

**REGULAR MEETING OF THE
MONTANA BOARD OF INVESTMENTS
DEPARTMENT OF COMMERCE
2401 Colonial Drive, 3rd Floor
Helena, Montana
May 24 & 25, 2016**

AGENDA

COMMITTEE MEETINGS

- A. Audit Committee** **8:30 AM**
1. Public Comment – *Public Comment on issues with Committee Jurisdiction*
 2. Approval of February 23, 2016 Committee Minutes
 3. Comments from Chair and Reference to Checklist
 4. Executive Director General Comments
 5. STIP Update
 6. Status of Financial and Internal Controls Audits
 7. Internal Controls Policy - **Decision**
 8. Board Properties, Recent Appraisals, and Implications for Financial Statement
 9. On-site Camera Project Update
 10. FY16 Financial Statements – Update and Comments
 11. Ethics Policy Revision – **Decision**

- B. Human Resource Committee** **9:30 AM**
1. Public Comment – *Public Comment on issues with Committee Jurisdiction*
 2. Executive Director General Comments
 3. Exempt Staff Pay Plan Policy – **Decision**
 4. Exempt Staff Pay Review and Recommendations – **Decision**
 5. Staffing Level Recommendation – **Decision**

BREAK **10:15 AM**

- C. Loan Committee** **10:30 AM**
1. Public Comment – *Public Comment on issues with Committee Jurisdiction*
 2. Approval of February 23, 2016 Committee Minutes
 3. INTERCAP Loans – **Decisions**
 4. Underwriting Rural Development Loans in INTERCAP Program – Steven Troendle, Rural Development
 5. In State Loans – Neptune Aviation, Lewis & Clark Brewing Co., Bretz, Inc./Tour America, Community, Counseling and Correctional Services, Inc. – **Decisions**

LUNCH SERVED **12:00 PM**

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

- A. Roll Call
- B. Notice of Video Recording
- C. Public Comment – *Public Comment on issues with Board Jurisdiction*
- D. Approval of the February 2016 Regular Meeting Minutes – **Decision**
- E. Administrative Business
 1. Audit Committee Report – **Decisions**
 2. Human Resource Committee Report – **Decisions**
 3. Loan Committee Report – **Decisions**
- F. Comments from TRS and PERS Board Members
- G. Comments from Board Legislative Liaisons

Tab 2 EXECUTIVE DIRECTOR REPORTS – David Ewer **1:15 PM**

- A. Member Requests or Follow up from Prior Meeting
- B. Quarterly Cost Report
- C. Monthly Snap Shot
- D. Custodial Banking Relationship
- E. FY16 Budget Status & Staffing Level Review (as required by Governance Policy) – **Decision**

Tab 3 DOMESTIC EQUITIES, Joe Cullen, CFA, CAIA, FRM & Rande Muffick, CFA	1:45 PM
BREAK	2:45 PM
Tab 4 MONTANA LOAN PROGRAM REPORT – Doug Hill	3:00 PM
Tab 5 BOND PROGRAM REPORT – Louise Welsh, Senior Bond Program Officer	3:25 PM
A. Activity Report	
B. Staff Approved Loans Report	
ADJOURNMENT	3:50 PM

AGENDA – DAY 2

RECONVENE AND CALL TO ORDER – Mark Noennig, Chairman	8:30 AM
A. Roll Call	
B. Notice of Video Recording	
C. Public Comment – <i>Public Comment on issues with Board Jurisdiction</i>	
Tab 6 INVESTMENT CONSULTANT – RVK, Inc.	8:35 AM
A. Executive Summary Report	
B. Capital Markets Review	
Tab 7 INVESTMENT ACTIVITIES/REPORTS – Joe Cullen, CFA, CAIA, FRM	9:15 AM
A. Investment Policy Statement Review	
1. Short-term Investment Pool (STIP) – Decision	
B. State Operating Funds– John Romasko, CFA	
1. STIP Overview	
2. Treasurers Fund	
C. Pension Funds	
1. Retirement Plans Overview - Joe Cullen, CFA, CAIA, FRM	
2. Private Equity Pool (MPEP) - Ethan Hurley, CAIA	
3. Real Estate Pool (MTRP) - Ethan Hurley, CAIA	
4. Public Market Pools (MDEP, MTIP, RFBP) - Rande Muffick, CFA	
5. Internal Fixed Income Portfolio Management– Nathan Sax, CFA	
D. Trust Funds	
1. Trust Funds Investment Pool Overview - Joe Cullen, CFA, CAIA, FRM	
E. Insurance Funds	
1. State Fund Overview - Joe Cullen, CFA, CAIA, FRM	
2. State Fund - Details - Jon Putnam, CFA, FRM, CAIA	
BREAK	10:30 AM
Tab 8 RVK, INC. – QUARTERLY REVIEW	10:45 AM
RECAP OF STAFF TO DO LIST AND ADJOURNMENT – Mark Noennig, Chairman	11:30 AM
Appendix	
A. Annual Board Meeting Schedule	
B. Systematic Work and Education Plan	
C. Acronym Index	
D. Terminology List	
E. Retirement Plans Investment Policy	
F. Public Market Manager Evaluation Policy	
G. Educational Resources	

**MONTANA BOARD OF INVESTMENTS
DEPARTMENT OF COMMERCE
2401 Colonial Drive, 3rd Floor
Helena, Montana
MINUTES OF THE MEETING – February 23, 2016**

BOARD MEMBERS PRESENT:

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

LEGISLATIVE LIAISONS PRESENT:

Representative Kelly McCarthy
Senator Bob Keenan

STAFF PRESENT:

Polly Boutin, Associate Financial Manager	Ed Kelly, Alternative Investments Analyst
Jason Brent, CFA, Alternative Investments Analyst	Teri Kolnik, CFA, Alternative Investments Analyst
Geri Burton, Deputy Director	Eron Krpan, CIPM, Investment Data Analyst
Dana Chapman, Board Secretary	Tammy Lindgren, Investment Accountant
Frank Cornwell, CPA, Associate Financial Manager	April Madden, Investment Accountant
Craig Coulter, Alternative Investments Analyst	Rande Muffick, CFA, Portfolio Manager, Public Equities
Joseph M. Cullen, CFA, CAIA, FRM Chief Investment Officer	Mary Noack, Network Administrator
Roberta Diaz, Investment Accountant	Kelsey Poore, CPA, Investment Accountant
David Ewer, Executive Director	Jon Putnam, CFA, FRM, CAIA, Fixed Income Investment Analyst
Julie Feldman, CPA, Financial Manager	John Romasko, CFA, Fixed Income Investment Analyst
Julie Flynn, Bond Program Officer	Nathan Sax, CFA, Portfolio Manager, Fixed Income
Tim House, Equity Analyst/Investment Operations Chief	Steve Strong, Equity Investment Analyst
Ethan Hurley, CAIA, Portfolio Manager, Alternative Equities	Louise Welsh, Senior Bond Program Officer
	Dan Zarling, CFA, Director of Research

GUESTS:

Meg O'Leary, Executive Director, Department of Commerce
Jim Voytko, RVK, Inc.
Mark Higgins, CFA, RVK, Inc.
Leah Tietz, Montana University System, Workers' Comp
Herb Kulow, CMB, Portfolio Manager, In-State Loan Program (Contracted)

CALL TO ORDER

Board Chairman Mark Noennig called the regular meeting of the Board of Investments (Board) to order at 11:33 a.m. As noted above, a quorum of Board Members was present. Chairman Noennig advised video recording of the meeting was underway and called for public comment. There was none. Chairman Noennig called for comments or revisions to the November 17-18, 2015 Board Meeting Minutes.

Member Jon Satre made a motion to accept the November 17-18, 2015 Board Meeting Minutes as presented. Member Marilyn Ryan seconded the motion. The motion carried.

ADMINISTRATIVE BUSINESS

Audit Committee Report

The Audit Committee met prior to the Board meeting. Committee Chairman Jon Satre noted most Board members were present at the meeting. Staff reported on the FY 2015 Financial Audit which has been presented to the Legislative Audit Committee. BOI had a clean report. The Committee reviewed the FY2016 Risk Assessment Model and Internal Control Testing Schedule and the proposed revisions to the Internal Controls Policy. These documents were approved by the Committee as recommended by staff.

The 2016 financial compliance audit by the Legislative Auditors is set to begin in the spring. The audit determines BOI compliance with statutes. The Committee reviewed staff changes. Jon Putnam is the new internal manager of Montana State Fund and John Romasko is the new Short Term Investment Pool (STIP) manager. Chairman Satre thanked staff for stepping into their new roles.

Committee Chairman Satre noted the revisions to the Internal Controls Policy addressed recent changes to STIP, minor changes to the In-State Loan Program and changes to INTERCAP wiring documents. The Committee reviewed and approved all staff recommended changes.

Committee Chairman Satre moved to approve the changes to the Internal Control Policy as presented by staff. Member Sheena Wilson seconded the motion. There was no discussion. The motion carried.

Chairman Satre stated the Committee reviewed the 2016 Audit Checklist and noted not many items have been checked off yet as the meeting was the first one of the year.

Human Resource Committee Report

The Human Resource Committee met prior to the Board meeting. Committee Chairman Karl Englund noted all Board members were present. The Committee discussed proposed changes to the organization structure of investment staff as proposed by Chief Investment Officer Joe Cullen and Executive Director Ewer. The proposed changes were reviewed in detail; all proposed changes regarding new functional roles and reporting responsibilities have been discussed with staff. The changes realign staff duties and in some cases, staff supervisor reporting. The proposed changes will require revisions to the organizational chart, which the Board will need to approve. The new organizational chart will be presented for approval by the Board at the April meeting. All changes were vetted in detail by the Committee and met with general approval.

Loan Committee Report

The Loan Committee met prior to the Board meeting. Committee Chairman Jack Prothero stated the Committee had several loans to approve. The first loan presented by contract employee Mr. Herb Kulow includes an equipment loan and a real estate loan. The equipment loan to primary borrower Kettlehouse Brewing Company, LLC, is for brewery equipment for a brewing facility in Bonner. The total equipment loan amount is \$2,849,000; BOI's 77% BOI participation amount is \$2,193,730. The real estate loan to primary borrower K3, LLC, a real estate holding company of Kettlehouse Brewing, will be used to construct a brewing manufacturing facility. The total real estate loan is \$3,291,000; BOI's loan participation of 77% is for \$2,534,070. Both loans are guaranteed by the borrowers. The BOI total combined loan amount for the two loans is slightly under \$5 million. The Loan Committee approved both loans.

The second loan presented to the Committee is a bond purchase from the Department of Natural Resources and Conservation (DNRC) to fund water projects. The loan term is 20 years at 4% interest rate for \$2,573,976. The loan was approved by the Committee. BOI has an ongoing relationship with DNRC.

The Committee approved three INTERCAP loan requests. The first was a \$1,205,000 loan to the City of Harlem, a bond anticipation note (BAN) in anticipation of USDA Rural Development Services (RD) long term

financing when the project is completed. The loan will be used for wastewater system improvement projects in Harlem. Chairman Prothero requested that staff expand on the interim financing process at the next Loan Committee Meeting.

The Committee also approved a loan for \$1,663,809 to the Board of Regents on behalf of the University of Montana - Missoula. The campus is purchasing two new energy efficient buses. The Committee also approved a University of Montana - Missoula loan through the Board of Regents for \$1 million to finish the Adams Center basement and a loan for \$1,089,300 for a Montana Tech project in Butte to remodel the chemistry building.

The Committee also approved two policy changes for the In-State Loan Program, which requires full Board approval. The first is a change in the Veteran's Home Loan Policy, which increases the stated policy insurance deductible from \$1,000 to the current industry standard of \$1,500, thereby bringing the policy into compliance with industry standards.

Chairman Jack Prothero made a motion to approve the VA Loan Policy revisions. Member Terry Cohea seconded the motion. The motion carried.

The second policy considered by the Committee is a revision in the Commercial Loan Policy. The Policy contained a ceiling limit on hotels as a portion of the Permanent Coal Trust Fund (Perm Coal); however, the Perm Coal has increased and BOI has not increased loans to hotels/motels; therefore, the policy restriction no longer applies. Staff is requesting Board approval to remove the policy restriction. The current hotel/motel concentration of the loan portfolio is well under the limit.

Chairman Prothero made a motion to approve the revision to the Commercial Loan Policy. Member Cohea seconded the motion. The motion carried.

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

PERS Representative Sheena Wilson reported MPERA held a meeting with the Employee Investment Advisory Council, which Mr. Tim House participated in. The goal is to engage employees and human resource people as a tool for recruitment. The PERS CAFR (Comprehensive Annual Financial Report) is complete and a new actuary, Cavanaugh Macdonald Consulting, LLC, has been selected to replace the prior actuary, which dropped out due to non-compliance in the RFP process. The computer system project continues to move along and a go live date is anticipated by May for the employer section of the system. Member Wilson presented a retirement benefit summary detailing benefits received around the state. Yellowstone County receives \$41 million per year, which is not surprising; however, even Petroleum County, with a population of less than 500 people, receives PERS benefits totaling \$200,000 per year. Member Wilson added it is useful to see how important BOI is for the flow of benefit money when examining the retirement benefits paid over one year.

TRS Representative Marilyn Ryan reported the TRS Board met on December 3; she participated by phone. One staff change was reported. IT manager Rick Bush has retired and has been replaced by John Noble, who worked as the IT manager in the Governor's office since 2006. Kristen Williams was also added to staff. The TRS privacy and security information policy has been revised. Other state agencies offer education reimbursement when the education is relevant to employment; TRS has approved a reimbursement for staff modeled after other state agencies. Drake Law Firm has been hired to handle contested cases. A problem area with the University System occurred where a retiree started working at Helena College, and when changing jobs, TRS was not notified; therefore, the individual was not contributing to TRS as required by law. This has occurred with other university systems in the state as people change positions, without the understanding that retirees are on different systems, with full salary and benefits. The problem was identified and corrected with a positive resolution. New procedures have been implemented which address occasions when retirees join the staff of universities.

Legislative Liaison Comments

Senator Bob Keenan had nothing to report.

Representative Kelly McCarthy reported on a couple of items. The state's bureau of economics presented its findings a couple of weeks ago in Billings. The price of oil is down, and gas and coal are depressed; beef and wheat are down; however, there is no area in the state that is not still growing. The reason is that 20 years ago a lot was done to diversify the Montana economy, and it is paying off. In the past, manufacturing growth had more of an impact; however, now Montana has a more diversified economy. One impact on the economy is the lack of work force talent, and as baby boomers retire, it is a struggle to replace them. The solutions include a more creative approach to the work force, with a more creative approach to building talent. The state of North Dakota will pay businesses to up to \$3,000 to bring in interns; Montana is now competing with its neighbors for talent. The production taxes gained by the state from oil and gas comprise only 2% of the state's budget. For Alaska, that figure is 95%; however, Montana remains the number one financially healthy state.

EXECUTIVE DIRECTOR'S REPORT

Overall Comments

Executive Director Ewer presented his report and reviewed the two member requests from the last meeting. First, the Board asked that private equity and real estate policy guidelines, including leverage constraints, be included in the quarterly reports. Mr. Ethan Hurley has included these. The second item, Member Sheena Wilson provided input on the revisions to the Annual Report.

Director Ewer presented the quarterly cost report, and the monthly pension snapshot, which the Board receives monthly via email.

Director Ewer reviewed the Ethics Policy. Staff is required to sign the Policy annually, as a condition of employment. All staff have signed and turned in the Policy for this year. Director Ewer strongly urged all Board members to sign the Policy signature page and return it.

Director Ewer provided an update on the FY 2015 Annual Report and Financial Statements. BOI received a clean FY15 Legislative Audit report; there were no recommendations for either the Internal Service Fund or the Enterprise Fund Financial Statements. Staff reported to the Legislative Audit Committee.

Director Ewer presented his memo on emergency preparedness and disaster recovery, which is an item on the Systematic Work and Education Plan. In its fifth year, the Work Plan goal is to bring every material matter before the Board. All computer and communication systems are backed up regularly and staff is in the process of researching surveillance camera options for the parking lot and common areas in the building.

Member Satre stated BOI monitors and has procedures in place for the onsite computer systems, and asked whether other associated entities, such as State Street Bank, provide information about their systems, in the event they go offline.

Executive Director Ewer acknowledged it would be a problem and one way the scenario is addressed is in the qualifications required through the custodial bank RFP process. Certification of backup systems and redundancies are stipulated in the RFP. BOI staff have visited on site, although not recently. State Street has a mission control center located at an offsite facility and the site is vetted.

Deputy Director Geri Burton added the SSAE 16 Report (Statement on Standards for Attestation Engagements) is received annually.

Executive Director Ewer added State Street has a requirement that BOI meets due diligence.

Julie Feldman added auditors visit State Street each year. The SAS 70 Audit has been replaced by the SSAE 16 Report, which is utilized to report on internal controls for providers. BOI reviews it annually to ensure all requirements are met, and to verify our controls are working and that a written report is prepared and submitted to the auditors.

Mr. Jim Voytko added if you look at technical failures over the last 5 or 7 years, there is a chain of technologies, which are subject to failure, exchanges and telecom networks that link to BOI. The key is to avoid having investments that would put you in a terrible bind if you were offline for 24 or 48 hours. Reviewing tech and service audits are the best you can do. The question is more whether your infrastructure is heavily redundant, so you avoid reliance on service monitors. RVK also has a recovery plan, which is viewable on request; the plan also includes off site locations.

Director Ewer noted BOI staff has met with State Street, US Bank and Department of Administration personnel, and the group meets annually to review emergency preparedness. If access to the Colonial Building is not possible, major systems are able to keep functioning. BOI staff has special tokens, which allow access to systems at a remote site; this would enable the flow of money to keep paying state bills.

Director Ewer reviewed staff outreach for 2015 and thanked staff who participated in outreach to connect with the public, out in the field, and attending conferences.

Director Ewer provided an update on the STIP participation protocol. The packets have been sent with the Resolutions and associated attached exhibits. All local government participants are required to complete the Resolution and return to BOI by the June 30 deadline. STIP participants understand the importance of having a good process in place.

Director Ewer advised there was an investment loss charged to the STIP Reserve fund. Per policy, any charges to the STIP Reserve require notification to the Board. The investment purchased from an approved name; however, the actual security purchased was not of sufficient credit rating and therefore was not within policy. Policy requires staff act on such an item, and the security was sold. Interest rates were against the sale, resulting in an \$80,000 charge to the Reserve. There was no effect on portfolio yield; however, the Reserve was reduced by \$80,000. As a result, staff has tightened procedures to avoid future potential losses.

Member Karl Englund asked if there was a failure at time of purchase.

Chief Investment Officer Joe Cullen stated the issue was due in part to the analytical trading system that checks securities; the particular rule was not coded into the system correctly and the error was caught in the review of the portfolio when compared to policy statements. Moving forward, staff will closely review methods to comply with policy statements.

MONTANA LOAN PROGRAMS

In-State Loan Program

Mr. Herb Kulow presented the residential and commercial loan portfolios. The commercial loan portfolio balance was \$110,625,265 at the end of January, a slight increase after deducting \$549,641 representing other real estate for the Vann's loan in Lolo. The lease purchase option expired in mid-January; however, it was extended to March, which is a good sign and the tenant has done property improvements. The portfolio total includes 104 loans and there is almost \$60 million in the pipeline. The portfolio yield is 3.79% and six loans are past due, 8.09% of the portfolio, due to Shoot the Moon, LLC and Purdy-Hatzenbeller Investments. The bankruptcy process is in motion; staff expects a loss of \$250,000 to \$350,000.

The residential loan portfolio has a balance of \$8,281,450 as of January 31 with five loans over 90 days past due totaling \$300,459 or 3.63% of the portfolio; four of those are FHA guaranteed. The Veterans Home Loan Program is seeing increases; the portfolio balance was \$30,233,183 at the end of January with five outstanding reservations for \$808,230. One loan is past due more than 90 days; a demand letter was sent and the loan was brought current. There are no conventional loans in the VA program, all are guaranteed by VA, FHA or by the HUD 184 program, which is an American Indian and Alaska native program; however we have had no requests for the HUD 184.

CONSULTANT REPORT

RVK, Inc. – Mr. Jim Voytko and Mr. Mark Higgins, CFA

Mr. Higgins noted the quarterly report is a little different this time, providing an overview of capital markets and a snapshot with the executive summary. The 4th quarter was generally positive for risk assets, although January and February were difficult for risk assets compared to quarter end, so comments will include some of the more recent activity.

There were three main factors driving markets:

1. China growth expectations have been a core driver with broad impact; with commodities, iron and copper all showing weakness. Emerging markets have suffered for five years, as well as developed markets; for example, Apple showed weakness in China.

Mr. Voytko added that looking at China, every estimate of GDP or manufacturing, all estimates are lower than the government's, which shows a lack of credibility for the Chinese government. Exports and imports are declining. There is a general lack of faith in government.

Mr. Higgins continued:

2. Oil prices have seen some stability, but have realized a very substantial decline of about 70% since mid-2014. OPEC and Russia are coming together; there is more supply than demand, which causes repercussions in other parts of the economy. High yield debt markets are suffering as is the U.S. stock market. Hopefully, oil has hit its low point and there is some stability now.
3. Many feel the Federal Reserve hike was premature and looking ahead to other expected hikes in 2016, there is a lot of skepticism questioning whether the Fed acted correctly. The Fed could point to indicators; however, it does not feel like the beginning of a tightening cycle. Although unemployment is low, inflation is weak in the 1% range. There are a lot of factors the Fed should have considered; a flight from risk assets ensued.

Mr. Higgins stated going forward, oil prices and Fed policy are both risks. The BOI plans are very well allocated and diversified, and private equity and real estate in particular have helped. This storm will pass.

Mr. Voytko noted the expected returns across all capital markets, the \$6 trillion worth of sovereign bonds, such as Germany and Japan, have not been realized in capital markets. The ugliest are energy, high yield and emerging markets, which have taken a big hit, and fixed income has suffered, while equity GDP growth continues to be depressed. For example, Brazil is very challenging on the equity side. Earnings per share are declining moderately and declining prices in risk assets have caused the market recalibration to the current circumstances. When Japan announced negative interest rates, not much happened. It will be a tough year ahead. When BOI entered into real estate, it was painful, but it is now paying off, helping to lower equity beta, with the added advantage of being slightly less sensitive to the stock market decline.

Mr. Higgins presented the Executive Summary. The total fund performance as represented by PERS through December 31 shows a 2% return, something we are not accustomed to. On a relative basis, the portfolio has performed well and continues to rank in the top decile over the last year; and for annualized periods Montana ranks in the top decile over peers, all the way back to the 10-year period.

Mr. Voytko added when the Board recalibrated years ago, there were fundamental changes implemented. It takes a long time to chart a new heading, but over the last seven years, it is not a trivial change. The outstanding peer ranking has been sustained over a very long time.

Mr. Higgins noted some other highlights include the continued improvement in MDEP and MTIP with very good progress and strength over the last three to five years. The RFBP underperformed a bit, as did the fixed income composite in general due to riskier assets in the portfolio; high yield in particular has suffered. However, performance is still well above the median. The private equity pool in a raging bull market will trail the indexes. The relative index returns, plus the 4%, finally experienced a period where private equity performed significantly better, compared to the public markets.

Mr. Voytko added when public markets do well, private equity lags, and when public markets flatten or go down, private equity shows an over performance, as it has recently.

Mr. Higgins noted seven years ago, it was painful to initiate private equity, but it has paid off and we are now seeing the benefits.

INVESTMENT ACTIVITIES/REPORTS

Retirement System Asset Allocation Report

Mr. Joe Cullen stated staff will provide detailed updates, however, there are some changes in the reporting and staff expects there will be some additional adjustments over the next few meetings. Additionally, there will be a few different staff members presenting. Jon Putnam is taking over State Fund and John Romasko has taken over the STIP portfolio.

Mr. Cullen reviewed asset allocation for the retirement systems. For the quarter ending December 31, all assets remained within policies, although two plans dropped slightly below on cash at year-end. Cash historically held at the pension levels is usually between 1-5%. Staff will continue to report on cash, but will also implement increased transparency on cash levels. At the end of December, about 2% of the total pension plans were in cash, which provides the liquidity needed to make benefit payments. Pension assets increased \$224 million over the quarter due to appreciation on the equity side at year-end. Net distributions totaled about \$76 million for benefits to beneficiaries, about \$32.5 million was made up of dividends and interest payments, as well as sales and rebalancing of other asset classes. Total net distribution for the year ending December 31 was \$231 million, of which \$132.5 million was funded by dividends and interest payments. All plans are well diversified and within policy.

Member Jack Prothero asked when looking with fresh eyes, did Mr. Cullen see anything surprising when looking over the plans from risk standpoint.

Mr. Cullen responded, no, nothing surprising, but with markets you must be prepared for surprises and expect the unexpected. Things have worked well with a well-diversified portfolio and the portfolio has been positioned well. Staff will continue to look at process and allocation moving forward.

Member Satre asked how the decisions are made as to where the proceeds will come from to make disbursements.

Mr. Cullen stated when benefit payment amounts are determined, staff looks first to dividends and interest, and any remaining funds needed are generated from sales of assets above and beyond that amount. Current allocations relative to policy are reviewed or any areas where staff may want to move allocations to. If an asset is at the high end of its range, it may be a candidate to reduce and provide sales. With the recent run up of equities, most benefit payments have been funded through sales of equities; however, that could change going forward. Staff considers total dollar amount, where the allocations are and what the desired target allocation is going forward; it is an ongoing process.

Internal Fixed Income

Mr. John Romasko reported big doings in STIP with the Federal Reserve increase; LIBOR rates mirror that, and the TED spread also went up dramatically in the quarter. STIP holdings are all within policy ranges with liquidity well above minimums during the quarter. Staff made purchases of floating rate securities and Yankee CDs over the quarter and sold a \$20 million piece of Bank of America. The largest holders in STIP include the Treasurers Fund as the largest and some municipalities are large holders. Municipalities are voluntary participants, whereas state agencies are required to participate in STIP.

Member Satre asked if the percent of municipalities has changed over the last year.

Mr. Romasko stated yes, municipalities utilizing STIP hit a high at year-end near 30% of the total, which is as high as it has gone. The increase in yield made STIP more attractive, and therefore more entities are investing.

Mr. Romasko compared STIP vs. peers vs. the benchmark, adding the comparison uses the BOI net while peers include total returns. The BOI STIP reserve fund costs about 12 basis points and administrative fees cost another four basis points, producing a net yield of 35 basis points at quarter end. The yield is below the LIBOR rate yield of 43 basis points at quarter end; the biggest reason is the STIP average maturity of 35 days. Historically, STIP has been short and conservative and yields recently have gone well above LIBOR. The STIP Reserve fund balance was \$30.5 million, compared to \$29.5 million last quarter. The SIVs were down just over \$1 million for the quarter.

Mr. Nathan Sax presented internal fixed income management and noted that Mr. Rande Muffick will cover fixed income managed externally. The Federal Reserve increased rates on December 16 from 0-25 basis points to a 25-50 basis points range, and indicated it may raise rates four more times over the upcoming calendar year. The expectation is the Fed will raise rates once or twice more over the next 9-10 months. For 2015, GDP remained about the same as 2014 and the prior two years. The real rate of return is roughly 2% to 2.5%, over the last few years, which looks good relative to the rest of the world, and the dollar is strong, compared to other currencies. Consumers increased their savings, rather than spending, and they are remaining cautious, which has an effect on how fast the economy grows. Reviewing high yield, spreads have gotten wider since mid-2014, which is an indicator of risk and how much investors want to be compensated for risk. High yield spreads tightened significantly in February and March of 2016. Commodities have been declining, and economic development around the world has been declining. Commodity prices did improve, however, also in February/March of this year. The Fed is cognizant of the slowness of economic growth, and knows if rates are raised too soon or too high, growth may slow.

Mr. Sax noted defaults are expected to rise, due in large part to energy. A lot of managers are loath to hold metals, mining, or oil pipelines, etc.

Representative McCarthy asked if we are starting to see defaults.

Mr. Cullen stated there will always defaults, and they are expected to increase; the question on a default is whether you will receive any recovery.

Mr. Sax added that default rates are tracked.

Mr. Voytko stated while you can determine what default rates have been, that does not translate into what default rates are expected to be going forward.

Mr. Cullen added it depends largely on sectors. If the approach of high yield is across sectors and spreads over the longer term, it provides decent risk adjusted returns, net of any defaults.

Mr. Sax noted default and recovery rates are tracked; recovery was at 40 cents on the dollar, however it has declined down to about 30 cents.

Mr. Cullen added more discussion of high yield will occur at the April Board meeting.

Mr. Sax explained staff considers quality and liquidity, and is staying away from smaller issues and less credit worthy bonds and illiquid bonds. While giving up some yield, the approach is to stay more conservative. At year-end 2015, relative performance in the CIBP and TFBP suffered in the fourth quarter because of holdings in certain utilities, including Talen Energy, a spinoff of Pennsylvania Power and Light. Staff believes they will pay off at maturity and therefore are not selling out of it.

The Barclays Aggregate Index returned 452 basis points for 10 years and 144 basis points over three years. However, the returns enjoyed five years ago are not expected to continue over the long term; however, 2016 is off to a good start. The effective duration for the pools is only slightly longer than the index, which has helped over time; the yield to maturity is 276 basis points vs. 253 basis points for the index, a modest yield advantage of about 25 basis points. Treasuries, agencies and mortgages are all underweight compared to the index, and BOI is overweight in corporate bonds and asset backed securities. For credit quality, the portfolio is slightly overweight BBB corporate bonds, single A's are even with the index, AA's are

overweight and AAA are about 90% of the index weight. The portfolio emphasizes high quality and high liquidity.

Mr. Sax reviewed below Investment grade holdings. Utilities have dropped to the BB level; Teck Resources is a small weight in the TFBP and Talen energy, a larger weighted security which PA Power and Light spun off, sold to a private equity company, which prompted the bond price to move down. Staff expects them to pay off.

Member Jack Prothero asked if Lehman Brothers is expected to pay off.

Mr. Sax responded it will conclude at some point; however, it could take years. It is the largest bankruptcy in U.S. history.

Executive Director Ewer asked if Lehman Brothers is booked at zero and has been written down.

Mr. Jon Putnam stated yes it has been written down.

Director Ewer noted any dollar received back to BOI is recovery.

MUS Workers Compensation – Investment Policy Statement

Mr. Sax presented the new investment policy statement for the Montana University System's Self-Funded Workers Compensation Program (MUS) and noted Ms. Leah Tietz, Director of Montana University System Workers' Comp was in attendance.

Staff is presenting a recommendation for the new policy for MUS for the Workers' Compensation Program to move beyond investing exclusively in STIP and to allocate up to \$5 million in the Trust Funds Investment Pool (TFIP). The fund is an operating account, which requires liquidity; however, it contains excess reserve. The MUS Committee has approved the investment of up to 35% of the account into the TFIP. Staff recommends Board approval.

Executive Director Ewer explained this is a new policy. MUS have invested only in STIP thus far, and BOI does not have individual user policies when investments are in STIP only. MUS has been invested in STIP since 2003.

Member Karl Englund asked if the move is consistent with policy.

Director Ewer stated with an abundance of caution, this is a big change; therefore staff is seeking Board approval. The TFIP policy does not change; however, the client base changes.

Mr. Romasko clarified client changes in policy do come to the Board for approval; there are a lot of participants invested in the TFIP.

Chairman Noennig asked if any client wanting to invest in TFIP is required to come to the Board.

Mr. Romasko replied that is correct.

Member Jack Prothero made a motion to approve MUS Policy as presented. Member Karl Englund seconded the motion. The motion carried.

Member Sheena Wilson stated PERS is working on a similar idea for the Disability Retirement Pool.

Director Ewer agreed staff is working on it; however, there is no decision about policy changes yet.

Montana State Fund

Chief Investment Officer Cullen stated Mr. Jon Putnam has taken over responsibility for Montana State Fund and will present the quarterly report. Mr. Putnam has been at BOI since 2005, most recently working on the

fixed income team. The State Fund portfolio has mostly fixed income, but also includes equity and real estate. Going forward, Mr. Putnam will work with Mr. Rande Muffick in managing all the asset classes within the State Fund portfolio.

Mr. Putnam presented the State Fund report for the quarter ending December 31, and reviewed market values and weight percentages of the current asset classes vs. the current policy ranges. Most of the portfolio is invested in the bond pool to maximize income and secure the safety of principal. There are small allocations to equities and real estate; the real estate is split between two core real estate managers. There were no changes to equity or real estate over the quarter. Mr. Putnam stated at year-end, State Fund transitioned to a calendar year from a June 30 fiscal year. Pursuant to that, they requested that BOI allow cash to go to zero, and therefore were out of policy compliance by January 1. This was a onetime event due to the switchover and staff does not anticipate a reoccurrence.

Member Prothero asked why State Fund would request going to zero cash.

Mr. Putnam advised they had to close out areas to enable the movement to new accounts for the calendar year switchover.

Mr. Putnam reviewed the State Fund bond pool characteristics and noted the effective duration is a bit short relative to the index. Mr. Putnam added State Fund paid out a substantial cash dividend to participants as well.

Member Englund asked how the State Fund dividend works; and whether they provide BOI with advance notice to build up cash.

Mr. Putnam stated yes, BOI received advance notice and there was no issue with raising the cash.

Mr. Putnam reviewed the State Fund sector weights. There is an underweight in treasuries and agencies, which is typical for this portfolio and an overweight in financials, which performed well. As for the commodities sectors, energy has been beaten up, and there is a slight overweight to energy; however, the portfolio remains solid, with high quality assets. One exception is Marathon Oil, which is in exploration; it was out 700 basis points in the last 3-4 months, but the portfolio has a short position and it looks like they will be all right over the long term. Durations will be moved back towards neutral for the portfolio. Over the quarter staff sold \$20 million in short durations; however, the portfolio is still underweight in duration.

Mr. Putnam reviewed performance for the quarter and stated the portfolio looks good in for all time periods vs. the custom index, and managed to beat the Barclays Gov/Credit Intermediate index. The portfolio is underweight duration and overweight financials, which were positives; however, so far in the first quarter financials are taking a beating. Equities were strong in the 4th quarter, but have given back in the first quarter. Core real estate has been very strong; the three-year returns will show up next quarter, as April 2013 was the start of the real estate investment. Returns for real estate have been double digit and it provides a nice income component to it, as well as a good diversifier. However, double-digit returns in core real estate are not expected going forward.

Retirement Fund Bond Pool (RFBP)

Mr. Cullen turned over the presentation of the Retirement Funds Bond Pool (RFBP) to Mr. Rande Muffick. Mr. Muffick stated the RFBP is comprised of the core internal portfolio and the external portion that is managed by Reams, Neuberger Berman and Post Advisory. Performance for the bond pool lagged a bit in this quarter, due mostly to widening spreads, as well as high yield difficulties. The Barclays High Yield Index was down just over 2%.

Member Terry Cohea asked if Post Advisory is high yield.

Mr. Muffick replied yes, as well as Neuberger Berman. Post is a concentrated manager; they take big positions and have no exposure to energy, which has worked well compared to the benchmark, which does contain energy. Duration of the RFBP is a bit less than the benchmark. The internal bond portfolio

traditionally has a longer duration, but when rolled up it is less than the benchmark. The average quality is still A1, which is good considering all the talk of downgrades. The sector weights show the attractiveness of spread products. You can see the effect of high yield in credit quality; most non-investment grade comes from Reams high yield holdings, as about 1% is non-investment grade.

Director Ewer asked how the Barclays Index works when securities are downgraded.

Mr. Cullen responded when securities are downgraded, they drop out of the Barclays Gov/Credit Index and drop into the Barclays High Yield Index.

Responding to a question from Member Englund, Mr. Sax stated the RFBP was started 1995; however, the start dates of managers are later, for example Reams started in 2008.

Trust Fund Bond Pool (TFBP)

Mr. Muffick presented the Trust Funds Investment Pool. The pool includes the Trust Funds Bond Pool (TFBP) as the largest member and includes lesser amounts of real estate as well as high yield with Post. Fund performance is even with the benchmark; however, the internal fund lagged a bit due to spread product. Post did well in the quarter, even though it is high yield, due mostly to the lack of energy holdings. Real estate also did well. Post did so well that allocation of high yield went up by a couple percentage points due to the outperformance of managers.

Montana Domestic Equity Pool (MDEP) and Montana International Equity Pool (MTIP)

Mr. Muffick presented the Montana Domestic Equity Pool for the quarter ending December 31. The U.S. market environment for the 4th quarter shows returns across the board were positive; large cap growth led with 7.3%, outperforming small and mid-caps by a bit and growth stocks did well compared to value stocks. Energy and mining did not do well. For active management industry wide, large cap stocks and active managers did not do well for the quarter. Even small cap managers suffered, mid-caps did a better job at beating the benchmark. BOI managers did the opposite as three of four managers did well; mid-caps struggled the most, small caps were mixed and growth performed the best.

Mr. Muffick reviewed the characteristics of the pool and capitalization weights. Staff did raise some cash in December and sold some spiders (Standard & Poor's Depository Receipt SPDR), enough to increase cash levels. Energy is underweighted a bit, as many managers are staying away from the energy sector. Staff wanted to show the difference between active managed accounts, taking away passive accounts, to look only at active manager positions. It makes quite a bit of difference and shows mega and giants, and the overweight to midcaps. Active accounts have a much bigger capitalization preference. The result is staff is looking at allocating more active money in smaller caps.

Member Terry Cohea asked with the overweight of small and midcaps, when compared to passive, it is only a slight tilt.

Mr. Muffick agreed yes, exactly.

Director Ewer asked if the strategy is still working at after four years.

Mr. Muffick stated yes, although for the long term, we will see some volatility. Small and mid-caps have struggled vs. large caps and when the economy experiences turbulence, you can see underperformance.

Mr. Mark Higgins added the capital market assumptions are due in April, and while you will see small and mid-caps underperform for the short term, over the long term they will outperform.

Mr. Voytko added when the portfolio was restructured the odds are weighted in your favor by taking active manager risk where you are taking it. Small caps will underperform when market sentiment sees the market is headed for trouble.

Mr. Muffick added that energy is underweighted by active managers and active managers as a whole are pretty well diversified by economic sector.

Mr. Muffick reviewed performance. For the three months just ended there is a portfolio lag of 25 basis points, due to manager selection. Three out of four large cap managers outperformed which offset the underperformance of the small and mid-caps to some degree.

Mr. Muffick presented the Montana International Equity Pool (MTIP) for the quarter ending December 31. The markets did well in the 4th quarter, although not as good as the U.S. due to the stronger dollar. After January 1, however, 4th quarter gains have been given back. Small caps did well compared to large caps and growth did well vs. value, due to energy and commodities concerns. Emerging markets lagged, due in part to oil producing nations and active management did well in large and small caps, outperforming industry wide. BOI large cap managers did well; all outperformed their benchmarks. All three small cap managers in MTIP struggled, although this seems to be an aberration. Occasionally, lesser quality small caps can outperform better quality small caps.

Mr. Muffick reviewed the exposure reports for MTIP. The portfolio is overweight emerging markets vs. the benchmark when passive is included. The active account rollup is quite different and active is more overweight mid and small caps. Reviewing exposure by sector, energy is a slight overweight; managers as a whole are underweight financials and overweight consumer discretionary. Concerns about Europe and China banking systems continue.

Reviewing country weightings on an active basis, emerging market is 4.5% underweight, as managers are cognizant of emerging market concerns; China is also underweight.

Member Terry Cohea posed a global question. Although international exposure is important, and BOI is at about 14% international, when reviewing the 10 year numbers for MDEP, domestic equity has averaged a 7% return while international equity only 2.4%. Private equity allocation is about half of international so it follows that there is a lot of emphasis on international; therefore, how long is it wise to be patient.

Mr. Muffick replied BOI has done well in underweighting international. Expected return over the long term is still above U.S. markets, and emerging markets expectations are even higher over the long term. While favoring U.S. vs. international developed markets, most growth will come from emerging markets. However, the U.S. markets are more mature and the U.S. labor market is much more mobile than Europe.

Member Englund observed that since inception, June 2009, only international large cap passive has come close for performance.

Mr. Cullen noted all play key roles regarding return goals and diversity. The overweight of U.S. has helped over time; however, at different times international will do better than domestic. At an asset allocation level, it takes study to be mindful of the past but also to look forward.

Mr. Muffick added there has been a huge appreciation of the U.S. dollar, and all indices are dollar denominated. If you take the dollar away, the 30% difference is the currency penalty. In local markets, performance was much better, as a U.S. investor, currency risk is a factor.

Mr. Jim Voytko stated there are several reasons to overweight domestic equities including the relative merits of investing internationally. However, if you are already underweight international, 45% of the entire equity universe is outside of the U.S.; therefore, you would be making a bet against the rest of the world.

Member Englund stated that makes sense, until you look at numbers.

Mr. Voytko agreed, when comparing the numbers over 10 years, it does.

Mr. Muffick reviewed performance for the quarter. Managers performed well with the small cap tilt adding slightly as they did better than large caps internationally. The cap weights will remain the same for small vs. large, the same as domestic.

There were no changes to the Watch List; however, the two managers on the list, Artisan and Alliance Bernstein, have seen some improvement.

Montana Private Equity Pool (MPEP)

Mr. Ethan Hurley presented the Montana Private Equity Pool report for the quarter ending September 30, 2015.

Fund Name	Vintage	Subclass	Sector	Amount	Date
Axiom Asia Private Capital, IV, LP	2016	Buyout/Venture FoF	Diversified	\$25M	12/16/15
McCarthy Capital Fund VI, LP	2016	Buyout	Diversified	\$25M	12/15/15

There were two commitments of \$25 million each to Axiom Asia and McCarthy Capital; McCarthy is a new manager.

