%	-13.5%	-17.8%	-22.1%
Colombia	0.08%	0.10%		-24.1%	-24.1%	-38.0%	-52.3%
Mexico	1.06%	0.94%		-12.0%	-12.0%	-14.4%	-25.1%
Peru	0.06%	0.07%		-21.3%	-21.3%	-26.2%	-27.0%
Mid East/Africa	2.3%	2.3%	0.03%				
Egypt	0.04%	0.06%		-15.3%	-15.3%	-26.6%	-34.2%
Qatar	0.16%	0.22%		-6.9%	-6.9%	-12.8%	-21.1%
South Africa	1.61%	1.56%		-19.0%	-19.0%	-18.6%	-16.6%
Turkey	0.40%	0.29%		-20.0%	-20.0%	-33.2%	-26.0%
United Arab Emirates	0.12%	0.17%		-10.1%	-10.1%	-9.5%	-28.3%
Frontier	0.00%	0.00%	0.00%				
EMERGING & FRONTIER TOTAL	20.1%	20.6%	-0.53%				

MEMORANDUM

Montana Board of Investments

Department of Commerce

2401 Colonial Drive, 3rd Floor

Helena, MT 59601 (406) 444-0001

To: Members of the Board

From: Rande R. Muffick, CFA
Portfolio Manager – Public Equities

Date: November 18, 2015

Subject: Public Equity External Managers Watch List - Quarterly Update

There were no changes to the Watch List this quarter.

**PUBLIC EQUITIES
MANAGER WATCH LIST**
November 2015

<u>Manager</u>	<u>Style Bucket</u>	<u>Reason</u>	<u>\$ Invested (mil)</u>	<u>Inclusion Date</u>
Artisan	Domestic – MC Value	Performance	\$119.8	November 2014
Alliance Bernstein	Domestic – SC Growth	Performance	\$32.9	February 2015

[Back to Agenda](#)

APPENDIX

2015 CALENDAR

Board Dates Board Packet Mailing

01 New Year's Day
19 M.L. King Day

JANUARY						
S	M	T	W	Th	F	S
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

04 Independence Day

JULY						
S	M	T	W	Th	F	S
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	

16 Presidents Day

FEBRUARY						
S	M	T	W	Th	F	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28

AUGUST						
S	M	T	W	Th	F	S
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	31					

MARCH						
S	M	T	W	Th	F	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31				

SEPTEMBER						
S	M	T	W	Th	F	S
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30			

07 Labor Day

03 Good Friday
05 Easter Sunday

APRIL						
S	M	T	W	Th	F	S
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30		

OCTOBER						
S	M	T	W	Th	F	S
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

12 Columbus Day
31 Halloween

10 Mother's Day
25 Memorial Day

MAY						
S	M	T	W	Th	F	S
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
31						

NOVEMBER						
S	M	T	W	Th	F	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30					

11 Veterans Day
26 Thanksgiving Day

21 Father's Day

JUNE						
S	M	T	W	Th	F	S
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30				

DECEMBER						
S	M	T	W	Th	F	S
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31		

25 Christmas Day

Systematic Work and Education Plan 2015

- Feb. 24-25** **Quarterly Meeting**
Quarterly reports and subcommittee meetings
Annual Report and Financial Statements
Financial Audit
Ethics
Board's real property holdings
Securities lending
- April 7** **Non-Quarterly Meeting**
All policy review
Capital market/asset allocation overview
Board as a rated credit
In – state loan programs
RVK presentation (TBD)
Board education and possible conferences (IFE usually in June)
- May 19-20** **Quarterly Meeting**
Quarterly reports and subcommittee meetings
Fixed income
Fixed income trust clientele joint presentations (and luncheon)
Board's web site
State Fund as major BOI client
Staffing level review
- August 18-19** **Quarterly Meeting**
Quarterly reports and subcommittee meetings
CEM Benchmarking
MBOI Budget and legislative-related action-decision
Internal Controls
Fiscal Year performance through June 30th
RVK presentation (TBD)
- October 6** **Non-Quarterly Meeting**
TBD
- Nov. 17-18** **Quarterly Meeting**
Quarterly reports and subcommittee meetings
Affirm or Revise Asset Allocation
Resolution 217
Resolution 218
PERS/TRS annual update
Benchmarks used by Board
Securities litigation status
Exempt staff annual review
Accounting Review