Member Satre asked if Axiom is invested in Asia.

Mr. Hurley responded yes, they are an existing manager invested in higher growth regions of the world.

Member Satre stated this is the third BOI commitment to Axiom, and asked if the funds are similar.

Mr. Hurley responded, yes, the funds are similar and although they make slight tweaks from fund to fund, they are consistent.

Representative Kelly McCarthy asked Mr. Hurley what drew him to the new manager, McCarthy Capital.

Mr. Hurley stated McCarthy is looking at smaller companies and putting in \$50+ million into a \$353 million fund, which represents a significant alignment of interest. They are located in Omaha, Nebraska and are very easy to work with. BOI staff interviewed all of the Boston affiliate employees.

Mr. Hurley reviewed the cash flow, which was again positive at quarter end; 14 of the last 16 quarters were cash positive. MPEP is diversified by strategy, overweight buyouts, but diversified broadly and there is no attempt to over or underweight any specific industry.

Member Cohea asked about the low allocation to the energy sector.

Mr. Hurley stated it is not by design, although has played out that way over time. There are private equity general partners who have energy commitments, which have not been called yet.

Mr. Hurley stated direct commitments continue to rise vs. fund of funds. Looking at periodic return comparisons, the portfolio continues to be an accretive asset class.

Mr. Hurley presented a new addition to the report, a snapshot of holdings at year-end; all numbers are updated through December 31, 2015. The global private equity index provided by State Street Bank shows the portfolio is roughly performing in line with the 2500 underlying private equity funds tracked by State Street.

Member Cohea asked if unfunded commitments of nearly \$600 million is a higher than average amount.

Mr. Hurley responded, it is about average.

Chairman Noennig asked where the money is committed.

Mr. Hurley stated it is spread across asset classes or in cash.

Montana Real Estate Pool (MTRP)

Mr. Hurley reported there were no new commitments for real estate since the last Board Meeting. On January 22, the trade settled which divested interest in Clarion Fund, a core real estate fund which staff had been trimming; proceeds were used for liquidity needs. By the end of last year, in relation to the rest of the BOI managers, Clarion was investing in riskier assets, value added type real estate transactions with higher leverage. Staff chose to divest completely as real estate ranges went up and BOI dropped into a higher fee band.

Member Cohea asked about the structure of real estate and the ability to exit out of a fund when you want, and if real estate has different arrangements.

Mr. Hurley stated yes, but only with open-ended core real estate funds. As with private equity, the market for closed-end real estate funds is a very illiquid market where you potentially take a large hair cut if sold. However, core real estate has open ended funds and provide liquidity options on a quarterly basis. Although open-ended, they are open-ended in name only. When the real estate market shifts negatively, there may not be enough liquidity to fulfill all the redemption requests. Therefore, an exit can be hindered until the market stabilizes.

On the cash flow side, MTRP had a negative quarter, due mostly to two fund closings with large capital calls which required BOI cash.

The portfolio is well diversified, and broadly geographically diversified, as well as diversified by property exposures. Staff makes no attempt to over or underweight. Reviewing time weighted returns, the portfolio continues to move in a positive direction and the IRR is moving in a positive direction (closed end). Reviewing the commitment summary, holdings changes as of 12/31/15 are due to cash flows. The portfolio is conservatively leveraged and within all policy constraints.

Mr. Hurley reported there were no changes on the watch list.

Member Prothero asked if any managers were making progress.

Mr. Hurley stated none have made drastic improvements, and there is not much that can be done about it, as selling would be at a loss. Real estate is performing better than during 2008-2009.

Carried Interest – Update

Mr. Hurley stated there has been a lot of scrutiny and media attention, critical mass, building in the limited partner community regarding disclosure of transparency on fees and carried interest. The media has painted general partners as hiding carried interest; however, it is reported in financial statements, so they are not hiding it. BOI has been getting information from real estate general partners. There has been a recent effort put on private equity general partners, and a template was developed with accounting staff to send out to the GPs. BOI has requested quarterly disclosures, and ILPA, a non-profit group has developed a reporting template. BOI has publicly endorsed the ILPA reporting template. None of our GPs do not want to do business with us, but BOI is climbing on board with the rest of the limited partners to standardize the reporting.

Member Englund asked why this is happening now.

Executive Director Ewer stated there has been a lot of bad press and prominent articles written.

Member Cohea asked is the question only on carried interest and not distributions.

Mr. Hurley stated yes and no. When a GP is entitled to carried interest, no check is cut or cash distributed, they simply take their share of the carried interest when the investment is realized and taken from profits.

Director Ewer added it is not accounted for; the portion the GP makes in the process, as BOI books our 80 but not their 20. We want to track it; is not an accounting phenomenon.

Mr. Hurley stated many times there will be a bullet; financial statements are consistent with LP agreements, and a water fall which addresses carried interest. As a limited partner, it is reported to us, but it is not on our BOI balance sheet.

Mr. Voytko added when looking at profit sharing, you want to know what each party's share was, the management fees and offsets. General partners were not cheating anyone; however, they were not all reporting in the same way. ILPA is trying to uniformly present the profit sharing.

Member Englund referenced Odyssey Partners and asked how often is it necessary to have face to face contact.

Mr. Hurley responded annually, often during the annual general meetings, or any other time of year at the manager's location; staff does need to be in front of each manager each year.

CONSULTANT REPORT

RVK, Inc. – Mr. Jim Voytko and Mr. Mark Higgins, CFA

Mr. Higgins presented the RVK quarterly performance report for the quarter ending December 31, 2015. Reviewing the summary of retirement plan performance as represented by PERS, a lot of the trailing return is due to the private equity pool and the underperformance of U.S. and international equity; however, peer rankings are very strong, in the top decile. The portfolio metrics illustrate the effectiveness of the program over five and ten year analysis. The Risk/Return matrix demonstrates less risk with higher return as desired and BOI is doing both over five and ten years with a top decile ranking for risk adjusted return.

Mr. Voytko added the reports show not only how well BOI has done, but also how much risk was taken; the BOI position shows less risk, with more return, whereas, higher returns with more risk means more volatility.

Mr. Higgins reported both domestic equity and international equity are improving substantially; the international pool has fared a little better. The RFBP exposure to high yield, although will generate a better long-term return, showed a bit of underperformance over one year. The TFIP exposure to real estate has helped. The private equity pool is finally proving its value, especially over one year. Five years ago vs. the index, private equity was trailing by double digits, but has closed in on the benchmark and is slightly positive over 7 years. STIP is becoming more attractive as interest rates are rising and realized a 14 basis points return advantage, and gross of fees is performing well. Private equity has showed excess returns, which means the public market has slowed down.

Mr. Voytko added the 2014 annual return fell 8.96% below the public equity benchmark; today however, it is the complete opposite.

Mr. Higgins reviewed peer rankings. Domestic equity is looking good, international equity is lagging, but it is hard to determine the peer group. The RFBP and TFIP both look good.

Mr. Voytko stated as Mr. Cullen pointed out, in recent times, domestic equity has been tapped for providing liquidity to pay benefits when necessary. Beta sensitivity to equity markets shows steady management, vs. sensitivity to the U.S. stock market, there are no huge ups and downs.

Mr. Higgins concurred; the current program is functioning well.

Member Prothero asked Mr. Higgins and Mr. Voytko if they have any manager concerns.

Mr. Higgins responded the RVK manager research team reviews managers on an ongoing basis. Artisan has struggled over the long-term, but there are no recommendations at this time to take any action on any of the portfolio managers.

Mr. Kulow requested to reconvene the Loan Committee to approve an increase in the DNRC loan amount, approved earlier in the Committee meeting. Upon speaking with Ms. Anna Miller, Bureau Chief of DNRC to

advise her BOI had approved the \$2,573,976 loan, Ms. Miller requested the reserves and financing costs be included, increasing the total loan amount to \$3 million. Mr. Kulow recommended the Committee approve the increased loan amount.

Executive Director Ewer noted he approved of the increase.

Loan Committee Chairman Jack Prothero made a motion to approve the increase in the loan amount to DNRC from \$2,573,976 to \$3 million. Member Kathy Bessette seconded the motion. The motion carried.

BOND PROGRAM REPORTS

Activity Report

Ms. Louise Welsh reviewed the quarterly Activity Summary Report as of December 31, 2015, and noted there were 24 loans committed over the quarter totaling \$8.6 million. Funded loans for the quarter totaled \$9.2 million to 32 borrowers and included loans for vehicles, buildings and roads.

Member Karl Englund inquired about the loan to the Broadwater Hospital District for \$474,000 to be utilized for Medicaid reimbursement.

Ms. Welsh explained Medicare calculates the amount each hospital receives, but if the payments amount to overcompensation, the hospital must reimburse Medicare/Medicaid for the overpayment.

Ms. Julie Flynn further explained in Broadwater County's case, the nursing home closed down for a time and when it was recertified and reopened, a new Medicare/Medicaid formula was applied generating the new revenue figures, which were incorrect resulting in a large reimbursement being paid back.

Member Satre asked if it is true that Broadwater County has been experiencing a lot of financial difficulty.

Ms. Flynn stated yes, however they appear to be headed in the right direction.

Mr. Satre stated they now have the \$474,000 debt, in addition to the normal operating expenses on top of the recent economic problems.

Ms. Flynn replied yes; however, a tax levy was successfully voted to specifically pay debt service on the \$474,000 INTERCAP loan.

INTERCAP PROGRAM OVERVIEW

Ms. Welsh presented an overview of the INTERCAP Bond Program (INTERCAP). INTERCAP's inception stems from the combination of the Board with the Montana Economic Development Board in 1984 as part of the "Build Montana" program. The Board was charged with both board's missions including implementing programs under the Montana Finance Consolidation Act (MFCA) in the Montana Code Annotated, Title 17, Chapter 5, Part 16, as well as various coal tax loan programs. In 1987, INTERCAP was created to assist local governments finance their capital projects using low-interest loans. INTERCAP is an enterprise fund, run as a business, providing services to Montana government agencies for a fee in the form of loan interest; it is a self-supporting program. The Board issues tax exempt Annual Adjustable Rate Tender Option Municipal Finance Consolidation Act Bonds (Bonds) to provide the pool of cash available to fund the INTERCAP loans Resolution 219 specifies the Board can enhance the Bonds and cover the Bond debt service by replenishing the Bond reserve, if needed, through the Perm Coal, Treasurers' Fund and STIP.

Ms. Welsh presented the quarterly Activity Summary. The previous Bond rate was 23 basis points and the new rate for 2016 is 52 basis points. The Bonds were oversubscribed again, and so were fully remarketed. At 52 basis points, the maximum spread allowed is 1.50, therefore 2.02% is the maximum

allowable rate charged to borrowers. The new 2016 loan interest rate to borrowers has been set at 1.55%.

The Board's current enhancement on the Bonds is \$106,445,000; however, that amount will decrease to \$97,340,000 after March 1, as the 1997 Bonds will be redeemed. On a side note, Montana Facilities Finance Authority (MFFA) anticipates a full call of their Board enhanced \$3,625,000 Montana Developmental Center bonds in April. No outside bond insurance company is used; BOI guaranties the bonds. Doing so enhances the marketability of the bonds and assists INTERCAP in obtaining the lowest possible loan interest rates to eligible governmental units that provide essential services and facilities to Montanans. Tendered Bonds are remarketed each year and if not purchased, the Board purchases, although to date, the Board has never been called on to cover. Even without the anticipated redemptions, the funds designated as the guaranty provide 8x the coverage. Bondholder interest is expected semi-annually on September 1 and March 1, therefore loan repayments have semiannual due dates of August 15 and February 15.

With the reduced amounts of bonds outstanding, the 52 basis points will amount to about \$500,000 for a total exposure of \$97.85 million. Perm Coal STIP is the first in line to provide the guaranty if called upon. A new bond issue can occur at any time of year though it is preferred to issue during the remarketing period to reduce cost and avoid two Bond rates in effect for the year.

Ms. Welsh reviewed the Bonds remarketing process and stated 20 days before the March 1 closing date BOI is notified of the amount to be tendered and remarketed. 74% of the bonds were tendered; The United Services Automobile Association (USAA) retained their bonds and added more to their portfolio; Vanguard tendered and did not come back; and BNY Private Wealth, Neuberger Berman, Fidelity, Columbia Asset Management, Northern Trust and JP Morgan all invested.

BOI is paid a credit enhancement fee of a 1.3% onetime payment on a new Bond issue and 25 basis points of the principal amount of tendered bonds actually purchased. BOI has realized \$1.5 million paid in fees. The fee price is set at the discretion of the Board; the Executive Director is reviewing the fee for possible future revisions. So far, the Board has not been called on to replenish Bond reserves to pay debt service or purchase tendered bonds.

The tax-exempt Bonds used to fund INTERCAP loans are remarketed every February, and the high rating makes the bonds very attractive. A new Bond will be issued in 2017; for every Bond issue, a reserve is held back. The remarketing cost is ~18 basis points, and Bond terms are for 20 and 25 years. The Board's guaranty directly affects the rating. Moody's rating is Aa3 and Fitch's rating is AA; ratings are based on the fiscal capacity of the Board, its total leverage, and the relative size of outstanding and proposed debt compared to funds available to pay. The State of Montana Fitch rating is AA+. High quality bonds translate into lower rates for the borrowers. The municipal markets, other similarly rated credit, and supply and demand, are all taken into consideration. In 2008, the market environment was a challenge for remarketers. The finance team used to prepare and market the Bonds consists of Underwriter/Remarketing Agents, Underwriter's Counsel, Board Counsel, Bond Counsel and Trustee.

Borrowers consist of local governments, state agencies and universities, and thus far, INTERCAP has never suffered a loss. This is due to a reasonable underwriting process and the basic credit soundness of Montana local governments. Loans have no origination fees and there are no prepayment penalties.

INTERCAP benefits Montana; close to \$473 million has been distributed throughout the state since inception of the program for various projects. 75% of all Montana cities/towns and counties in addition to almost half the school districts have used INTERCAP.

RECAP OF STAFF TO DO LIST AND ADJOURNMENT

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

- 1. By consensus, the October 4 Board Meeting is rescheduled to Thursday, October 6.
- 2. The revised Organization chart will be finalized and presented at the April Board meeting. Managers and portfolio managers will be directing staff under the new supervisor arrangements. Executive Director Ewer and Deputy Director Burton will be assisting in the process.
- 3. Staff will provide more detail to the Loan Committee regarding INTERCAP loans involving the Rural Development program.

Being no further business before the Board, the meeting adjourned at 4:54 p.m.

Next Meeting

The next regular meeting of the Board will be April 5, 2016 in Helena, Montana.

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

BOARD OF INVESTMENTS

APPROVE: _____
Mark E. Noennig, Chairman

ATTEST: _____
David Ewer, Executive Director

DATE: _____

BOI:drc
3/31/16

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: May 24, 2016
Subject: Executive Director Reports

1. Member Requests or Committee Requests or Follow up from Prior Meeting
 - a. More detail for underwriting Inter-cap loans when involving the USDA Rural Development program. Scheduled for Loan Committee.
 - b. Ethics policy-see memorandum under this tab and draft rewrite
 - c. Policy formatted now to outline form for easier reference
 - d. Four modifications or changes to proposed pension investment policy
2. Quarterly Cost Report and Monthly Snapshot – Included under Tab 2
3. Invitation for Budget Officer to Consider Purchase of BOI buildings

The Board as fiduciary owns four buildings and one vacant property. Staff has approached the Budget Office to consider a sale of three properties: 100 N. Park, 1712 9th Avenue and 2273 Boot Hill Court (Bozeman). Funding for building is a lengthy budget process. The legislature would have to approve any purchase; the Board would not be obligated or be compelled to sell these properties.

4. Budget-Additional memo included under Tab 2

As required by policy, the Board's current budget status is presented in tables under this Tab 2. The Board's staffing level must also be considered, reaffirmed or changed. The Board is authorized to employ 32 full time equivalent (FTE) staff, eight who are exempt, 24 who classified. Staff is recommending the Board endorse seeking an additional investment analyst FTE. This matter requires a **Decision** of the full Board.

5. Custodial Banking Relationship- Separate memo and RVK material Included under Tab 2
6. Ethics

The Audit Committee agreed that the current ethics policy should be rewritten. A draft revision is included in this Tab along with two supporting memoranda. Any changes will require a **Decision** of the Committee and full Board.

Total Fiscal Year 2016 Management Fees (Unaudited)

Board Fees					
<u>Pool</u>	<u>Q1</u> <u>9/30/2015</u>	<u>Q2</u> <u>12/31/2015</u>	<u>Q3</u> <u>3/31/2016</u>	<u>Change¹</u>	<u>FY 2016</u> <u>to Date</u>
Retirement Funds Bond Pool (RFBP)	\$ 193,098	\$ 193,098	\$ 193,098	\$ -	\$ 579,294
Trust Funds Investment Pool (TFIP)	137,577	137,577	137,577	-	412,731
Montana Domestic Equity Pool (MDEP)	189,546	189,546	189,546	-	568,638
Montana International Equity Pool (MTIP)	170,055	170,055	170,055	-	510,165
Montana Private Equity Pool (MPEP)	274,809	274,809	274,809	-	824,427
Montana Real Estate Pool (MTRP)	171,858	171,858	171,858	-	515,574
Short Term Investment Pool (STIP)	162,237	162,237	162,237	-	486,711
All Other Funds (AOF) Investments Managed	222,615	222,615	222,615	-	667,845
Total	\$ 1,521,795	\$ 1,521,795	\$ 1,521,795	\$ -	\$ 4,565,385

¹ Board Fees: No change.

Custodial Bank Fees					
<u>Pool</u>	<u>Q1</u> <u>9/30/2015</u>	<u>Q2</u> <u>12/31/2015</u>	<u>Q3</u> <u>3/31/2016</u>	<u>Change²</u>	<u>FY 2016</u> <u>to Date</u>
Retirement Funds Bond Pool (RFBP)	\$ 47,082	\$ 47,082	\$ 47,082	\$ -	\$ 141,246
Trust Funds Investment Pool (TFIP)	36,141	36,141	36,141	-	108,423
Montana Domestic Equity Pool (MDEP)	168,912	168,910	168,909	(1)	506,731
Montana International Equity Pool (MTIP)	61,614	61,614	61,614	-	184,842
Montana Private Equity Pool (MPEP)	13,188	13,188	13,188	-	39,564
Montana Real Estate Pool (MTRP)	10,635	10,635	10,635	-	31,905
Short Term Investment Pool (STIP)	61,905	61,905	61,905	-	185,715
All Other Funds (AOF) Investments Managed	34,275	34,275	34,275	-	102,825
Total	\$ 433,752	\$ 433,750	\$ 433,749	\$ (1)	\$ 1,301,251

² Custodial Fees: No significant changes.

External Manager Fees					
<u>Pool</u>	<u>Q1</u> <u>9/30/2015</u>	<u>Q2</u> <u>12/31/2015</u>	<u>Q3</u> <u>3/31/2016</u>	<u>Change³</u>	<u>FY 2016</u> <u>to Date</u>
Retirement Funds Bond Pool (RFBP)	\$ 349,816	\$ 293,258	\$ 297,131	\$ 3,873	\$ 940,205
Trust Funds Investment Pool (TFIP)	457,895	460,657	461,889	1,232	1,380,441
Montana Domestic Equity Pool (MDEP)	2,398,693	2,253,186	2,229,748	(23,438)	6,881,627
Montana International Equity Pool (MTIP)	942,766	875,165	881,882	6,717	2,699,813
Montana Private Equity Pool (MPEP)	3,446,800	3,834,017	4,794,809	960,792	12,075,626
Montana Real Estate Pool (MTRP)	1,101,050	1,299,035	1,254,549	(44,486)	3,654,634
Short Term Investment Pool (STIP)	-	-	-	-	-
All Other Funds (AOF) Investments Managed	164,522	167,649	170,468	2,819	502,639
Total	\$ 8,861,542	\$ 9,182,967	\$ 10,090,476	\$ 907,509	\$ 28,134,985

³ RFBP: No significant changes.

TFIP: No significant changes.

MDEP: No significant changes.

MTIP: No significant changes.

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

MTRP: No significant changes. Because reported fees are subject to a lag, they are inconsistent quarter to quarter. Therefore, quarterly fee comparisons are less meaningful.

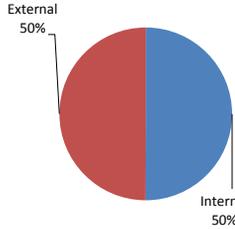
AOF: No significant changes.

Total Fees					
<u>Pool</u>	<u>Q1</u> <u>9/30/2015</u>	<u>Q2</u> <u>12/31/2015</u>	<u>Q3</u> <u>3/31/2016</u>	<u>Change</u>	<u>FY 2016</u> <u>to Date</u>
Retirement Funds Bond Pool (RFBP)	\$ 589,996	\$ 533,438	\$ 537,311	\$ 3,873	\$ 1,660,745
Trust Funds Investment Pool (TFIP)	631,613	634,375	635,607	1,232	1,901,595
Montana Domestic Equity Pool (MDEP)	2,757,151	2,611,642	2,588,203	(23,439)	7,956,996
Montana International Equity Pool (MTIP)	1,174,435	1,106,834	1,113,551	6,717	3,394,820
Montana Private Equity Pool (MPEP)	3,734,797	4,122,014	5,082,806	960,792	12,939,617
Montana Real Estate Pool (MTRP)	1,283,543	1,481,528	1,437,042	(44,486)	4,202,113
Short Term Investment Pool (STIP)	224,142	224,142	224,142	-	672,426
All Other Funds (AOF) Investments Managed	421,412	424,539	427,358	2,819	1,273,309
Total	\$ 10,817,089	\$ 11,138,512	\$ 12,046,020	\$ 907,508	\$ 34,001,621

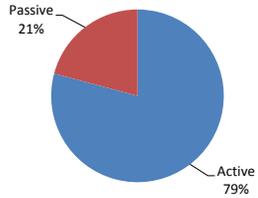
MBOI Snapshot

As of 4/30/2016

MBOI Internal/External

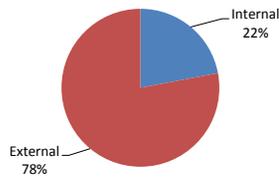


MBOI Active/Passive

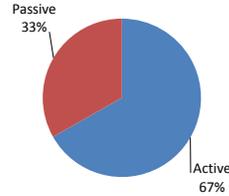


Category	Market Value	Percentage
Internal	\$8,313,117,732	50.05%
External	\$8,296,985,667	49.95%
Active	\$13,147,776,299	79.16%
Passive	\$3,462,327,100	20.84%
Grand Total	\$16,610,103,399	

Pension Internal/External



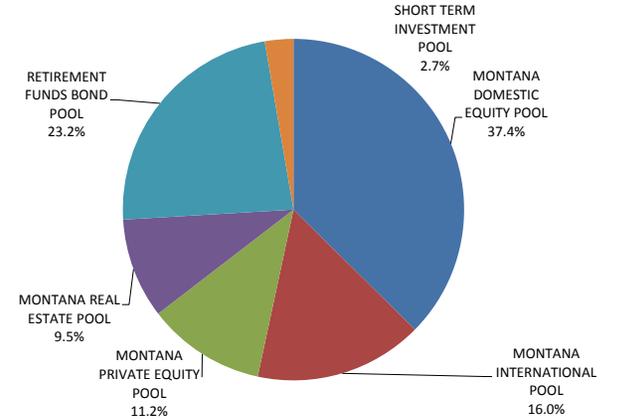
Pension Active/Passive



Category	Market Value	Percentage
Internal	\$2,196,055,775	22.02%
External	\$7,775,692,865	77.98%
Active	\$6,661,235,234	66.80%
Passive	\$3,310,513,406	33.20%
Grand Total	\$9,971,748,640	

Pension by Asset Type

Pension Pool NAV	Market Value	%	Policy Range
MONTANA DOMESTIC EQUITY POOL	\$3,728,138,155	37.39%	28 - 44%
MONTANA INTERNATIONAL POOL	\$1,593,113,452	15.98%	14 - 22%
MONTANA PRIVATE EQUITY POOL	\$1,117,579,276	11.21%	9 - 15%
MONTANA REAL ESTATE POOL	\$946,778,795	9.49%	6 - 10%
RETIREMENT FUNDS BOND POOL	\$2,316,819,148	23.23%	22 - 30%
SHORT TERM INVESTMENT POOL	\$269,319,814	2.70%	1 - 5%
Total	\$9,971,748,640	100.00%	



Pension by Plan

Fund Participant	Market Value	%
PUBLIC EMPLOYEES' RETIREMENT	\$5,001,602,790	50.16%
TEACHERS' RETIREMENT	\$3,610,881,527	36.21%
FIREFIGHTERS' RETIREMENT	\$336,083,195	3.37%
POLICE RETIREMENT	\$328,389,100	3.29%
SHERRIF'S RETIREMENT	\$296,585,102	2.97%
GAME WARDEN'S RETIREMENT	\$152,026,241	1.52%
HIGHWAY PATROL RETIREMENT	\$127,465,433	1.28%
JUDGES' RETIREMENT	\$86,831,192	0.87%
VOL. FIREMANS' RETIREMENT	\$31,884,061	0.32%
Total	\$9,971,748,640	100.00%

Investment Pools

Pool Name	Market Value	%
MONTANA DOMESTIC EQUITY POOL	\$3,728,138,155	25.22%
SHORT TERM INVESTMENT POOL	\$2,778,344,479	18.79%
RETIREMENT FUNDS BOND POOL	\$2,316,819,148	15.67%
TRUST FUNDS INVESTMENT POOL	\$2,304,122,110	15.58%
MONTANA INTERNATIONAL POOL	\$1,593,113,452	10.78%
MONTANA PRIVATE EQUITY POOL	\$1,117,579,276	7.56%
MONTANA REAL ESTATE POOL	\$946,778,795	6.40%
Asset Total	\$14,784,895,415	100.00%

Coal Tax Trust

Trust Name	Market Value	%
ECONOMIC DEVELOPMENT TRUST	\$92,610,746	8.91%
SHORT TERM INVESTMENT POOL	1,225,180	0.12%
TRUST FUNDS INVESTMENT POOL	91,385,566	8.79%
PERMANENT COAL TRUST	566,385,841	54.49%
IN-STATE LOANS	122,136,930	11.75%
VHLM Mortgages	30,134,906	2.90%
SHORT TERM INVESTMENT POOL	10,323,109	0.99%
TRUST FUNDS INVESTMENT POOL	403,790,896	38.85%
REGIONAL WATER FUND	97,149,495	9.35%
SHORT TERM INVESTMENT POOL	1,224,310	0.12%
TRUST FUNDS INVESTMENT POOL	95,925,184	9.23%
TREASURE STATE ENDOWMENT	283,318,464	27.26%
IN-STATE LOANS	363,561	0.03%
SHORT TERM INVESTMENT POOL	2,650,012	0.25%
TRUST FUNDS INVESTMENT POOL	280,304,890	26.97%
Grand Total	1,039,464,546	100.00%

Top 10 Non-Pension Accounts

Account Name	Market Value	%
STATE FUND INSURANCE	\$1,466,653,660	28.84%
TREASURERS FUND	\$852,501,194	16.77%
PUBLIC SCHOOL TRUST	\$691,740,043	13.60%
STATE AGENCY OTHER	\$592,513,073	11.65%
PERMANENT COAL TRUST	\$564,806,116	11.11%
TREASURE STATE ENDOWMENT	\$283,318,464	5.57%
TOBACCO TRUST	\$211,494,327	4.16%
MONTANA STATE UNIVERSITY	\$171,839,538	3.38%
UCFRB RESTORATION	\$136,512,654	2.68%
RESOURCE INDEMNITY TRUST	\$113,429,789	2.23%
Total	\$5,084,808,857	100.00%

STIP

Account	# Accounts	% Total	Total Market Value
Total State	318	73.07%	2,030,226,436
Total Local	166	26.93%	748,118,043
Total STIP	484	100.00%	2,778,344,479

Average Current Month STIP Yield: **0.5530%**

Intercap Statistics

Loans Outstanding	\$75,490,760
Bonds Outstanding	\$97,340,000
# of Borrowers	187
2014 Loan Rate	1.55%

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: May 24, 2016
Subject: State Street Bank, Custodial Relationship Review as per Work Plan

State Street Bank provides custodial banking services to the Board which include safekeeping most of the Board's fiduciary assets and investments, as well as clearing and recording the Board's financial transactions. In addition, State Street calculates performance numbers for the various accounts, as well as demonstrating relative performance for each account using the Board's assigned benchmarks.

In 2015 the Board adopted a specific governance policy on custodial banking services, Appendix N, covering this complicated relationship:

- Detailed the complexity of the role
- Governed by state procurement laws
- Sets forth minimum requirements
- Designates custodial bank as the 'book of record' for security holdings and values, with exceptions noted in the policy

Other important functions include securities lending and filing class action claims on behalf of the Board. State Street investment products are also used to sweep cash into temporary investments through various stock index or the Bank's in-house liquidity funds.

Only a handful of banks worldwide are truly eligible for consideration for a custody relationship given the Board's asset size and complexity. The Board's relationship with the custodial bank is quite hands-on. Board staff has daily contact with various State Street personnel. State Street brings a sizeable team to Helena three times a year.

State Street Bank and the State's depository bank, U. S. Bank, are paid by an on-going 'statutory' appropriation. Currently, State Street is charging the Board \$1.655 million per year and gets 20% of the securities lending income. An additional \$80,000 is charged annually for Transfer Agency Services. For private equity accounts over 175, State Street will receive an additional fee of \$2,000/account.

Within this tab is a report from RVK on current trends and some challenges custodial banking is facing.

State Street recently went through another round of substantial down-sizing and in that process, the Board's principal account representative was among the employees terminated. This is the second time within two years that the Board's account representative has been let go.

Generally State Street ably performs the custodial bank work it has contracted to do. There are times when service quality has lagged but this is not an issue at this time. While staff believe that there are no pending matters that merit Board member attention, this agenda item may prompt further inquiry from members.



Memorandum

To	Montana Board of Investments (“MBOI”)
From	RVK, Inc. (“RVK”)
Subject	RVK Comments on Custodial Marketplace and State Street
Date	May 4, 2016

Executive Summary

RVK was requested by the MBOI to provide a memo discussing the current dynamics of the Custodial Banking marketplace, RVK’s commentary and considerations for evaluating the services and performance of custodial partnerships, and a summary of our current view on State Street, the current custodian for the MBOI (retained following an RFP process conducted in 2014). Highlighted below are several key points discussed throughout the remainder of this memo.

- **Custodial Banking is a Concentrated Industry with a Diverse Array of Service Offerings.**
 - Leading providers to US Asset Owners include BNY-Mellon, JPMorgan, Northern Trust, and State Street.
 - Services may extend beyond simple custody and can include additional investment functions, processing, and reporting services, each of which have distinct revenue and profit drivers.
- **Factors Key to Vendor Success:**
 - Capable / Experienced Professionals
 - High Quality Processes / Services
 - Strong Technology Tools with Sufficient Technology Reinvestment
 - Competitive and Reasonable Fees
- **Understanding Revenue Dynamics is Important When Structuring a Custodial Relationship.**
 - Market litigation, press coverage, and increasing relationship complexity increases the need to understand revenue drivers and the transparency of services provided
- **Although the Industry Has Evolved Substantially over the Past Several Years, Evaluation Drivers Employed by MBOI for the 2014 RFP Have Not Changed Materially.**

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- **State Street Remains a Generally Recommended Provider by RVK to our Clients.**
 - State Street is a leading provider to the US public fund marketplace, servicing many of the largest clients in the segment; the firm offers a robust set of custody, accounting, and performance measurement services.
 - Potential weaknesses in a relationship with State Street include unreasonable account team turnover and service degradation, as well as inefficient custom process maintenance, which can lead to errors or additional manual requirements.

Current Custodial Marketplace Dynamics

In our view the custodial marketplace for US Asset Owners, such as the MBOI, is characterized by a relatively high degree of vendor concentration with meaningful barriers to entry for new vendors. The primary market participants for large market (i.e. >\$1 Billion in assets) full-service custody and associated value-added services rest primarily (although not exclusively) with four firms in our opinion: BNY-Mellon, JPMorgan, Northern Trust, and State Street. These firms have survived multiple rounds of consolidation and are in our estimation market leaders that remain committed to the custody segment for US Asset Owners.

When considering custodial vendors, we believe the following are of critical importance: (1) employment of capable/experienced professionals, (2) high quality processes / services, (3) strong technology infrastructure coupled with sufficient technology reinvestment, and (4) competitive and reasonable fees for services offered. We find that relationships are strained if material deficiencies emerge in any of these areas. That said, clients prioritize each of these issues differently; therefore, what is viewed as a deficiency with one client may be viewed as acceptable to another.

Expansion beyond Traditional Custodial Services

In recent years, many custodians have expanded their portfolio of services beyond the custody and safekeeping of domestic assets. Such services include global custody via sub-custodial and depository networks, foreign exchange services, accounting/valuation services, performance/analytics services, benefit payment services, securities lending, investment management (STIF and long-term assets, generally passive), class action monitoring and filing services, and alternative asset services. Sophisticated custodial clients may realize value by obtaining these services from a single source or via affiliated sources. However, custodial customers must also be mindful of the potential for a custodian to derive additional revenue from the affiliated services and offerings, which may represent a significant multiple of core custody revenue. While often bundled, it is important to note that market participants have also been successful and have found value in unbundling relationships such as securities lending and most notably, investment management.



Impact of Recent Negative Publicity

The custodial vendor community and their affiliates and services have been in the popular and financial press related to a wide variety of issues from cash funds, securities lending programs, foreign exchange, transition management services, and other such services. Attention, publicity, and allegations of potential wrongdoing have focused increased scrutiny on whether an asset owner is always aware of the full breadth of expenses and potential revenue sources associated with custodial (and related) services. In many cases, this has prompted strategic reassessments of vendor and service usage. Relationship changes resulting from these reassessments can impact custodial client profitability, particularly when fee relationships are denominated in hard dollar fixed fees. Combined with prolonged periods of exceptionally low interest rates and depressed revenue from capital market services, such as securities lending and foreign exchange, nearly all custodial vendors are finding themselves in a situation that requires or at least indicates the need for difficult discussions about revenue model sustainability. We believe that these matters, taken together with compliance with various direct/indirect fee disclosure obligations (for certain classes of clients – specifically those governed by ERISA), is making fee discussions and the adoption of increasingly detailed fee schedules more common.

Custodial Banking Evaluation Criteria

Evaluation components typically considered by clients, such as the MBOI, have not changed materially since the 2014 RFP. Specifically, the RFP included the following component evaluation scope and questionnaire factors:

- Organizational Resources, Technology and Staffing
- Securities Safekeeping and Core Servicing
- Securities Settlement, Accounting, and Reporting
- Comprehensive Pooled / Unit Accounting System including Transfer Agency Services
- Cash and Exposure Management Services
- Foreign Exchange
- Securities Lending
- Performance Measurement and Portfolio Risk Analysis

General Comments on State Street

RVK believes that State Street qualifies as one of the four leading providers of asset custody and related services to US Asset Owners. We believe that the firm generally employs experienced and talented professionals, has capable processes and services, maintains strong technology with meaningful reinvestment, and generally offers competitive fees. Of the four leading custodians, we find that State Street generally provides strong accounting services and tends to be among the most capable and experienced from a daily valuation standpoint, given its heritage of offering mutual fund and asset manager servicing.



Service Delivery Model

State Street relationship teams serve clients from various offices around the United States and key locations throughout the world for global relationships. However, similar to many of its peers, State Street continues to weigh the benefits and costs of client proximity versus operational consolidation. As such, in recent years some degree of centralization has occurred with all service lines, spanning core custodial safekeeping and settlement, accounting and analytics services. Furthermore, State Street has made significant investments in offshore IT/systems development and processing hubs, which have led to the redeployment and virtualization of many resources.

Overall Assessment

State Street is a leading provider to the US public fund marketplace, servicing many of the largest clients in the segment, and it also maintains a meaningful presence in other institutional sectors. The firm offers a rich set of services from custody, accounting, and performance measurement. We find that State Street generally offers a rational mixture of services, but variance in client experience and satisfaction can differ as a result of specific service team staffing and unique process requirements for the relationship. We have also observed that achieving successful outcomes in challenging circumstances appears to be closely linked to the relative stability of relationship teams, which are staffed by experienced individuals who are capable of either directly satisfying client needs or successfully advocating for client needs within the larger organization. To this end, involuntary turnover on accounts, which has occurred at State Street as well as its peers in an effort to improve margins, has affected satisfaction with services provided. We view this turnover as a potential weakness for State Street. Another weakness is the presence of inefficient custom process maintenance, which can lead to errors or additional manual requirements. These issues notwithstanding, overall, we are comfortable with State Street as a generally recommended provider to our clients.

State Street: Summary Facts and Figures

Among the largest global master custodians at December 31, 2015:

- Assets under Custody of \$21,258 Billion
- 2,257 Institutional clients

Two lines of business:

- Investment Servicing – 88% of 2015 revenue
- Investment Management – 12% of 2015 revenue

Highly Rated Financial Franchise:

	Moody's	S&P	Fitch	DBRS
State Street Corporation				
Short Term Commercial Paper	P-1	A-1	F1+	R-1 (Middle)
Senior Debt	A2*	A	AA-	AA (Low)
Subordinated Debt	A2	A-	A+	A (High)
Trust Preferred Securities	A3	BBB	BBB+	A (High)
Preferred Stock	Baa1	BBB	BBB	A (Low)
Outlook	RuR Up	Stable	Stable	Stable
State Street Bank & Trust				
Short Term Deposits	P-1	A-1+	F1+	R-1 (High)
Long Term Deposits	Aa2*	AA-	AA+	AA
Senior Debt	A1*	AA-	AA	AA
Long Term Counterparty/Issuer	A1	AA-	AA	-
Subordinated Debt	A1*	A	A+	AA (Low)
Outlook	RuR Up	Stable	Stable	Stable
Last Change	02/02/16	12/02/2015	5/19/2015	NC since '05

*Ratings under review for an upgrade

Significant Staffing:

- 32,391 total headcount at December 31, 2015
 - 25,728 in Global Services/Markets
 - 2,510 in Global Advisors/Marketing/Research
 - Remainder in Corporate Functions

Moderate but Growing Turnover Rates:

- 2013: 14.48%
- 2014: 15.29%
- 2015: 16.33%



Significant Client Base, particularly with large Public Funds:

- 210 Public Fund Clients with Assets of \$2.328 Trillion at 12/31/2015.
- 45 >\$5 Billion Public Fund Clients with Assets of \$2.201 Trillion at 12/31/2015.
- Growing Overall Client Franchise, but with some Client Account Losses.

Global Coverage for Assets:

- Global Custody Network in 108 markets worldwide through 114 subcustodian relationships and depository memberships.

Meaningful Dedication to and Investment in Technology:

- 5,700 employees and contractors globally devoted to technology. Complex technology environment with meaningful integration and controls - increased usage of cloud technologies. Approximately 20-25% of annual operating expense devoted to technology.

Comprehensive Asset Servicing and Accounting / Reporting:

- Proprietary and Vendor-Provided Technology and Platforms leveraged to deliver comprehensive services.

Cash and Foreign Exchange Services Offered with Affiliates:

- Diverse and comprehensive set of cash investment options offered by an affiliated investment manager with sweep functionality. Diverse set of foreign exchange capabilities offered, ranging from standing instruction / indirect execution with bank as principal to direct / negotiated execution with bank as principal as well as support for third party executions. Explicit disclaimers of no-agent or best execution obligations unless separately contracted with SSGM. Three standing instruction programs: AIR – daily rate with variable spreads based on Hong Kong prices and session bound; SSH – daily rate with variable spreads based on manager transaction initiation site with variable spreads, with netting, and session bound; and HPS – hourly WM fixing approach with defined spreads.

Large Custodial Securities Lending Program:

- Large program (\$3.18 Trillion Lendable / \$357 Billion on loan at 12/31/2015) with lending in 30 markets worldwide. Currently 150+ approved counterparties across all global markets. Affiliated investment team with deep bench strength. Reasonable experience supporting third-party lending relationships.

Significant Custodial Performance and Analytics Resources:

- Performance services offered to over 850 clients globally. Over 700 dedicated investment performance and compliance professionals in 15 offices worldwide. Proprietary private assets system and hedge fund applications.

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: May 24, 2016
Subject: Budget Process, Budget Status Reports and Staffing Levels

Background

There are **three** different statutory frameworks authorizing the Board to expend money.

First, most of the Board's funding for operations is authorized by the Montana Legislature in House Bill 2, the main appropriations bill. In the 2015 Session, the Legislature set the maximum rate that can be charged by the Board to its investment pools and other investment accounts, \$6,031,846 for both FY 2016 and FY 2017. Again, this amount covers only the operational costs of managing the investment pools and other investment monies; it does not cover the operational costs of the Board's municipal bond programs, primarily the INTERCAP Program.

Second, there are two significant budget areas that are authorized in law known as a *statutory appropriation*. The Board's custodial banking expenses and its INTERCAP Program are authorized in separate statutory appropriations and do not need repeated authorization by the Legislature. The Legislature can change statutory appropriations but generally, these authorizations are long-standing.

Third, the Board is expressly authorized in the unified investment law to deduct investment management and other costs of its investments before distributing income. Most of the Board's expenses fall within this last category.

There are **two** distinctly separate fund classifications applicable to the Board, ***internal service fund*** and ***enterprise fund***. The Board's investment mission is classified as an internal service fund because this type of fund charges other accounts for the costs of the Board's services. The entire MBOI investment side is classified as an internal service fund and the Legislature sets the absolute dollar limit that can be applied against the accounts for this fund. The Board's INTERCAP Program and other municipal bond programs are classified as an enterprise fund because, as the name implies, these programs are enterprise in nature, they can be voluntarily used. The Board's financial statements present these two funding classifications separately.

At each quarterly meeting, the Board receives a breakout of the three main categories of costs incurred for its internal service fund: operations, custodial banking, and external investment charges.

Budget Process for the 2017 Legislative Session

As an administratively attached agency of the Department of Commerce (the “Department”), the Board submits its budget through the Department. As noted, the budget is exclusive to requesting the maximum permissive amount that the Board’s internal service fund can charge against all of its investment-mission accounts. In deriving this recommended total charge, the Board relies on directives from the Governor’s Budget Director as configured by Department staff. Board staff has input, but ultimately the Board’s budget is under the authority of the Department Director.

At the August meeting, staff will present the Department’s preliminary recommendation for the maximum rate for the 2018-2019 biennium and the draft narrative about the Board.

Budget Status Report

Attached in Tables I and II are the budgeted amounts for the account classifications, internal service fund and enterprise fund, respectively, and the amounts expensed-to-date. At the Board’s August meeting, as required by the Board’s Governance Policy, staff will recommend, for Board approval, funding amounts for the various operational categories for its two major fund types.

Staff Levels

As required by the Board’s Governance Policy, staff is required to recommend staffing levels. The Board is currently authorized for eight exempt positions and 24 classified positions.

Recommendation

Staff recommends authorization to request a new full-time equivalent (FTE) investment analyst position through the 2018-2019 biennium Executive Planning Process, for a staffing level of eight exempt and 25 classified FTE positions.

Table I			
Board of Investments			
Investments			
(Internal Service Fund 06527)			
		Actual	
Category	FY16 Budget	As of 4/2016	Remaining
Personal Services	3,300,000	2,491,828	808,172
Board Per Diem	7,920	6,760	1,160
Board of Housing Mortgage Services	40,000	39,614	386
Research Services	806,277	626,454	179,823
Consulting Services	372,500	253,823	118,677
Other Contracted Services (1)	387,200	285,086	102,114
Supplies/Materials (2)	32,000	25,021	6,979
Communications (3)	30,000	22,806	7,194
In-State Travel	4,000	2,068	1,932
Out-of-State Travel	42,400	30,683	11,717
Board Travel & Education	8,000	7,563	437
Building Rent	167,000	153,926	13,074
Other Rent (4)	4,000	2,434	1,566
Repairs & Maintenance (5)	2,000	758	1,242
Commerce Department Services (6)	466,417	352,301	114,116
Miscellaneous (7)	41,500	102,155	(60,655)
Total	5,711,214	4,403,280	1,307,934
Personal Services	3,307,920	2,498,588	809,332
Operating Expenses	2,403,294	1,904,692	498,602
	5,711,214	4,403,280	1,307,934
Authorized Fee	6,031,846		
(Under)/Over	(320,632)		
(1) Includes Employment Serv/Legal Serv//Audit/Print Services/State Computer Network Charges			
(2) Computers Hardware & Software/Office Furniture/Office Supplies/Books & Reference Materials			
(3) Phones/Parcel Delivery/Postage/Employment Ads			
(4) Copiers/Records Management			
(5) Printer/FAX Repair & Maintenance			
(6) Percentage of Personnel Services			
(7) Training/Education/Subscriptions/Dues/Freight/Recruitment Expenses/Misc State Charges			

Table II			
Board of Investments			
Bond Program			
(Enterprise Fund 06014)			
		Actual	
Category	FY16 Budget	As of 4/2016	Remaining
Personal Services	360,000	303,341	56,659
Board Per Diem	1,980	1,690	290
Other Contracted Services (1)	35,000	20,090	14,910
Supplies/Materials (2)	8,000	5,853	2,147
Communications (3)	7,000	4,169	2,831
In-State Travel	3,000	1,562	1,438
Out-of-State Travel	600	0	600
Board Travel & Education	2,000	1,770	230
Building Rent	48,000	44,312	3,688
Other Rent (4)	1,000	609	391
Repairs & Maintenance (5)	1,000	155	845
Commerce Department Services (6)	51,039	43,009	8,030
Miscellaneous (7)	3,500	2,022	1,478
Total	522,119	428,582	93,537
Personal Services	361,980	305,031	56,949
Operating Expenses	160,139	123,551	36,588
	522,119	428,582	93,537
(1) Includes Employment Serv/Legal Serv//Audit/Print Services/State Computer Network Charges			
(2) Computers Hardware & Software/Office Furniture/Office Supplies/Books & Reference Materials			
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MEMORANDUM

Montana Board of Investments

Department of Commerce

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

To: Board Staff
From: Executive Director
Date: (Annually)
Subject: Compliance with Board's Ethics Policy

The Board's Governance Policy sets forth its ethics policy in Exhibit B. Members and staff are required each year to review and reaffirm both familiarity and continued compliance with state law, rules and the Board's ethics policy.

The web link to the State ethics law is [Title 2 Part 1 MCA](#)

The State's travel policy can be found in the [State's Operations Manual](#).

Please familiarize yourself with state law and policy. Questions should be directed to either the Deputy Executive Director or to me.

DRAFT CODE OF ETHICS FOR MONTANA BOARD OF INVESTMENTS

I. PURPOSE: TO PROTECT AND HONOR THE PUBLIC TRUST

The Montana Board of Investments (the “Board”) fully accepts its responsibility and obligation to follow all state laws regarding ethical conduct. The Board expects its members, employees and all associated parties doing business with the Board to conduct themselves within the highest ethical standards that will in all circumstances reflect well on the Board and to the people it serves. All members and employees must obey state law and the additional requirements as to their conduct as further provided within this policy.

II. STATE CODE OF ETHIC PROVISIONS

The Board’s ethics policy complements and does not substitute for state law. Members and employees are expected to be familiar with and obey all state laws and understand and obey those regarding conduct, disclosure and conflict of interest requirements of the state code of ethics Title 2 Part 1 Montana Code Annotated.

III. ADDITIONAL AREAS RELATING TO ETHICAL CONDUCT AT THE MONTANA BOARD OF INVESTMENTS

1. Conflict of Interest. There shall be no action taken by a member or employee related to the affairs of the Board that would result in the receipt of a financial benefit to the member or employee or the appearance of a ‘quid pro quo.’ Members must disclose and recuse themselves from any situation involving a possible conflict. Employees must disclose to their supervisor and avoid any such conflict.
2. Protection of Information. Members and employees must protect and may not disclose or use, except as allowed by Board procedures, any investment information, internal control procedures, or any confidential personal information.
3. Use of Board’s assets. No person may use the physical or electronic assets of the Board for personal gain or for any use other than to fulfill the missions and programs of the Board. This provision also pertains to all the fiduciary assets including all investment or Board program information of every type. All assets of the Board are exclusively for the benefit of the citizens and must be protected in all respects.

IV. SPECIFIC PROVISION RELATED TO GIFTS, TRAVEL, MEALS AND CONFERENCES

1. Gifts.
 - a. All gifts received shall be addressed as provided by state law and as further limited by this Section IV of the Board’s ethics policy.
 - b. All gifts shall be logged with the date of receipt, their description and final disposition noted.
 - c. All allowable gifts, i.e., those having values below the statutory limit of \$50, if perishable shall be shared with Board staff, if non-perishable shall be auctioned and the proceeds deposited into the Board’s employee fund.
2. Travel. All travel is to be approved by the Executive Director. Reimbursement for travel expenses and for determining work time or overtime is subject to state policy. Where the Board participates on a Limited Partner Advisory Committee (“LPAC”) and the limited partnership agreement or other legal documents entered into by the General Partner and the Limited Partners explicitly provide for LPAC members to be reimbursed for reasonable expenses related to travel, lodging and meals incurred while attending LPAC meetings, such reimbursement may be accepted, but only with the express approval of the Executive Director who shall report such activity to the Board at least annually.
3. Meals. Meals provided during conferences or by vendors or other parties that are reasonably incidental to the conduct of the Board’s business such as during breakfast or lunchtime meetings may be accepted, however meals at restaurants are to be ‘no-host.’
4. Conferences. All member requests and permission to attend conferences are to be approved by the Executive Director after consulting with the Chair. All other conferences are to be approved by the Executive Director.

I have read and understand the Montana Board of Investments Code of Ethics and agree to comply with all its provisions; that it is my responsibility to abide both by the State ethics law Title 2 Part 1 Montana Code Annotated and the State’s travel policy as provided in the Montana Operations Manual governing allowable travel reimbursement expenses and the rules for designating work or overtime hours.

Board member/staff

Date

Montana Domestic Equity Pool

Asset Class Review

Presented by:

Joseph M. Cullen, CFA, CAIA, FRM, Chief Investment Officer

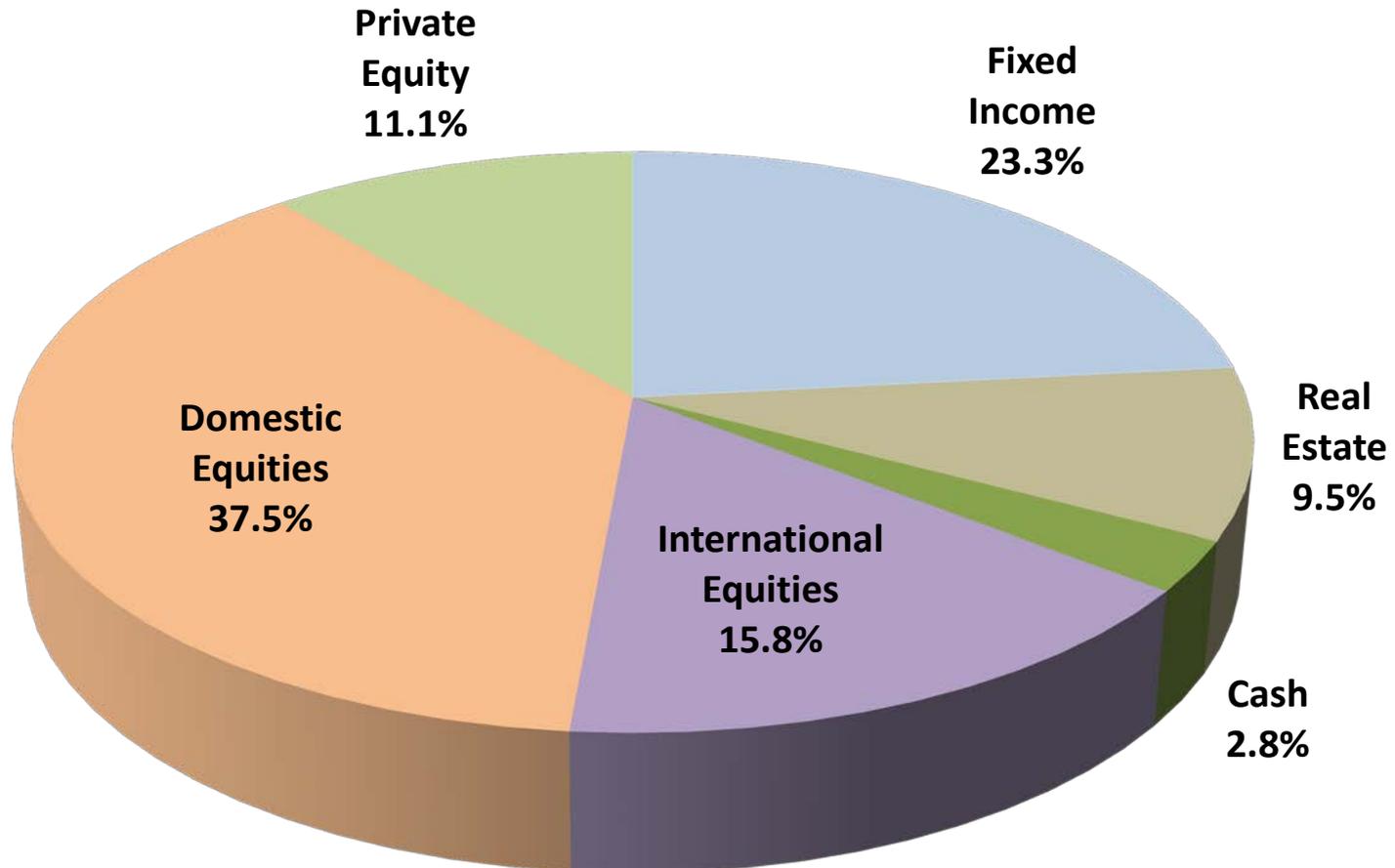
Rande Muffick, CFA, Director of Public Market Investments

May 24, 2016

Contents

- Asset Allocation Context
- Policy Statement
- Current Pool Structure
- Types of Portfolios Within MDEP
- Positioning
- Fees and Costs
- Due Diligence and Monitoring
- Future Considerations and Tendencies

Pension Allocation as of 3/31/2016



Montana Domestic Equity Pool (MDEP)

- High long-term returns
- Major driver of plan returns
- Largest asset class
- Highly volatile returns
- Highly liquid assets
- Objective: Attain highest possible total return within parameters of the MDEP Investment Guidelines

Montana Domestic Equity Pool (MDEP)

The Montana Public Retirement Plans investment in the Montana Domestic Equity Pool (MDEP) will provide the Plans with exposure to a broad and diverse spectrum of equity-related securities across different industries and market capitalization ranges. Primarily, these equity investments will be managed by external asset managers that invest in the common shares of equity for entities that have their headquarters based in the United States and are traded on eligible U.S. exchanges. MDEP will be diversified across a number of investment portfolios and investment managers that will utilize either an active or an index focused investment strategy. The specific strategic objectives, performance criteria, and investment guidelines for MDEP are detailed in Appendix II: Pool Investment Objectives and Guidelines – Schedule II-A.

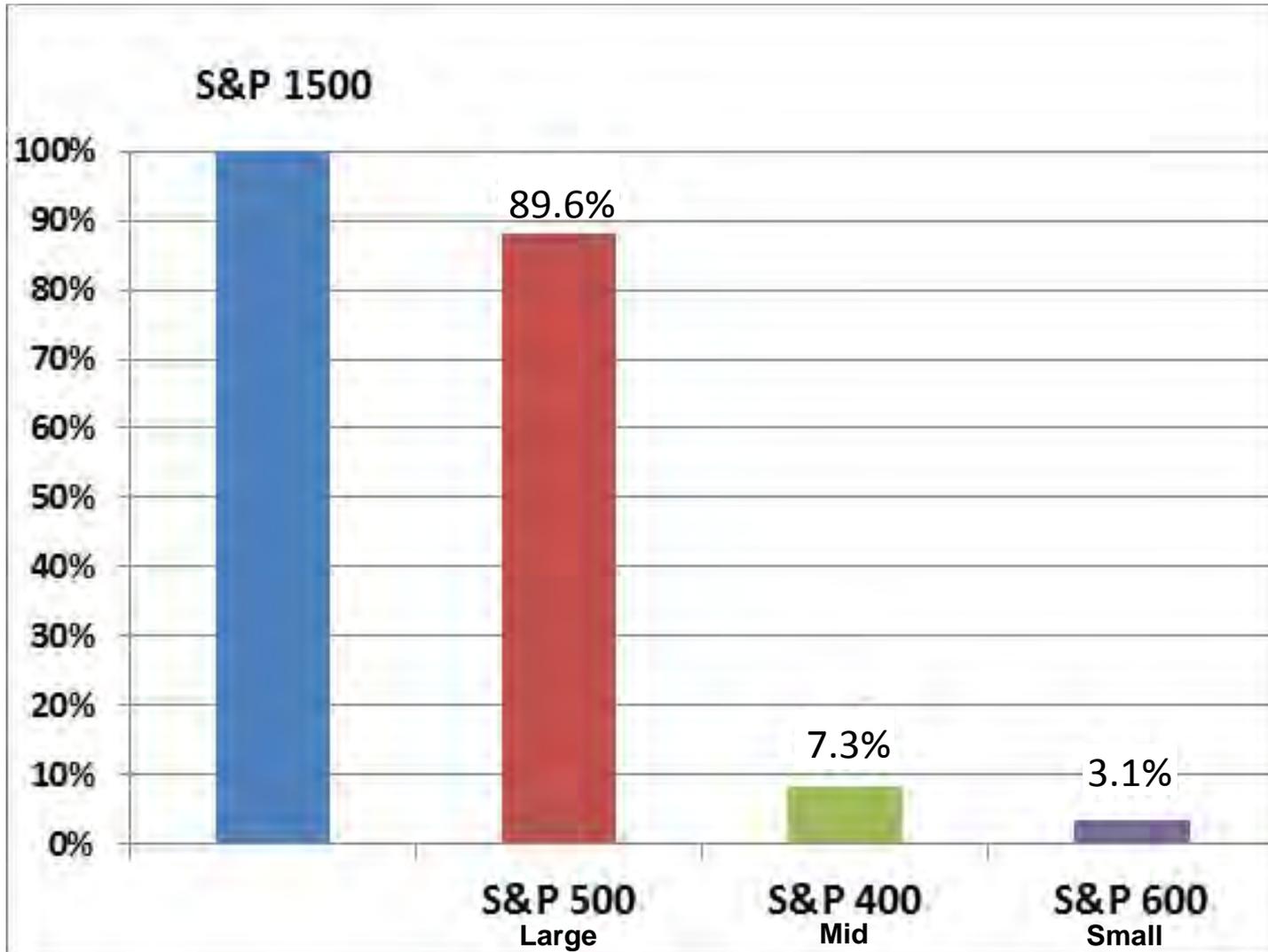
Structural Beliefs

- Diversification within the Pool is key
- Mid Caps & Small Caps are isolated by design
- Typically overweight Mid Caps & Small Caps
- Typically largely indexed within Large Caps
- Typically largely active within Mid & Small Caps
- Cost effective approach

Current Pool Structure

- Standard & Poor's 1500 Benchmark
- Market Capitalization Ranges
- Manager Style Ranges
- Sector Exposure Weights

S&P 1500 Market Capitalization



Domestic Equity Pool by Manager at 3/31/2016

3/31/2016 Domestic Stock Pool By Manager				
Manager Name	Market Value	%	Approved Range	Benchmark Weight
STATE STREET BANK + TRUST CO	93,196,015	2.51%		
CASH EQUIVALENT Total	93,196,015	2.51%		
BLACKROCK EQUITY INDEX FUND	2,049,641,228	55.28%		
STATE STREET SPIF ALT INV	5,609,293	0.15%		
LARGE CAP INDEXED Total	2,055,250,521	55.43%	45-70%	
INTECH INVESTMENT MANAGEMENT	130,088,406	3.51%		
T ROWE PRICE ASSOCIATES INC	299,387,266	8.07%		
LARGE CAP ENHANCED Total	429,475,671	11.58%	8-12%	
ANALYTIC INVESTORS MU3B	131,693,318	3.55%		
JP MORGAN ASSET MGMT MU3E	293,639,999	7.92%		
PARTIAL LONG/SHORT Total	425,333,317	11.47%	8-12%	
COMBINED LARGE CAP Total	3,003,255,525	81.00%	72-90%	89.6%
ARTISAN MID CAP VALUE	126,363,363	3.41%		
BLACKROCK MIDCAP EQUITY IND FD	72,163,489	1.95%		
IRIDIAN ASSET MANAGEMENT MU3V	65,163,815	1.76%		
NICHOLAS INVESTMENT PARTNERS	59,353,537	1.60%		
TIMESQUARE CAPITAL MGMT	145,468,575	3.92%		
MID CAP Total	468,512,780	12.64%	6-17%	7.3%
ALLIANCE BERNSTEIN SMALL CAP3R	31,953,611	0.86%		
DIMENSIONAL FUND ADVISORS INC	67,066,895	1.81%		
MET WEST CAPITAL MGT MU3W	25,044,413	0.68%		
VAUGHAN NELSON INV	79,568,844	2.15%		
VOYA INVESTMENT MANAGEMENT	32,418,667	0.87%		
SMALL CAP Total	236,052,430	6.37%	3-11%	3.1%
MDEP Total	3,707,820,734	100.00%		

Types of Portfolios Within MDEP

- Commingled Funds and Separate Accounts
- Indexed Portfolios
- Enhanced Indexed Portfolios
- Long Only Active Portfolios
 - Fundamental (80% of actively managed equities)
 - Quantitative-Mathematical (20% of actively managed equities)
- Partial Long/Short Active Portfolios

Types of Portfolios Within MDEP

Index Portfolios

BlackRock	500
BlackRock	400
BlackRock iShares	600

Active Portfolios

Enhanced Index

INTECH (Quant)
T Rowe Price

Long Only

Artisan
Iridian
TimesSquare
Nicholas
Vaughan Nelson
Met West
AllianceBernstein
ING
DFA (Quant)

Partial Long/Short

JPMorgan
Analytic (Quant)

Positioning

- Diversification is Key
- Indexed and Active Portfolios
- Complementary Active Portfolios
 - Styles – Growth and Value
 - Methodologies
 - Market Capture Profiles
 - Correlation of Return Histories
- Mid Cap and Small Cap Overweights
- Cash level of no more than 5%

Fees and Costs

- Implementing a cost effective approach
- Total fees reduced substantially compared to previous years
- Active management fees paid primarily in Mid Cap and Small Cap portfolios and Partial Long/Short portfolios
- CEM Study monitors manager fees

Fees by Market Cap (Then and Now)

	Average Balance	% of Total	Fees	Expense Ratio	Change from Prior
3/31/2012	2,764,943,343	100.0%	9,820,033	0.36%	
Passive	754,927,379	27.3%	216,823	0.03%	
Large Cap	640,477,061	23.2%	108,554	0.02%	
Mid Cap	98,845,463	3.6%	77,059	0.08%	
Small Cap	15,604,855	0.6%	31,210	0.20%	
Active	2,010,015,964	72.7%	9,603,210	0.48%	
Large Cap	1,662,406,023	60.1%	7,279,280	0.44%	
Mid Cap	209,656,778	7.6%	1,487,229	0.71%	
Small Cap	137,953,163	5.0%	836,701	0.61%	
12/31/2013	3,312,882,139	100.0%	8,061,566	0.24%	-0.11%
Passive	1,965,554,581	59.3%	276,052	0.01%	-0.01%
Large Cap	1,869,728,539	56.4%	184,669	0.01%	-0.01%
Mid Cap	84,955,621	2.6%	72,903	0.09%	0.01%
Small Cap	10,870,421	0.3%	18,480	0.17%	-0.03%
Active	1,347,327,558	40.7%	7,785,514	0.58%	0.10%
Large Cap	781,210,798	23.6%	3,801,641	0.49%	0.05%
Mid Cap	333,251,869	10.1%	2,375,880	0.71%	0.00%
Small Cap	232,864,892	7.0%	1,607,993	0.69%	0.08%
3/31/2016	3,855,024,283	100.0%	9,309,105	0.24%	0.00%
Passive	2,276,835,902	59.1%	287,311	0.01%	0.00%
Large Cap	2,196,959,049	57.0%	215,931	0.01%	0.00%
Mid Cap	73,728,309	1.9%	63,387	0.09%	0.00%
Small Cap	6,148,545	0.2%	7,993	0.13%	-0.04%
Active	1,578,188,381	40.9%	9,021,794	0.57%	-0.01%
Large Cap	923,482,467	24.0%	4,424,429	0.48%	-0.01%
Mid Cap	404,496,926	10.5%	2,814,800	0.70%	-0.02%
Small Cap	250,208,987	6.5%	1,782,565	0.71%	0.02%

Types of Portfolios Within MDEP

Value

Artisan
Iridian
Vaughan Nelson
Met West

Core

INTECH (Quant)
T Rowe Price
JPMorgan
Analytic (Quant)
DFA (Quant)

Growth

TimesSquare
Nicholas
AllianceBernstein
Voya

Due Diligence and Monitoring

- External Manager Evaluation Policy
- Staff performs due diligence and monitoring:
 - Manager Scorecard
 - Quarterly review process
 - Research data sources such as FactSet
 - Chronologies of events
 - On-site visits
 - Analytic tools such as Bloomberg
- Developing a 'bench' of possible managers
- RVK involvement
- Bloomberg Demonstration

Due Diligence and Monitoring

- Investment Guidelines for Current Managers
 - American Depository Receipts (ADRs) Limits
 - Exchange Traded Funds (ETFs) Limits
 - Prohibition of certain types of investments (derivatives)
 - Market Capitalization Limits

Future Considerations/Tendencies

- Regular source of funds for monthly plan cash needs
- Typical Mid Cap and Small Cap overweight
- An ongoing manager selection process
- Active/Indexed Ranges rather than Manager Style Ranges

MEMORANDUM

Montana Board of Investments

Department of Commerce

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

To: Board of Directors
From: Doug Hill
Date: May 24, 2016
Subject: Commercial and Residential Loan Portfolios

As of April 30, 2016, the commercial loan portfolio balance was \$109,760,459, and represents 104 individual loans or participations. Reservations totaled \$49,600,908 and commitments totaled \$24,507,444. The commercial loan portfolio has a yield of 3.75%, as of April 30, 2016. There were six loans past due over 30 days, totaling \$8,993,728. Of that total, Shoot The Moon represents \$6,876,372.

The residential loan portfolio, as of April 30, 2016, has an outstanding balance of \$8,020,749. There were no outstanding reservations. There were three loans over 90 days past due totaling \$191,363 or 2.39% of the portfolio. Two of the past due loans, totaling \$153,566, are FHA guaranteed. One loan for \$37,796 is a conventional loan.

The Veterans Home Mortgage portfolio reflected an outstanding balance, as of April 31, 2016, of \$30,134,906. There were seven reservations totaling \$1,428,860. There was one loan past due over 90 days totaling \$202,172, representing 0.67% of the portfolio, and no loans past due less than 90 days.

A new era of mining at Garnet USA



Over the past two years, Garnet USA, majority owned by GMA, has been transformed into an effective mining operation producing high-quality crushed garnet to be used in the abrasive blasting, waterjet cutting and water filtration industries.

Mining of alluvial garnet in Alder, Mont. commenced in the early 1990s by Cominco, subsequently sold and then purchased by a range of would-be entrepreneurs hoping to strike riches, and later abandoned in 2010 when all the alluvial garnet finished.

In 2012, enter GMA and the transformation has been swift with millions of dollars invested to bring the mine and processing plants into production. President of GMA Garnet USA Rod Liebeck is a strong supporter of the operations and believes the mine will operate for the next 50 years and beyond.

“When I first arrived in 2012, what I witnessed was a garnet operation aban-

doned but full of promise. The previous equipment was designed for recovering gold, not garnet, so the first thing GMA did was completely redesign the operations to focus on garnet recovery to become more efficient and low-cost,” Liebeck says.

Today, the processing operations are totally environmentally friendly with no use of chemicals, instead relying on water, gravity and magnets to separate the garnet from the ore. Mining is no longer alluvial but hard rock, with the mine being the first new permitted open cut, hard rock mine in Montana in more than 30 years.

Success to Garnet USA is not limited to its newly designed plants, but also the highly successful distribution network of the GMA Group. GMA, with the world’s largest alluvial mine in Western Australia, distributes through its own entities on a global basis to Europe, Southeast Asia, the Middle East and, of course, the

United States. Crushed garnet from Garnet USA is being exported and distributed throughout the GMA distribution network, making the garnet an exported product.

Liebeck is adamant that garnet is not a commodity and needs a strong distribution network and marketing effort to reach the thousands of customers worldwide who purchase in either truckloads or by the 55-pound bag.

Garnet USA, under the leadership of Dean Schwarz, GMA global production manager, oversees a workforce of 46 employees – and growing – as the operations ramp up. GMA is a strong believer in people as its greatest asset and has implemented attractive benefits to its workforce in the past six months with a medical package covering the employee and 75 percent of the employee’s dependents.

It’s been a dramatic change in the workforce according to Schwarz, who

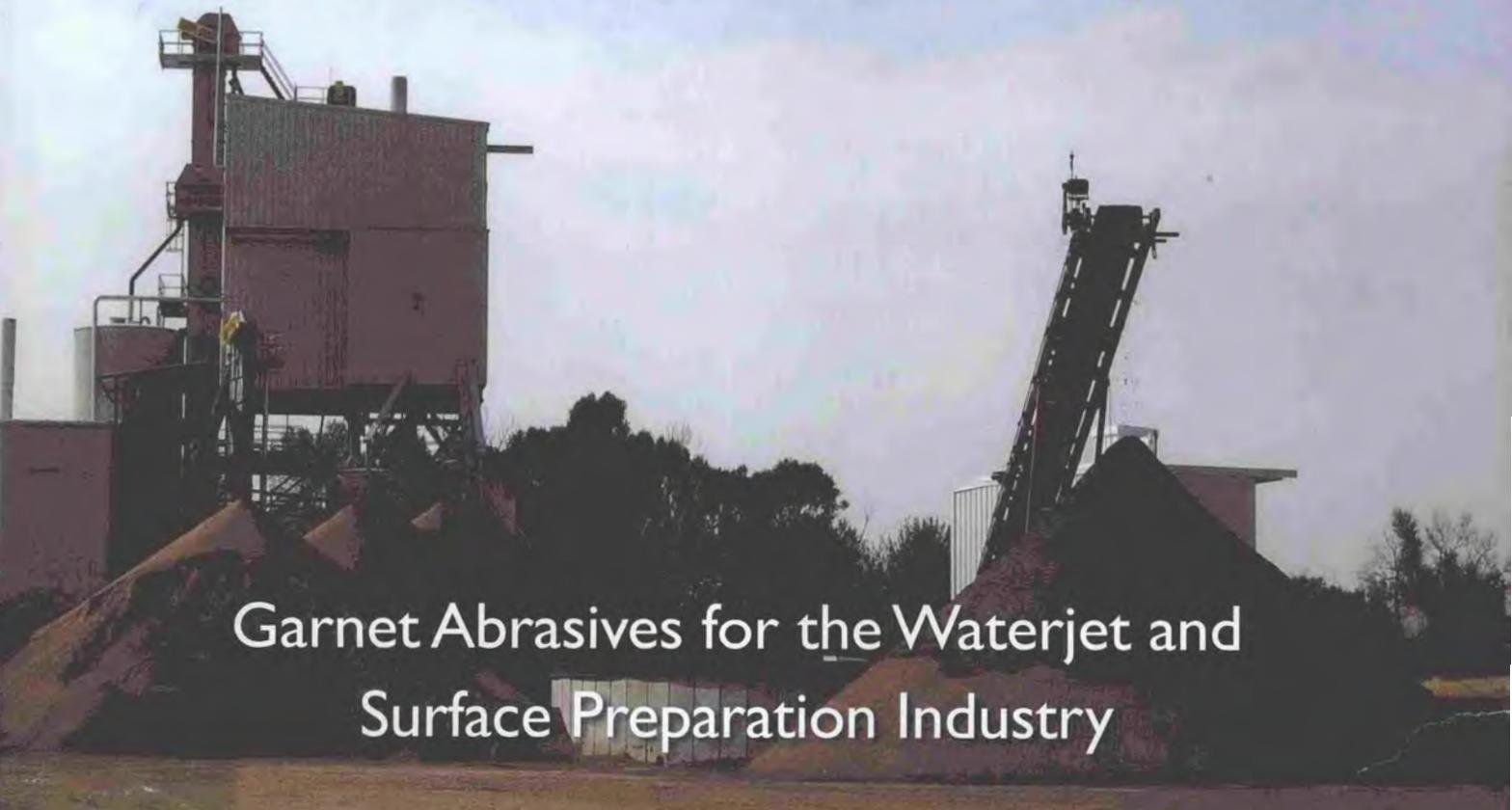


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says, “Initially, people were skeptical, and rightly so, and new employees would either travel long distances each day or stay in RV parks. Today many employees are purchasing homes and see their future long-term at Garnet USA. That’s a real positive for Garnet USA and the local community.”

But it’s not just the locals and GMA who have confidence in the garnet mine – the Montana Board of Investments is also betting on it. Last month, the Montana Board of Investments approved a \$24-million loan together with the Bank of Montana (who provided \$6 million), making it the biggest funding project to be undertaken by the Board. That speaks highly of the confidence of the project long-term and the work being undertaken by GMA. ♦



INTERCAP Loan Program

Activity Summary

As of March 31, 2016

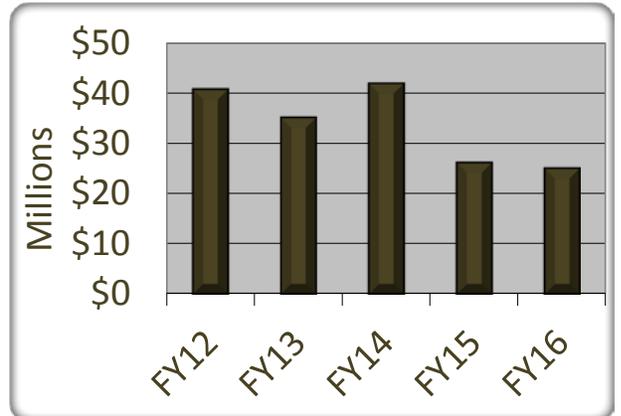
Since Inception 1987 - March 2016

Total Bonds Issued	148,000,000
Total Loan Commitments	514,960,762
Total Loans Funded	477,796,675
Total Bonds Outstanding	97,340,000
Total Loans Outstanding	75,033,387
Loan Commitments Pending	37,164,087

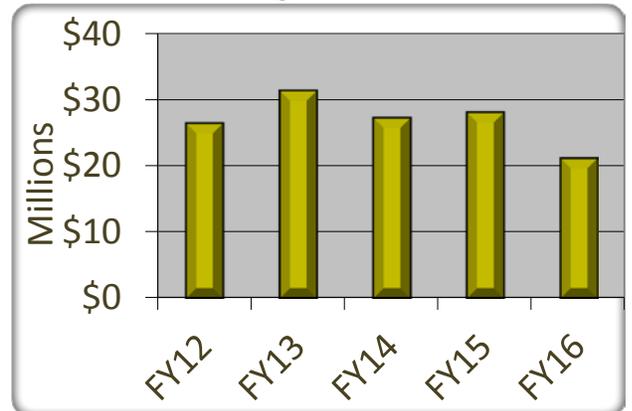
FY2016		
Month	Commitments	Fundings
July-15	\$ 469,035	\$ 2,791,218
August	6,285,661	2,355,011
September	713,361	1,934,323
October	328,000	2,601,010
November	7,616,652	1,303,515
December	162,175	5,245,031
January	630,126	2,805,340
February	6,758,109	481,411
March	2,131,600	1,749,002
April	-	-
May	-	-
June-16	-	-
To Date	\$ 25,094,719	\$ 21,265,860

Note: Commitments include withdrawn and expired loans.

Commitments FY12-FY16



Fundings FY12-FY16



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

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>
February 16, 2012 - February 15, 2013	<u>1.25%</u>	February 16, 2016 - February 15, 2017	<u>1.55%</u>

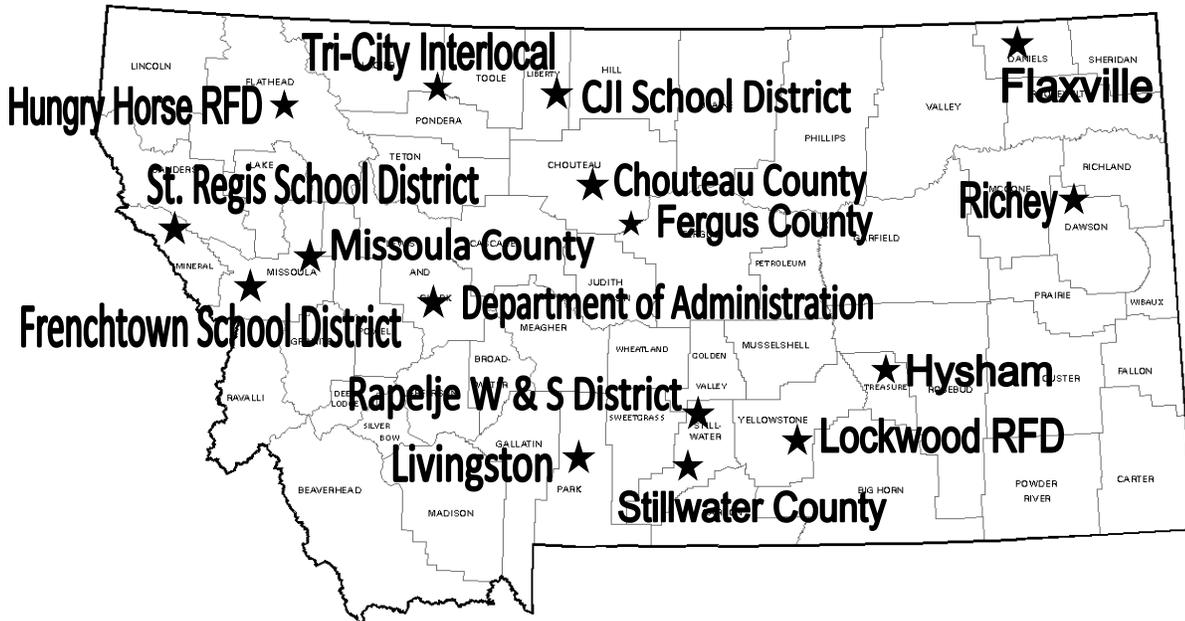
MEMORANDUM

Montana Board of Investments

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

To: Members of the Board
From: Louise Welsh, Senior Bond Program Officer
Date: May 24, 2016
Subject: INTERCAP Staff Approved Loans Committed

Staff approved the following loans between January 1 and March 31, 2016.



Borrower: **NEW**	Rapelje Water & Sewer District
Purpose:	Refinance existing USDA RD loan used to install a water pump
Staff Approval Date	January 5, 2016
Board Loan Amount:	\$ 20,785
Other Funding Sources:	\$ 0
Total Project Cost:	\$ 20,785
Term:	6 years

Borrower: **NEW**	St. Regis School District
Purpose:	Convert and equip available space into a weight room using building reserve funds
Staff Approval Date	January 13, 2016
Board Loan Amount:	\$ 110,000
Other Funding Sources:	\$ 0
Total Project Cost:	\$ 110,000
Term:	4 years

Borrower:	St. Regis School District
Purpose:	Convert and equip available space into a weight room
Staff Approval Date	January 15, 2016
Board Loan Amount:	\$ 120,000
Other Funding Sources:	\$ 0
Total Project Cost:	\$ 120,000
Term:	15 years

Borrower: **NEW**	Chouteau County
Purpose:	Finance County bridge project
Staff Approval Date	January 19, 2016
Board Loan Amount:	\$ 186,841
Other Funding Sources:	\$ 227,540
Total Project Cost:	\$ 414,381
Term:	10 years

Borrower:	State of Montana, Department of Administration
Purpose:	Finance internal service fund equipment for print and mail services
Staff Approval Date	January 20, 2016
Board Loan Amount:	\$ 192,500
Other Funding Sources:	\$ 0
Total Project Cost:	\$ 192,500
Term:	5 years

Borrower:	City of Livingston
Purpose:	Purchase property to be used as a right-of-way for street crossing
Staff Approval Date	February 9, 2016
Board Loan Amount:	\$ 250,000
Other Funding Sources:	\$ 100,000
Total Project Cost:	\$ 350,000
Term:	5 years

Borrower:	Frenchtown School District
Purpose:	Finance school building maintenance projects
Staff Approval Date	February 10, 2016
Board Loan Amount:	\$ 750,000
Other Funding Sources:	\$ 0
Total Project Cost:	\$ 750,000
Term:	5 years

Borrower:	Lockwood Rural Fire District (Billings)
Purpose:	Finance a fire engine
Staff Approval Date	February 12, 2016
Board Loan Amount:	\$ 400,000
Other Funding Sources:	\$ 20,000
Total Project Cost:	\$ 420,000
Term:	5 years

Borrower:	Chester-Joplin-Inverness (CJI) High School District
Purpose:	Remodel school kitchen and lunchroom
Staff Approval Date	February 29, 2016
Board Loan Amount:	\$ 300,000
Other Funding Sources:	\$ 35,000
Total Project Cost:	\$ 335,000
Term:	5 years

Borrower:	Chester-Joplin-Inverness (CJI) Elementary School District
Purpose:	Remodel school kitchen and lunchroom
Staff Approval Date	February 29, 2016
Board Loan Amount:	\$ 200,000
Other Funding Sources:	\$ 35,000
Total Project Cost:	\$ 235,000
Term:	5 years

Borrower:	Fergus County
Purpose:	Renovate Denton public swimming pool
Staff Approval Date	March 9, 2016
Board Loan Amount:	\$ 150,000
Other Funding Sources:	\$ 93,000
Total Project Cost:	\$ 243,000
Term:	15 years

Borrower:	Town of Flaxville
Purpose:	Repair and improve water treatment facility
Staff Approval Date	March 14, 2016
Board Loan Amount:	\$ 41,600
Other Funding Sources:	\$ 0
Total Project Cost:	\$ 41,600
Term:	10 years

Borrower:	Missoula County
Purpose:	Renovate Missoula County Public Works Administrative Building
Staff Approval Date	March 14, 2016
Board Loan Amount:	\$ 300,000
Other Funding Sources:	\$ 0
Total Project Cost:	\$ 300,000
Term:	3 years

Borrower:	Missoula County
Purpose:	Finance improvements to County Fairgrounds
Staff Approval Date	March 14, 2016
Board Loan Amount:	\$ 450,000
Other Funding Sources:	\$ 0
Total Project Cost:	\$ 450,000
Term:	7 years

Borrower:	Stillwater County
Purpose:	Purchase two snow plow trucks
Staff Approval Date	March 14, 2016
Board Loan Amount:	\$ 100,000
Other Funding Sources:	\$ 0
Total Project Cost:	\$ 100,000
Term:	5 years

Borrower:	Tri-City Interlocal Equipment Pool (Conrad, Cut Bank and Shelby)
Purpose:	Purchase a truck with an aerial bucket
Staff Approval Date	March 15, 2016
Board Loan Amount:	\$ 60,000
Other Funding Sources:	\$ 0
Total Project Cost:	\$ 60,000
Term:	5 years

Borrower: **NEW**	Hungry Horse Rural Fire District
Purpose:	Refinance an existing loan for two fire engines
Staff Approval Date	March 22, 2016
Board Loan Amount:	\$ 35,000
Other Funding Sources:	\$ 15,600
Total Project Cost:	\$ 50,600
Term:	3 years

Borrower: **NEW**	Town of Richey
Purpose:	Finance sewer line project
Staff Approval Date	March 22, 2016
Board Loan Amount:	\$ 45,000
Other Funding Sources:	\$ 0
Total Project Cost:	\$ 45,000
Term:	15 years

Borrower:	Town of Hysham
Purpose:	Interim financing for water system improvements
Staff Approval Date	March 24, 2016
Board Loan Amount:	\$ 950,000
Other Funding Sources:	\$ 1,900,000
Total Project Cost:	\$ 2,850,000
Term:	2 years

Montana Board of Investments
INTERCAP Loan Summary and Approval



Borrower Board of Regents of Higher Education of the State of Montana (BOR)
on behalf of the University of Montana – Missoula (UM)

Date April 29, 2016

Approval Date _____

The Borrower requests \$1,349,671 to finance the completion of the research space on the 3rd floor of the Interdisciplinary Science Building (ISB). The loan will be in the form of a general promise to pay of UM over a five (5) year term based on allowable non-state revenue (see Revenue Pledge section). INTERCAP will be the sole funding source for this project.