MONTANA BOARD OF INVESTMENTS
ACRONYM INDEX

ACH.....	Automated Clearing House
ADR.....	American Depository Receipts
AOF.....	All Other Funds
ARC.....	Actuarially Required Contribution
BOI.....	Board of Investments
CFA.....	Chartered Financial Analyst
EM.....	Emerging Market
FOIA.....	Freedom of Information Act
FWP.....	Fish Wildlife and Parks
FX.....	Foreign Exchange
IPS.....	Investment Policy Statement
LDI.....	Liability-Driven Investing
MBOH.....	Montana Board of Housing
MBOI.....	Montana Board of Investments
MDEP.....	Montana Domestic Equity Pool
MFFA.....	Montana Facility Finance Authority
MPEP.....	Montana Private Equity Pool
MPT.....	Modern Portfolio Theory
MSTA.....	Montana Science and Technology Alliance
MTIP.....	Montana International Pool
MTRP.....	Montana Real Estate Pool
MTSBA.....	Montana School Boards Association
MVO.....	Mean-Variance Optimization

MONTANA BOARD OF INVESTMENTS
ACRONYM INDEX

NAV	Net Asset Value
PERS	Public Employees' Retirement System
PFL.....	Partnership Focus List
QZAB	Qualified Zone Academy Bonds
QSCB	Qualified School Construction Bonds
RFBP.....	Retirement Funds Bond Pool
RFP	Request for Proposal
SABHRS	Statewide Accounting Budgeting and Human Resource System
SLQT	Securities Lending Quality Trust
SSBCI	State Small Business Credit Initiative
STIP	Short Term Investment Pool
TFBP	Trust Funds Bond Pool
TFIP	Trust Funds Investment Pool
TIF.....	Tax Increment Financing
TIFD	Tax Increment Financing District
TRS.....	Teachers' Retirement System
TUCS	Trust Universe Comparison Service
VIX	Volatility Index

Terminology Commonly Used and Generally Understood at the Montana Board of Investments (And most typical context used at BOI)

Active management (typically with respect to stocks)

Investment method which involves hiring a manager to research securities and actively make investment decisions to buy and sell securities in an effort to outperform an assigned index, rather than purchasing a portfolio of securities that would simply replicate the index holdings (*'passive'* investing).

Actuarial assumed rate (pension concept)

The investment return rate used by actuaries that enables them to project the investment growth of retirement system assets into the future (typically perpetual).

Actuarial funding status (pension concept)

A measurement made by actuaries to measure a pension system's financial soundness (ratio of actuarial liabilities to the actuarial value of the assets available to pay the liabilities).

Alpha (investment term)

Return on an investment portfolio in excess of the market return or benchmark return; generally used in the context of *'active'* management (as passive management, by definition, does not seek excess returns, or *'alpha'*).

Alternative Investments

A wide range of investments, other than traditional assets such as publically traded stocks and bonds. The most common nontraditional or alternative investments are private equity, real estate, commodities, and hedge funds.

Arbitrage (bond program)

A structural or systematic difference between investment types which may allow profiting from the *'difference,'* i.e., arbitrage. The most common context for the use of *'arbitrage'* at the BOI is the federal law that prevents *'arbitrage,'* i.e., the profiting of investing tax-exempt securities (e.g. INTERCAP) into taxable yields investments (such as U.S. Treasuries).

Asset Allocation and Asset Allocation Range (general investment principle)

The Board's invested assets are divided or allocated into various asset classes such as stocks and bonds, each with its own characteristics, with the objective of attaining an optimal mix of risk and return. The total expected return of a portfolio is primarily determined by the mix or allocation to its underlying assets classes. Given the importance of *'asset allocation,'* the BOI Board sets the asset allocation *'range'* for each broad investment type or asset class.

Average life (fixed income, particularly bonds)

The average time period the debt is expected to be outstanding. This is typically the maturity date for a traditional bond structure, however it will be shorter for bonds having a sinking fund or amortizing payment structure.

Barclay's Aggregate Index (fixed income)

A composite of outstanding bond issues, including corporate, structured, and government bonds whose overall investment features such as return and investment type are tracked over many years. This is the most common benchmark used for comparing the performance of a portfolio that invests in U.S. investment grade fixed income securities. Formerly known as the Lehman Aggregate bond index.

Basis points (investment jargon)

A basis point is 1/100th of a percentage. Ten basis points is one tenth of a percent, typically written as 10 bps.

Benchmark (standard investment concept)

The concept of employing a particular independent or market investment return as a measurement to judge an investment portfolio's return; typically chosen investment benchmarks have the following attributes: they are investible, quantifiable, chosen in advance, easily understandable, and have a long history; common examples are the S & P 500 Index and the Barclay's Aggregate Index.