The ISB was designed to be a catalyst for stimulating high levels of research in the natural sciences. Due to limited funding, the initial construction that began in 2007 included 3-1/2 floors of shelled out space with the plan, as funding became available, the unfinished floors would be completed to house faculty labs, offices, and core facilities associated with Montana's Astrobiology Institute, as well as faculty and scientists engaged in research sponsored by the National Science Foundation in the areas of Evolutionary Genetics and Genomics.



Authorization

20-25-402, MCA (1) In carrying out the powers provided in... 20-25-302, the regents may: (a) borrow money for any purpose or purposes stated in parts 3 and 4 of this chapter... (c) issue bonds, notes,... (d) pledge for the payment of... the principal and interest on bonds, notes, or other securities authorized in this chapter or otherwise obligate: (i) the net income received from rents, board, or both in housing, food service, and other facilities;... (e) make payments on loans or purchases from any other available income not obligated for those purposes, including receipts from sale of materials, equipment, and fixtures of the facilities or from sales of the facilities themselves, other than land;

20-25-302, MCA The regents of the Montana university system may: (6) do all things necessary to plan for and propose financing, including all necessary loan applications, for: (a) classroom, laboratory,...and other instructional facilities; (b) office, recordkeeping, storage, equipment maintenance, and other administrative and operational facilities;

July 14, 2005 – BOR ITEM 128-1004-R0705 authorization to build the ISB, complete 1-1/2 floors, and issue bonds to finance the project passed 5-0. The Governor authorized the project August 18, 2005 per 18-2-102, MCA.

March 5, 2015 – BOR ITEM 166-1001-R0315 authorization to complete the research space on the 3rd floor of the ISB passed 7-0. [Video discussion is available on BOR's meetings website; March 5, 2015 PM1 beginning at 1:59:30.¹]

April 11, 2016 – Office of the Commissioner of Higher Education (OCHE) approved the INTERCAP application and repayment source in accordance with the INTERCAP Program Agreement between the Board and BOR dated January 2, 2007 (the "Agreement"), Article II, Section 2.01(a). Note: OCHE approval certifies that it performed sufficient due diligence as to the appropriateness of the Project in the context of the overall plans and policies of BOR and UM, and that the proposed loan complies with existing contracts, statutes, the BOR Indenture, and all legislative directives, mandates, and limitations.

<http://www.mus.edu/board/meetings/agendas-and-minutes.asp>

INTERCAP Debt

BOR has been using INTERCAP since 1992 financing just over \$51.0 million on behalf of the University of Montana and Montana State University campuses for various projects. Total outstanding to date for all the campuses is \$15.4 million with the longest term maturing August 2030. At this time, the universities have ~\$4.2 remaining INTERCAP commitments that if drawn upon would make a potential total outstanding of \$19.6 million.

The UM campuses combined have ~\$3.8 million in remaining INTERCAP commitment and ~\$3.1 million principal outstanding with the longest term maturing June 2029. Including this loan request pending approval, UM total combined potential outstanding will be ~\$8.1 million, or 8.4% of the total INTERCAP Bonds outstanding, which falls below the Board's 19% cap.

Revenue Pledge

There will be ~\$300,000 annual debt service on the proposed loan. The UM research team was selected for a five-year, \$8.2 million National Aeronautics and Space Administration (NASA) grant to study evolution of life. It is believed that a better understanding of how life arises, propagates and becomes increasingly complex will help NASA find and recognize it elsewhere in the universe. UM's research team was one of seven nationwide selected to receive grants totaling \$50 million to assist NASA with astrobiology research. A video about the NASA award is online at <http://bit.ly/111C5oQ>. Repayment will come from UM's surplus net revenue pledge of the Facility and Administrative (F&A) cost recoveries primarily from the \$8.2 million NASA Grant.

F&A is non-state revenues available to UM to pay debt service and are otherwise known as indirect cost recovery (ICR/IDC) payments. These are a negotiated percent of federal grant awards that the U.S. Office of Budget & Management (OMB) Circular No. A-21 allows UM to expend in areas (including debt service) not directly related to individual grant projects, but in furtherance of the overall campus research effort. The five-year history in the table below reflects F&A revenue as a reliable source of debt repayment for UM.

Historical Federal Indirect Cost Recoveries [Facility & Administrative Costs (F&A)]					
	2011	2012	2013	2014	2015
Total Grants and Contracts (excluding Student Aid)	63,857,146	61,543,835	59,306,532	58,272,583	64,572,795
Federal Grants and Contracts (excluding Student Aid)	54,276,880	52,225,414	50,189,935	47,078,129	51,542,806
% Federal of Total	85%	85%	85%	81%	80%
Facilities & Administrative (F&A) Revenue (excluding Student Aid)	9,105,055	8,541,585	8,475,422	7,869,208	8,411,416
Estimated F&A Revenue Available Derived From Federal Contracts	8,515,342	7,972,792	7,816,372	7,816,372	7,907,256

To the extent the pledged resource is insufficient, UM will, as authorized by and according to applicable provisions and limitations of law, budget and appropriate any allowable non-state revenues sufficient to pay the principal of and interest on the loans when due. The Financial Report on the next page demonstrates UM can adequately service the debt.

Financial Report

<u>UM-Missoula overall</u>	<u>FY15</u>	<u>FY14</u>
Net Assets, beginning of year	\$ 178,364,704	\$ 182,114,941
Fund Balance Capital Asset Gain	77,850	423,723
Revenues	399,234,412	380,194,440
Expenditures	<u>385,826,049</u>	<u>384,368,400</u>
GASB 68 Pension Adjustment	(50,683,377)	
Net Assets, end of year	\$ 141,167,540	\$ 178,364,704

Net Change in Fund Balance	\$ 13,408,363	\$ (4,173,960)
Non-State Revenue	\$ 331,034,663	\$ 317,051,976
Fund Balance Cash	\$ 19,907,751	\$ 14,190,850
Fund Balance Unrestricted	\$ 99,970,049	\$ 148,752,652

COMMENTS

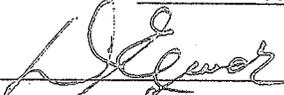
Fiscal year 2015 reflects the implementation of Statement No. 68 Accounting and Financial Reporting for Pensions issued by the Governmental Accounting Standards Board (GASB 68) in June 2012. In summary, the purpose of GASB 68 is to improve accounting and financial reporting for pensions providing decision-useful information, supporting assessments of accountability and inter-period equity, and creating additional transparency. The Net Change in Fund Balance shown above does not factor in the fund balance capital asset gains in FY14/FY15 or the GASB 68 Pension Adjustment.

Recommendation

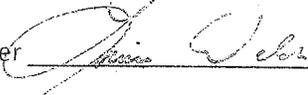
The UM has the resources to service this proposed debt. Approval recommended with the following condition:

Prior to releasing funds, UM must provide a copy of the NASA grant with the terms and conditions showing the award has sufficient indirect cost recovery (F&A) allowances on an annual basis to support the debt service and a Memorandum of Understanding from the University President and/or Vice President of Research committing the F&A revenue to repayment of the loan.

Staff Loan Committee

David Ewer, Executive Director  Recommended 5/2/16

Geri Burton, Deputy Director  Recommended 5.2.16

Louise Welsh, Sr. Bond Program Officer  Recommended 5/2/16

Board Loan Committee – May 24, 2016

Jack Prothero, Chairperson – Loan Committee Yes No Abstain

Kathy Bassette, Member Yes No Abstain

Terry Cohea, Member Yes No Abstain

Approved _____

Montana Board of Investments
INTERCAP Loan Summary and Approval



Borrower City of Dillon

Date May 2, 2016

Approval Date _____

The City requests \$1,320,000 to refinance a 2009 general obligation (GO) bond. The original \$1,600,000 bond was voter-approved for the purpose of providing funds to pay the costs of transferring the City's police retirement system to the state's Municipal Police Officers Retirement System. The refinance will be in the form of a GO bond pledging the full faith and credit of the City. The refinanced bond will have a term of 13 years, to match the existing GO bond's maturity date. INTERCAP is the sole source of funding for the refinancing.

Authorization

The program's bond counsel established that the 2009 GO bond issue, all the proceedings taken for the authorization and issuance, and the levy to pay such bonds, is validated, ratified, approved and confirmed under the Bond Validating Act, Title 17, Chapter 5, Part 2 Montana Code Annotated (MCA) and thus refundable under Title 7, Chapter 7, Part 43, MCA.

7-7-4201 MCA (1) a city or town may not issue bonds or incur other indebtedness for any purpose in an amount that with all outstanding and unpaid indebtedness exceeds 2.5% of the total assessed value of taxable property. (2) The issuing of bonds for the purpose of funding or refunding outstanding warrants or bonds is not the incurring of a new or additional indebtedness but is merely the changing of the evidence of outstanding indebtedness. [City \$292,307,728 total assessed value X 2.5% = \$7,307,693 debt authority. The City has \$4,123,886 outstanding, including the existing GO bond. The City has \$3,183,807 additional available debt authority.]

7-7-4301 MCA The city or town council may contract an indebtedness on behalf of a city or town, upon the credit of the city or town, by issuing bonds...when there is a reduction in debt service as a result of refunding pursuant to 7-7-4304 MCA.

7-7-4304 MCA (1) Except as provided in subsection (2), refunding bonds may not be issued unless the refunding bonds bear interest at a rate of at least 1/2 of 1% less than the interest rate of the outstanding bonds to be refunded. [Fixed interest rate on existing GO bond is 6.39%; INTERCAP variable interest rate is 1.55% with a 4.10% overall average since inception of the program.] (2) Variable rate refunding bonds may also be issued if the governing body determines that the issuance of variable rate refunding bonds is reasonably expected to result in less interest payable on the refunding bonds than the interest payable on the refunded bonds. [Please refer to the anticipated interest savings outlined under Repayment.]

INTERCAP Debt

The City is a new borrower to INTERCAP.

Repayment

Using INTERCAP's overall average interest rate of 4.10%, the annual debt service on the proposed GO bond will be ~\$132,000 through June 2029. The annual debt service on the existing GO bond at 6.39% is \$145,937.

Using 4.10%, the anticipated savings over the remaining life of the GO bond would be ~\$196,900. Using INTERCAP's 15-year average interest rate of 2.64%, the anticipated savings over the remaining life of the GO bond would be ~\$344,900. Even accounting for bond counsel fees, the City would lower its expenses by refinancing with INTERCAP.

While the existing GO Bond has no specific reserve requirements, the City maintains at least a 6-month debt service reserve to allow for timing issues between when tax revenue is received from the County and when bond payments are due. The City will continue this practice with the refinanced GO Bond

The following Financial Report provides an overview of the City's General Fund.

Financial Report

	<u>FY15</u>	<u>FY14</u>
Beginning Fund Balance	\$ 240,521	\$ 231,790
Revenues	1,259,301	1,199,251
Expenditures	<u>1,149,813</u>	<u>1,190,520</u>
Ending Fund Balance	\$ 350,009	\$ 240,521
Net Change in Fund Balance	\$ 109,488	\$ 8,731
Fund Balance Cash	\$ 172,741	\$ 256,631
Fund Balance <i>Unassigned</i>	\$ 350,009	\$ 240,521

COMMENTS

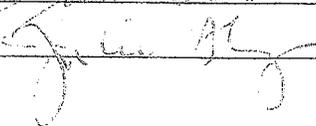
FY14 Without the (\$56,332) capital expenditure, the net change in fund balance would have been \$65,063.

FY15 Without the \$16,000 one-time revenue and (\$3,246) capital expenditure, the net change in fund balance would have been \$96,734. The remaining increase in revenue was primarily due to increased taxable value.

Recommendation

Bond counsel will be required at the City's expense to prepare the necessary documents and provide the unqualified legal opinion. The City can adequately service the debt. Approval recommended.

Staff Loan Committee

David Ewer, Executive Director		Recommended <u>5/2/16</u>
Geri Burton, Deputy Director		Recommended <u>5/2/16</u>
Louise Welsh, Sr. Bond Program Officer		Recommended <u>5/2/16</u>
Julie Flynn, Bond Program Officer		Recommended <u>5-2-16</u>

Board Loan Committee – May 24, 2016

Jack Prothero, Chairperson – Loan Committee	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Abstain
Kathy Bassette, Member	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Abstain
Terry Cohea, Member	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Abstain

Approval Date _____

Montana Board of Investments
Loan Committee
INTERCAP Loan Summary and Approval



Borrower Gallatin Gateway County Water & Sewer District

Date April 27, 2016

Approval Date _____

The District requests a \$1,650,000 interim loan in anticipation of the United States Department of Agriculture (USDA) Rural Development Services (RD)¹ long-term financing for wastewater system improvements. The loan will be for up to one (1) year and in the form of a bond anticipation note (BAN). The project will go out to bid June 2016, and the projected drawdown schedule for the loan is July 2016 through June 2017, at which point the District anticipates closing on its RD loan.

The funding package for the \$5,237,000 total project cost is as follows:

Department of Commerce – TSEP ² Grant	\$ 750,000
Department of Natural Resources & Conservation – RRGL ² Grant	100,000
Department of Commerce – CDBG ² Grant	214,000
US Army Corps of Engineers – WRDA ² Grant	413,000
Rural Development (RD) Grant	1,815,000
Rural Development (RD) Direct Loan	295,000
INTERCAP Interim Loan	\$1,650,000
Rural Development (RD) Loan	<u>1,650,000³</u>
Total	\$ 5,237,000

¹ <http://www.rurdev.usda.gov/>

² Treasure State Endowment Program
Renewable Resource Grant and Loan Program
Community Development Block Grant Program
Water Resources Development Act

³ Includes an 8.5% contingency for the construction portion of the budget

Authorization

7-7-109 Montana Code Annotated (MCA) (2) (a) When all conditions exist precedent to the offering for sale of bonds of a political subdivision in any amount and for any purpose authorized by law or the political subdivision has applied for and received a commitment for a grant or loan of state or federal funds, its governing body may by resolution issue and sell, in anticipation of the receipt of the grant, loan, or bonds in an amount not exceeding the total amount of bonds authorized or the total amount of the loan or grant that is committed, notes maturing within not more than three years from the date on which the notes are issued.

INTERCAP Debt

The Board approved a \$1.65 million BAN for the District in November 2011 as part of a \$4.31 million wastewater project. The District encountered obstacles that prevented the project from going forward as designed and let the Board's commitment expire. The District has not had any other INTERCAP loans.

After abandoning the previous design, the District has spent the intervening time considering alternatives and now plans to connect to a nearby system that has been recently upgraded. The District has continued to work with RD and other state and federal agencies to develop a financing package to meet the increased cost of this delayed project. As a result, CDBG and WRDA funds have been newly committed to the project, along with an additional RD loan. The long-term RD loans will now be at 1.75% a welcome reduction from the over 2% initially committed.

RD Commitment

The Code of Federal Regulations (CFR) Title 7, Chapter Xvii, Part 1780, Sub Part B, Section §1780.39 (b)(5)(i)(d) states, "For all loans exceeding \$500,000, where funds can be borrowed at reasonable interest rates on an interim basis from commercial sources for the construction period, such interim financing may be obtained so as to preclude the necessity for multiple advances of Rural Utilities Services (RUS i.e. RD) loan funds. However, the approval official may make an exception when interim financing is cost prohibitive or unavailable. Guidance on informing the private lender of RUS's commitment is available from the Agency. When interim commercial financing is used, the application will be processed, including obtaining construction bids, to the stage where the RUS loan would normally be closed, that is immediately prior to the start of construction. The RUS loan should be closed as soon as possible after the disbursement of all interim funds."

RD staff works closely with the borrower, engineer, other state and federal agencies and technical assistance providers throughout the planning, application and construction phases of all RD financed projects to ensure each one is a viable project, a sound credit, and in the government's best interest. Prior to authorizing draws on the interim loan, RD staff goes through an exhaustive process to ensure the borrower meets the multitude of requirements as if they were to close and release funds on the RD long-term revenue bond. RD provides three documents to Board staff that evidence their due diligence and commitment to fund the project as follows:

- Letter of Conditions (LOC): The LOC assures the Board that the processing office completed the credit analysis, verified user number and rate revenue sufficient to support all costs of the facility after the project is complete, validated the engineering design, and oversaw environmental due diligence. The approving official, Community Programs Director (Director), reviews the application package, the LOC delineating the conditions the applicant must meet prior to closing, and the processing office's recommendation to approve. If the applicant agrees to the conditions and the Director concurs with the processing office's findings, the funds are obligated to the project. It is important to note that RD will not issue the LOC unless funds have been appropriated by Congress and are available. The Director affirmed that Congress does not claw back funding once appropriated.
- USDA, Office of General Counsel (OGC) Closing Instructions: The closing instructions assure the Board that RD approved the loan, obligated funds to the project, and the OGC reviewed and approved all the bond proceedings. The closing instructions list the items that need to be completed prior to closing. As required in the above federal regulation, all the requirements are met prior to closing and releasing funds either on an RD loan or, if interim financing is involved, authorizing any interim draws. A 5%-10% contingency, depending on the complexity of the system, is added after bids are received to establish the total project cost.
- Letter of Intent ("I" Letter): The Director's "I" letter acknowledges that INTERCAP is the interim financing source, that each draw will be authorized by RD and that funds will be available to payoff both principal and interest on the INTERCAP loan when the engineer issues the Certificate of Substantial Completion to the contractor for RD loan only projects. However, over 90% of the cases involve grant funds as well. The amount of grant versus loan depends on the borrower's available cash. RD requires the loan be closed before the first draw of RD grant funds so that when construction is 60-80% complete, INTERCAP is paid in full and RD carries through to project completion. If there is financial hardship in the community, the project is grant only with no loan component or interim financing involved.

Repayment

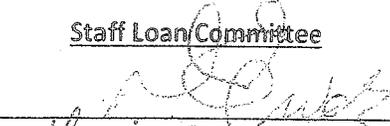
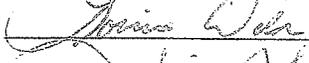
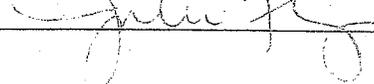
The bond proceeds from the District's issuance and sale of a revenue bond to RD will repay the BAN. Special conditions to the Board's commitment to ensure the revenue bond takes out the BAN are as follows:

1. Prior to disbursing funds, the Board requires evidence of RD's commitment to pay off the BAN with a long-term loan. Copies of the following will provide sufficient evidence:
 - RD Letter of Conditions (MBOI has on file)
 - USDA Office of General Council (OGC) Loan Closing Instruction
 - RD Letter of Intent to Fund ("I" Letter)
2. The Board will require approval from RD for each specific draw on the loan.
3. The Board requires the District to hire Bond Counsel to prepare the necessary BAN documents and provide the opinion at closing. The Bond Counsel needs to be nationally recognized and rendering a bond counsel opinion in the last ten years.

Recommendation

Providing interim financing is in step with INTERCAP's statutory mission to reduce, to the extent possible, costs of public indebtedness to taxpayers and residents. Since 1996, INTERCAP and RD have been successful partners in this endeavor, saving communities with populations under 10,000 on interest expense that is better spent towards their vital water and wastewater projects protecting the health and quality of life in Montana. Funds are never drawn until the RD approved construction contract documents has been signed and RD is satisfied there are sufficient funds to build the total project. To date, the Board has never been obliged to turn any of these BANs into a long term revenue bond. Approval recommended.

Staff Loan Committee

David Ewer, Executive Director		Recommended <u>4/27/16</u>
Geri Burton, Deputy Director		Recommended <u>4-27-16</u>
Louise Welsh, Sr. Bond Program Officer		Recommended <u>4/27/16</u>
Julie Flynn, Bond Program Officer		Recommended <u>4-27-16</u>

Board Loan Committee – May 24, 2016

Jack Prothero, Chairperson – Loan Committee	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Abstain
Kathy Bassette, Member	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Abstain
Terry Cohea, Member	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Abstain

Approved _____

Montana Board of Investments
 Loan Committee
 INTERCAP Loan Summary and Approval



Borrower Prairie County Hospital District (Terry)

Date May 10, 2016

Approval Date _____

The District requests an interim loan for \$1,876,000 in anticipation of the United States Department of Agriculture (USDA) Rural Development Services (RD)¹ Community Facilities Program long-term financing for improvements to its hospital building. The loan will be for up to one (1) year and in the form of a bond anticipation note (BAN).

The project will address several issues with the building and include upgraded windows, doors and insulation to improve energy efficiency; new heating, ventilation and cooling system to replace an outdated boiler, radiators and window air conditioning units; upgraded electrical to allow for emergency power; and an improved fire suppression system to include increased water storage that will provide sufficient capacity for the entire building to be served by fire sprinklers.



The projected drawdown schedule for the loan is from July through December 2016, at which point the District anticipates closing on its RD loan. The funding package for the \$2,588,450 total project cost is as follows and includes a 10% contingency:

Borrower Portion	\$ 116,760
Department of Commerce – Community Development Block Grant	639,050
Rural Development (RD) Community Facilities Program Grant	43,400
INTERCAP Interim Loan	\$ 1,876,000
Rural Development (RD) Community Facilities Program Loan	<u>1,876,000</u>
Total	\$2,675,210

¹<http://www.rd.usda.gov/>

Authorization

7-7-109 Montana Code Annotated (MCA) (2) (a) When all conditions exist precedent to the offering for sale of bonds of a political subdivision in any amount and for any purpose authorized by law or the political subdivision has applied for and received a commitment for a grant or loan of state or federal funds, its governing body may by resolution issue and sell, in anticipation of the receipt of the grant, loan, or bonds in an amount not exceeding the total amount of bonds authorized or the total amount of the loan or grant that is committed, notes maturing within not more than three years from the date on which the notes are issued.

INTERCAP Debt

The District borrowed \$168,619 through INTERCAP in 2010. The loan is fully drawn, has \$115,215 outstanding and matures August 2025. The District is current with its payments.

RD Commitment

The Code of Federal Regulations (CFR) Title 7, Chapter XVIII, Part 1942, Sub Part A Community Facility Loans, Section §1942.17(n)(3) states, "In all loans exceeding \$50,000, where funds can be borrowed at reasonable

interest rates on an interim basis from commercial sources for the construction period, such interim financing will be obtained so as to preclude the necessity for multiple advances of Rural Development funds. When interim commercial financing is used, the application will be processed, including obtaining construction bids, to the stage where the Rural Development loan would normally be closed, that is immediately prior to the start of construction. The Rural Development loan should be closed as soon as possible after the disbursement of all interim funds."

RD staff is field based and work closely with the borrower, architect/engineer, other state and federal agencies and technical assistance providers throughout the planning, application and construction phases of all the projects financed by the RD Community Facilities Program to ensure each one is a viable project, a sound credit, and in the government's best interest. Prior to authorizing draws on the interim loan, RD staff goes through an exhaustive process to ensure the borrower meets the multitude of requirements as if they were to close and release funds on the RD long-term revenue bond. RD provides three documents to Board staff that evidence their due diligence and commitment to fund the project as follows:

- Letter of Conditions (LOC): The LOC assures the Board that the district office completed the credit analysis, verified revenues are sufficient to support all costs of the facility after the project is complete, validated the architectural/engineering design, and oversaw environmental due diligence. The approving official, Community Programs Director (State Director), reviews the application package, the LOC delineating the conditions the applicant must meet prior to closing, and the processing office's recommendation to approve. If the applicant agrees to the conditions and the State Director concurs with the district office's findings, the funds are obligated to the project. It is important to note that RD will not issue the LOC unless funds have been appropriated by Congress and are available. The State Director affirmed that Congress does not claw back funding once appropriated.
- USDA, Office of General Counsel (OGC) Closing Instructions: The closing instructions assure the Board that RD approved the loan, obligated funds to the project, and the OGC reviewed and approved all the bond proceedings. The closing instructions list the items that need to be completed prior to closing. As required in the above federal regulation, all the requirements are met prior to closing and releasing funds either on an RD loan or, if interim financing is involved, authorizing any interim draws. A 5%-10% contingency, depending on the complexity of the project, is added after bids are received to establish the total project cost.
- Letter of Intent ("I" Letter): The Director's "I" letter acknowledges that INTERCAP is the interim financing source, that each draw will be authorized by RD and that funds will be available to payoff both principal and interest on the INTERCAP loan. For projects that have only an RD loan, but no RD grant, the payoff will occur when the architect/engineer issues the Certificate of Substantial Completion to the contractor. At that point, the owner can make use of the facility while only minor work remains.

Most projects do involve RD grant funds. The amount of grant versus loan depends on the borrower's available cash. The grant portion in this funding package is a small nudge to help reach the amount needed to complete the total project cost that includes 10% contingency. Another essential piece to this process is that RD requires sufficient performance and payment bonds are in place prior to construction to make sure the project is completed and the contractors are paid. Lien/material waivers are also collected as the project progresses so RD has a clean title policy on the property at the end of the project. The borrowing statute for hospital district's 7-34-2131(2)(c), MCA provides that, *"The notes may be secured by a mortgage of or a security interest in all or part of the district's assets and by a pledge of the taxes and revenue of the district, or either of them."*

Repayment

The bond proceeds from the District's issuance and sale of a revenue bond to RD will repay the BAN. Special conditions to the Board's commitment to ensure the revenue bond takes out the BAN are as follows:

1. Prior to disbursing funds, the Board requires evidence of RD's commitment to pay off the BAN with a long-term loan and sufficient bonding is in place. Copies of the following will provide sufficient evidence:
 - RD Letter of Conditions (MBOI has on file)
 - USDA Office of General Council (OGC) Loan Closing Instruction
 - RD Letter of Intent to Fund ("I" Letter)
 - Performance and Payment bonds
2. The Board will require approval from RD for each specific draw on the loan.
3. The Board requires the District to hire Bond Counsel to prepare the necessary BAN documents and provide the opinion at closing. The Bond Counsel needs to be nationally recognized and rendering a bond counsel opinion in the last ten years.

Recommendation

Providing interim financing is in step with INTERCAP's statutory mission to reduce, to the extent possible, costs of public indebtedness to taxpayers and residents. Interim financing for water/wastewater projects through RD's Rural Utilities Services Program is much more common and have been occurring through INTERCAP since 1996. Beginning 2009, this will be the fifth request in INTERCAP's history for interim financing in anticipation of closing on a Community Facilities (CF) Program loan. As with the water/wastewater projects, using INTERCAP saves the communities interest expense that is better spent towards the CF projects protecting the health and quality of life in Montana. Funds are never drawn until the RD approved construction contract documents have been signed and RD is satisfied there are sufficient funds to build the total project. To date, the Board has never been obliged to turn any of these BANs into a long term revenue bond. Approval recommended.

Staff Loan Committee

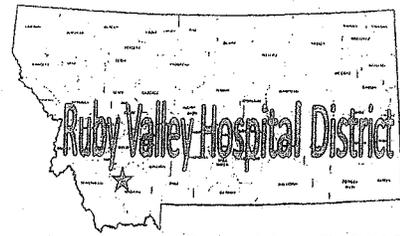
David Ewer, Executive Director	<u><i>[Signature]</i></u>	Recommended <u>5/12/16</u>
Geri Burton, Deputy Director	<u><i>[Signature]</i></u>	Recommended <u>5-10-16</u>
Louise Welsh, Sr. Bond Program Officer	<u><i>[Signature]</i></u>	Recommended <u>5/10/16</u>

Board Loan Committee – May 24, 2016

Jack Prothero, Chairperson – Loan Committee	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Abstain
Kathy Bassette, Member	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Abstain
Terry Cohea, Member	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Abstain

Approval Date _____

Montana Board of Investments
 Loan Committee
 INTERCAP Loan Summary and Approval



Borrower Ruby Valley Hospital District (Sheridan)

Date May 9, 2016

Approval Date _____

The District requests an interim loan for \$3,000,000 in anticipation of long-term financing from the United States Department of Agriculture (USDA) Rural Development Services (RD)¹ Community Facilities Program. The loan will be for up to two (2) years, in the form of a bond anticipation note (BAN) and will finance construction of a new critical access hospital² owned and operated by the District in Sheridan. The existing facility was built in 1964 and is inadequate for the expanded services offered by the District coupled with not meeting several hospital building codes enacted since its construction. The projected drawdown schedule for the loan is from August 2016 to December 2017, and the District anticipates closing on its RD loan in July 2017. The funding package for the \$11,650,000 total project cost is as follows and includes a 9% contingency:



Borrower Portion		\$ 1,300,000
Community Development Block Grant		400,000
INTERCAP Interim Loan	\$3,000,000	
Commercial Bank(s) Interim Loan(s)	\$6,950,000	
RD Community Facilities Direct Loan		<u>9,950,000</u>
		Total \$11,650,000

¹<http://www.rd.usda.gov/>

²<http://rubyvalleyhospital.com/attachments/NewHospitalInfoPack.pdf>

Authorization

7-7-109 Montana Code Annotated (MCA) (2) (a) When all conditions exist precedent to the offering for sale of bonds of a political subdivision in any amount and for any purpose authorized by law or the political subdivision has applied for and received a commitment for a grant or loan of state or federal funds, its governing body may by resolution issue and sell, in anticipation of the receipt of the grant, loan, or bonds in an amount not exceeding the total amount of bonds authorized or the total amount of the loan or grant that is committed, notes maturing within not more than three years from the date on which the notes are issued.

INTERCAP Debt

The District is a new borrower to INTERCAP.

RD Commitment

The Code of Federal Regulations (CFR) Title 7, Chapter XVIII, Part 1942, Sub Part A Community Facility Loans, Section §1942.17(n)(3) states, "In all loans exceeding \$50,000, where funds can be borrowed at reasonable interest rates on an interim basis from commercial sources for the construction period, such interim financing will be obtained so as to preclude the necessity for multiple advances of Rural Development funds. When interim commercial financing is used, the application will be processed, including obtaining construction bids, to the stage where the Rural Development loan would normally be closed, that is immediately prior to the start of construction. The Rural Development loan should be closed as soon as possible after the disbursement of all interim funds."

RD staff are field based and work closely with the borrower, architect/engineer, other state and federal agencies and technical assistance providers throughout the planning, application and construction phases of all the projects financed by the RD Community Facilities Program to ensure each one is a viable project, a sound credit, and in the government's best interest. Prior to authorizing draws on the interim loan, RD staff goes through an exhaustive process to ensure the borrower meets the multitude of requirements as if they were to close and release funds on the RD long-term revenue bond. RD provides three documents to Board staff that evidence their due diligence and commitment to fund the project as follows:

- Letter of Conditions (LOC): The LOC assures the Board that the district office completed the credit analysis, verified revenues are sufficient to support all costs of the facility after the project is complete, validated the architectural/engineering design, and oversaw environmental due diligence. The approving official, Community Programs Director (State Director), reviews the application package, the LOC delineating the conditions the applicant must meet prior to closing, and the processing office's recommendation to approve. If the applicant agrees to the conditions and the State Director concurs with the district office's findings, the funds are obligated to the project. It is important to note that RD will not issue the LOC unless funds have been appropriated by Congress and are available. The State Director affirmed that Congress does not claw back funding once appropriated.
- USDA, Office of General Counsel (OGC) Closing Instructions: The closing instructions assure the Board that RD approved the loan, obligated funds to the project, and the OGC reviewed and approved all the bond proceedings. The closing instructions list the items that need to be completed prior to closing. As required in the above federal regulation, all the requirements are met prior to closing and releasing funds either on an RD loan or, if interim financing is involved, authorizing any interim draws. A 5%-10% contingency, depending on the complexity of the project, is added after bids are received to establish the total project cost.
- Letter of Intent ("I" Letter): The Director's "I" letter acknowledges that INTERCAP is the interim financing source, that each draw will be authorized by RD and that funds will be available to payoff both principal and interest on the INTERCAP loan. For projects that have only an RD loan, but no RD grant, the payoff will occur when the architect/engineer issues the Certificate of Substantial Completion to the contractor. At that point, the owner can make use of the facility while only minor work remains.

Most projects do involve RD grant funds. The amount of grant versus loan depends on the borrower's available cash. This RD funding package is loan only signifying the District has ample cash available to contribute to the project hence the need for RD grant funds was not warranted. Another essential piece to this process is that RD requires sufficient performance and payment bonds are in place prior to construction to make sure the project is completed and the contractors are paid. Lien/material waivers are also collected as the project progresses so RD has a clean title policy on the property at the end of the project. The borrowing statute for hospital district's 7-34-2131(2)(c), MCA provides that, *"The notes may be secured by a mortgage of or a security interest in all or part of the district's assets and by a pledge of the taxes and revenue of the district, or either of them."*

Repayment

The bond proceeds from the District's issuance and sale of a revenue bond to RD will repay the BAN. Special conditions to the Board's commitment to ensure the revenue bond takes out the BAN are as follows:

1. Prior to disbursing funds, the Board requires evidence of RD's commitment to pay off the BAN with a long-term loan and sufficient bonding is in place. Copies of the following will provide sufficient evidence:

- RD Letter of Conditions (MBOI has on file)
- USDA Office of General Council (OGC) Loan Closing Instruction
- RD Letter of Intent to Fund ("I" Letter)
- Performance and Payment bonds

2. Prior to disbursing funds, the District must provide a copy of the other lender(s) written commitment to fund the additional interim financing required to match the RD loan amount.
3. The Board will require approval from RD for each specific draw on the loan.
4. INTERCAP draws will begin after the other lender(s) interim funds are expended.
5. The Board requires the District to hire Bond Counsel to prepare the necessary BAN documents and provide the opinion at closing. The Bond Counsel needs to be nationally recognized and rendering a bond counsel opinion in the last ten years.

Recommendation

Providing interim financing is in step with INTERCAP's statutory mission to reduce, to the extent possible, costs of public indebtedness to taxpayers and residents. Interim financing for water/wastewater projects through RD's Rural Utilities Services Program is much more common and have been occurring through INTERCAP since 1996. Beginning 2009, this will be the fourth request in INTERCAP's history for interim financing in anticipation of closing on a Community Facilities (CF) Program loan. As with the water/wastewater projects, using INTERCAP saves the communities interest expense that is better spent towards the CF projects protecting the health and quality of life in Montana. Funds are never drawn until the RD approved construction contract documents have been signed and RD is satisfied there are sufficient funds to build the total project. To date, the Board has never been obliged to turn any of these BANs into a long term revenue bond. Approval recommended.

Staff Loan Committee

David Ewer, Executive Director	<u></u>	Recommended <u>5/10/16</u>
Geri Burton, Deputy Director	<u></u>	Recommended <u>5-10-16</u>
Louise Welsh, Sr. Bond Program Officer	<u></u>	Recommended <u>5/10/16</u>

Board Loan Committee – May 24, 2016

Jack Prothero, Chairperson – Loan Committee	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Abstain
Kathy Bassette, Member	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Abstain
Terry Cohea, Member	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Abstain

Approval Date _____



Montana Board of Investments

Investment Performance Analysis

Period Ended: March 31, 2016



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2	Capital Markets Review

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Executive Summary



EXECUTIVE SUMMARY
QUARTER ENDING MARCH 31, 2016

Economic and Capital Market Review

The first quarter of 2016 proved to be a volatile period. The year began with a substantial decline in equity markets during January and the first half of February. Key drivers included weakening economic indicators in China, continued pricing pressure on energy markets, and fears of an overly aggressive tightening of monetary policy by the Federal Reserve. However, losses incurred in the first half of the quarter were largely erased as fears over each of these factors subsided by the end of the end of March. **Figure 1** summarizes some of the positive and negative drivers influencing markets for the quarter. In addition, **Figure 2** presents returns for key market indices. In order to provide a glimpse of market activity in April 2016, we have also provided year-to-date returns for indices that provide monthly reporting.

Figure 1: Drivers of 2nd Quarter Asset Class Performance

Positive Drivers	Negative Drivers
<p>1. Continued Strength in U.S. Real Estate Markets – Private real estate continued to show relative strength in the first quarter, although not quite at the level in comparison to prior years. The immediate term outlook remains positive, as low vacancies across most property types continue to provide owners with pricing power.</p> <p>2. Interest Rate Declines – Interest rates decreased substantially during the quarter, as inflationary concerns remain muted and the Federal Reserve shifted to a more dovish stance on the pace of future interest rate increases.</p> <p>3. Rebalancing of Crude Oil Supply and Demand – Despite the failure of OPEC and non-OPEC counties to reach an accord on production freezes in Doha, oil markets showed continued progress toward equilibrium. As a result, oil prices rebounded off the low achieved in February, with WTI crude ending the quarter near \$40 per bbl.</p>	<p>1. Continued Economic Weakness in China – The immediate trigger for the January 2016 sell-off was fear about Chinese economic growth, and, more importantly, the ability of the Chinese government to manage markets effectively. While calm has partially returned to the market, concerns remain about the trajectory of the Chinese economy and rapid increases in private and government debt to fuel growth.</p> <p>2. Softening of U.S. Economy – While the U.S. economy continued to show strength relative to foreign markets, it too showed signs of weakness. Manufacturing activity slowed, job growth softened, and the first read of first quarter GDP showed that growth slowed to 0.5% (annualized).</p> <p>3. Weak U.S. Earnings – Earnings reports for the first quarter have come in relatively weak. As of April 29, 2016, S&P 500 earnings reports were 7.6% below Q1 2015.</p>

Figure 2: Key Market Index Returns
Period Ending March 31, 2015

Index	Asset Class	Q2 To Date	Q1 2016	1 Year	5 Year	10 Year
S&P 500	U.S. Large Cap Equity	0.39	1.35	1.78	11.58	7.01
Russell 2000	U.S. Small Cap Equity	1.57	(1.52)	(9.76)	7.20	5.26
MSCI EAFE (Net)	Int'l Developed Markets	2.90	(3.01)	(8.27)	2.29	1.80
MSCI Emerging Markets (Net)	Int'l Emerging Markets	0.54	5.71	(12.03)	(4.13)	3.02
Barclays US Agg Bond	U.S. Fixed Income	3.43	3.03	1.96	3.78	4.90
NCREIF ODCE (Gross)	Private Real Estate	N/A	2.21	13.70	13.26	6.36
Bloomberg Commodity	Commodities	8.51	0.42	(19.56)	(14.15)	(6.16)

* 2nd QTD returns are for the period ending April 30, 2016. All other returns are for the period ending March 31, 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 (Net of Fees)
Period Ending March 31, 2016

	QTD	FYTD ¹	1 Year	3 Years	5 Years	7 Years	10 Years
Total Fund Composite (Net)	1.24	0.48	0.99	7.53	7.70	11.34	5.67
Actual Allocation Index	2.36	0.94	1.34	8.42	8.29	11.96	5.96
<i>Difference</i>	<i>-1.12</i>	<i>-0.46</i>	<i>-0.35</i>	<i>-0.89</i>	<i>-0.59</i>	<i>-0.62</i>	<i>-0.29</i>
Rank	28	4	1	1	1	6	9

¹ Fiscal year to date covers the trailing period beginning July 1, 2016.