Beta (investment jargon)

A measure of the risk (or volatility) of a security or a portfolio in comparison to the market as a whole. If the stock or portfolio moves identically to that market, its beta value is 1; if its price volatility (or movement) is greater than that market's price volatility, it is said to have beta greater than 1.

Cap, as in large 'cap' (generally for stocks, i.e., public equities)

'Cap' is short for capitalization, as a reference to the market value of a publically-traded company. The current stock price times the total shares outstanding of the company equals its market capitalization or market 'cap'; often used contextually such as 'large-cap,' 'mid-cap,' and 'small-cap' for different sized public companies.

Clawback (private equity)

A clause in the agreement between the general partner and the limited partners of a private equity fund. The clawback gives limited partners the right to reclaim a portion of distributions to a general partner for profitable investments based on significant losses from later investments in a portfolio which ultimately resulted in the general partner receiving more distributions than it was legally entitled to.

Core (context varies for equity, fixed income, real estate)

In equity and fixed income, 'core' refers to investments that are generally always found in the portfolio and normally expect to hold for a very long time e.g. 'core' holdings of the largest U.S. companies, or U.S. treasuries; in real estate, 'core' generally refers to the best quality of real estate holdings such as prime commercial property in major metropolitan cities that have low leverage and low levels of vacancy.

Correlation (common statistical concept)

A measure of how two or more investment values or two asset classes move relative to each other during the same time period. A central concept in portfolio construction is to seek investments whose values do not move *together* at the same time, i.e., are uncorrelated. A correlation of 1 means that two or more investments 'move' precisely together.

Custom benchmark (or sometimes custom index)

A way to measure investment performance using a tailor-made measurement versus a generic industry-standard benchmark. At the BOI, total pension performance is measured against the Board's 'custom index' or 'custom benchmark' which is a weighted blend of all the underlying asset class benchmarks used to measure the asset class returns.

Derivatives (investment jargon)

Investment securities whose performance itself depends (or is 'derived') from another underlying investment return. Examples include stock options, puts/calls, and forward currency contracts whose returns are based on the underlying stock or currency.

Developed markets (equity)

Countries having a long period of stable industrialization; or are the most economically developed.

Discount (fixed income, generally)

Used most often with respect to bonds, the price paid that is less than face (or 'par') value. A \$1 million face-value of a bond purchased for less than a million is bought at a 'discount.' Described as the difference between a bond's current market price and its face or redemption value.

Diversification (standard investment concept)

The concept of spreading risk by putting assets in several investment categories, each having different attributes with respect to type, expected return, risk, and correlation, to best protect against the risk of loss.

Duration (bonds)

Almost exclusively used when discussing fixed income bonds, a measurement of how sensitive a bonds' change in price is to a change in general market interest rates, expressed in years (specifically calculated as a weighted average term to maturity of the bond's cash flows). The greater the duration of a bond, the greater the volatility of price for changes in market interest rates.

Efficiency (usually when discussing various stock markets)

Used to describe markets where it is very difficult to achieve return in excess of that of the overall market from individual stock selection. When information is widely available on a company and its securities are traded regularly the market is considered 'efficient.'

Emerging Markets (most often for public equities)

Certain international securities markets that are typically small, new, have low turnover, and are located in countries where below-average income prevails and is developing in response to the spread of capitalism.

Enhanced (pertaining to stocks)

Generally linked with 'index' as in enhanced index, an indexed investment management style that has been modified to include the portfolio manager's idea of how to outperform the index by omitting some stocks in the index and overweighting others in a limited manner designed to enhance returns but at minimal risk.

Enhancement (bond program)

At BOI, the term generally refers to credit support or a bond or loan guarantee. For example the Board's INTERCAP bonds are 'enhanced' by the BOI's performance guarantee bringing down the yearly interest rate.

Excess returns (standard investment concept)

Returns are 'excess' if they are more than the market or more than the benchmark they are measured against.

Exempt staff vs. classified staff (specific to Montana state government)

"Exempt" refers to the Board's seven employees who, under state law, do not fall under the state's standard employment rules (the 'classified' staff).

Fiduciary (from the Latin verb, fidere, to trust)

The concept of trust and watchfulness; a fiduciary is charged with the responsibility of investing the money wisely for the beneficiary's benefit. Board members are the ultimate 'fiduciaries' for the Board's assets and are obligated to be a good agent.

FTE (state government jargon)

An acronym in state government: "full time equivalent" as in full time employee. The concept is a slot or position, not the actual individuals. The BOI is currently authorized for 32 FTE's.

Fund of funds (private equity)

A concept used in alternative investments referring to using an investment manager to invest in *other* managers or funds, as opposed to making direct investments in funds.

GAAP/GASB (accounting terminology)

GAAP...Generally Accepted Accounting Principles; Montana state law uses GAAP accounting principles unless specifically allowed otherwise. GASB...Government Accounting Standards Board, the board that sets GAAP

standards for U.S. governments (FASB...Financial Accounting Standards Board, the entity for commercial and business accounting standards).

General obligation (municipal finance term)

Used to describe the promise that a government makes to bond holders, backed by taxing and further borrowing power, it is generally considered the highest level of commitment to bondholders. At the local government level, general obligation bonds typically require a vote of the residents.

General partner vs. limited partner (private equity)

In private equity, the general partner is responsible for the operations of the partnership and makes the actual underlying investment decisions; the limited partner is the investor, and therefore has limited liability for investment decisions; the BOI is the 'limited' partner in its private equity fund investments (and real estate funds as well).

Growth (as to style public equities)

An investment style that more heavily invests in companies whose earnings are expected to grow at an above average rate to the market. A growth stock usually does not pay a dividend, as the company would prefer to reinvest retained earnings in capital projects to grow the company (vs. 'value,' which considers buying established companies they feel are trading at bargain prices to the fundamental analysis of the company's financial statements and internal competitive factors).

Indenture (bond and loan programs)

The central document describing the contract between investors and the borrower or user of the proceeds. The Board's INTERCAP program is structured around a bond indenture.

Hedge fund (as defined by Investopedia)

An aggressively managed portfolio of investments that uses advanced investment strategies such as *leverage*, long, short and *derivative* positions in both domestic and international markets with the goal of generating high returns (either in an absolute sense or over a specified market *benchmark*).

Hurdle Rate (private equity)

a minimum return per annum that must be generated for limited partners of a private equity fund before the general partner can begin receiving a percentage of profits from investments.

Index (investment concept)

Typically a single measure of a broadly-based group of investments that can be used to judge, or be compared to the return performance of an individual investment or manager.

Indexing (investment concept)

Typically refers to investing in a portfolio to match a broad range of investments that are set within a pre-determined grouping, such as the S&P 500, so as to match its performance; such investing is generally labeled 'passive' or indexed investing; or buying shares in an Index Fund.

In-state loan program (Montana-specific)

Programs that are funded by the state's coal severance tax monies.

Internal service vs. enterprise fund (state accounting concept)

Within Montana state government: a program whose funding is dependent on *mandatory participation* by another state government program is labeled an 'internal' service fund; a program whose funding is dependent on voluntary participation is labeled an enterprise fund. At BOI, the investment program is an internal service fund because participation is not voluntary; the Board's bond and loan programs, because their use is voluntary, are accounted for as an enterprise.

Investment grade (bonds)

Bond ratings from Moody's, Standard and Poor's, and Fitch high enough to be considered secure enough for most investors (bonds rated AAA – BBB). Below investment-grade bonds (below BBB) are generally considered to have a more speculative outlook and carry more risk of default.

IRR (private equity)

A measure of investment performance, short for 'internal rate of return,' expressed as a percentage (the 'internal rate of return' number, or discount rate) that mathematically will equalize the total future cash flows of an investment to the initial cash outflow of the investment; the concept accounts for the time value of money.

Leverage (investment concept)

As an investment concept, a way to increase a return on an investment through a combination of one's own money and also by borrowing additional money to enhance such an investment; high 'leverage' is also associated with high risk.

Mean Variance Optimization Model ('Modern Portfolio Theory')

A theory that it is possible to construct a portfolio to maximize the return for the least amount of risk or volatility. This theory is based on various asset types and their level of expected return, risk (volatility) and their correlation with each other or how the asset values move with each other. The central idea of the model is to blend investments so that in total, they provide both the best expected return and optimal amount of diversification to minimize deep performance swings (volatility); a central tenant is that long term historical returns are indicative of future returns.

Mezzanine finance (private equity)

Subordinated debt with an equity 'kicker' or ability to share in the equity value of the company. It is typically lower quality because it is generally subordinated to debt provided by senior lenders such as banks, thus is considered higher risk.