RVK Commentary

- **Modest Absolute Returns**—The first quarter began with a substantial decline in risk assets, but then experienced a sharp recovery in the second half of the quarter. The net result was a slightly positive return for the first quarter. The strong returns from the retirement funds bond pool (+ 3.27%) and the real estate pool (+ 2.85%) were the primary drivers of positive performance, while the public and private equity pools experienced relatively flat returns.
- **Continued Strength of Peer Rankings**—MBOI rankings against peers remain extremely strong across all trailing periods. The plans continue to rank in the top decline over all annualized periods out to 10 years. In addition, on a risk-adjusted basis, the plans continue to perform exceptionally, providing higher return than peers with less risk. A graphic demonstrating this relationship can be found on page 8 and 9 of the RVK Performance Report.
- **Weak Performance for U.S. Equity Active Managers**—Active managers in U.S. equity substantially underperformed during the first quarter. The weak performance affected trailing returns out to five years. While the performance is disappointing, it was not unique to Montana. During the quarter, approximately 67% of active U.S. large and mid cap managers underperformed the index. While the quarter was disappointing, performance should be considered in terms of the broader context.
- **Strong Performance of Retirement Funds Bond Pool**—Fixed income returns were strong for the quarter, and the retirement funds bond pool outperformed the index. This feat was particularly impressive given the fact that 56% of core managers and 87% of high yield managers underperformed the index.
- **Private Equity Relative Performance Lag**—Private equity once again lagged the S&P 1500 + 4% for the quarter; however, over the trailing year the pool has continued to catch up after lagging during the extended U.S. equity bull market.

MBOI Performance Highlights: Asset Class Composites

The performance of the major asset class composites within the MBOI portfolio are summarized on **pages 11-13** 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 0.62% for the quarter, trailing the S&P 1500 composite index by 95 basis points. Relative to peers, the pool ranked in the 71st percentile for the quarter. However, the pool is now outperforming peers over all trailing, annualized periods out to ten years. It also ranks in the top quartile over the 3- and 5- year periods. The medium term results should provide increased 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 providing value. While the weak relative performance in comparison to the S&P 1500 index was disappointing over the trailing quarter, it is important to consider the fact that the period was generally difficult for active managers.
- ❑ **Montana International Equity Pool**—The MBOI International Equity Pool returned 0.00% for the quarter, outperforming the International Equity Custom Benchmark by 23 basis points. Relative to peers, the pool ranked in the 32nd percentile for the quarter. Over the past 3- and 5- year periods, the international equity pool is now exceeding its benchmark. While peer rankings continue to lag, the pool has shown modest improvement on this metric as well.
- ❑ **Retirement Funds Bond Pool**—The Retirement Funds Bond Pool returned 3.27% for the quarter, exceeding the Barclays US Aggregate Bond Fund by 24 basis points. In addition to the past quarter, the pool continues to perform well relative to the index and peers over virtually all trailing periods.
- ❑ **Trust Funds Investment Pool**—The fixed income portion of the Trust Funds Investment Pool largely mirrored the Retirement Funds Bond Pool. However, absolute and relative returns were notably better due to the presence of real estate in the portfolio, which provided strong positive returns for the quarter and trailing year.
- ❑ **Real Estate Pool**—The Real Estate Pool, which is benchmarked on a lagged basis, returned 2.85% for the quarter, trailing the NCREIF ODCE Index by 26 basis points. Relative to peers, the pool ranked in the 37th percentile. Once again, the diversification value of real estate was clearly evident during this quarter, as the pool provided strong positive returns while equity markets struggled. Over the longer term, the real estate pool continues to lag the index 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.
- ❑ **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 32 basis points, which is due to extremely low interest rates on the short end of the yield curve.

¹ The iMoney.net Money Fund Median is reported on a gross of fees basis.

-
- **Private Equity Pool**—The Private Equity Pool returned 0.80% for the quarter, which underperformed the S&P 1500 + 4% (one quarter lagged) by 679 basis points. Private equity continues to provide valuable diversification and return enhancement for the MBOI pension plans. Over 10 years, the portfolio has returned 10.02% net of fees, which exceeds the return of all other asset classes in the portfolio. While the pool lagged during the quarter, it began to catch up with public markets over the trailing year, as public equity returns were relatively flat.

Overall, the MBOI portfolio continues to perform well and has maintained its strength in comparison to peers. RVK continues to support several of the recent changes that were made in order to improve performance, particularly in the international and domestic equity portfolios. Absolute returns for the first quarter were relatively modest and highly volatile. However, we believe that the plans remain well-diversified and well-positioned for the long term.

Capital Markets Review

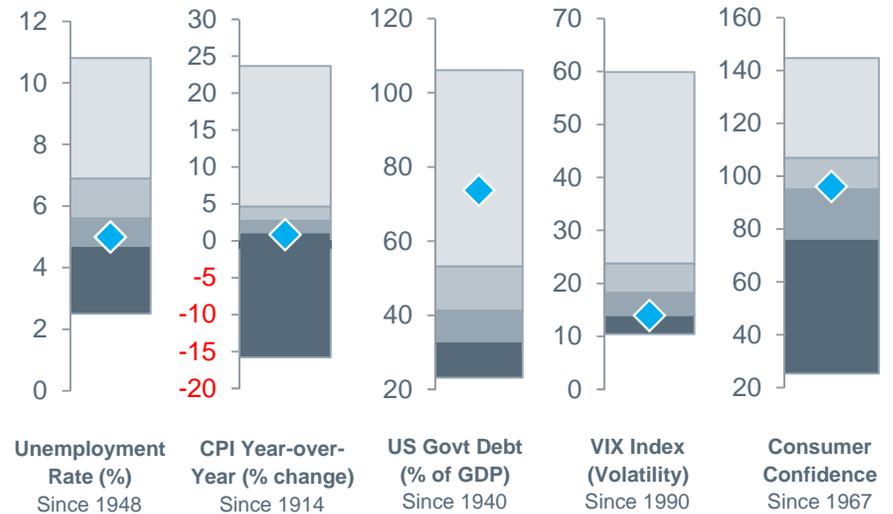


First Quarter Economic Environment

Key Economic Indicators

Negative investor sentiment and heightened volatility drove sharp declines in equity and commodity markets during the first two months of 2016. However, this trend reversed dramatically in March due to renewed optimism. By the quarter's end, global equities had sufficiently rallied to produce marginal overall gains for investors. Global fixed income appreciated as concern over disinflationary pressure and weak global growth led several developed market central banks to intensify accommodative monetary policies. In some cases, this included further experimentation with negative interest rates. In the US, investors reacted positively toward a perceived shift by the Federal Reserve toward a less aggressive monetary policy forecast. The US dollar reacted accordingly, reversing a prolonged strengthening trend over the past several years. The weakening dollar provided price support to dollar-based commodities, and also served as a tailwind for emerging market equity and debt assets.

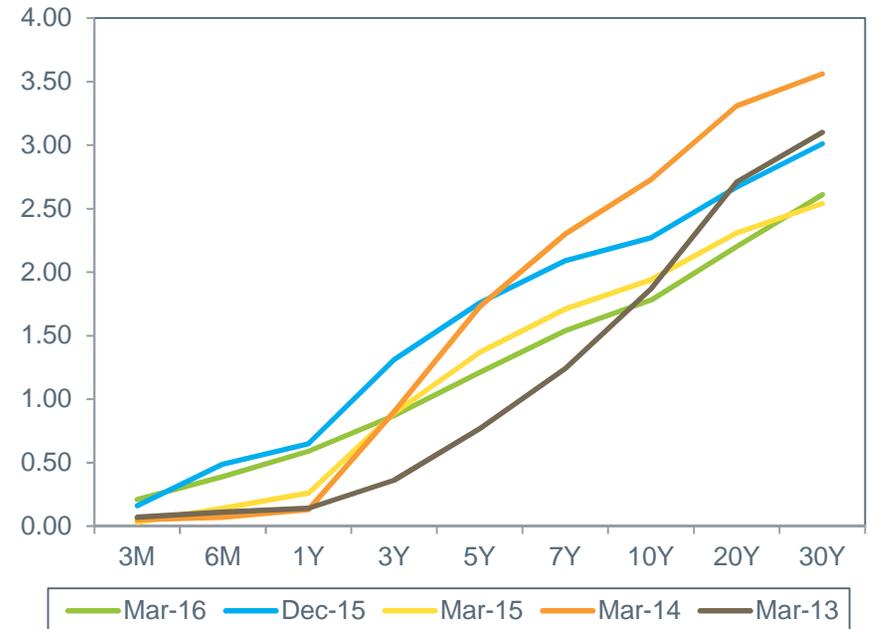
Key Economic Indicators



Economic Indicators

	Mar-16	Dec-15	Mar-15	Mar-13	20 Yr
Federal Funds Rate (%)	0.25 ▲	0.20	0.06	0.13	2.54
Breakeven Infl. - 1 Yr (%)	2.10 ▲	0.85	1.46	2.32	N/A
Breakeven Infl. - 10 Yr (%)	1.63 ▲	1.58	1.78	2.52	N/A
CPI YoY (Headline) (%)	0.9 ▲	0.7	-0.1	1.5	2.2
Unemployment Rate (%)	5.0 —	5.0	5.5	7.5	6.0
Real GDP YoY (%)	1.9 ▼	2.0	2.9	1.1	2.4
PMI - Manufacturing	51.80 ▲	48.00	52.30	52.50	52.10
USD Total Wtd Idx	89.84 ▼	94.46	92.14	76.20	86.73
WTI Crude Oil per Barrel (\$)	38 ▲	37	48	97	55
Gold Spot per Oz (\$)	1,233 ▲	1,061	1,184	1,597	751

Treasury Yield Curve (%)



Market Performance (%)

	QTD	CYTD	1 Yr	5 Yr	10 Yr
S&P 500 (Cap Wtd)	1.35	1.35	1.78	11.58	7.01
Russell 2000	-1.52	-1.52	-9.76	7.20	5.26
MSCI EAFE (Net)	-3.01	-3.01	-8.27	2.29	1.80
MSCI EAFE SC (Net)	-0.60	-0.60	3.20	5.58	3.44
MSCI Emg Mkts (Net)	5.71	5.71	-12.03	-4.13	3.02
Barclays US Agg Bond	3.03	3.03	1.96	3.78	4.90
BofA ML 3 Mo US T-Bill	0.07	0.07	0.12	0.08	1.15
NCREIF ODCE (Gross)	2.21	2.21	13.70	13.26	6.36
Wilshire US REIT	5.20	5.20	4.76	12.11	6.29
HFN FOF Multi-Strat	-3.20	-3.20	-6.77	1.10	1.12
Bloomberg Cmddy (TR)	0.42	0.42	-19.56	-14.15	-6.16

Treasury data courtesy of the US Department of the Treasury. Economic data courtesy of Bloomberg Professional Service. Breakeven Inflation does not have 20 years of history; therefore, its 20-year average is shown as N/A.



First Quarter Review

Broad Market

Despite a sharp uptick in volatility, the US equity market finished the quarter in positive territory, as strong March gains erased heavy losses incurred during January's market sell-off.

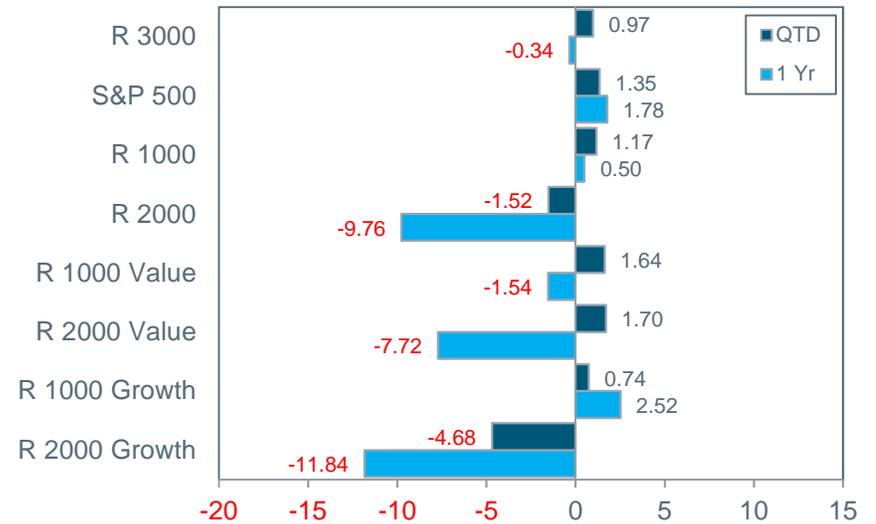
Market Cap

In terms of capitalization, mid cap outperformed all other market cap ranges, with the Russell Mid Cap Index returning 2.2%. Large and mega cap stocks ended the quarter positive, while small and micro cap continued to lag, as the Russell 2000 Index and the Russell Micro Cap index returned -1.5% and -5.4%, respectively.

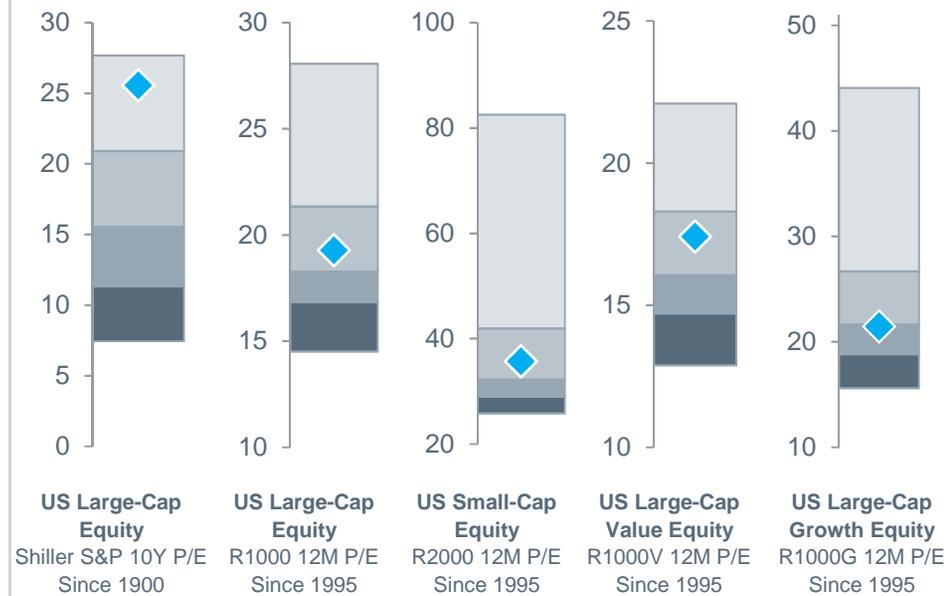
Style and Sector

In sharp contrast to 2015, value outperformed growth across the market cap spectrum for the quarter.

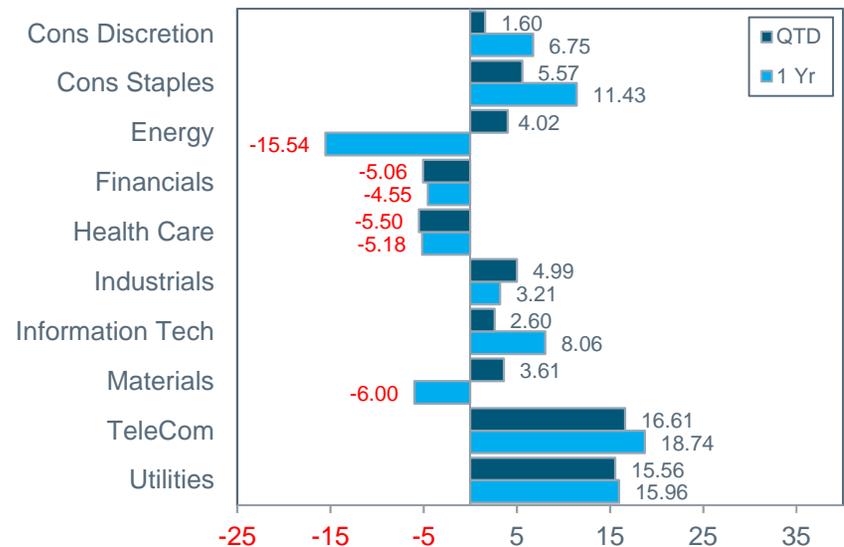
Style and Capitalization Market Performance (%)



Valuations



S&P 500 Index Sector Performance (%)



Valuation data courtesy of Bloomberg Professional Service and Robert J. Shiller, Irrational Exuberance, Second Edition. P/E metrics shown represent the 5th through 95th percentiles to minimize the effect of outliers.



First Quarter Review

Developed Markets

Developed international markets had a strong rebound in March, but remained negative for the quarter. Japan was one of the largest performance detractors for the quarter. Reacting to a 1.4% decline in GDP during the previous quarter, the BoJ adopted a negative interest rate policy for the first time in history.

Emerging Markets

Performance from emerging markets diverged positively for the quarter following a year of significantly better returns from developed markets. The rebound in March pushed emerging market equity returns well into positive territory for the quarter.

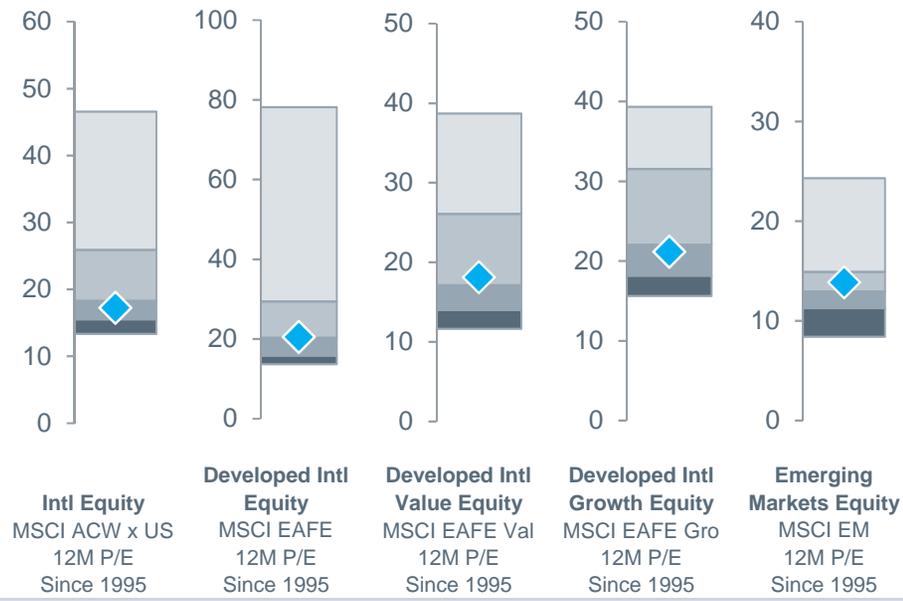
Market Cap & Style

Small cap developed stocks outperformed their larger counterparts. Value, yet again, underperformed growth by a significant margin in the developed space. In emerging markets, large cap outperformed small cap stocks and value outperformed growth.

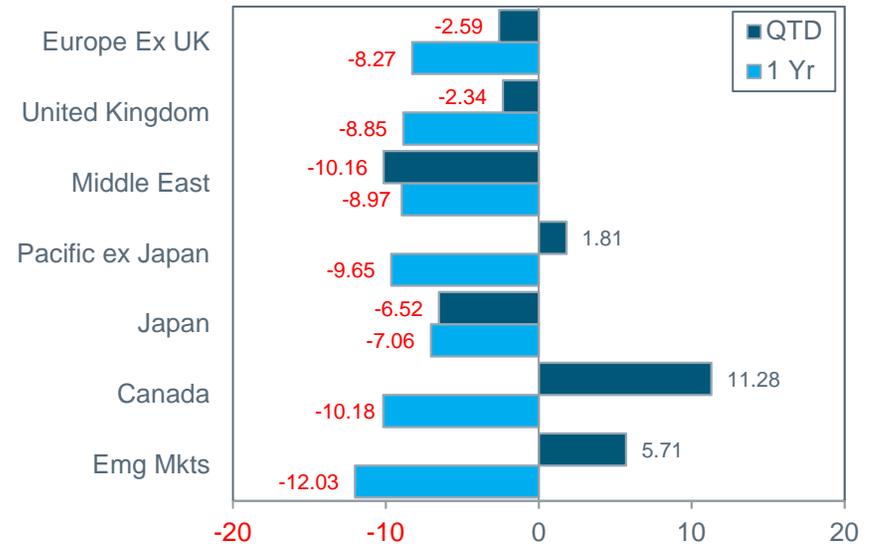
MSCI Style and Capitalization Market Performance (%)



Valuations



MSCI Region Performance (%)



Valuation data courtesy of Bloomberg Professional Service.

P/E metrics shown represent the 5th through 95th percentiles to minimize the effect of outliers. All returns are shown net of foreign taxes on dividends.



First Quarter Review

Broad Market

The Fed's shift toward a more accommodative monetary policy forecast for 2016 led to a decline in Treasury yields, while the rebound in energy prices had a positive impact on credit and market volatility stabilized after increasing in December and January.

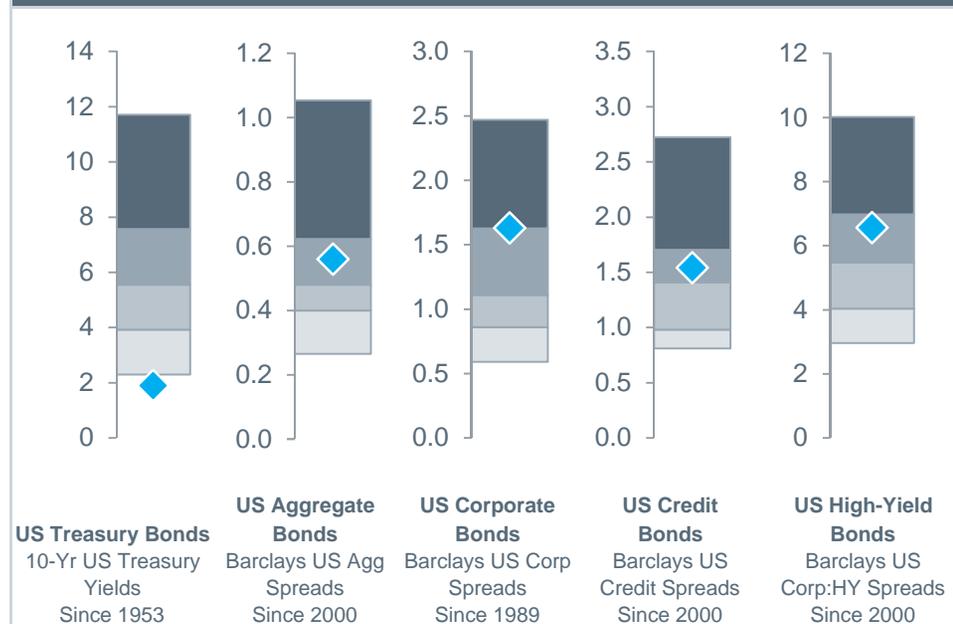
Credit Market

High yield bonds rebounded with a 3.2% return. Declining interest rates detracted from floating rate bank loans, but improvement in the credit markets allowed bank loans to post positive performance with a return of 1.5%.

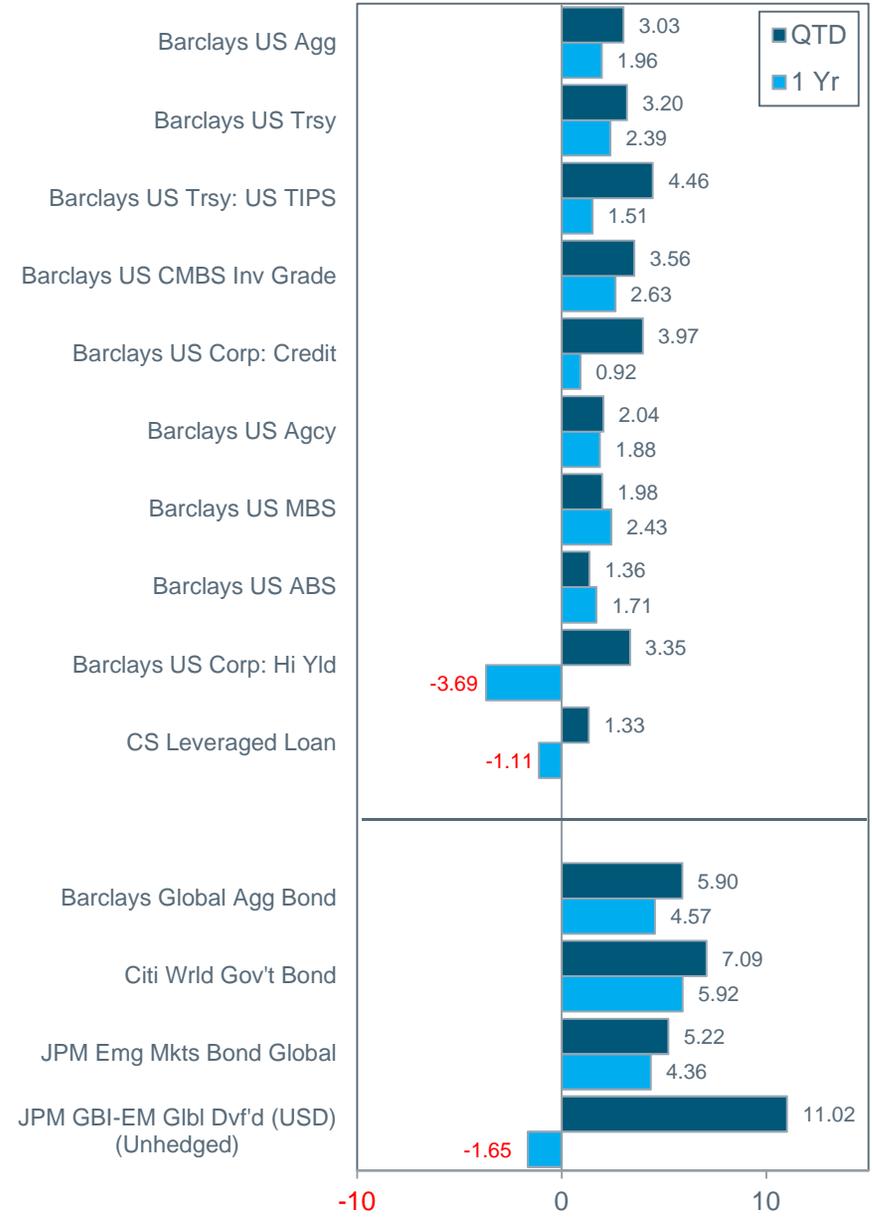
Emerging Market Debt

Local currency emerging markets bonds had a very strong quarter due to the weakening of the US Dollar and a recovery of energy prices. Local currency bonds finished the quarter with a return of 11.0% while hard currency emerging markets debt finished the quarter with a return of 5.0%.

Valuations



Fixed Income Performance (%)



Valuation data courtesy of Bloomberg Professional Service. Valuations shown represent the 5th through 95th percentiles to minimize the effect of outliers.

First Quarter Review - Absolute Return

General Market - Hedge Funds

The hedge fund industry performed poorly during the first quarter of 2016, with a variety of factors contributing to the uninspired returns. As it relates to the Fund of Hedge Fund (“FoHF”) managers RVK follows closely, the most consistent relative detractor was negative alpha from Long/Short Equity (“ELS”), in part due to tactical over-weights to heavily trafficked sectors like healthcare, technology, and financials, which underperformed. The best performing strategies during the quarter were systematic managed futures/CTAs.

General Market - Global Tactical Asset Allocation (GTAA)

There was dispersion among returns for strategies with exposures beyond US fixed income and US equity. Managers positioned for interest rate increases in the US lagged due to the Fed’s accommodative stance. Macro-oriented, fundamental value-based approaches, which were underweight US equities relative to emerging markets, provided the strongest performance over the quarter.

First Quarter Review - Real Assets

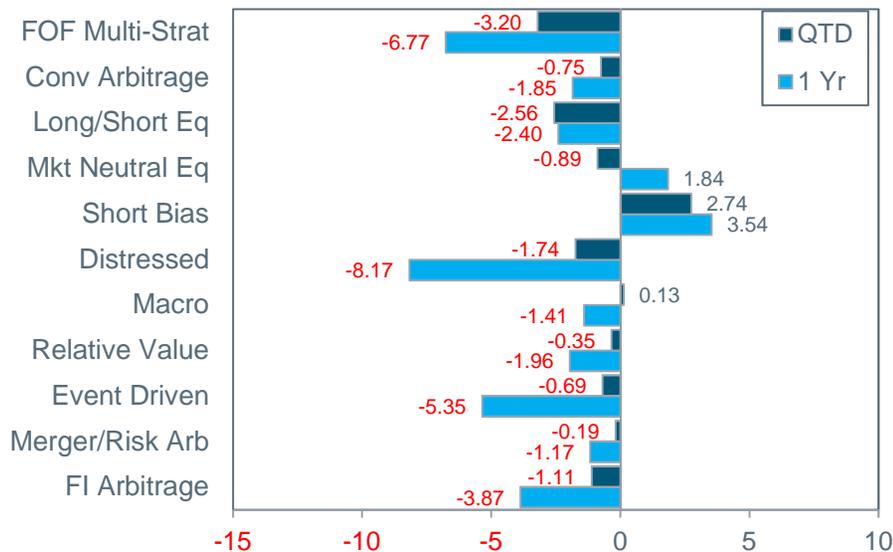
General Market - Diversified Inflation Strategies (DIS)

Some measures of inflation increased over the quarter, driving strong relative performance. However, market expectations for inflation in 10 year Treasuries remain muted at around 1.6%, about the same level at the beginning of the quarter. DIS managers with REIT exposure, precious metals, and non-US dollar denominated emerging markets exposures provided the strongest performance. Strategies that avoided natural resource equity exposure significantly underperformed DIS peers.

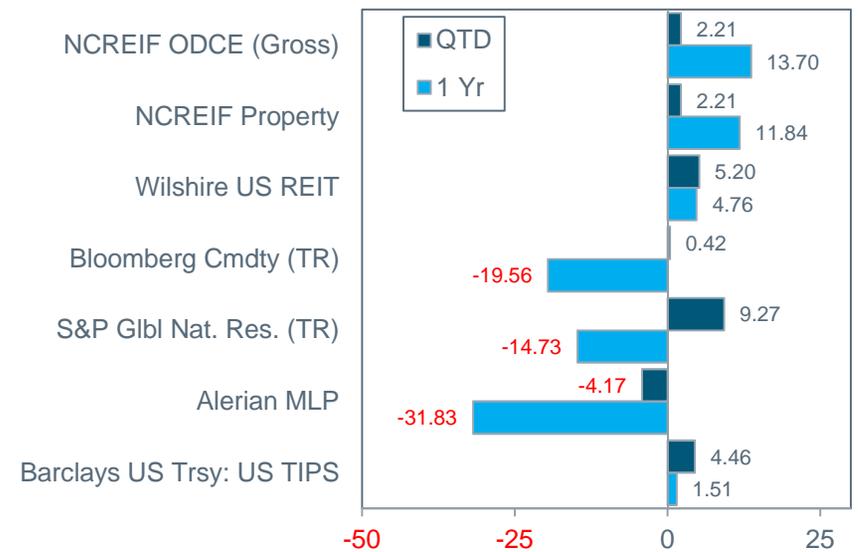
General Market - Real Estate

Real Estate was not immune to the effects of broader uncertainty and volatility in the global markets during Q1. In the US, cap rates flattened in certain property sectors for the first time in six years and property valuations showed modest changes as a whole. Core US real estate increased its run of consecutive quarters of positive returns to 25 quarters, albeit with relatively muted growth at 2.2% percent as reported by the NCREIF ODCE Index.

HFN Hedge Fund Performance (%)



Real Asset Performance (%)



Annual Asset Class Performance

As of March 31, 2016

	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	YTD
Best	25.91	61.34	33.16	34.00	35.97	39.38	8.44	78.51	28.60	22.49	20.00	38.82	31.78	15.01	7.30
	16.56	55.81	31.45	26.19	32.18	16.23	5.24	58.21	26.86	15.99	18.23	32.39	19.31	9.59	5.71
	14.81	47.25	25.55	21.39	26.34	15.97	2.06	46.78	22.04	13.56	17.59	29.30	13.69	4.23	5.20
	10.25	38.59	20.25	21.36	19.31	11.63	-2.35	31.78	18.88	9.24	17.32	22.78	12.50	1.38	4.46
	5.54	36.18	18.33	13.82	18.37	11.17	-10.01	28.60	16.83	7.84	16.34	13.94	5.97	0.55	3.35
	3.58	28.97	13.06	13.54	16.32	9.91	-20.47	27.18	16.36	4.98	16.00	9.10	4.89	0.05	3.03
	3.12	28.68	11.13	6.75	15.79	6.97	-26.16	26.46	15.12	2.11	15.81	7.44	3.64	-0.81	2.21
	1.78	23.93	10.88	5.33	11.85	6.60	-33.79	18.91	15.06	0.10	10.94	1.86	3.03	-1.24	1.35
	-1.41	11.93	9.15	4.91	9.85	5.49	-35.65	11.41	10.16	-4.18	8.82	0.07	2.45	-1.44	0.42
	-6.17	9.28	8.56	4.55	4.85	5.00	-37.00	9.72	7.75	-5.55	6.98	-2.02	0.04	-3.30	0.07
	-7.83	8.39	8.46	3.07	4.33	1.87	-39.20	5.93	6.54	-12.14	4.80	-2.60	-2.19	-4.41	-0.60
	-15.94	5.87	6.79	2.84	2.71	1.45	-43.38	1.92	6.31	-13.32	4.21	-8.61	-4.30	-4.47	-1.52
	-20.48	4.10	4.34	2.74	2.07	-1.57	-47.01	0.21	4.77	-15.94	0.11	-8.83	-4.95	-14.92	-3.01
Worst	-22.10	1.15	1.33	2.43	0.41	-17.55	-53.33	-29.76	0.13	-18.42	-1.06	-9.52	-17.01	-24.66	-3.20
	S&P 500 - US Large Cap	R 2000 - US Small Cap	MSCI EAFE (Net) - Int'l Dev.	MSCI EAFE SC (Net) - Int'l SC	MSCI EM (Net) - Int'l Emg Mkts	Barclays US Agg Bond - FI	Barclays US Corp: Hi Yield - FI	Barclays US Trsy: US TIPS - FI	Barclays US Gov/Credit: Lng - FI	NCREIF ODCE (Gross) - Real Estate	Wilshire US REIT - REITs	HFN FOF Multi-Strat (Net) - ARS	Bloomberg Cmdty (TR) - Commod.	BofA ML 3 Mo T-Bill - Cash Equiv	



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**SHORT-TERM INVESTMENT POOL (STIP)
INVESTMENT POLICY**

Recommended May 24-25, 2016

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1. Introduction:

This policy is effective upon adoption and supersedes all previous Investment Policies related to the investment management of the Short Term Investment Pool (STIP).

STIP is an investment program managed and administered under the direction of the Montana Board of Investments (MBOI) as authorized by the Unified Investment Program. STIP invests the operating funds of the State of Montana, participating local government entity funds, and the liquidity requirements of the various pension and trust funds managed by MBOI.

STIP is a commingled pool for investment purposes. The use of a commingled pool allows for simplified investing and accounting, as well as broader investment diversification, and it provides opportunities for fee savings.

2. Purpose:

The purpose of this policy statement is to provide a strategic framework for the STIP investments under the guidance of the Board of Investments.

3. Legal and Constitutional Authority:

The Montana Constitution, Article VIII, Section 13, requires that the Legislature provide for a Unified Investment Program for public funds. Section 17-6-201, MCA, established the Unified Investment Program, created the Montana Board of Investments (the "Board") and gave the Board sole authority to invest state funds, including the Short Term Investment Pool (STIP) in accordance with state law and the state constitution.

The Unified Investment program for public funds must be administered by the Board of Investments in accordance with the "prudent expert principle," defined as:

- 1) discharging its duties with the care, skill, prudence, and diligence, under the circumstances then prevailing, that a prudent person acting in a like capacity with the same resources and familiar with like matters exercises in the conduct of an enterprise of like character with like aims;
- 2) diversifying the holdings of each fund to minimize the risk of loss and maximize the rate of return, unless under the circumstances it is clearly prudent not to do so; and
- 3) discharging its duties solely in the interest of and for the beneficiaries of the funds managed.

The Board created the Short Term Investment Pool (STIP) to allow qualifying funds, per sections 17-6-201, 202, and 204, MCA, to participate in a diversified pool. Although state agencies with accounts that retain their interest earnings are legally required to invest in STIP, local governments may voluntarily participate in the STIP.

The Board, as the investment fiduciary, is responsible for establishing the investment parameters for the STIP.

STIP is not registered with the Securities and Exchange Commission (SEC) as an investment company and therefore is not required to abide by the SEC's rule 2a7 of the Investment Company Act of 1940.

STIP has a defined set of investment objectives and investment guidelines, including permitted investments, which are detailed in this policy statement.

4. Financial Reporting

The STIP financial statements are included in the Board's Consolidated Unified Investment Program financial statements, which are audited by the Montana Legislative Auditor.

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

5. Strategic Investment Objectives

The Board's objective for STIP is to achieve a high level of investment income that is compatible with the preservation of principal, providing STIP participants with liquidity with one-day notification, and the prudent investment practices of the Board.

No Guaranteed Return. 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.

No Warranty. The Board makes no warranty that funds will be immediately available in the event of any failure of a third party or that STIP participants will not suffer losses due to acts of God, or other calamities, or other market dislocations or interruptions.

STIP Not Insured Against Loss. STIP 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.

Reserve fund – This Policy requires maintenance of a reserve fund to offset possible losses. STIP interest earnings may be used to fund this reserve before the net earnings are distributed to the STIP Participants. However, the reserves may not be adequate to cover investment losses.

6. Reserve.

The STIP will maintain a reserve account. The reserve will be available to offset realized gains or losses. Additionally, the reserve will be available to offset unrealized gains or losses, or to limit fluctuations in the NAV, to the extent deemed prudent by Staff.

The STIP Net Asset Value (NAV) will be calculated based on the assumption that the STIP reserve is considered a liability on the financial statements.

Any use of the reserve will be reported to the Board.

7. Time Horizon

The STIP investment portfolio shall be managed with the goal of attaining its objectives throughout market and economic cycles, after giving prudent consideration to the investment risk constraints (described as part of the Investment Guidelines in Appendix I) and the liquidity needs of the participants.

The Board expects to meet or exceed these objectives over a long-term investment horizon. Over shorter periods, the anticipated market volatility and specific actions, including risk mitigation efforts of the Board, may lead to unfavorable, but expected, deviation from these objectives.

8. Performance Measurement

Investment performance is measured by two integrated long-term return objectives:

- The **investment policy benchmark**. The investment policy benchmark represents the return that would be achieved if the Pool implemented a passively managed portfolio. Deviations from the policy benchmark measure the contribution of active investment management throughout the fund and investment implementation generally.
- The Board also compares STIP's total performance, before all fees, to appropriate **peer universes**. While the Board seeks to rank favorably compared to peers, the Board recognizes that other short-term investment funds may have investment objectives and risk tolerances that differ substantially from STIP.

9. Roles and Responsibilities

Board of Investments – The Board is responsible for approving the STIP Investment Policy Statement and has the authority to manage STIP as it considers prudent, and subject to such limitations as contained in law and the Constitution. The Board reviews this document periodically and, as needed, approves any changes to the policy.

As described in the Board of Investments Governance Manual, the Board delegates authority to the Executive Director, Chief Investment Officer, and other Staff to execute the day to day duties required to carry out the Board's mission.

Executive Director – The Executive Director is empowered by the Board to sign any and all documents required to conduct Board business, unless there are specific written policies or instructions from the Board to the contrary. The Executive Director is responsible for the oversight of the STIP investment program and the establishment of the STIP financial reporting procedures and the collection and reporting of all income;

Chief Investment Officer – The Chief Investment Officer (CIO) is empowered by the Board to serve as the principal staff person responsible for overseeing the investment activities under the Board's jurisdiction in compliance with the Board's policies. The CIO, with the support of other staff, is responsible for recommending investment policy changes for Board approval.

Investment Staff – The investment staff is responsible for, but not limited to, the following:

- Managing day-to-day STIP investment operations;
- Investing STIP assets and monitoring compliance in accordance with this Policy;
- Reporting to the Board the STIP investment results and investment characteristics at the Quarterly Board meetings; and
- Reporting any deviations from this Investment Policy to the Board.

Investment Consultant – The investment consultant assists the CIO and Staff with policy recommendations and provides advice to the Board. The investment consultant shall provide assistance to Staff as requested in conjunction with the management of the STIP.

10. Risk Management

Short-term investments held within STIP are exposed to a number of risks. The objective will be to mitigate the inherent risks associated with these securities, primarily liquidity risk, credit risk and interest rate risk.

a) Liquidity Risk

Based on the percentage of STIP Units Value usually necessary to meet the daily distribution requests of STIP participants, the liquidity needs for the STIP are generally low. However, illiquidity risk still needs to be monitored and managed by staff on a regular basis to ensure that assets are not required to be sold too quickly, or at an unfavorable time, and potentially at a discount to fair value to meet the cash needs of STIP participants.

In order to improve liquidity and manage both the expected and unexpected STIP participants' need for cash, the STIP Investment Objectives and Guidelines (Appendix I) require certain percentages of the STIP Units Value to either be invested in cash, direct obligations of the U.S. government, or in securities that will have an effective maturity for specifically defined short periods or time (daily and weekly).

b) Credit Risk

Credit risk is the risk that an issuer or other counterparty to an investment will not fulfill its obligation in making full and timely principal and interest payments. The STIP will utilize credit ratings, issued by at least two of the nationally recognized statistical rating organizations (NRSRO), to assist in the monitoring and management of credit risk.

Approved List. Purchases of securities other than U.S. government or U.S. Agency obligations are restricted to those which are pre-approved. The approved list shall be maintained by Staff with issuers added or removed from time to time depending on an analysis of their risk characteristics and suitability for use in the portfolio. At least two investment staff must approve names on the list. One of the investment staff should be part of the internally managed fixed income team and the other person from the Risk Management team. Issuers on the list shall be reviewed at least semi-annually for continued inclusion on the approved list.