Multiple (as in "multiple" of invested capital, private equity)

The ratio of total cash returned over the life of the investment plus the investment's residual value over the total cash expended in making the investment. A multiple of 2 means, regardless of the total investment time period, that total cash returned was twice the cash invested.

130/30 Strategy (public equities)

Also called 'partial long short,' this strategy involves the establishment of a short position in select stocks while taking the proceeds of those shorts and buying additional long positions in stocks. The net effect is an overall market position that is 100% long, but the active decisions on individual stock selections are amplified by this ability to short. If the stock selections are successful, the strategy enables the portfolio to profit more than if a stock had simply not been owned, as with traditional long-only portfolios.

Opportunistic (real estate)

In real estate, a euphemism for the most risky real estate investments, typically distressed, raw land, newly developed buildings or other high risk investments in the real estate sector, (versus, 'core,' which are the best quality fully leased commercial properties).

Overweight or underweight (investment concept)

Generally the level of holdings of a certain type of investment that is above or below either a benchmark's weight (portion of total investment), or the percentage held of a particular asset class compared to the Board's asset allocation policy weight. Also used to describe an external investment manager's decision to have more (or less) of a particular investment than the percentage or weighting found in the benchmark.

Passive management or passive investment (most often in public equities, but not exclusively)

An investment style where a fund's portfolio mirrors a market index, such as the S&P 500, with limited selection decisions by the manager, resulting in market returns. Passive management is the opposite of active management in which a fund's manager attempts to beat the market with various investment strategies and buy/sell decisions of a portfolio of securities to enhance returns.

P/E ratio (equity)

The price of a publically traded stock divided by its estimated or actual earnings is the price/earnings or P/E ratio. This can also be calculated for a stock index or portfolio of stocks. Over the last 100 years, the S&P 500 has had an overall P/E ratio of about 15, or a total index price of about 15 times the annual earnings of its underlying companies.

Pacing study (private equity)

An analysis of the likely timing and amount of the drawdown of committed but yet uninvested monies and the estimated distributions or returns from the funds held in an alternative investment portfolio, generally used to judge the future size of the portfolio and its potential liquidity needs, i.e., cash funding demands.

Par (fixed income)

The initial principal amount designated by the issuer of the bond, or face value of a bond.

Passive

For investments, generally not materially participating in an investment decision, meaning an investment portfolio whose returns follows that of a broad market index, such as an investable stock index, i.e. the S & P 500.

Passive weight (generally equities)

The percentage of a stock held in a particular index portfolio, or percentage of an overall asset class that is held in passive portfolios.

Policy Portfolio

A fixed-target asset allocation, as opposed to asset allocation ranges, which theoretically allows gauging whether deviations from the target portfolio had a positive or negative impact on overall performance.

Portable alpha (public equities)

An investment strategy which involves the active selection of securities while neutralizing overall beta or market risk. This often involves the use of derivative investments such as futures to replicate the market return, either taking a short or long position, while then selecting securities which are expected to add return in an absolute sense or in addition to the market return. As an example, this strategy can be found with certain hedge funds where a market exposure is shorted while individual securities such as specific stocks are purchased that are expected to outperform the general market. The concept of portable applies when the ability to generate positive alpha can be overlaid or ported onto a portfolio. This is not a strategy employed by any of MBOI's existing managers.

Premium (fixed income)

Most often the amount paid over the stated face amount (often called 'par') of a bond, but also used in other contexts, typically paying more (the premium) than a market price (as in a take-over bid for a company).

Proxy (publically traded companies)

An agent legally authorized to act on behalf of another party. Shareholders not attending a company's annual meeting may choose to vote their shares by proxy by allowing someone else to cast votes on their behalf, but the word 'proxy' is used more frequently colloquially as a 'close approximation.'

Prudent expert, prudent person (a central fiduciary concept)

These legal terms have long histories of court-determined standards of care, deriving originally under English common law. The BOI is empowered to operate under the 'prudent expert rule,' which states that the Board shall manage a portfolio:

a) with the care, skill, prudence, and diligence, under the circumstances then prevailing, that a prudent man acting in a like capacity and familiar with such matters would use in the conduct of an enterprise of a like character and with like aims;

b) diversify the holdings of each fund within the unified investment program to minimize the risk of loss and to maximize the rate of return unless, under the circumstances, it is clearly prudent not to do so; and

(c) discharge the duties solely in the interest of and for the benefit of the funds forming the unified investment program.

At an 'expert' level; there is more room for accepting risk under the prudent expert rule than the prudent person rule.