The STIP will minimize credit risk by means of the following:

1. Limiting Permissible investments to securities on the “Approved List”;
2. Pre-qualifying the financial institutions, broker/dealers, intermediaries and advisers with whom the STIP will conduct business;
3. Diversifying the investment portfolio so that potential losses on individual securities will be minimized; and
4. The STIP will maintain a reserve account.

c) Interest Rate Risk

The STIP portfolio will minimize the risk that the market value of the securities will deviate significantly from cost due to changes in the general level of interest rate by means of the following:

1. Structuring the investment portfolio so that securities mature to meet cash requirements for ongoing operations thereby normally avoiding the need to sell securities on the open market prior to maturity;
2. Maintaining a dollar-weighted average portfolio maturity of 60 days or less (for this purpose, the date to the next coupon reset date will be used for all floating or variable rate securities); and
3. The STIP will maintain a reserve account.

11. Securities Lending

Section 17-1-113, MCA, authorizes the Board to lend securities held by the state. The Board may lend its publicly traded securities held in the investment pools, through an agent, to other market participants in return for compensation. Currently, through an explicit contract, State Street Bank and Trust, the state's custodial bank, manages the state's securities lending program. The Board seeks to assess counterparty and reinvestment risk, associated with each aspect of its securities lending program. The Board requires borrowers to maintain collateral at 102 percent for domestic securities and 105 percent for international securities. To ensure that the collateral ratio is maintained, securities on loan are marked to market daily and the borrower must provide additional collateral if the value of the collateral falls below the agreed-upon ratio of over-collateralization. In addition to the strict collateral requirements imposed by the Board, the credit quality of approved borrowers is monitored continuously by the contractor. From time to time, Staff or the investment manager may restrict a security from the loan program upon notification to State Street Bank. Staff will monitor the securities lending program, and the CIO will periodically report to the Board on the status of the program. The Board’s participation in securities lending may change over time given Plan activity, market conditions and the agent agreement.

12. Investment Policy Review

The Board intends to keep this Policy updated as it modifies or amends the underlying contents. As stated in the Governance Policy, “the Board shall review this Investment Policy at least annually or more frequently at the request of Board staff. Statements may only be revised in a public meeting. All Statements shall be posted on the Board’s web site for review by the public.”

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Appendix I: Investment Objectives and Guidelines

Schedule I-A: Investment Objectives and Guidelines Short Term Investment Pool (STIP)

Effective Date of Schedule: May 25, 2016

This Schedule is effective upon adoption by the Board of Investments and supersedes all previous Investment Objectives and Guidelines for the STIP.

Statement of Purpose:

The purpose of these objectives and guidelines is to:

1. Establish the investment objectives and performance standards of the Pool; and
2. Provide diversified exposure to Cash Equivalent and Short-Term Fixed Income Investments in a prudent and cost effective manner.

Investment Objective:

Strategic:

The objective of the STIP is to attain the highest possible total return within the parameters of the Investment Guidelines set forth below.

Performance:

Success in achieving this objective will be measured by comparing the risk and the net of expenses return of STIP to a **one-month LIBOR Index** (the "Benchmark"). Performance results will be monitored and evaluated quarterly. However, the success in achieving the objective will be measured on a three-year, five-year, and ten-year annualized basis.

Investment Guidelines:

The Montana Board Investment Staff will have full discretion to manage STIP consistent with the investment guidelines stated below. Compliance with the following guidelines for permitted investments and other restrictions is the sole responsibility of the Staff. Any exceptions or compliance violations are to be reported to the Board of Investments at the next scheduled quarterly Board meeting.

Permitted Investments:

Purchases of securities other than U.S. government or U.S. Agency obligations are restricted to those which are pre-approved and part of an "Approved List". STIP may invest only in the following securities and investment vehicles:

1. U.S. Treasury or U.S. dollar denominated securities fully guaranteed by the U.S. Government;
2. U.S. Government Agency securities denominated in U.S. dollars;
3. Publicly traded U.S. dollar denominated corporate bonds, notes, and medium term notes (MTNs);
4. U.S. dollar denominated Commercial Paper (CP);
5. U.S. dollar denominated Bankers' Acceptance (BA);
6. U.S. dollar denominated Certificates of Deposits (CD);
7. U.S. dollar denominated Asset-Backed Securities (ABS) collateralized by credit cards, automobile loans and leases, student loans, and equipment leases;
8. U.S. dollar denominated Asset-Backed Commercial Paper (ABCP);
9. Repurchase or Reverse Repurchase Agreements with an approved primary dealer or the custodial bank, and under the terms of a written master repurchase agreement;
10. Investments required to implement the bond credit enhancement authorized by Resolution 219;
11. SEC registered 2a-7 Institutional Money Market Funds [that are considered "U.S. Treasury" or "U.S. Government" money market mutual funds according to the SEC regulations](#); and
12. Short term investment vehicle available through the custodial bank.

Other Restrictions

1. A maximum of 65% of the STIP Units Value shall be held in U.S. Government Agency securities;
2. A maximum of [2530%](#) of the STIP Units Value shall be held in any single issuer of U.S. Agency securities;
3. STIP shall maintain a dollar-weighted average portfolio maturity of 60 days or less (for this purpose, the date to the next coupon reset date will be used for all floating or variable rate securities);
4. All securities, with the exception of securities fully guaranteed by the U.S. Government and approved Institutional Money Market Funds, must be rated by at least two of the three rating agencies (S&P, Moody's or Fitch) at the time of purchase.
5. A maximum of 40% of the STIP Units Value shall be held in corporate securities (CP, corporate bonds, notes, and MTNs);
6. A maximum of 25% of the STIP Units Value shall consist of corporate bonds, notes, or MTNs;
7. CP shall not have a rating lower than A-1 (S&P), P-1 (Moody's) or F1 (Fitch) at the time of purchase;
8. Corporate bonds, notes, or MTNs shall not have a rating lower than A (S&P), A2 (Moody's) or A (Fitch) at the time of purchase;
9. A maximum of 40% of the STIP Units Value shall be held in ABS and ABCP combined;
- [10. ABS shall not have a rating lower than A \(S&P\), A2 \(Moody's\) or A \(Fitch\) at the time of purchase;](#)
- [11. A maximum of 5% of the STIP Units Value shall be held in ABS rated at A- \(S&P\), A3 \(Moody's\), or A- \(Fitch\), or at a lower rating at any time;](#)
- ~~10.~~
- ~~11.12.~~ A maximum of 10% of the STIP Units Value shall be invested in any one type of receivable or collateral type via ABS, with the exception of financial institution obligations;

13. ABCP shall not have a rating lower than A-1 (S&P), P-1 (Moody's) or F1 (Fitch) at the time of purchase;
14. A maximum of 5% of the STIP Units Value shall be held in ABCP rated at A-2 (S&P), P-2 (Moody's), or F2 (Fitch), or at a lower rating at any time;
- ~~12.~~
- ~~13-15.~~ ABCP purchases shall be limited to maturities of 90 days or less;
- ~~14-16.~~ A maximum of 10% of the STIP Units Value shall be held in ABCP with maturities greater than 60 days;
- ~~15.~~ ~~A maximum of 20% of the STIP NAV shall be held in ABCP with maturities greater than 30 days;~~
- ~~16-17.~~ A maximum of 10% of the STIP Units Value in the aggregate shall be held in any one financial sponsor of ABS and ABCP as well as any direct obligations associated with the sponsor. Repurchase agreement obligations of a financial institution shall not be considered in this limit;
- ~~17-18.~~ A maximum of 30% of the STIP Units Value shall be held in BAs and CDs combined;
19. BAs and CDs shall not have a rating lower than A-1 (S&P), P-1 (Moody's) or F1 (Fitch) at the time of purchase or if the BA or CD is not rated, the issuer's parent organization must be rated by at least two rating agencies and have a minimum rating of A (S&P), A2 (Moody's) or A (Fitch) at the time of purchase;
20. A maximum of 5% of the STIP Units Value shall be held in the aggregate for BAs and CDs rated at A-2 (S&P), P-2 (Moody's), or F2 (Fitch) or below at any time or for the issuer's parent rated at A- (S&P), A3 (Moody's), or A- (Fitch), or at a lower rating at any time;
- ~~18.~~
- ~~19-21.~~ A maximum of ~~30~~10% of the STIP Units Value shall be held in Repurchase Agreements;
- ~~20-22.~~ A maximum of 5% of the STIP Units Value shall be held in Repurchase Agreements with any single primary dealer or financial institution;
- ~~21-23.~~ The maximum term of any Repurchase Agreement will be ~~90~~30 days;
- ~~22-24.~~ Acceptable forms of collateral under Repurchase Agreements will consist of U.S. Treasury and/or U.S. Agency Securities which will be required to be maintained at a market value of 102% of the value of the Repurchase Agreement;
- ~~23-25.~~ The maximum term of any Reverse Repurchase Agreement will be 90 days and must be matched to anticipated cash flows adequate to liquidate the transaction;
- ~~24-26.~~ A maximum of ~~15~~10% of the STIP Units Value shall be pledged to secure Reverse Repurchase Agreements. Transactions will be used only to secure borrowings for temporary or emergency purposes;
- ~~25-27.~~ A maximum of 15% of the STIP Units Value shall be held in permitted SEC registered 2a-7 Institutional Money Market Funds;
- ~~26-28.~~ A maximum of 5% of the STIP Units Value shall be held in any single SEC registered 2a-7 Institutional Money Market Funds;
- ~~27-29.~~ Any permitted investments with floating rate coupons shall have the floating rate tied to LIBOR, Fed Funds, Treasury Bills, or Commercial Paper indices;
- ~~28-30.~~ The maximum final maturity of any Permitted Investment shall not exceed 397 days (not including securities used as collateral in Repurchase Agreements or Permitted Investments considered "Variable Rate" securities, which on any reset date can reasonably be expected to have a market value that approximates its amortized cost);

- ~~29.31.~~ A Variable Rate security shall have a maximum maturity of 2 years;
- ~~30.32.~~ A maximum of 25% of the STIP Units Value in the aggregate shall be held in all non-Government Variable Rate securities with maturities greater than ~~one year~~397 days;
- ~~31.33.~~ A maximum of ~~23~~23% of the STIP Units Value shall be invested in any one issuer with the exception of U.S. Treasury and U.S. Agency securities as well as any Repurchase Agreements with a financial institution; and
- ~~32.~~ ~~A maximum of 15% of the STIP NAV shall be invested in companies whose principal business activities are in the same industry except that holdings in financial service companies are not limited;~~
- ~~33.34.~~ A minimum of ~~5~~10% of the STIP Units Value shall ~~mature within one day~~qualify as "daily liquid assets". ~~(for~~For this guideline is it assumed that "daily liquid assets" is defined as cash, direct obligations of the U.S. government, securities that will mature or are subject to a demand feature that is exercisable and payable within one business day, and a permitted SEC registered 2a-7 Institutional Money Market Fund~~has a maturity of one day~~);
- ~~34.35.~~ A minimum of ~~10~~15% of the STIP Units Value shall ~~mature within five business days~~qualify as "weekly liquid assets". ~~(for~~For the purpose of this guideline, it is assumed that "weekly liquid assets" is defined as "daily liquid assets" (as defined above), government agency discount notes with remaining maturities of 60 days or less, securities that will mature or are subject to a demand feature that is exercisable and payable within five business days, and a permitted SEC registered 2a-7 Institutional Money Market Fund~~has a maturity of one day~~); and
- ~~35.36.~~ A maximum of 10% of the STIP Units Value shall be invested in Permitted Investments that are considered "illiquid". For the purpose of this guideline, "illiquid" shall be defined as "a security that cannot be sold or disposed of in the ordinary course of business within seven calendar days at approximately the value ascribed to it by STIP".

If at any time, due to market fluctuations or any other circumstances, any of the guidelines are not maintained, Staff will use its best efforts to conform to these limits in a timely manner, while taking into account current market conditions and the associated costs. At the Board's next regularly scheduled quarterly meeting, the CIO or Staff shall inform the Board of any cases that the Pool allocations were outside of the limits and either inform the Board of the actions that were taken to return the Pool back within guidelines or a plan to do so.

Appendix II: Definitions

DEFINITIONS

1. Asset-Backed Security – Bonds or notes backed by loan paper or accounts receivable originated by banks, credit card companies, or other providers of credit; not mortgages.

2. Banker's Acceptance – A short-term credit investment which is created by a non-financial firm and whose payment is guaranteed by a bank. Often used in importing and exporting, and as a discount money market fund investment.

3. Certificate of Deposit (CD) – A short-or medium-term, interest-bearing deposit obligation offered by banks and savings and loans. These may include “Yankee CDs” which are CDs issued by foreign banks or their U.S. affiliates in the U.S. which are denominated in U.S. dollars.

4. Commercial Paper – An unsecured obligation issued by a corporation or bank to finance its short-term credit needs, such as accounts receivable and inventory. Maturities typically range from 2 to 270 days. Commercial paper is available in a wide range of denominations, can be either discounted or interest-bearing, and usually have a limited or nonexistent secondary market. Commercial paper is usually issued by companies with high credit ratings, meaning that the investment is almost always relatively low risk.

5. Corporate Note – A type of unsecured debt issued by a corporation that may be longer-term than Commercial Paper, but shorter-term than a typical Corporate Bond.

6. Repurchase Agreement – A contract in which the seller of securities, such as Treasury Bills, agrees to buy them back at a specified time and price. May also be called “Repo” or “Buyback.” Typically used a short term form of collateralized borrowing by a bank or securities dealer.

7. Reverse Repurchase Agreement – A purchase of securities with an agreement to resell them at a higher price at a specific future date. The investor essentially borrows money and allows its securities to be held as collateral. Reverse Repurchase Agreements occur most often in government securities or other securities that are highly valued and thus considered a good form of collateral.

SHORT-TERM INVESTMENT POOL (STIP) INVESTMENT POLICY

PURPOSE

The purpose of this document is to establish policies that will govern the investment activities of the Montana Board of Investments (MBOI) with regard to the management of the Short-term Investment Pool (STIP). These policies are adopted by, and can be changed only by a majority of Board members at a publicly-noticed meeting.

These policies are designed to ensure the prudent management of public funds, conformance to Montana Constitution and law, the availability of operating and capital funds when needed, and an investment return competitive with comparable funds and financial market indices.

All participants in the investment process shall act responsibly as custodians of the public trust and shall recognize that the STIP portfolio is subject to public review and evaluation. The pool shall be designed and managed in accordance with the standards of a “prudent expert”.

SCOPE

This Investment Policy applies to the investment of short-term operating funds of the State of Montana, participating local government entity funds, and the liquidity requirements of the various pension and trust funds managed by the MBOI.

1. **Pooling of Funds.** Each participant choosing to invest in the STIP must provide a legal opinion that it is authorized by law to participate. The STIP will consolidate cash balances from all participating funds to maximize investment earnings. Investment income is accrued daily and allocated monthly to participants based on their pro rata participation in accordance with generally accepted accounting principles net of fees and any reserve accrual.
2. **Transactions and Reporting.** STIP participant transactions are executed at amortized cost. Amortized cost represents the original cost, adjusted for premium and discount amortization. The net asset value (NAV) is reported at fair value monthly and presented on MBOI financial statements.

DELEGATION OF AUTHORITY

1. **Board.** The Board, as a quasi-judicial body under state law is legally responsible for the prudent investment of the STIP. The Board is responsible for approving and amending this policy and delegates the responsibility for administering the STIP as outlined below:
2. **Staff.** Responsibility for the daily operation of the STIP is delegated to Board Staff, who shall act in accordance with this policy. Staff’s duties include, but are not limited to, the following:
 - a. **The Executive Director** (ED) is responsible for the oversight of the STIP investment program and the establishment of investment and financial reporting procedures consistent with this policy. The ED is also responsible for the following:
 - i. collection and reporting of all income;
 - ii. reconciling all transactions with the records of brokers and custodians; and,
 - iii. monitoring compliance with statute and this policy.
 - b. **The Chief Investment Officer** (CIO) shall establish a system to review and regulate the activities of subordinate investment officers and shall exercise authority over the entire investment staff and investment process.
 - c. **The Portfolio Manager** (PM) assigned to the STIP portfolio is responsible for, but not limited to, the following:
 - i. developing and recommending amendments to the STIP policy to the CIO;
 - ii. implementing and adhering to the STIP policy;
 - iii. structuring the portfolio to meet investment objectives;
 - iv. all trades undertaken in the portfolio; and,
 - v. reporting to the Board at least quarterly on the results and investment strategy for the pool.

**SHORT-TERM INVESTMENT POOL (STIP)
INVESTMENT POLICY**

- d. **The Board Internal Auditor (BIA)**, if the Board chooses to employ one, will periodically review the STIP internal controls. The audit will be designed to measure Board Staff compliance with this policy.
3. **General Investment Consultant.** The General Investment Consultant shall provide assistance to the Board's Staff as requested in conjunction with the management of the STIP.

OBJECTIVES

1. **Investment Objective.** The STIP shall be managed to accomplish the following hierarchy of objectives:
- a. **Preservation of Principal.** The STIP portfolio investments shall be undertaken in a manner that seeks to ensure the preservation of capital in the overall portfolio. The objective will be to mitigate the inherent risks associated with short-term investments, primarily credit risk and interest rate risk
 - i. **Credit Risk.** The STIP portfolio will minimize credit risk, the risk of loss due to the failure of the security issuer or backer by means of the following:
 - 1. limiting investments to Permissible Securities on the Approved List;
 - 2. pre-qualifying the financial institutions, broker/dealers, intermediaries and advisers with whom the STIP will conduct business; and
 - 3. diversifying the investment portfolio so that potential losses on individual securities will be minimized.
 - ii. **Interest Rate Risk.** The STIP portfolio will minimize the risk that the market value of the securities will deviate significantly from cost due to changes in the general level of interest rate by means of the following:
 - 1. structuring the investment portfolio so that securities mature to meet cash requirements for ongoing operations thereby normally avoiding the need to sell securities on the open market prior to maturity;
 - 2. investing funds primarily in short-term maturities of money market securities; and
 - 3. maintaining a dollar-weighted average portfolio maturity of 60 days or less (for this purpose, the date to the next coupon reset date will be used for all floating or variable rate securities).
 - b. **Maintenance of Liquidity.** The STIP portfolio will maintain sufficient liquidity to meet all state agency and local government operating requirements and STIP participant investment cash flow needs that can be reasonably anticipated; and
 - c. **Return.** The STIP investment portfolio shall be managed with the objective of attaining a market rate of return throughout market and economic cycles, taking into account the investment risk constraints and liquidity needs of the participants.
 - d. **Reserve.** The STIP portfolio will maintain a reserve account.. The reserve will be available to offset realized gains or losses. The reserve will be available to offset unrealized gains or losses, to the extent deemed prudent by Staff, to limit fluctuations in the NAV. Any use of the reserve will be reported to the Board. The NAV will be calculated without regard to the reserve.

SHORT-TERM INVESTMENT POOL (STIP) INVESTMENT POLICY

AUTHORIZED & SUITABLE INVESTMENTS

1. **Permissible Securities.** The following securities and investment vehicles are approved for purchase for the STIP:
 - a. U.S. Treasury and U.S. Governmental Agencies, or corporations wholly owned by the U.S. Government;
 - b. Publicly traded domestic corporate bonds, notes and medium term notes (MTNs);
 - c. Asset-backed securities (ABS) collateralized by: credit cards, automobile loans, leases and other receivables acceptable to staff in their analysis of this type of structure;
 - d. Publicly and privately traded U.S. dollar denominated money market securities, including, but not limited to:
 - i. Bankers' Acceptances (BA),
 - ii. Commercial Paper (CP), and
 - iii. Certificates of Deposits (CD), including Eurodollar and Yankee obligations which include CDs issued in U.S. dollars by foreign banks and foreign branches of U.S. banks.
 - ~~e. Floating rate securities tied to LIBOR, Fed Funds, Treasury Bills or commercial paper indices;~~
 - ~~f.e.~~ Repurchase Agreements and Reverse Repurchase Agreements;
 - ~~g. U.S. Dollar bonds and money market securities issued in the United States by foreign borrowers (Yankees);~~
 - ~~h. U.S. Dollar bonds and money market securities issued outside the United States by domestic or foreign borrowers;~~
 - ~~i.f.~~ Institutional money market funds;
 - ~~j-g.~~ Investments required to implement the bond credit enhancement authorized by **Resolution 219**; and
 - ~~k-h.~~ Short term investment fund of the custodial bank.

2. **Approved List.** Purchases of securities other than U.S. government or U.S. Agency obligations are restricted to those which are pre-approved. The approved list shall be maintained by Staff with issuers added or removed from time to time depending on an analysis of their risk characteristics and suitability for use in the portfolio. At least two investment staff must approve names on the list. Issuers on the list shall be reviewed at least semi-annually for continued inclusion on the approved list.

DIVERSIFICATION AND LIMITATIONS

These limitations shall apply at the time of purchase of a permissible security. Should the portfolio fall out of compliance due to downgrades or shrinkage of the total portfolio size, a reasonable cure period will be allowed so that compliance can be obtained through normal maturities or sales at fair market value. Sales will be considered as a means of curing any out-of-compliance condition only if deemed prudent by Staff in light of prevailing market conditions.

1. **U.S. Government Securities**
 - ~~a. 100% of portfolio may be invested in U.S. Treasury Securities;~~
 - ~~b-a.~~ 65% maximum of portfolio may be invested in U.S. Government Agency Securities; and
 - ~~e-b.~~ 2530% maximum of portfolio per single U.S. Agency issuer.

2. **Corporate commercial paper, bonds, notes and medium-term notes (MTNs)**
 - a. 40% maximum of portfolio may be invested in these types of corporate securities;
 - ~~i. Up to 100% of this corporate debt limit may consist of commercial paper; and~~
 - ~~ii-i.~~ Up to 25% of the total portfolio may consist of bonds, notes or MTNs.

SHORT-TERM INVESTMENT POOL (STIP) INVESTMENT POLICY

- b. CP, corporate notes, and MTNs must have a minimum of two separate credit ratings (either short or long term) by Standard & Poor's, Moody's or Fitch;
 - i. CP must be rated a minimum of A1 (S&P), P1 (Moody's) or F1 (Fitch) at the time of purchase; and
 - ii. Corporate notes and medium-term notes must be rated by at least two rating agencies and carry a minimum mid-single A quality rating at the time of purchase (i.e., A(S&P), A2(Moody) or A(Fitch)).
- 3. Asset-backed Securities (ABS)**
- a. 40% maximum of portfolio in Asset-backed Securities;
 - b. Asset Backed Commercial Paper (ABCP) must carry at least two separate credit ratings one of which must be a minimum of A1 (S&P), P1 (Moody's) or F1 (Fitch) at the time of purchase, ~~as long as no more than 10% of the portfolio is invested in ABCP which carries one lower rating of A2, P2 or F2 (i.e., split rated);~~
 - c. ABCP purchases shall be limited to maturities of 90 days, ~~except that no more than 20% of the portfolio may be invested in maturities greater than 30 days and~~ no more than 10% of the portfolio may be invested in maturities greater than 60 days; and
 - d. No more than 10% of the portfolio may be invested in any one financial sponsor of ABS of any type. In measuring exposure to a financial sponsor for this purpose, both holdings in the ABS sponsored by the firm as well as its direct obligations shall be considered. Repurchase agreement obligations of a financial institution shall not be considered in this limit.
- 4. Bankers Acceptances and Certificates of Deposit**
- a. 30% maximum of portfolio may be invested in the combination of BA's and CD's;
 - b. BA's and CD's must carry at least two separate credit ratings and be rated a minimum of A1, P1 or F1 at the time of purchase; and
 - c. If not rated, the issuer's parent must carry a minimum long-term unsecured senior debt rating of A(S&P), A2(Moody) or A(Fitch) from at least two rating agencies at the time of purchase.
- 5. Repurchase and Reverse Repurchase Agreements**
- a. Transactions will be conducted only with approved primary dealers or the master custodial bank, and under the terms of a written master repurchase agreement;
 - b. ~~30~~10% maximum of the portfolio may be invested in repurchase agreements;
 - c. 5% maximum of the portfolio with any single primary dealer or financial institution;
 - d. The maximum term of any repurchase agreement will be ~~90~~30 days;
 - e. Acceptable forms of collateral under repurchase agreements will consist of U.S. Treasury ~~and/or U.S. Agency~~ securities which will be required to be maintained at a market value of 102% of the value of the repurchase agreement;
 - f. The maximum term of any reverse repurchase agreement will be 90 days and must be matched to anticipated cash flows adequate to liquidate the transaction; and
 - g. A maximum of fifteen percent (~~15~~10%) of the portfolio may be pledged to secure reverse repurchase agreements. Transactions will be used only to secure borrowings for temporary or emergency purposes.
- 6. Institutional Money Market Funds (MMF's)**
- a. Registered 2a-7 investment companies only;
 - b. 15% maximum of portfolio may be invested in institutional MMF's; and
 - c. 5% maximum of portfolio invested in any one MMF.

SHORT-TERM INVESTMENT POOL (STIP) INVESTMENT POLICY

7. Issuer, Industry and Collateral Concentration Limitation

- a. No more than 23% of the portfolio will be invested in any one non-government issuer, ~~except that up to 3% may be invested per issuer as long as no more than 2% is invested in securities maturing in more than seven days.~~ Repurchase agreement obligations of a financial institution shall not be considered in this limit;
- b. ~~No more than 15% of the portfolio will be invested in companies whose principal business activities are in the same industry except that holdings in financial service companies are not limited; and~~
- c. No more than 10% of the portfolio will be invested in any one type of receivable or collateral type via asset backed securities with the exception of financial institution obligations. These underlying types of collateral include such assets as trade receivables, student loans, residential mortgages, commercial mortgages, auto loans and leases, plant and equipment loans and leases, repurchase agreements, collateralized debt obligations of all types, credit card receivables, and other forms of collateral acceptable as part of the approval process for a specific issuer.

8. Maximum Maturities. To the extent possible, investment maturities in the STIP portfolio shall attempt to match the anticipated cash flow requirements. In addition, the maximum final maturity of any security shall not exceed 397 days, with the following exceptions:

- a. Securities used as collateral in repurchase agreements;
- b. A variable rate security which on any reset date can reasonably be expected to have a market value that approximates its amortized cost, and has a maximum maturity of 2 years. Further, all variable rate non-government securities (corporate bonds, notes or MTNs and bank CDs) maturing past one year shall not exceed 25% of the total portfolio; and
- c. Securities received as settlement in exchange for an originally purchased security.

9. Liquidity

- a. Minimum one-day maturities equal to 510% or greater and minimum maturities within one week equal to 4015% or greater of the total fund value including MMF holdings and balances in the U.S. Bank sweep account which is held by the Treasurer's Fund;
- b. The fund may not acquire any security if, or as a result, more than 10% of the fund's net assets would be invested in securities that are illiquid; and
- c. Illiquid securities shall include repurchase agreements maturing in more than seven days, and restricted, privately placed securities that are not registered under the Securities Act of 1933, with the exception that certain restricted securities eligible for resale to qualified institutional investors, including Rule 144a securities, are not subject to this limitation on illiquid securities.

BENCHMARK

The STIP portfolio performance results will be compared to the return of a one month LIBOR index as a market benchmark, and the iMoneyNet First Tier Institutional only (gross) return as a peer group measure.

ADMINISTRATIVE

Securities Lending

Section 17-1-113, MCA, authorizes the Board to lend securities held by the state. The Board may lend its publicly traded securities held in the investment pools, through an agent, to other market participants in return for compensation. Currently, through an explicit contract, State Street Bank and Trust, the state's custodial bank, manages the state's securities lending program. The Board seeks to assess the risks, such as counterparty and reinvestment risk, associated with each aspect of its securities lending program. The Board

SHORT-TERM INVESTMENT POOL (STIP) INVESTMENT POLICY

requires borrowers to maintain collateral at 102 percent for domestic securities and 105 percent for international securities. To ensure that the collateral ratio is maintained, securities on loan are marked to market daily and the borrower must provide additional collateral if the value of the securities on loan increases. In addition to the strict collateral requirements imposed by the Board, the credit quality of approved borrowers is monitored continuously by the contractor. From time to time, Staff or the investment manager may restrict a security from the loan program upon notification to State Street Bank. Staff will monitor the securities lending program, and the CIO will periodically report to the Board on the status of the program.

DEFINITIONS

1. **Asset-Backed Security** – Bonds or notes backed by loan paper or accounts receivable originated by banks, credit card companies, or other providers of credit; not mortgages.
2. **Banker's Acceptance** – A short-term credit investment which is created by a non-financial firm and whose payment is guaranteed by a bank. Often used in importing and exporting, and as a discount money market fund investment.
3. **Certificate of Deposit (CD)** – A short-or medium-term, interest-bearing deposit obligation offered by banks and savings and loans. These may include “Yankee CDs” which are CDs issued by foreign banks or their U.S. affiliates in the U.S. which are denominated in U.S. dollars.
4. **Commercial Paper** – An unsecured obligation issued by a corporation or bank to finance its short-term credit needs, such as accounts receivable and inventory. Maturities typically range from 2 to 270 days. Commercial paper is available in a wide range of denominations, can be either discounted or interest-bearing, and usually have a limited or nonexistent secondary market. Commercial paper is usually issued by companies with high credit ratings, meaning that the investment is almost always relatively low risk.
5. **Corporate Note** – A type of unsecured debt issued by a corporation that may be longer-term than Commercial Paper, but shorter-term than a typical Corporate Bond.
6. **Repurchase Agreement** – A contract in which the seller of securities, such as Treasury Bills, agrees to buy them back at a specified time and price. May also be called “Repo” or “Buyback.” Typically used a short term form of collateralized borrowing by a bank or securities dealer.
7. **Reverse Repurchase Agreement** – A purchase of securities with an agreement to resell them at a higher price at a specific future date. The investor essentially borrows money and allows its securities to be held as collateral. Reverse Repurchase Agreements occur most often in government securities or other securities that are highly valued and thus considered a good form of collateral.

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Operating Funds

Short Term Investment Pool (STIP)

John Romasko, CFA
May 25, 2016

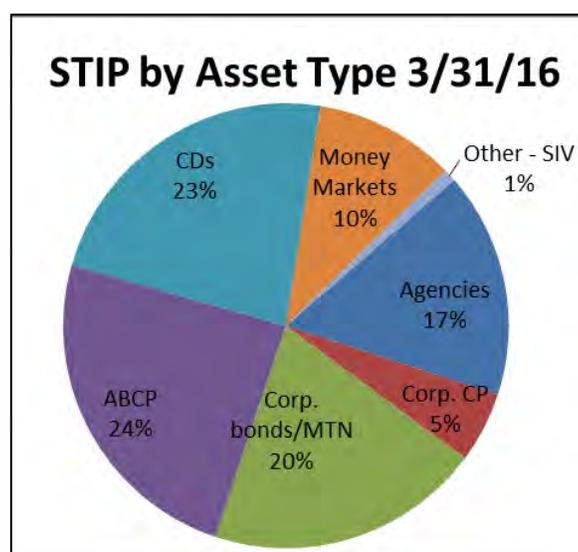
Environment

Money market yields remained unchanged on the quarter with one month LIBOR rates varying less than 2 basis points throughout the quarter. Credit spreads declined early in the quarter but increased late to end unchanged from the previous quarter.

Characteristics

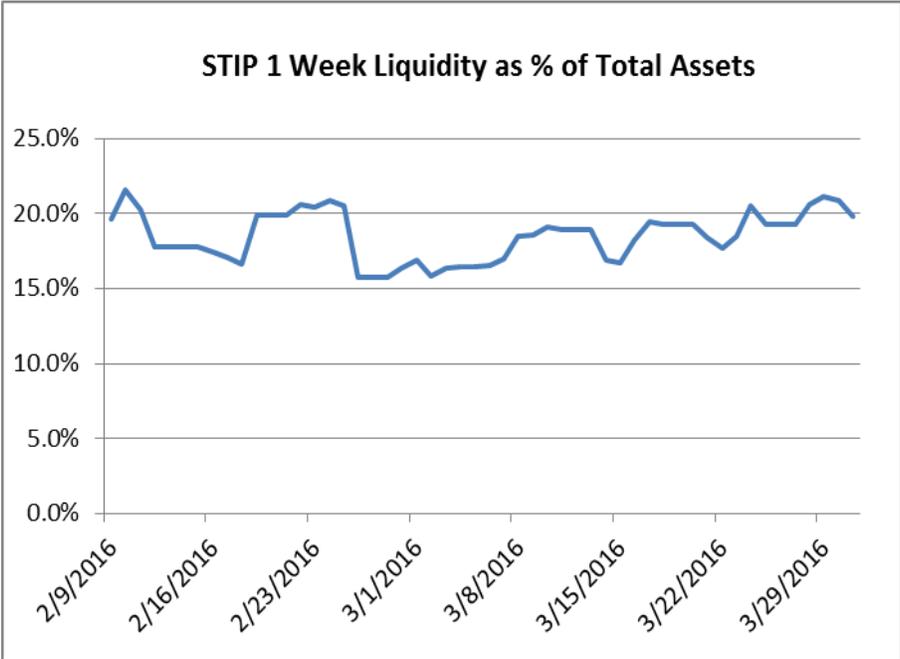
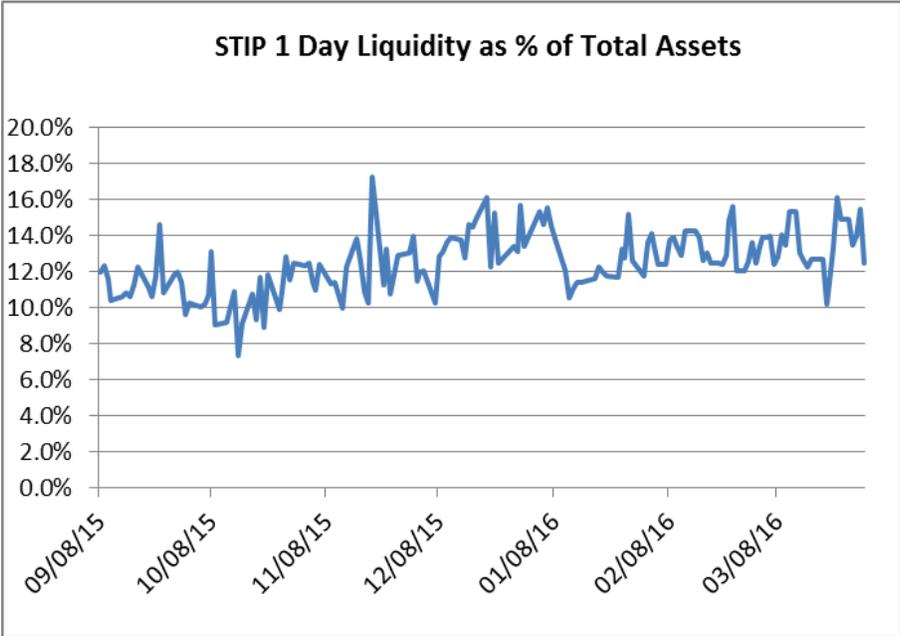
The STIP portfolio is currently well diversified.

Short Term Investment Pool (STIP) Guidelines 3/31/16		
	STIP	Policy Range
Weighted Average Maturity	42 Days	Maximum 60 Days
U.S. Treasury Securities	0%	100% Maximum
U.S. Government Agency Securities	16%	65% Maximum
Largest Agency Issuer	8%	25% Maximum
Corporate CP, bonds, notes	25%	40% Maximum
Corporate CP	5%	40% Maximum
Corporate bonds, notes	20%	25% Maximum
Certificates of Deposit	23%	30% Maximum
Asset Backed C P(ABCP)	24%	40% Maximum
Money Market Funds	10%	15% Maximum
Other - SIV	1%	
Largest Non-Gov't Issuer > 7 Days	2%	2% Maximum
Largest Non-Gov't Issuer Total	3%	3% Maximum
Largest Non-financial Industry	3%	15% Maximum
Collateral Concentration	not measured	10% Maximum
Maximum Maturity Fixed	305 Days	Maximum 397 Days
Maximum Maturity Floating	707 Days	Maximum 2yrs
Non-Gov't Maturities > 1 year	21%	Maximum 25%
Minimum one-day liquidity	see below	Minimum 5%
Minimum one-week liquidity	see below	Minimum 10%



A significant change in asset type makeup during the quarter was an increase the level of agencies in the pool from 10% to 17%. Liquidity has been maintained well above the minimums. The increased use of agencies and liquidity are in recognition of expected seasonal declines in the pool balance, to offset expected large single day expenditures, and in recognition of a significant increase in cash from the pension pools which could reverse in the short-term depending on markets.

Daily liquidity remains above the minimum of 5% daily and 10% weekly.



State entities made up 70% of STIP. Local Governments made up 30%.

STIP BALANCES 3/31/2016			
<u>Account Name</u>	<u>% Total</u>	<u>Total Shares</u>	<u>STIP as a % of Client Holdings</u>
TREASURE ST. OF MT	20.7%	548,035,883	76.2%
MT STATE UNIVERSITY	6.2%	164,805,188	89.2%
PUBLIC EMPLOYEES RET	5.3%	139,549,142	2.8%
MISSOULA CNTY TREAS	4.6%	121,789,862	100.0%
YELLOWSTONE CO TREAS	3.9%	103,296,695	100.0%
TEACHERS RETIREMENT	3.7%	98,856,723	2.8%
FIRE SUPPRESSION FU	2.4%	64,032,514	100.0%
GALLATIN CO. TREAS	2.3%	60,245,364	100.0%
LEWIS & CLARK CO TRE	2.2%	57,096,755	100.0%
BUTTE SILVER BOW TRE	2.1%	56,263,980	100.0%
LONG RANGE BUILDING	1.8%	48,583,210	100.0%
TRUST FUND INVS POOL	1.8%	46,914,188	2.1%
MSU BLGS STIP CLEAR	1.4%	37,707,713	100.0%
UNIVERSITY OF MONT	1.4%	37,422,615	34.5%
CITY OF HELENA/FINAN	1.3%	35,381,438	100.0%
CITY OF BILLINGS	1.2%	31,616,709	100.0%
FLATHEAD CO. TREAS	1.1%	30,000,000	100.0%
ROOSEVELT CNTY TRES	1.1%	29,000,000	100.0%
AGENCY INSURANCE	1.0%	27,425,031	100.0%
UCFRB RESTORATION FD	1.0%	26,634,588	19.2%
	<u>66.5%</u>	<u>1,764,657,598</u>	
OTHER STATE ENTITIES	23.5%	623,123,956	
OTHER LOCAL GOVERNMENTS	10.0%	266,095,154	
	<u>33.5%</u>	<u>889,219,110</u>	
	<u>100.0%</u>	<u>2,653,876,708</u>	
STATE ENTITIES	70.2%	1,863,090,750	
LOCAL GOVERNMENTS	29.8%	790,785,958	
	<u>100.0%</u>	<u>2,653,876,708</u>	

Local Governments

Performance

STIP is expected to trail movements in LIBOR, which jumped in December when the Federal Reserve increased rates. The STIP yield increased .15% from the previous quarter end. The increase in yield was due to the resets of floating rate securities tied to higher LIBOR rates. The net daily yield on STIP finished the quarter at 0.52% as compared to the quarter end one-month LIBOR rate of 0.43%. The current fed funds target rate is 0.25%-0.50%.

STIP Performance (3/31/16)

	1 Year	3 Year	5 Year	10 Year
STIP Net of Fees/Reserve	0.32%	0.19%	0.23%	1.42%
Libor 1 Month Index	0.28%	0.21%	0.21%	1.35%
iMoneynet First Tier Instit. (Gross)	0.32%	0.24%	0.25%	1.47%

The STIP net yield subtracts the reserve and administrative expenses from the gross yield. The amounts subtracted are a set dollar amount. The percentage reduction in yield is a function of the dollar reduction divided by the size of the portfolio. The quarter end impact is shown below.

STIP Portfolio Size, Yield and Reserve Impact		
	1Q16	4Q15
Avg STIP Portfolio	\$2.70B	2.32B
STIP Quarter End	\$2.71B	\$2.49B
Total Reserve	\$ 31,418,683	\$ 30,591,091
Daily Reserve (\$)	\$ 8,000	\$ 8,000
Daily Administrative Expense	\$ 2,410	\$ 2,410
Gross Yield Quarter End	0.66%	0.51%
Reserve Yield Impact	-0.11%	-0.12%
Administrative Yield Impact	<u>-0.03%</u>	<u>-0.04%</u>
Net Yield Quarter End	0.52%	0.35%

The reserve is available to offset losses, including any potential losses from the residual assets of the former SIV's as shown below.

Residual Assets from the Former SIV's			
	1Q16	4Q15	Change
Book Value	\$ 24,163,567	\$ 25,317,217	\$ (1,153,650)

The decline in the book value of the former SIV's was due to payments received on the underlying assets.

Treasurer's Fund

John Romasko, CFA

May 25, 2016

The primary investment objective of the Treasurer's Fund is to provide safety of principal and a high degree of liquidity, and to a lesser degree the maximization of book income return.

Investments shall be made solely in fixed income instruments subject to the limitations and constraints outlined below.

Treasurer's Fund Securities 3/31/2016		
	3/31/2016	Policy Limit
STIP	76%	No limit
Deposits - U.S. Bank	4%	No limit
U.S. Treasuries	9%	100% of Allowed
U.S. Government Agencies	11%	100% of Allowed
Tri-party Repurchase Obligations	0%	100% of Allowed
Credit Enhancement - Res. 219	0%	100% of Allowed
MCHA Loan	0%	100% of Allowed
Longest Maturity	2.2 years	3yr Maximum

The fund totaled \$719 million as of March 31, 2016, consisting of approximately one half general fund monies and the balance in various other state operating accounts. There were no security purchases in the first 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 March projected General Fund FYE balance was \$427 million.

Treasurer's Fund Limits 03/31/2016		
	3/31/2016	Policy Range
Total Fund	\$ 718,906,560	
Project General Fund FYE Balance (PGFB)	\$ 427,000,000	
Allowable Securities	\$ 213,500,000	50% of PGFB
Securities Held	\$ 140,333,080	
Quarter end Securities % Allowable	66%	

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Pension Funds

**Pension Plans
Investment Activities and Performance**

1) Asset Allocation Summary - 1st Quarter Calendar 2016:

- The Asset Allocation market value percentages for each asset pool are consistent across retirement plans. All allocations were within defined policy ranges.
- During the quarter there was approximately a 2.2% decrease in Domestic Equity and small reductions in International Equity, Private Equity and Real Estate and additions in Fixed Income and STIP of 0.9% and 1.7% respectively.
- As of March 31, 2016, the total cash position held at the pension plan and pool levels was slightly above 4%.
- During the quarter, total pension assets, net of distributions, increased by approximately \$25.6 million.
- During the quarter, the plans made net distributions totaling approximately \$79 million which were paid through a combination of dividends, interest, and asset sales. Over this period we made sales of approximately \$200 million in the Domestic Equity Pool and reduced MPEP by \$20 million and MTRP by \$25 million. Approximately \$200 million of these funds were used in increasing the size of STIP and RFBP, while the remaining \$42.5 million was used to make up the net distribution that was not fully covered by the \$36.8 million in dividends and interest.

2) Performance Summary - as of March 31, 2016

- The Public Employees' Retirement Plan had a positive return of 1.24% for the first quarter. All six underlying investment pools had positive returns for the quarter with the strongest returns from Fixed Income (+3.27%) and Real Estate (+2.85%).
- Contributions (combination of pool return and the average weight of the pool) to the quarterly pension return.

Contributors to Absolute Return		Contributors to Relative Return	
	+1.24%		-1.12%
RFBP	+0.69%	RFBP	+0.05%
MTRP	+0.25%	MTIP	+0.04%
MDEP	+0.21%	STIP	+0.00%
MPEP	+0.08%	MTRP	-0.02%
MTIP	+0.00%	MDEP	-0.36%
STIP	+0.00%	MPEP	-0.83%

3/31/2016
Q4 2015 - Q1 2016

Plan Asset Allocation

	MDEP	MTIP	MPEP	MTRP	RFBP	STIP	Total
Public Employees Retirement	37.5%	15.8%	11.2%	9.5%	23.3%	2.8%	4,975,302,741
Teachers Retirement	37.5%	15.8%	11.2%	9.5%	23.3%	2.8%	3,594,345,135
Firefighters Retirement	37.5%	15.8%	11.2%	9.5%	23.3%	2.8%	334,392,761
Police Retirement	37.4%	15.8%	11.2%	9.5%	23.2%	2.9%	326,797,496
Sheriffs Retirement	37.5%	15.8%	11.2%	9.5%	23.2%	2.9%	294,575,720
Game Wardens Retirement	37.4%	15.8%	11.2%	9.5%	23.2%	2.9%	150,966,217
Highway Patrol Retirement	37.6%	15.8%	11.2%	9.5%	23.3%	2.6%	127,021,290
Judges Retirement	37.4%	15.8%	11.2%	9.5%	23.2%	2.9%	86,376,749
Vol. Firefighters Retirement	37.5%	15.8%	11.2%	9.5%	23.3%	2.7%	31,885,633
03/31/2016	37.5%	15.8%	11.2%	9.5%	23.3%	2.8%	9,921,663,742
Approved Ranges	28 - 44%	14 - 22%	9 - 15%	6-10%	22 - 30%	1 - 5%	

Allocation Changes from Last Period

	MDEP	MTIP	MPEP	MTRP	RFBP	STIP	Total
Public Employees Retirement	(2.2%)	(0.0%)	(0.1%)	(0.1%)	0.9%	1.6%	20,760,285
Teachers Retirement	(2.2%)	(0.0%)	(0.2%)	(0.1%)	0.8%	1.7%	(2,351,650)
Firefighters Retirement	(2.2%)	(0.0%)	(0.2%)	(0.1%)	0.9%	1.6%	984,543
Police Retirement	(2.3%)	(0.1%)	(0.2%)	(0.1%)	0.8%	1.9%	95,051
Sheriffs Retirement	(2.1%)	0.0%	(0.1%)	(0.1%)	0.9%	1.4%	2,459,816
Game Wardens Retirement	(2.1%)	(0.0%)	(0.1%)	(0.1%)	0.9%	1.5%	2,527,872
Highway Patrol Retirement	(2.3%)	(0.1%)	(0.2%)	(0.1%)	0.8%	1.8%	779,658
Judges Retirement	(2.2%)	(0.0%)	(0.2%)	(0.1%)	0.8%	1.7%	802,962
Vol. Firefighters Retirement	(2.3%)	(0.1%)	(0.2%)	(0.1%)	0.8%	1.9%	(445,618)
Increase (Decrease) From Q4	(2.2%)	(0.0%)	(0.2%)	(0.1%)	0.9%	1.7%	25,612,919

Pension and Pool Cash Exposure

	MDEP	MTIP	MPEP	MTRP	RFBP	STIP	Total
As Percent of Pool	2.5%	1.9%	1.4%	0.9%	0.0%	100%	
As Percent of Pension	0.9%	0.3%	0.2%	0.1%	0.0%	2.8%	4.3%
In Dollars	93,196,015	30,036,877	15,849,787	8,496,534	969,941	276,836,041	425,385,195
3/31/2016	3,719,517,017	1,566,729,761	1,110,212,708	940,228,756	2,308,139,459	276,836,041	9,921,663,742

Net Plan Contributions (Distributions)

	MDEP	MTIP	MPEP	MTRP	RFBP	STIP	Total
Public Employees Retirement	(98,987,074)	1,916,760	(9,441,310)	(17,520,628)	10,842,822	81,218,999	(31,970,431)
Teachers Retirement	(79,063,588)	(1,567,630)	(9,045,915)	(14,591,182)	3,383,317	60,784,998	(40,100,000)
Firefighters Retirement	(6,780,290)	79,594	(702,718)	(1,210,224)	654,495	5,402,978	(2,556,166)
Police Retirement	(7,355,262)	(211,792)	(895,243)	(1,359,632)	220,035	6,247,336	(3,354,557)
Sheriffs Retirement	(5,098,210)	413,621	(343,692)	(847,184)	1,080,588	4,113,868	(681,009)
Game Wardens Retirement	(2,172,198)	385,144	(52,323)	(323,936)	811,877	2,254,092	902,656
Highway Patrol Retirement	(2,506,848)	57,925	(230,644)	(439,045)	299,162	2,238,963	(580,488)
Judges Retirement	(1,563,459)	93,532	(118,719)	(264,174)	279,253	1,454,303	(119,264)
Vol. Firefighters Retirement	(889,277)	(87,921)	(137,270)	(176,449)	(79,827)	597,042	(773,701)
12/31/2015 - 3/31/2016	(204,416,206)	1,079,234	(20,967,835)	(36,732,452)	17,491,722	164,312,578	(79,232,960)

Pool Changes from Last Period

	MDEP	MTIP	MPEP	MTRP	RFBP	STIP	Total
12/31/2015	3,930,460,697	1,566,065,305	1,122,433,737	947,027,863	2,217,780,751	112,282,470	9,896,050,823
Dollar Value Added	(6,527,475)	(414,777)	8,746,806	29,933,345	72,866,987	240,993	104,845,879
Dividend and Interest Distributed	(4,916,206)	(1,420,766)	(967,835)	(11,732,452)	(17,508,278)	(240,993)	(36,786,531)
Pools Bought (Sold)	(199,500,000)	2,500,000	(20,000,000)	(25,000,000)	35,000,000	164,553,571	(42,446,429)
3/31/2016	3,719,517,017	1,566,729,761	1,110,212,708	940,228,756	2,308,139,459	276,836,041	9,921,663,742
\$ Change From 12/31/2015	(210,943,681)	664,456	(12,221,029)	(6,799,108)	90,358,709	164,553,571	25,612,919
% Change From 12/31/2015	(5.4%)	0.0%	(1.1%)	(0.7%)	4.1%	146.6%	0.3%

Pension Performance
3/31/2016

	Cumulative		Annualized					Annual					
	QTD	FYTD	1 Year	3 Years	5 Years	7 Years	10 Years	2015	2014	2013	2012	2011	
Public Employees' Retirement	1.24	0.48	0.99	7.53	7.70	11.34	5.67	1.86	8.07	17.38	13.24	2.13	
Montana Domestic Equity Pool	0.62	(0.59)	(0.34)	11.18	10.94	16.90	6.62	0.86	12.28	34.19	16.44	0.44	
Retirement Funds Bond Pool	3.27	3.38	1.92	2.81	4.51	6.63	5.65	0.48	6.19	(0.95)	7.31	7.69	
Montana International Equity Pool	0.01	(8.25)	(7.15)	1.32	0.79	9.34	1.45	(3.57)	(4.00)	16.39	17.11	(14.63)	
Private Equity Pool	0.80	5.08	7.35	11.77	12.04	11.94	10.02	7.20	15.47	14.52	14.28	16.11	
Real Estate Pool	2.85	9.98	13.94	12.66	11.77	3.75	2.54	14.27	12.13	10.16	9.90	14.19	
Short Term Investment Pool	0.12	0.27	0.32	0.19	0.23	0.27	1.42	0.22	0.10	0.19	0.30	0.28	
MDEP - Average Monthly Weight	37.30	38.72	39.00	38.70	37.86	37.24	38.47	39.64	38.75	37.61	37.05	36.11	
RFBP - Average Monthly Weight	23.34	22.77	22.67	22.33	23.28	24.39	24.86	22.49	22.09	22.38	24.58	25.20	
MTIP - Average Monthly Weight	15.39	15.86	16.08	16.79	16.86	17.02	17.41	16.30	17.32	17.18	16.32	18.03	
MPEP - Average Monthly Weight	11.48	11.15	10.96	11.19	11.77	11.84	10.85	10.71	10.94	12.20	12.82	12.29	
MTRP - Average Monthly Weight	9.67	9.29	9.14	8.92	8.41	7.57	6.12	8.90	8.71	8.87	7.94	6.71	
STIP - Average Monthly Weight	2.82	2.20	2.15	2.07	1.81	1.76	1.87	1.97	2.20	1.77	1.29	1.51	
Approximate	MDEP - Contribution to Return	0.21	(0.15)	(0.11)	4.27	4.12	6.37	2.64	0.33	4.69	12.32	6.06	0.14
	RFBP - Contribution to Return	0.69	0.50	0.35	0.62	1.04	1.64	1.46	0.11	1.35	(0.20)	1.79	1.72
	MTIP - Contribution to Return	0.00	(0.86)	(0.92)	0.22	0.13	1.61	0.26	(0.57)	(0.68)	2.70	2.78	(2.35)
	MPEP - Contribution to Return	0.08	0.37	0.65	1.30	1.41	1.43	1.13	0.75	1.67	1.70	1.82	1.76
	MTRP - Contribution to Return	0.25	0.61	1.02	1.12	0.99	0.29	0.16	1.23	1.04	0.86	0.78	0.85
	STIP - Contribution to Return	0.00	0.00	0.01	0.00	0.00	0.00	0.03	0.00	0.00	0.00	0.00	0.00

Public Employees' Benchmark	2.36	0.95	1.34	8.42	8.29	11.95	5.96	1.40	9.08	17.94	14.88	1.67	
S&P 1500 Composite Index	1.57	1.01	1.18	11.59	11.37	17.17	7.13	1.01	13.08	32.80	16.17	1.75	
Barclays US Agg Bond Index	3.03	3.71	1.96	2.50	3.78	4.52	4.90	0.55	5.97	(2.02)	4.21	7.84	
International Custom Benchmark	(0.23)	(8.99)	(8.08)	0.70	0.55	9.60	2.21	(4.60)	(4.03)	15.62	16.96	(14.07)	
S&P 1500 + 4% (Qtr Lag)	7.59	2.63	5.01	18.90	16.39	18.97	11.41	3.70	22.57	24.43	34.18	4.92	
NCREIF ODCE Index (Net) (Qtr Lag)	3.11	10.47	13.95	12.77	12.60	5.47	5.55	13.86	11.36	11.97	10.47	17.18	
1 Month LIBOR Index	0.11	0.23	0.28	0.20	0.21	0.23	1.35	0.21	0.16	0.19	0.23	0.23	
MDEP - Relative Return	(0.94)	(1.60)	(1.52)	(0.40)	(0.43)	(0.27)	(0.51)	(0.15)	(0.81)	1.40	0.27	(1.31)	
RFBP - Relative Return	0.23	(0.33)	(0.04)	0.31	0.73	2.11	0.76	(0.07)	0.22	1.08	3.10	(0.15)	
MTIP - Relative Return	0.24	0.75	0.93	0.62	0.24	(0.26)	(0.76)	1.03	0.03	0.77	0.15	(0.56)	
MPEP - Relative Return	(6.80)	2.45	2.33	(7.14)	(4.35)	(7.03)	(1.38)	3.50	(7.09)	(9.90)	(19.90)	11.19	
MTRP - Relative Return	(0.26)	(0.49)	(0.01)	(0.11)	(0.83)	(1.73)	(3.01)	0.41	0.77	(1.81)	(0.57)	(2.99)	
STIP - Relative Return	0.02	0.04	0.05	(0.01)	0.02	0.04	0.07	0.01	(0.06)	0.01	0.07	0.05	
Approximate	MDEP - Value Added	(0.36)	(0.63)	(0.61)	(0.15)	(0.15)	(0.09)	(0.19)	(0.07)	(0.29)	0.37	0.09	(0.48)
	RFBP - Value Added	0.05	(0.08)	(0.01)	0.07	0.16	0.51	0.18	(0.02)	0.05	0.25	0.77	(0.06)
	MTIP - Value Added	0.04	0.13	0.16	0.10	0.04	(0.04)	(0.12)	0.18	0.00	0.11	0.03	(0.10)
	MPEP - Value Added	(0.83)	0.18	0.15	(0.88)	(0.56)	(0.84)	(0.03)	0.38	(0.83)	(1.12)	(2.47)	1.35
	MTRP - Value Added	(0.02)	(0.07)	(0.04)	(0.03)	(0.09)	(0.15)	(0.12)	(0.01)	0.06	(0.17)	(0.06)	(0.26)
	STIP - Value Added	0.00	0.00	0.00	(0.00)	0.00	0.00	0.00	(0.00)	(0.00)	0.00	0.00	0.00
Difference from Benchmark	(1.12)	(0.47)	(0.35)	(0.89)	(0.59)	(0.61)	(0.29)	0.46	(1.02)	(0.56)	(1.65)	0.47	

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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, Director of Private Investments
Date: May 24, 2016
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 December 31st.

- o The portfolio was net cash flow positive for the quarter ending 1Q16 with contributions and distributions of \$39.2M and \$43.8M, respectively
- o There have been no significant changes or shifts in diversification to the portfolio since 4Q15

ii. **New Commitments:**

The table below summarizes the investment decisions made by staff since the last board meeting. Two new commitments were made to Dover Street IX, LP and Centerbridge Special Credit Partners III, LP. Investment briefs summarizing these funds and the general partners follow.

Fund Name	Vintage	Subclass	Sector	Amount	Date
Dover Street IX, LP	2016	Secondaries	Diversified	\$20M	2/1/16
Centerbridge Special Credit Partners III, LP	2016	Distressed Debt	Diversified	\$35M	5/5/16

iii. **Portfolio Index Comparison:**

Table comparing the performance of the private equity portfolio to the State Street Global Exchange Private Equity IndexTM.

Market Observations – 1Q16

- During 1Q16, turbulence in the broad financial markets produced a muted investment environment for the private markets and private market metrics showed a mixture of weakness and strength.
 - Prices for all US LBOs continued to rise through 1Q16 with average purchase price multiples as reported by S&P Capital IQ for 1Q16 coming in at 10.5x vs. all of 2015 at 10.3x and all of 2014 at 9.7x.
 - Global IPO issuance declined 73% from the year-ago period, totaling \$9.6B in the 1Q16.
 - Global M&A activity declined 24% from the same period in 2015. Global private equity-backed M&A exit activity increased slightly from the fourth quarter of 2015.
 - Institutional leveraged loan and high-yield issuance declined by 28.2% and 60.6%, respectively compared to the 1Q15.
 - US-based venture capital activity remained flat from 4Q15, totaling \$12.1B during the quarter.
 - Global private equity fundraising increased 20% from the prior quarter to \$74.3B.

Montana Board of Investments

Private Equity Board Report

Q4 2015

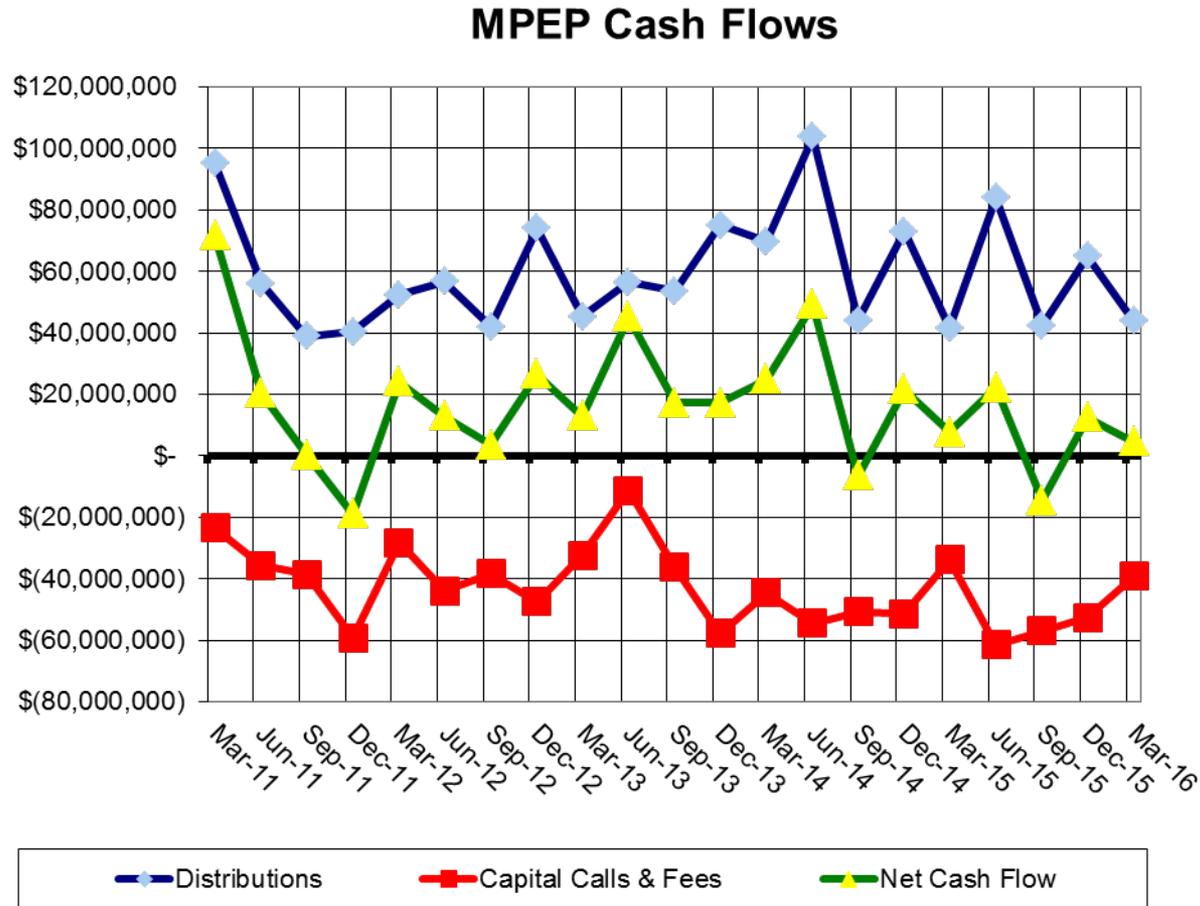
Due to, among other things, the lack of a valuation standard in the private equity industry, differences in the pace of investment across funds and the understatement of returns in the early years of a fund's life, the internal rate of return information may not accurately reflect current or expected 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

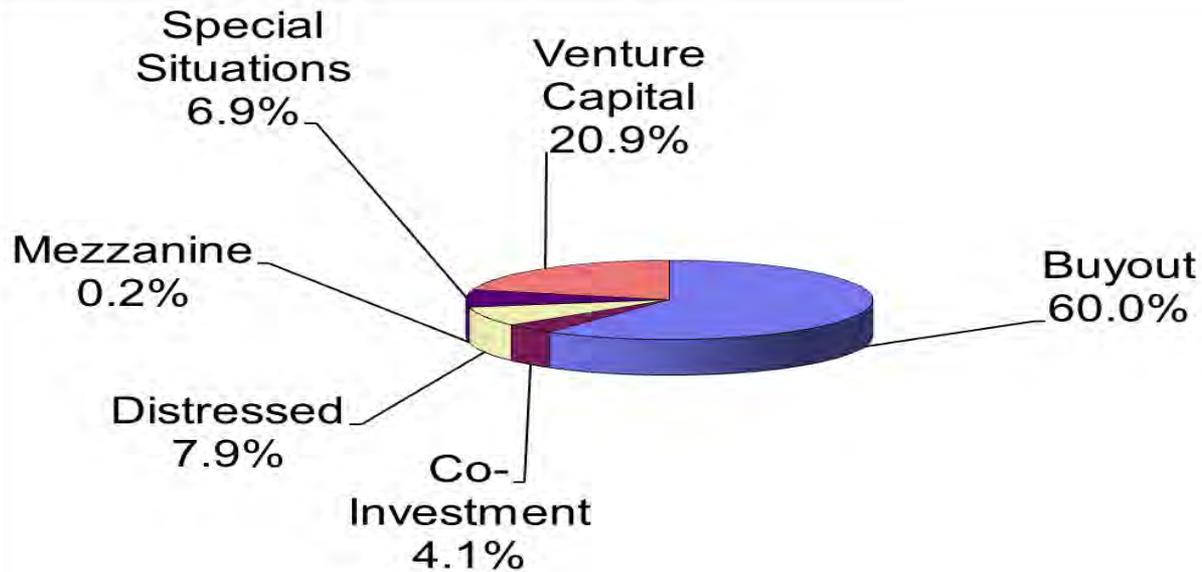
March 31, 2011 through March 31, 2016



Net cash flow for the quarter ending 3/31/16 was positive. Broadly speaking relative to 4Q15, the total number of US leveraged buyout transactions for the period ending 1Q16 was up slightly from 13 to 17, with absolute dollars transacted increasing from \$15B to \$43B. The US IPO market saw no IPOs in January and only 11 IPOs in all of 1Q16, the slowest start to the year since 2009. In total \$1.2B in proceeds were raised in 1Q16 representing declines of 83% and 80% compared to 4Q15 (\$7.2bn) and 1Q15 (\$6.1bn).

Q4 2015 Strategy – Total Exposure

(Since inception through December, 2015)

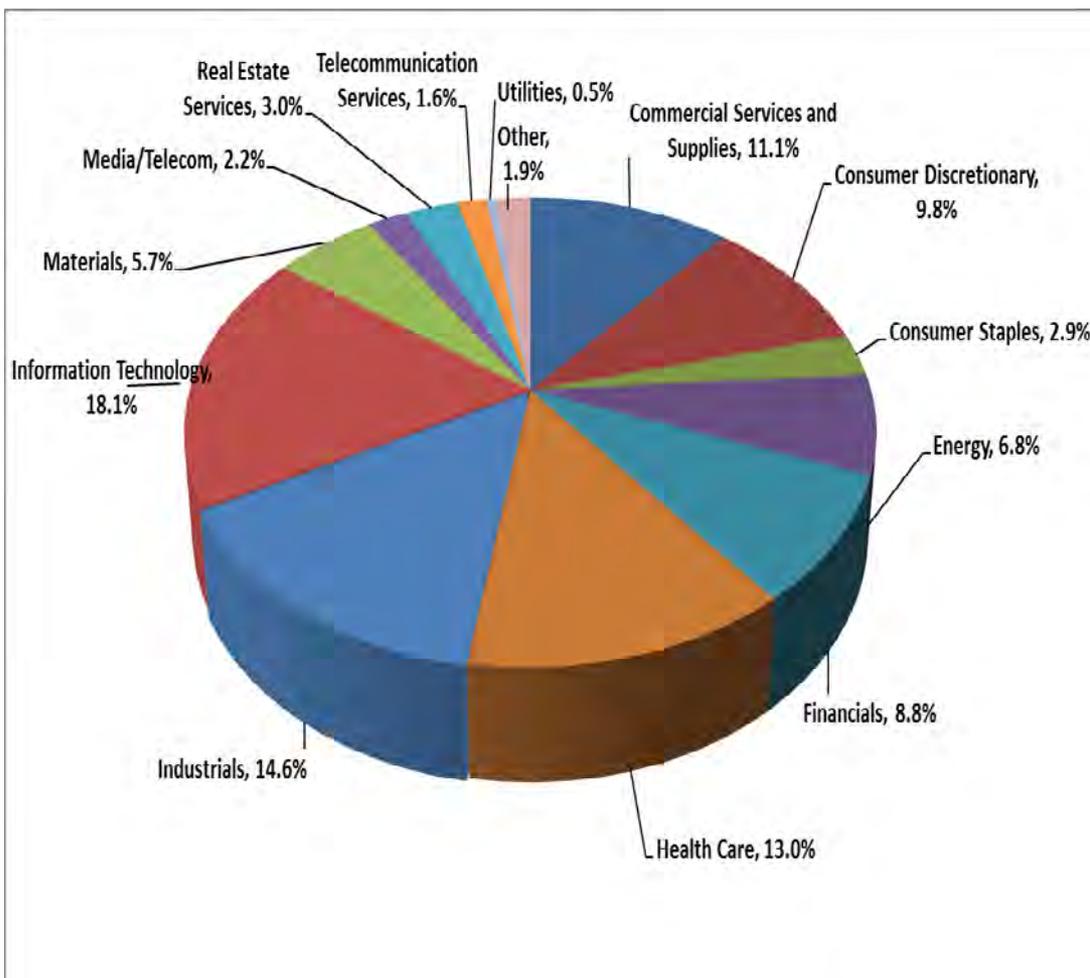


Strategy	Remaining Commitments	Percentage	Market Value	Percentage	Total Exposure	Percentage
Buyout	\$414,546,888	70.5%	\$600,264,122	54.4%	\$1,014,811,009	60.0%
Co-Investment	\$28,495,757	4.8%	\$41,327,477	3.7%	\$69,823,234	4.1%
Distressed	\$32,207,767	5.5%	\$101,490,641	9.2%	\$133,698,408	7.9%
Mezzanine	\$39,071	0.0%	\$2,952,129	0.3%	\$2,991,200	0.2%
Special Situations	\$59,274,531	10.1%	\$58,269,744	5.3%	\$117,544,275	6.9%
Venture Capital	\$53,663,727	9.1%	\$299,715,958	27.1%	\$353,379,685	20.9%
Total	\$588,227,740	100.0%	\$1,104,020,072	100.0%	\$1,692,247,811	100.0%

The portfolio is well diversified by strategy, with the most significant strategy weight consisting of Buyout at 60% of total exposure. When combined with Co-Investment and Special Situations, the overall exposure to Buyout is approximately 71%. 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.

Q4 2015 Industry – Market Value Exposure

(Since inception through December 31, 2015)

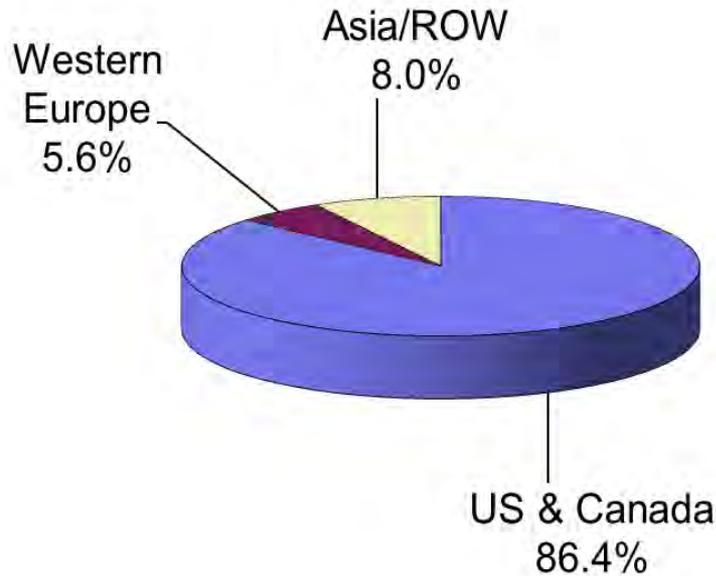


Industry	Investments, At Market Value	Percentage
Information Technology	196,636,638	18.1%
Industrials	159,273,468	14.6%
Health Care	141,036,836	13.0%
Commercial Services and Supplies	120,992,790	11.1%
Consumer Discretionary	107,026,145	9.8%
Financials	95,275,332	8.8%
Energy	74,415,749	6.8%
Materials	61,560,352	5.7%
Real Estate Services	32,168,892	3.0%
Consumer Staples	31,673,677	2.9%
Media/Telecom	23,584,410	2.2%
Other	20,684,561	1.9%
Telecommunication Services	17,352,944	1.6%
Utilities	5,945,484	0.5%
Total	1,087,627,278	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 67% 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.

Q4 2015 Geography – Total Exposure

(Since inception through December 31, 2015)



The portfolio's predominate geographic exposure is to developed North America, representing 86.4% 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.

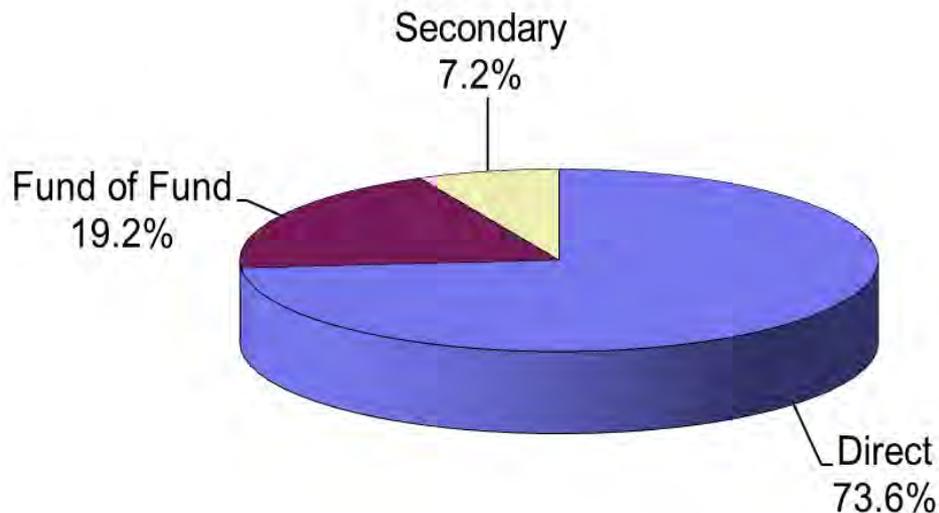
Geography	Remaining Commitments (1)	Percentage	Market Value (2)	Percentage	Total Exposure	Percentage
US & Canada	\$ 548,258,455	93.2%	\$ 900,373,250	82.8%	\$ 1,448,631,704	86.4%
Western Europe	\$ 10,569,965	1.8%	\$ 82,722,915	7.6%	\$ 93,292,880	5.6%
Asia/ROW	\$ 29,399,320	5.0%	\$ 104,531,114	9.6%	\$ 133,930,434	8.0%
Total	\$ 588,227,740	100.0%	\$ 1,087,627,278	100.0%	\$ 1,675,855,018	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.

Q4 2015 Investment Vehicle – Total Exposure

(Since inception through December 31, 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 its targeted international investments. Longer term it is the intention of staff to leverage fund-of-funds relationships to slowly move away from this model in order to access more of these specialized managers directly and to reduce overall costs.

Investment Vehicle	Remaining Commitments	Percentage	Market Value	Percentage	Total Exposure	Percentage
Direct	\$ 494,726,099	84.1%	\$ 751,108,401	68.0%	\$ 1,245,834,500	73.6%
Fund of Fund	\$ 65,514,293	11.1%	\$ 259,166,754	23.5%	\$ 324,681,047	19.2%
Secondary	\$ 27,987,348	4.8%	\$ 93,744,917	8.5%	\$ 121,732,265	7.2%
Total	\$ 588,227,740	100.0%	\$ 1,104,020,072	100.0%	\$ 1,692,247,811	100.0%

Q4 15 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	Investment Multiple	Inception to Date IRR	Contribution to IRR	Annual Rate of Return				
Total	168	1,104,020,071.60	1.49	12.39	12.39	7.07	11.98	12.14	12.78	9.67
Adams Street Funds	34	87,644,987.00	1.63	12.11	2.27	10.36	11.97	10.30	11.29	8.64
Buyout	54	454,172,914.89	1.60	12.67	5.62	12.57	16.65	16.77	15.94	12.88
Co-Investment	4	41,327,477.38	1.50	10.43	0.38	14.27	17.31	13.92	14.97	N/A
Distressed	11	101,277,174.00	1.43	25.59	1.26	(4.46)	3.91	8.60	16.70	9.60
Mezzanine	4	2,700,347.00	1.36	7.43	0.11	(12.71)	7.97	6.81	2.66	5.16
Non-US Private Equity	11	115,267,949.23	1.20	5.78	0.39	3.50	7.21	8.01	10.48	3.18
Secondary	9	87,946,786.15	1.51	13.14	1.13	6.49	11.85	11.92	10.63	10.34
Special Situations	10	60,090,892.00	1.14	4.86	0.30	(9.38)	0.02	2.05	5.79	4.71
Venture Capital	31	153,591,543.96	1.51	15.16	0.93	7.44	13.08	12.70	11.16	9.10

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 12/31/15, the portfolio's since inception net investment multiple and net IRR results were relatively flat: 1.49x and 12.39% compared to 1.50x and 12.48% last quarter. As of quarter end, all strategy categories performed approximately in-line relative to last quarter's performance.

Q4 2015 LPs by Family of Funds

Description	Vintage Year	Since Inception									
		Capital Committed	Capital Contributed for Investment	Management Fees	Remaining Commitment	% Capital Contributed/ Committed	Capital Distributed	Ending Market Value	Investment Net IRR	Multiple	Total Exposure
LP's By Family of Funds (Active)											
Total		2,456,212,084	1,743,338,161	151,574,506	588,227,740	76.37	1,640,130,808	1,104,020,072	10.75	1.45	1,692,247,811
Adams Street Partners		295,356,964	264,588,726	30,165,879	12,732,960	99.80	366,949,647	87,644,987	7.74	1.54	100,377,947
Adams Street Partners Fund - U.S.		94,000,000	81,612,676	7,742,824	4,644,500	95.06	98,565,241	39,353,986	7.99	1.54	43,998,486
Adams Street - 2002 U.S. Fund, L.P.	2002	34,000,000	29,485,960	2,882,040	1,632,000	95.20	41,382,800	11,169,440	8.83	1.62	12,801,440
Adams Street - 2003 U.S. Fund, L.P.	2003	20,000,000	17,402,500	1,597,500	1,000,000	95.00	21,463,102	8,217,030	8.16	1.56	9,217,030
Adams Street - 2004 U.S. Fund, L.P.	2004	15,000,000	13,014,843	1,235,157	750,000	95.00	14,784,566	6,322,508	7.18	1.48	7,072,508
Adams Street - 2005 U.S. Fund, L.P.	2005	25,000,000	21,709,373	2,028,127	1,262,500	94.95	20,934,773	13,645,008	6.96	1.46	14,907,508
Adams Street Partners Fund - Non-U.S.		19,156,819	17,129,233	1,686,958	716,000	98.22	22,817,446	6,145,841	9.14	1.54	6,861,841
Adams Street - 2002 Non-U.S. Fund, L.P.	2002	6,000,000	5,271,647	494,353	234,000	96.10	8,665,351	1,321,549	12.08	1.73	1,555,549
Adams Street - 2004 Non-U.S. Fund, L.P.	2004	5,000,000	4,350,456	415,044	234,500	95.31	4,798,059	1,840,649	6.38	1.39	2,075,149
Adams Street - 2005 Non-U.S. Fund, L.P.	2005	5,000,000	4,350,311	402,189	247,500	95.05	3,770,050	2,559,965	5.15	1.33	2,807,465
Brinson Non-U.S. Trust-2000 Primary Fund	2000	1,815,207	1,815,207	215,843	0	111.89	3,201,008	288,973	11.73	1.72	288,973
Brinson Non-U.S. Trust-2001 Primary Fund	2001	1,341,612	1,341,612	159,529	0	111.89	2,382,978	134,705	11.74	1.68	134,705
Brinson Partnership Trust - Non-U.S.		6,652,664	6,501,986	791,054	231,648	109.63	11,682,149	1,207,786	13.29	1.77	1,439,434
Brinson Non-U.S. Trust-1999 Primary Fund	1999	1,524,853	1,509,661	181,317	96,162	110.89	2,642,351	158,600	10.73	1.66	254,762
Brinson Non-U.S. Trust-2002 Primary Fund	2002	1,696,452	1,696,452	201,721	0	111.89	2,595,364	468,812	8.88	1.61	468,812
Brinson Non-U.S. Trust-2002 Secondary	2002	637,308	637,308	75,781	0	111.89	1,517,617	22,030	25.98	2.16	22,030
Brinson Non-U.S. Trust-2003 Primary Fund	2003	1,896,438	1,802,863	225,502	93,575	106.96	3,744,032	343,178	20.12	2.02	436,753
Brinson Non-U.S. Trust-2004 Primary Fund	2004	897,613	855,702	106,733	41,911	107.22	1,182,785	215,166	7.73	1.45	257,077
Brinson Partnership Trust - U.S.		175,547,481	159,344,831	19,945,043	7,140,812	102.13	233,884,811	40,937,374	7.36	1.53	48,078,186
Adams Street Global Oppty Secondary Fund	2004	25,000,000	20,166,194	1,708,806	3,125,000	87.50	28,036,997	5,279,693	11.02	1.52	8,404,693
Adams Street V, L.P.	2003	40,000,000	34,633,912	5,486,088	0	100.30	44,363,909	17,514,009	6.30	1.54	17,514,009
Brinson Partners - 1998 Primary Fund	1998	7,161,019	7,122,251	840,141	38,768	111.19	10,819,769	181,293	6.44	1.38	220,061
Brinson Partners - 1999 Primary Fund	1999	8,346,761	7,998,817	988,670	347,944	107.68	9,870,913	533,456	2.49	1.16	881,400
Brinson Partners - 2000 Primary Fund	2000	20,064,960	19,096,394	2,336,807	985,390	106.82	27,827,244	1,698,499	5.67	1.38	2,683,889
Brinson Partners - 2001 Primary Fund	2001	15,496,322	15,019,461	1,670,106	666,114	107.70	20,609,078	3,178,620	5.80	1.43	3,844,734
Brinson Partners - 2002 Primary Fund	2002	16,297,079	15,783,921	1,753,363	513,158	107.61	26,152,115	2,751,279	11.15	1.65	3,264,437
Brinson Partners - 2002 Secondary Fund	2002	2,608,820	2,545,315	276,340	110,228	108.16	4,531,266	383,511	12.59	1.74	493,739
Brinson Partners - 2003 Primary Fund	2003	15,589,100	14,784,432	1,652,816	804,668	105.44	21,821,961	3,761,824	9.47	1.56	4,566,492
Brinson Partners - 2003 Secondary Fund	2003	1,151,151	1,094,757	114,403	56,394	105.04	2,563,678	112,897	22.61	2.21	169,291
Brinson Partners - 2004 Primary Fund	2004	8,832,269	8,339,121	877,760	493,148	104.35	11,391,549	3,276,258	8.33	1.59	3,769,406
BVCF IV, L.P.	1999	15,000,000	12,760,256	2,239,744	0	100.00	25,896,332	2,266,035	7.68	1.88	2,266,035