Rebalancing (general investment term)

The process of realigning the weightings of the portfolio of assets. Rebalancing involves periodically buying or selling assets in the portfolio to maintain the original desired level of asset allocation and/or to stay within predetermined asset category range; it is part of a disciplined investment approach within modern portfolio theory.

Resolution (government term)

Generally a formal and written action by a governmental (or corporate) body that has long term significance and requiring a vote of the governing body. BOI uses 'resolutions' generally only for its most significant and long term actions and/or policies.

Securities lending (general investment)

Investments that are temporally borrowed by other investors for a fee; the BOI allows most of its publically traded investments to be loaned for additional marginal income.

Standard deviation (common statistical concept)

A specific statistic that measures the dispersion of returns from the mean over a specific time period to determine the "historical volatility" of returns for a stock, or portfolio, or asset class; more specifically a single unit (i.e., one standard deviation) of dispersion that accounts for approximately 66% of all data around a mean using a 'normal' (or 'uniform' or 'bell-shaped' curve; as opposed to a skewed or asymmetrical) distribution. The standard deviation is used as a gauge for the amount of expected future volatility.

SABHRS (accounting jargon)

Montana state government's State Accounting, Budgeting and Human Resource System; the State's central information management system. BOI investment and other financial data must tie and be reported on this system, which is the official book of record and includes the state's financial statements.

Style drift (often in reference to public equity managers, but applicable to other managers, too)

As the name implies, a divergence from an investor's professed investment bias or style or objective.

Tracking error (statistical concept in investments)

A measurement of the standard deviation of a portfolio's return versus the return of the benchmark it was attempting to outperform. The concept is often used when discussing investment managers. For example some styles are expected to have high 'tracking errors,' (e.g., deep 'value' investors who buy companies that may be dogs for years), versus passive managers, whose stock volatility is expected to be very close to their benchmark. Tracking error can either be intentional or unintentional; it can also be regarded as an accepted deviation or contrary to the management agreement. High *unexpected* tracking error is generally a serious concern to be examined and understood.

Underwriter (bond program)

In investments, the agent who buys investments to be resold to the public; at BOI, the investment firms that buy the Board's bonds to be resold to the public.

Unified Investment Program (Montana Constitution)

The Program in the State's constitution requiring a central investment program which the legislature has assigned to the BOI.

Value (as to style when discussing public equities)

An investment style that focuses on buying established companies that investors believe are undervalued and trading at bargain prices to the fundamental analysis of the company's financial statements and internal competitive factors.

Venture capital (private equity)

A higher-risk/high-return type of investing in startup firms and small businesses with perceived long-term growth potential. Sometimes these are already existing business ventures with limited operating history that need additional management expertise and access to capital. (For start-ups, 'seed capital,' or 'angel investor' are terms differentiating this even higher risk type of investment.)

Volatility (investment jargon)

A statistical measure of the dispersion of returns for a given security or market index. Volatility is typically measured by using the standard deviation of returns from the security or market index. Commonly, the higher the volatility, the riskier the security.

Yield (general investment, but most often within fixed income)

The amount returned to the investor above the original investment generally expressed as a percentage. Yield can be thought of as the expected return from the combination of interest and price accrual or amortization to maturity (in the case of a bond trading at a discount or premium to par).

Yield curve (fixed income)

A line that plots the prevailing interest rates at a given time for bonds ranging in maturity from as short as three months out to 30 years. When plotted across these various maturities (typically 2, 5, 7, 10 and 30 years), the resultant line is shaped like a curve with generally low interest rates (the yield) for shorter maturities and gradually higher interest rates for longer maturities, because generally investors demand higher interest rates for longer term investments. The yield curve for U.S. Treasury debt is the most common when referring to the prevailing level of interest rates.

MONTANA BOARD OF INVESTMENTS PUBLIC MARKETS MANAGER EVALUATION POLICY

INTRODUCTION

The purpose of this policy is to broadly define the monitoring and evaluation of external public markets managers. This policy also provides a basis for the retention and/or termination of managers employed within the Montana Domestic Equity Pool (MDEP), the Montana International Equity Pool (MTIP), the Retirement Funds Bond Pool (RFBP), and the Trust Funds Investment Pool (TFIP).

The costs involved in transitioning assets between managed portfolios can be significant and have the potential to detract from returns. Therefore it is important that the decision process be based on a thorough assessment of relevant evaluation criteria prior to implementing any manager changes. Staff will consider such costs when deciding to add or subtract to manager weights within the pools as well as in deciding to retain or terminate managers.

MONITORING PROCESS

Periodic Reviews: Staff will conduct periodic reviews of the external managers and will document such periodic reviews and subsequent conclusions. Periodic reviews may include quarterly conference calls on portfolio performance and organizational issues as well as reviews conducted in the offices of the Montana Board of Investments (MBOI) and on-site at the offices of the external managers. Reviews will cover the broad manager evaluation criteria indicated in this policy as well as further, more-detailed analysis related to the criteria as needed.

Continual Assessment: Staff will make a continual assessment of the external managers by establishing and maintaining manager profiles, monitoring company actions, and analyzing the performance of the portfolios managed with the use of in-house data bases and sophisticated analytical systems, including systems accessed through the Master Custodian and the Investment Consultant. This process culminates in a judgment which takes into account all aspects of the manager's working relationship with MBOI, including portfolio performance.

Staff will actively work with the Investment Consultant in the assessment of managers which will include use of database research, conference calls and discussions specific to each manager, and in any consideration of actions to be taken with respect to managers.

MANAGER EVALUATIONS

The evaluation of managers includes the assessment of the managers with respect to the following qualitative and quantitative criteria.

Qualitative Criteria:

- Firm ownership and/or structure
- Stability of personnel
- Client base and/or assets under management
- Adherence to investment philosophy and style (style drift)
- Unique macroeconomic and capital market events that affect manager performance

MONTANA BOARD OF INVESTMENTS PUBLIC MARKETS MANAGER EVALUATION POLICY

- Client service, reporting, and reconciliation issues
- Ethics and regulatory issues
- Compliance with respect to contract and investment guidelines
- Asset allocation strategy changes that affect manager funding levels

Quantitative Criteria:

- Performance versus benchmark – Performance of managers is evaluated on a three-year rolling period after fees.
- Performance versus peer group – Performance of managers is evaluated on a three-year rolling period before fees.
- Performance attribution versus benchmark – Performance of managers is evaluated on a quarterly and annual basis.
- Other measures of performance, including the following statistical measures:
 - Tracking error
 - Information ratio
 - Sharpe ratio
 - Alpha and Beta

PERFORMANCE MEASUREMENT

Performance calculations and relative performance measurement compared to the relevant benchmark(s) and peer groups are based on a daily time-weighted rate of return. The official book of record for performance measurement is the Master Custodian.

The performance periods relevant to the manager review process will depend in part on market conditions and whether any unique circumstances are apparent that may impact a manager's performance strength or weakness. Generally, however, a measurement period should be sufficiently long to enable observation across a variety of different market conditions. This would suggest a normal evaluation period of three to five years.

ACTIONS

Watch List Status: Staff will maintain a "Watch List" of external managers that have been noted to have deficiencies in one or more evaluation criteria. An external manager may be put on the "Watch List" for deficiencies in any of the above mentioned criteria or for any other reason deemed necessary by the Chief Investment Officer (CIO). A manager may be removed from the "Watch List" if the CIO is satisfied that the concerns which led to such status have been remedied and/or no longer apply.

Termination: The CIO may terminate a manager at any time for any reason deemed to be prudent and necessary and consistent with the terms of the appropriate contract.

**MONTANA BOARD OF INVESTMENTS
PUBLIC MARKETS MANAGER EVALUATION POLICY**

ROLES AND RESPONSIBILITIES

CIO: The CIO is responsible for the final decision regarding retention of managers, placement on and removal of “Watch List” status, and termination of managers.

Staff: Staff is responsible for monitoring external managers, portfolio allocations and recommending allocation changes to the CIO, and recommending retention or termination of external managers to the CIO.

Investment Consultant: The consultant is responsible for assisting staff in monitoring and evaluating managers and for reporting independently to the Board on a quarterly basis.

External Managers: The external managers are responsible for all aspects of portfolio management as set forth in their respective contracts and investment guidelines. Managers also must communicate with staff as needed regarding investment strategies and results in a consistent manner. Managers must cooperate fully with staff regarding administrative, accounting, and reconciliation issues as well as any requests from the Investment Consultant and the Custodian.

**RECOMMENDED EDUCATIONAL RESOURCES FOR
MEMBERS OF THE MONTANA BOARD OF INVESTMENTS**

August 2015





RVK Resources			
Publication	Cost	Link	Description
RVK Quarterly Commentary	Free	www.rvkuhns.com	Each quarter, RVK publishes a brief commentary that provides a high level overview of key macroeconomic events, as well as a performance summary for major asset classes. The commentary provides a quick reference for Board members, who wish to better understand the most important market events prior to each quarterly meeting.
RVK Investment Perspectives	Free	www.rvkuhns.com	Each quarter, RVK publishes a white paper covering topics of common concern for our clients. If Board members wish to receive future issues proactively, RVK can add their email addresses to a distribution list. Alternatively, the white papers can be downloaded from the RVK site.
Investment Committee Best Practices ^{NEW}	Free for RVK Clients Only	Copies Provided on Request	This 60-page study is the culmination of a one-year research effort, which involved an exhaustive literature review, completion of several surveys of investment professionals, and interviews with more than 30 investment committee chairs, staff, and industry thought leaders. The primary reason for producing this study was to address the fact that many investment committees face similar operational and strategic challenges, but are unable to address them collectively because they tend to operate in silos. This study is intended to accelerate improvement efforts by revealing these common challenges and sharing key insights, tactics, and case studies that may help resolve them.

Electronic Newsletters			
Newsletter	Cost	Link	Description
CFA Financial Briefs	Free	https://www.smartbrief.com/cfa/index.jsp	Each day, this newsletter compiles the most notable headlines relating to economics, investment management, and major geopolitical events. Each headline has a link to the underlying article. This email serves as the daily newspaper for many in the investing community.
JPMorgan Eye on the Market	Free	Send Email Request to gerard.r.fancovic@jpmorgan.com	Eye on the Market is released 2-3 times per week and provides in depth analysis on events shaping the global economy. The content is typically more balanced than John Mauldin’s letter, but should be viewed with some skepticism given the role of JPMorgan as an asset manager.



Periodicals			
Periodical	Cost	Link	Description
Pensions & Investments	\$325/Year	www.pionline.com	Pensions and Investments is a bi-weekly publication that covers current events impacting defined benefit plans. The PI Online web site also provides a variety of research reports and databases to support the decision-making of defined benefit plan staff and board members.
The Economist	\$134/Year	www.economist.com	The Economist is perhaps the most respected source of reporting and analysis on current events shaping the global economy. The Economist can help staff and board members stay familiar with the key factors and events that impact the performance of the portfolio.
Institutional Investor	\$575/Year	https://www.institutionalinvestor.com	Institutional Investor provides a monthly magazine that serves as both a source of news and proprietary research. A subscription also provides varying degrees of access to proprietary data and research online. Subscriptions range from \$575/year to \$1,680/year depending on the desired level of access to online resources. We believe that the online research capabilities are most relevant to staff, and therefore would only recommend the \$575 “silver” package for Board Members.
FundFire	<i>MBOI already subscribed</i>	http://www.fundfire.com/	FundFire is a source of competitive intelligence for the separately managed account industry. A subscription provides access to original articles and summaries of industry news which helps investors, managers and consultants stay abreast of the changes in their industry. Investment managers read FundFire to find out what competitors and prospective clients are doing and thinking. Financial advisors, investment consultants, pension plans, endowments and foundations rely on FundFire to power their money management IQ.

Books			
Book	Cost	Link	Description
Pioneering Portfolio Management	\$24	http://tinyurl.com/3sa4c4u	This book was written by David Swensen, the Chief Investment Officer of the Yale Endowment. The book provides a blue print for Mr. Swensen’s investing strategy, which has resulted in superior long term returns for decades. While the book is especially applicable to university endowments, many of the insights are relevant to public pension funds.

RECOMMENDED EDUCATIONAL RESOURCES



Book	Cost	Link	Description
<p>The Little Book of Behavioral Investing</p>	<p>\$16</p>	<p>http://tinyurl.com/3dya98f</p>	<p>This book was written by a senior investment professional at GMO, a global asset management firm led by renowned investor Jeremy Grantham. The book provides a comprehensive overview of common behavioral biases that can negatively impact the investment decision-making process. The lessons are easily comprehensible to both expert and novice investors.</p>
<p>Cambridge Handbook of Institutional Investment and Fiduciary Duty</p>	<p>\$135</p>	<p>http://tinyurl.com/nwegkvq</p>	<p>This book provides commentary and guidance on the evolving standards governing institutional investment. It features a wide range of contributors who share their perspectives on the forces that drive the current emphasis on short-term investment returns. This book is not yet available, and appears to be more academic in focus. However, it covers fiduciary duty in great detail, and may be a great resource for new and existing board members.</p>