Q4 2015 LPs by Family of Funds – Continued

Description	Vintage Year	Since Inception									
		Capital Contributed for Commitment	Capital 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	17,664,795	3,261,680	14,659,135	59.79	17,755,063	15,310,380	15.32	1.58	29,969,515
Affinity Asia Pacific Fund III, L.P.	2006	15,000,000	12,172,201	2,280,236	1,149,925	96.35	17,543,864	5,439,239	13.29	1.59	6,589,164
Affinity Asia Pacific Fund IV, L.P.	2013	20,000,000	5,492,594	981,444	13,509,210	32.37	211,199	9,871,141	37.93	1.56	23,380,351
American Securities LLC		55,000,000	22,677,906	1,706,404	30,615,690	44.34	2,409,963	34,672,704	19.71	1.52	65,288,394
American Securities Partners VI, L.P.	2011	35,000,000	22,677,906	1,706,404	10,615,690	69.67	2,409,963	34,672,704	19.71	1.52	45,288,394
American Securities Partners VII, L.P.	2014	20,000,000	0	0	20,000,000	0.00	0	0	N/A	0.00	20,000,000
Angeles Equity		15,000,000	0	0	15,000,000	0.00	0	0	N/A	0.00	15,000,000
Angeles Equity Partners I, L.P.	2015	15,000,000	0	0	15,000,000	0.00	0	0	N/A	0.00	15,000,000
ArcLight Energy Partners		90,000,000	59,434,628	4,446,495	26,118,901	70.98	74,883,147	13,947,122	10.76	1.39	40,066,023
ArcLight Energy Partners Fund II, L.P.	2004	25,000,000	19,895,920	1,278,260	3,825,820	84.70	34,470,667	46,668	16.92	1.63	3,872,488
ArcLight Energy Partners Fund III, L.P.	2006	25,000,000	19,719,432	1,884,269	3,396,322	86.41	33,630,092	748,276	8.62	1.59	4,144,598
ArcLight Energy Partners Fund V, L.P.	2011	20,000,000	14,171,227	962,798	4,865,975	75.67	6,782,388	7,591,156	-2.63	0.95	12,457,131
ArcLight Energy Partners Fund VI, L.P.	2015	20,000,000	5,648,048	321,168	14,030,784	29.85	0	5,561,022	-10.67	0.93	19,591,806
Audax		45,000,000	20,976,691	132,094	23,891,215	46.91	2,398,549	25,391,143	22.35	1.32	49,282,358
Audax Private Equity Fund IV, L.P.	2012	25,000,000	20,976,691	132,094	3,891,215	84.44	2,398,549	25,426,016	22.45	1.32	29,317,231
Audax Private Equity Fund V, L.P.	2015	20,000,000	0	0	20,000,000	0.00	0	(34,873)	N/A	0.00	19,965,127
Avenue Investments		35,000,000	33,123,011	2,086,886	0	100.60	46,063,536	265,660	10.93	1.32	265,660
Avenue Special Situations Fund V, LP	2007	35,000,000	33,123,011	2,086,886	0	100.60	46,063,536	265,660	10.93	1.32	265,660
Axiom Asia Private Capital		50,000,000	32,715,074	2,583,225	14,740,185	141.19	6,525,870	40,145,402	12.00	1.32	54,885,587
Axiom Asia Private Capital II, LP	2009	25,000,000	20,499,655	1,710,616	2,828,213	88.84	6,525,862	24,465,096	11.50	1.40	27,293,309
Axiom Asia Private Capital III, LP	2012	25,000,000	12,215,419	872,609	11,911,972	52.35	8	15,680,306	14.47	1.20	27,592,278
Black Diamond Capital Management		25,000,000	20,904,255	1,738,661	2,357,084	90.57	2,355,487	25,692,006	9.32	1.24	28,049,090
BDCM Opportunity Fund III, L.P.	2011	25,000,000	20,904,255	1,738,661	2,357,084	90.57	2,355,487	25,692,006	9.32	1.24	28,049,090
Carlyle Partners		60,000,000	50,392,688	5,507,866	5,472,075	93.17	91,528,217	11,351,296	11.88	1.84	16,823,371
Carlyle Partners IV, L.P.	2005	35,000,000	31,443,413	1,701,010	2,801,627	94.70	65,843,716	3,847,590	13.71	2.10	6,649,217
Carlyle U.S. Growth Fund III, L.P.	2006	25,000,000	18,949,275	3,806,856	2,670,448	91.02	25,684,501	7,503,706	7.72	1.46	10,174,154
Cartesian Capital Group, LLC		20,000,000	8,525,765	1,414,026	10,082,217	49.70	2,242,840	9,705,821	9.01	1.20	19,788,038
Pangaea Two, L.P.	2012	20,000,000	8,525,765	1,414,026	10,082,217	49.70	2,242,840	9,705,821	9.01	1.20	19,788,038
CCMP Associates		55,000,000	37,865,277	3,394,187	14,821,156	75.02	32,846,885	29,062,626	12.67	1.50	43,883,782
CCMP Capital Investors II, L.P.	2006	30,000,000	26,459,311	2,595,231	2,066,105	96.85	32,603,321	16,548,489	13.28	1.69	18,614,594
CCMP Capital Investors III, L.P.	2013	25,000,000	11,405,966	798,956	12,755,051	48.82	243,564	12,514,137	3.55	1.05	25,269,188
Centerbridge		77,500,000	52,244,196	3,041,235	22,988,685	71.34	18,159,385	46,471,987	6.60	1.17	69,460,672
Centerbridge Capital Partners II, L.P.	2011	25,000,000	19,880,737	1,678,934	3,528,423	86.24	603,857	23,880,008	4.88	1.14	27,408,431
Centerbridge Capital Partners III, L.P.	2014	20,000,000	4,210,081	204,657	15,585,262	22.07	0	4,790,427	14.30	1.09	20,375,689
Centerbridge Special Credit Partners	2009	12,500,000	11,030,142	280,880	1,875,000	90.49	15,053,343	1,948,507	12.28	1.50	3,823,507
Centerbridge Special Credit Partners II	2012	20,000,000	17,123,236	876,764	2,000,000	90.00	2,502,185	15,853,045	0.80	1.02	17,853,045
CIVC Partners		25,000,000	18,860,365	2,549,749	3,822,928	85.64	22,029,413	16,939,727	35.82	1.82	20,762,655
CIVC Partners Fund IV, L.P.	2010	25,000,000	18,860,365	2,549,749	3,822,928	85.64	22,029,413	16,939,727	35.82	1.82	20,762,655

Q4 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 IFR	Investment Multiple	Total Exposure
Energy Investors Funds		25,000,000	19,263,125	1,845,979	3,917,878	84.44	2,069,809	24,306,686	13.31	1.25	28,224,564
EIF US Power Fund IV, L.P.	2011	25,000,000	19,263,125	1,845,979	3,917,878	84.44	2,069,809	24,306,686	13.31	1.25	28,224,564
Eureka Capital Partners		20,000,000	3,152,727	1,186,857	15,882,172	21.70	4,871,620	5,210,932	129.85	2.32	21,093,104
Eureka III, L.P.	2012	20,000,000	3,152,727	1,186,857	15,882,172	21.70	4,871,620	5,210,932	129.85	2.32	21,093,104
GI Partners		20,000,000	8,945,093	605,486	10,466,142	47.75	48,021	9,757,850	3.22	1.03	20,223,992
GI Partners IV	2014	20,000,000	8,945,093	605,486	10,466,142	47.75	48,021	9,757,850	3.22	1.03	20,223,992
Gridiron Capital		35,000,000	16,920,747	882,393	17,446,981	50.87	3,939,375	17,727,350	10.96	1.22	35,174,331
Gridiron Capital Fund II, LP	2011	15,000,000	12,923,959	882,393	1,253,270	92.04	3,939,375	14,119,155	11.97	1.31	15,372,425
Gridiron Capital Fund III, L.P.	2015	20,000,000	3,996,788	0	16,193,711	19.98	0	3,608,195	-9.72	0.90	19,801,906
Guardian Capital Partners		20,000,000	4,536,704	528,781	15,000,000	25.33	0	4,633,439	-11.01	0.91	19,633,439
Guardian Capital Partners Fund II, L.P.	2014	20,000,000	4,536,704	528,781	15,000,000	25.33	0	4,633,439	-11.01	0.91	19,633,439
HarbourVest		86,823,772	67,591,152	3,629,171	16,127,740	82.03	50,092,407	48,425,346	10.58	1.38	64,553,085
Dover Street VII L.P.	2008	20,000,000	17,692,808	1,470,717	850,000	95.82	20,500,622	8,347,418	11.73	1.51	9,197,418
Dover Street VIII LP	2012	25,000,000	15,253,702	502,503	9,250,000	63.02	7,127,417	15,079,703	31.60	1.41	24,329,703
HarbourVest Direct 2007 Fund	2007	20,000,000	18,464,672	935,328	600,000	97.00	17,574,929	12,528,765	9.80	1.55	13,128,765
HarbourVest Intl Private Equity Fund VI	2008	21,823,772	16,179,970	720,623	5,427,740	77.44	4,889,439	12,469,460	-2.95	1.03	17,897,199
Highway 12 Ventures		10,000,000	8,191,489	1,996,189	0	101.88	3,577,031	9,826,480	5.09	1.32	9,826,480
Highway 12 Venture Fund II, L.P.	2006	10,000,000	8,191,489	1,996,189	0	101.88	3,577,031	9,826,480	5.09	1.32	9,826,480
HKW Capital Partners		20,000,000	10,909,169	617,184	8,598,587	57.63	908,865	13,872,144	25.14	1.28	22,470,731
HKW Capital Partners IV, L.P.	2012	20,000,000	10,909,169	617,184	8,598,587	57.63	908,865	13,872,144	25.14	1.28	22,470,731
Industry Ventures		10,000,000	9,220,777	918,359	265,001	101.39	10,329,056	2,410,404	4.92	1.26	2,675,405
Industry Ventures Fund IV, L.P.	2005	10,000,000	9,220,777	918,359	265,001	101.39	10,329,056	2,410,404	4.92	1.26	2,675,405
JCF		25,000,000	22,929,692	1,439,336	732,835	97.48	2,684,073	5,658,791	-13.41	0.34	6,391,626
J.C. Flowers II, L.P.	2006	25,000,000	22,929,692	1,439,336	732,835	97.48	2,684,073	5,658,791	-13.41	0.34	6,391,626
Joseph Littlejohn & Levy		50,000,000	30,014,861	1,273,098	18,859,423	62.58	29,233,694	17,248,461	10.42	1.49	36,107,884
JLL Partners Fund V, L.P.	2005	25,000,000	23,082,941	1,273,098	643,961	97.42	29,233,694	11,097,187	10.85	1.66	11,741,148
JLL Partners Fund VII, LP	2015	25,000,000	6,931,920	0	18,215,462	27.73	0	6,151,274	-10.85	0.89	24,366,736
Kinderhook Capital		20,000,000	5,812,000	315,870	13,872,130	30.64	0	5,539,534	-15.35	0.90	19,411,664
Kinderhook Capital Fund IV, L.P.	2014	20,000,000	5,812,000	315,870	13,872,130	30.64	0	5,539,534	-15.35	0.90	19,411,664
KKR		25,000,000	25,000,000	1,646,730	0	106.59	61,636,007	108,048	19.81	2.32	108,048
KKR European Fund, L. P.	1999	25,000,000	25,000,000	1,646,730	0	106.59	61,636,007	108,048	19.81	2.32	108,048
Lexington Capital Partners		155,000,000	133,405,678	8,698,321	12,970,547	91.68	165,408,503	53,880,578	13.55	1.54	66,851,125
Lexington Capital Partners V, L.P.	2001	50,000,000	46,997,565	2,759,053	243,382	99.51	79,693,375	4,271,396	18.28	1.69	4,514,778
Lexington Capital Partners VI-B, L.P.	2005	50,000,000	45,938,657	3,243,987	817,356	98.37	50,756,813	17,754,564	7.12	1.39	18,571,920
Lexington Capital Partners VII, L.P.	2009	45,000,000	31,735,513	2,276,016	11,063,017	75.58	27,769,726	25,657,293	17.61	1.57	36,720,310
Lexington Middle Market Investors II, LP	2008	10,000,000	8,733,943	419,265	846,792	91.53	7,188,589	6,197,325	14.54	1.46	7,044,117

Q4 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 IFR	Investment Multiple	Total Exposure
Matlin Patterson		30,000,000	25,566,268	2,727,207	1,706,525	94.31	15,302,433	19,170,810	4.20	1.22	20,877,335
MatlinPatterson Global Opps. Ptnrs. III	2007	30,000,000	25,566,268	2,727,207	1,706,525	94.31	15,302,433	19,170,810	4.20	1.22	20,877,335
MHR Institutional Partners		25,000,000	13,234,558	3,047,449	8,717,993	65.13	15,265,768	10,624,025	7.03	1.59	19,342,018
MHR Institutional Partners III, L.P.	2006	25,000,000	13,234,558	3,047,449	8,717,993	65.13	15,265,768	10,624,025	7.03	1.59	19,342,018
Montlake Capital		15,000,000	11,737,380	2,512,620	750,000	95.00	6,996,802	11,491,783	5.44	1.30	12,241,783
Montlake Capital II, L.P.	2007	15,000,000	11,737,380	2,512,620	750,000	95.00	6,996,802	11,491,783	5.44	1.30	12,241,783
Neuberger Berman Group, LLC		75,000,000	45,410,405	2,998,248	27,895,757	64.54	42,900,802	28,798,712	10.71	1.48	56,694,469
NB Co-Investment Partners, L.P.	2006	35,000,000	30,386,980	2,228,383	3,297,915	93.19	36,929,873	12,370,447	9.21	1.51	15,668,362
NB Strategic Co-Investment Partners II	2012	20,000,000	15,023,425	769,865	4,597,842	78.97	5,970,928	16,428,265	26.01	1.42	21,026,108
NB Strategic Co-Investment Partners III	2015	20,000,000	0	0	20,000,000	0.00	0	0	N/A	0.00	20,000,000
Northgate Capital Partners		45,000,000	32,430,000	1,170,000	11,400,000	74.67	7,095,520	43,534,522	18.84	1.51	54,934,522
Northgate V, L.P.	2010	30,000,000	23,520,000	780,000	5,700,000	81.00	7,095,520	32,906,008	20.03	1.65	38,606,008
Northgate Venture Partners VI, L.P.	2012	15,000,000	8,910,000	390,000	5,700,000	62.00	0	10,628,514	10.40	1.14	16,328,514
Oak Hill Capital Partners		45,000,000	39,536,310	5,171,687	1,695,641	99.35	55,186,180	16,924,238	10.30	1.61	18,619,879
Oak Hill Capital Partners II, L.P.	2005	25,000,000	22,735,013	2,432,487	120,346	100.67	39,291,349	2,412,733	9.97	1.66	2,533,079
Oak Hill Capital Partners III, L.P.	2008	20,000,000	16,801,297	2,739,200	1,575,294	97.70	15,894,830	14,511,505	10.96	1.56	16,086,799
Oaktree Capital Partners		120,000,000	111,770,146	5,079,367	3,500,000	97.37	180,944,360	8,026,023	41.56	1.62	11,526,023
Oaktree Opportunities Fund VIII, L.P.	2009	10,000,000	9,623,115	608,592	0	102.32	8,747,171	4,790,333	8.05	1.32	4,790,333
OCM Opportunities Fund IVb, L.P.	2002	75,000,000	73,086,225	1,913,775	0	100.00	121,581,315	175,924	44.89	1.62	175,924
OCM Opportunities Fund VIIb, L.P.	2008	35,000,000	29,060,806	2,557,000	3,500,000	90.34	50,615,874	3,059,766	16.61	1.70	6,559,766
Odyssey Partners Fund		70,000,000	34,529,959	4,836,761	29,838,282	56.24	68,435,301	22,136,122	25.64	2.30	51,974,404
Odyssey Investment Partners III, L.P.	2004	25,000,000	20,345,581	2,022,672	2,631,747	89.47	43,412,163	8,069,449	24.39	2.30	10,701,196
Odyssey Investment Partners IV, L.P.	2008	20,000,000	10,922,047	2,065,449	6,217,510	64.94	25,023,138	10,915,234	30.89	2.77	17,132,744
Odyssey Investment Partners Fund V, LP	2014	25,000,000	3,262,332	748,640	20,989,025	16.04	0	3,151,439	-51.96	0.79	24,140,464
Opus Capital Venture Partners		10,000,000	3,163,903	1,062,500	5,773,597	42.26	349,473	2,896,580	-9.20	0.77	8,670,177
Opus Capital Venture Partners VI, LP	2011	10,000,000	3,163,903	1,062,500	5,773,597	42.26	349,473	2,896,580	-9.20	0.77	8,670,177
Performance Venture Capital		25,000,000	20,758,555	1,912,673	2,328,772	90.68	7,579,261	28,982,615	14.77	1.61	31,311,387
Performance Venture Capital II	2008	25,000,000	20,758,555	1,912,673	2,328,772	90.68	7,579,261	28,982,615	14.77	1.61	31,311,387
Pine Brook Partners		25,000,000	12,175,330	1,281,174	11,598,424	53.83	559,232	11,921,463	-6.10	0.93	23,519,887
Pine Brook Fund II, L.P.	2013	25,000,000	12,175,330	1,281,174	11,598,424	53.83	559,232	11,921,463	-6.10	0.93	23,519,887
Portfolio Advisors		70,000,000	51,884,699	3,950,716	14,411,436	79.76	41,132,632	46,490,125	8.49	1.57	60,901,561
Port. Advisors Fund IV (B), L.P.	2006	30,000,000	21,442,536	1,681,673	6,875,791	77.08	16,082,153	21,645,358	7.51	1.63	28,521,149
Port. Advisors Fund IV (E), L.P.	2006	15,000,000	10,661,601	956,205	3,382,194	77.45	7,282,265	7,635,273	4.31	1.28	11,017,467
Port. Advisors Fund V (B), L.P.	2008	10,000,000	6,689,099	634,375	2,793,273	73.23	4,828,629	8,980,811	13.37	1.89	11,774,084
Portfolio Advisors Secondary Fund, L.P.	2008	15,000,000	13,091,463	678,463	1,360,178	91.80	12,939,585	8,228,683	14.92	1.54	9,588,861

Q4 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
Quintana Energy Partners		15,000,000	14,706,307	1,888,416	340,408	110.63	8,817,711	4,744,678	-2.29	0.82	5,085,086
Quintana Energy Partners Fund I, L.P.	2006	15,000,000	14,706,307	1,888,416	340,408	110.63	8,817,711	4,744,678	-2.29	0.82	5,085,086
Siguler Guff & Company		50,000,000	39,050,587	1,956,701	9,125,000	82.01	26,755,049	33,706,501	10.97	1.47	42,831,501
Siguler Guff Small Buyout Opportunities	2007	25,000,000	22,239,801	1,517,487	1,375,000	95.03	23,342,666	16,254,544	11.51	1.67	17,629,544
Siguler Guff Small Buyout Opps Fund II	2011	25,000,000	16,810,786	439,214	7,750,000	69.00	3,412,383	17,451,957	8.80	1.21	25,201,957
Southern Capital		15,000,000	11,987,630	993,699	2,019,341	86.54	0	12,017,650	-6.16	0.93	14,036,992
Southern Capital Fund III, L.P.	2013	15,000,000	11,987,630	993,699	2,019,341	86.54	0	12,017,650	-6.16	0.93	14,036,992
Spire Capital Partners		15,000,000	4,206,919	857,595	9,938,099	33.76	0	4,040,376	-22.39	0.80	13,978,475
Spire Capital Partners III	2014	15,000,000	4,206,919	857,595	9,938,099	33.76	0	4,040,376	-22.39	0.80	13,978,475
Sterling Capital Partners		20,000,000	12,135,332	1,156,646	6,766,732	66.46	2,307,657	12,356,426	7.96	1.10	19,123,158
Sterling Capital Partners IV	2012	20,000,000	12,135,332	1,156,646	6,766,732	66.46	2,307,657	12,356,426	7.96	1.10	19,123,158
Summit Ventures		20,000,000	13,720,762	557,210	5,800,000	71.39	2,119,730	16,496,039	17.59	1.30	22,296,039
Summit Partners Growth Equity Fund VIII	2011	20,000,000	13,720,762	557,210	5,800,000	71.39	2,119,730	16,496,039	17.59	1.30	22,296,039
TA Associates, Inc.		10,000,000	8,416,100	783,900	800,000	92.00	5,225,000	9,293,782	18.85	1.58	10,093,782
TA XI, L.P.	2010	10,000,000	8,416,100	783,900	800,000	92.00	5,225,000	9,293,782	18.85	1.58	10,093,782
Tenaya Capital		35,000,000	16,647,158	1,233,110	17,119,732	51.09	(0)	18,729,689	2.54	1.05	35,849,421
Tenaya Capital VI, L.P.	2012	20,000,000	14,284,814	1,089,777	4,625,409	76.87	(0)	16,379,533	3.07	1.07	21,004,942
Tenaya Capital VII, L.P.	2014	15,000,000	2,362,343	143,333	12,494,323	16.70	0	2,350,156	-8.40	0.94	14,844,479
Tenex Capital Management		20,000,000	16,130,999	1,075,035	3,697,877	86.03	7,500,009	16,901,744	19.44	1.42	20,599,621
Tenex Capital Partners LP	2012	20,000,000	16,130,999	1,075,035	3,697,877	86.03	7,500,009	16,901,744	19.44	1.42	20,599,621
Terra Firma Capital Partners		25,432,997	21,899,696	3,470,805	79,548	99.75	1,796,446	12,217,124	-9.40	0.55	12,296,672
Terra Firma Capital Partners III, L.P.	2007	25,432,997	21,899,696	3,470,805	79,548	99.75	1,796,446	12,217,124	-9.40	0.55	12,296,672
Thayer Hidden Creek Management, L.P.		45,000,000	29,654,390	2,936,195	13,045,353	72.42	6,004,176	37,109,397	12.98	1.32	50,154,750
HCI Equity Partners III, LP	2008	20,000,000	18,248,730	1,934,413	452,795	100.92	6,004,176	23,229,031	12.73	1.45	23,681,826
HCI Equity Partners IV, LP	2013	25,000,000	11,405,660	1,001,782	12,592,558	49.63	0	13,880,366	15.23	1.12	26,472,924
The Catalyst Capital Group		30,000,000	16,753,236	1,292,445	12,018,040	60.15	1,288,498	19,697,098	12.75	1.16	31,715,138
Catalyst Fund IV Parallel, L.P.	2014	15,000,000	7,995,750	254,250	6,750,000	55.00	183,026	8,745,830	14.11	1.08	15,495,830
Catalyst Fund LP IV	2012	15,000,000	8,757,486	1,038,195	5,268,040	65.30	1,105,472	10,951,268	12.44	1.23	16,219,308
Trilantic Capital Partners		51,098,351	20,120,763	2,525,290	28,566,271	44.32	12,065,453	14,990,114	8.29	1.19	43,556,385
Trilantic Capital Partners IV L.P.	2007	11,098,351	8,581,237	1,152,711	1,549,293	87.71	11,960,002	3,691,291	13.70	1.61	5,240,584
Trilantic Capital Partners V L.P.	2013	20,000,000	8,490,783	1,200,818	10,351,764	48.46	105,451	8,245,285	-10.59	0.86	18,597,049
Trilantic Energy Partners (NA) LP	2014	20,000,000	3,048,743	171,761	16,665,215	16.10	0	3,053,538	-3.02	0.95	19,718,753
Veritas Capital		45,000,000	34,150,890	524,971	10,324,139	77.06	0	48,523,965	14.59	1.40	58,848,104
The Veritas Capital Fund IV, L.P.	2010	25,000,000	24,066,553	450,046	483,401	98.07	0	38,566,770	15.27	1.57	39,050,171
Veritas Capital Fund V, L.P.	2014	20,000,000	10,084,337	74,925	9,840,738	50.80	0	9,957,195	-2.87	0.98	19,797,933
Welsh, Carson, Anderson & Stowe		75,000,000	68,908,695	5,523,644	750,000	99.24	103,556,851	11,820,623	8.81	1.55	12,570,623
Welsh, Carson, Anderson & Stowe IV, LP	2004	25,000,000	23,122,188	1,877,812	0	100.00	29,953,531	2,700,347	5.52	1.31	2,700,347
Welsh, Carson, Anderson & Stowe IX, L.P.	2000	25,000,000	22,704,505	2,045,495	250,000	99.00	42,057,142	14,407	11.91	1.70	264,407
Welsh, Carson, Anderson & Stowe X, L.P.	2005	25,000,000	23,082,002	1,600,337	500,000	98.73	31,546,178	9,105,869	7.98	1.65	9,605,869
White Deer		25,000,000	6,784,593	1,436,301	16,779,106	32.88	1	5,170,943	-25.20	0.63	21,950,049
White Deer Energy II L.P.	2013	25,000,000	6,784,593	1,436,301	16,779,106	32.88	1	5,170,943	-25.20	0.63	21,950,049
LP's by Family of Funds (Inactive)											
Total		391,151,089	353,841,381	21,177,845	0	95.88	646,227,427	0	14.57	1.72	0

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 since 3Q15.

MPEP Holdings Report as of March 31, 2016

Fund Name	Commitment Summary				Market Value Summary	
	Total Commitment	Funded Capital	Unfunded Commitment	% Unfunded	Beginning Market Value	Ending Market Value
Total	2,560,601,677.43	1,999,828,040.39	654,553,454.38	25.56	1,088,743,008.66	1,093,528,232.04
<i>ASP Fund of Funds</i>	185,787,510.00	177,293,820.00	8,493,690.00	4.57	48,131,130.00	49,243,824.00
<i>Buyout</i>	961,098,351.15	630,351,530.45	368,988,686.59	38.39	455,661,697.77	465,685,892.88
<i>Co-Investments</i>	95,000,000.00	70,338,639.02	26,071,350.34	27.44	39,349,593.82	36,701,557.91
<i>Distressed</i>	297,500,000.00	299,156,767.99	30,566,783.17	10.27	100,816,722.02	98,964,237.25
<i>Mezzanine Debt</i>	25,000,000.00	25,000,000.00	0.00	0.00	2,054,793.19	2,348,362.50
<i>Non-US Private Equity</i>	281,818,537.28	212,170,316.42	75,255,641.50	26.70	117,381,113.99	120,200,001.65
<i>Secondary</i>	274,397,279.00	234,417,225.45	44,710,789.00	16.29	92,307,413.51	88,979,873.81
<i>Special Situation</i>	180,000,000.00	133,194,376.34	53,346,574.41	29.64	66,126,324.24	65,088,078.00
<i>Venture Capital</i>	260,000,000.00	217,905,364.72	47,119,939.37	18.12	166,914,220.12	166,316,404.04

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, Director of Private Investments
Date: May 24, 2016
Subject: Montana Real Estate Pool (MTRP)

- i. New commitments – none signed since the last board meeting
- ii. Divestments – JP Morgan Strategic Property Fund, LP. - \$15,604,859.93 received April 5th.
- iii. Following this memo is the comprehensive review of the MTRP for the quarter ended December 31st.
 - o The portfolio was net cash flow negative for the quarter ending 1Q16 with contributions and distributions of \$27.2M and \$23.8M, respectively
 - o There have been no significant changes or shifts in diversification to the portfolio since 4Q15

Market Observations – 1Q16

- Broadly speaking, commercial real estate returns are down 70bps quarter over quarter as of 1Q16 as measured by NCREIF, but still positive at 2.21%
- Fundamentals remain strong as vacancies continue to drop and rents continue to grow
- Delinquency rates inched up in April and now stand at 4.23% for US commercial real estate loans as monitored by Trepp.
- REIT stocks were up 9.81% YTD through May 9, 2016 as measured by the MSCI REIT Index.
- While transaction volumes were near all-time highs at the end of 2015, 1Q16 transaction volume was down 20% from the same quarter a year ago
- Capital flows into the US continue to be quite strong
- Global private real estate fundraising through 1Q16 was flat relative to 4Q15 and the 1Q15 year ago period at \$21B

Montana Board of Investments

Real Estate Board Report

Q4 2015

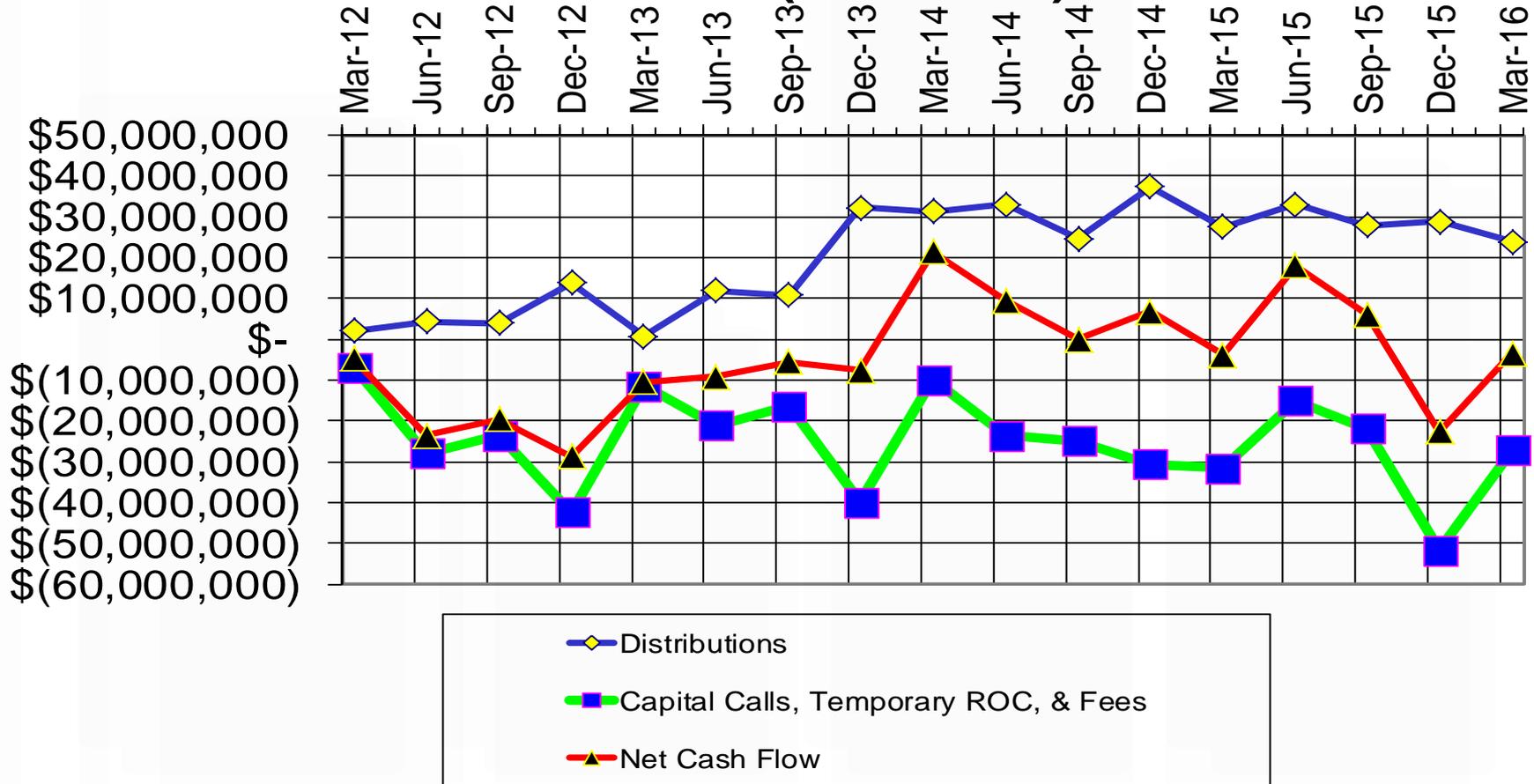
Due to, among other things, the lack of a valuation standard in the real estate private equity industry, differences in the pace of investment across funds and the understatement of returns in the early years of a fund's life, the internal rate of return information may not accurately reflect current 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.

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- **Strategy – Total Exposure Chart**
- **Geography – Total Exposure Chart**
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- **Time Weighted Returns**
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- **Commitment Summary**
- **Leverage**

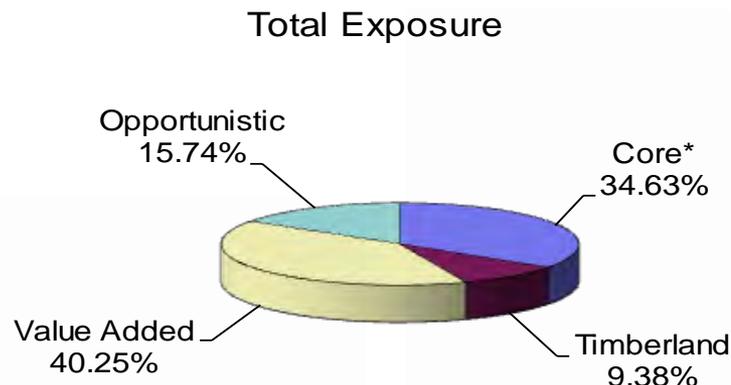
Quarterly Cash Flows through March 31, 2016

Montana RE Cash Flows Through 3/31/16 (Non Core)



Net cash flow for the quarter ending 3/31/16 was negative driven in large part by two outsized capital calls received during the most recent quarter.

Q4 2015 Strategy – Total Exposure



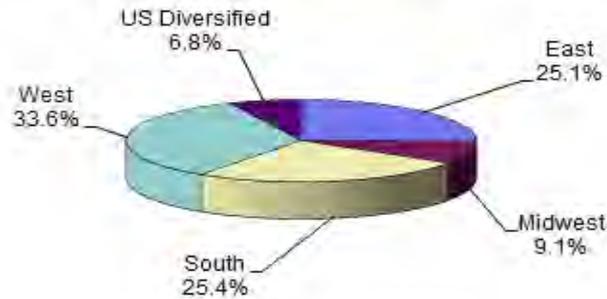
Strategy	Remaining Commitments	Percentage	Net Asset Value	Percentage	Total Exposure	Percentage
Core*	\$0	0.00%	\$387,143,693	40.72%	\$387,143,693	34.63%
Timberland	\$45,000	0.03%	\$104,857,682	11.03%	\$104,902,682	9.38%
Value Added	\$105,821,681	63.21%	\$344,270,150	36.21%	\$450,091,830	40.25%
Opportunistic	\$61,540,779	36.76%	\$114,443,407	12.04%	\$175,984,186	15.74%
Total	\$167,407,459	100.00%	\$950,714,932	100.00%	\$1,118,122,391	100.00%

* Includes MT Office Portfolio

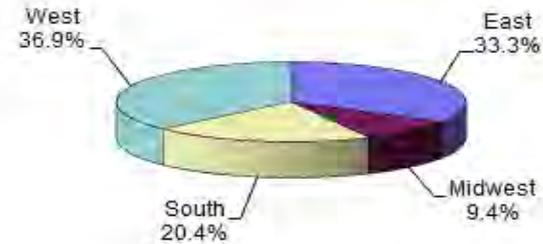
Core real estate dominates assets in the ground at approximately 41% of net asset value and includes the directly owned Montana office buildings. Timberland represents approximately 11% of the portfolio's total net asset value and approximately 9% of the total exposure which includes unfunded commitments. Value Added and Opportunistic account for approximately 36% and 12% of net asset value respectively.

Q4 2015 Geography – Total Exposure

Montana United States Portfolio



NCREIF Index



	East	Midwest	South	West	US Diverse	Non-US	Total
Montana US Value ²	\$386.0	\$139.6	\$390.8	\$516.9	\$103.1		\$1,536.4
Montana US Total ¹	25.1%	9.1%	25.4%	33.6%	6.8%		100.0%
NCREIF Value ^{2, 3}	157,266	44,117	96,086	174,210			\$471,678
NCREIF ¹	33.3%	9.4%	20.4%	36.9%			100.0%
Difference	-8.2%	-0.3%	5.1%	-3.3%	6.8%		
Montana Total Value ²	\$386.0	\$139.6	\$390.8	\$516.9	\$103.1	\$97.9	\$1,634.2
Montana Total ¹	23.7%	8.5%	23.9%	31.6%	6.3%	6.0%	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.

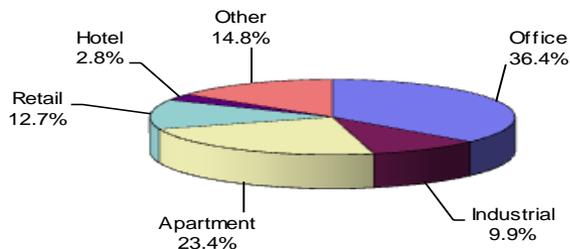
2) Values shown are in Millions.

3) The NCREIF gross market values represent the total gross asset values of the participating funds exclusive of any underlying debt.

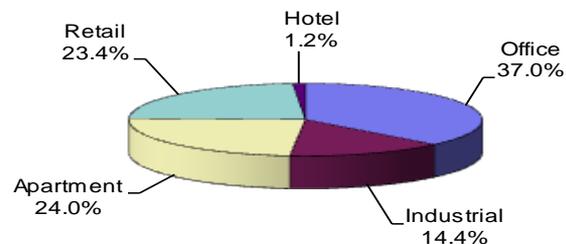
The geographic mix of the real estate portfolio is fairly aligned with NCREIF. As a reminder, while the portfolio is underweight in the West, East and Midwest and overweight to the South relative to the index, no attempt is made to match index weights. Approximately 7% of the portfolio is broadly diversified across the remainder of the US and the portfolio's international exposure represents 6% of the mix.

Q4 2015 Property Type – Market Value Exposure

Montana United States Portfolio



NCREIF Index



Relative to the NCREIF Property Index, Montana's domestic investments were underweighted in the Office, Industrial, Apartment and Retail sectors as of December 31, 2015.

	Office	Industrial	Apartment	Retail	Hotel	Other ²	Total
Montana US Value ³	\$559.9	\$152.5	\$359.4	\$195.1	\$43.5	\$226.0	\$1,536.4
Montana US Total	36.4%	9.9%	23.4%	12.7%	2.8%	14.8%	100.0%
NCREIF Value ^{3,4}	174,867	67,699	113,421	110,186	5,505		\$471,678
NCREIF ¹	37.0%	14.4%	24.0%	23.4%	1.2%		100.0%
Difference	-0.6%	-4.4%	-0.7%	-10.7%	1.7%	14.8%	
Montana Non-US Value ³	\$22.8	\$0.4	\$9.8	\$9.1	\$5.1	\$50.7	\$97.9
Montana Non-US Total	23.3%	0.4%	10.0%	9.3%	5.2%	51.8%	100.0%
Montana Total Value ³	\$582.7	\$152.9	\$369.1	\$204.2	\$48.7	\$276.6	\$1,634.2
Montana Total ¹	35.7%	9.4%	22.6%	12.5%	3.0%	16.9%	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) Total U.S. Other includes \$94,334,406 in mixed-use assets, \$8,206,052 in land, \$9,366,352 in debt assets, \$216,574 in parking, \$278,976 in manufactured assets, \$112,050,339 in timber, \$1,472,463 in other assets, and \$41,328 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, Industrial and Apartments and overweight in Hotels. At approximately 15%, Other represents the portfolio's exposure to Timberland, Mixed-Use properties, Land, Manufactured Housing, Parking and related properties and assets. 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.

Q4 2015 Time Weighted

	Time Weighted Returns															
	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	23,378,037	3.10%	3.37%	14.51%	15.74%	14.51%	15.74%	13.04%	14.18%	13.43%	14.55%	4.30%	5.39%	3.54%	4.62%	
INVESCO Core Real Estate-USA	49,755,727	2.27%	2.50%	13.68%	14.70%	13.68%	14.70%	12.73%	13.74%	12.31%	13.31%	4.80%	5.75%	3.59%	4.54%	
JP Morgan Strategic Properties Fund	168,426,039	3.15%	3.38%	14.17%	15.22%	14.17%	15.22%	12.88%	13.99%	13.01%	14.12%	6.16%	7.22%	4.88%	5.93%	
TIAA-CREF Asset Management Core Property	48,447,118	3.42%	3.58%	12.18%	12.90%	12.18%	12.90%	-	-	-	-	-	-	10.68%	11.48%	
UBS-Trumbull Property Fund	77,662,219	2.74%	3.00%	11.73%	12.90%	11.73%	12.90%	10.48%	11.64%	10.48%	11.63%	-	-	11.58%	12.69%	
Core Total	367,669,141	2.97%	3.20%	13.33%	14.37%	13.33%	14.37%	12.06%	13.13%	12.18%	13.26%	4.71%	5.74%	4.41%	5.44%	
Montana Office Portfolio ¹	19,474,552	0.00%	0.00%	8.36%	8.36%	8.36%	8.36%	7.08%	7.08%	-	-	-	-	6.24%	6.24%	
Timberland Total	104,857,682	1.67%	1.75%	3.55%	4.40%	3.55%	4.40%	6.79%	7.74%	-	-	-	-	5.55%	6.47%	
Value Added Total	344,335,488	5.77%	7.20%	17.22%	21.72%	17.22%	21.72%	16.01%	20.09%	13.65%	17.07%	7.53%	10.62%	5.81%	9.37%	
Opportunistic Total	114,443,407	1.62%	2.36%	9.60%	12.37%	9.60%	12.37%	10.75%	13.59%	12.05%	14.75%	0.65%	3.95%	-6.51%	-3.07%	
Total Portfolio	950,780,271	3.58%	4.28%	12.98%	15.38%	12.98%	15.38%	12.52%	14.84%	12.11%	14.21%	4.62%	6.73%	3.30%	5.60%	
Benchmark																
NCREIF	471,677,882,600		2.91%	13.33%		13.33%		12.04%		12.18%		-		9.32%		
NFI-ODCE (NET)	152,067,800,000		3.11%	13.95%		13.95%		12.77%		12.60%		-		7.68%		

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 be stable and with sound fundamentals. The Q4 Total Portfolio return outperformed Q3 by 111bps. Core and Opportunistic underperformed relative to Q3 by 7bps and 5bps respectively while Timberland and Value Added outperformed relative to Q3 by 142bps and 279bps respectively.

Q4 2015 Net Internal Rates of Return

	NAV	Current Quarter	Year to Date	1 - Year	3 - Year	5 - Year	7 - Year	Inception
Montana Office Portfolio	19,474,552	0.00%	8.58%	8.58%	7.21%	-	-	6.09%
Molpus Woodlands Fund III, LP	47,618,891	2.71%	4.01%	4.01%	8.57%	-	-	6.54%
ORM Timber Fund III, LLC	29,957,652	0.42%	1.60%	1.60%	1.85%	-	-	1.69%
RMS Forest Growth III LP	27,281,139	0.98%	4.40%	4.40%	5.85%	-	-	5.69%
Timberland	104,857,682	1.67%	3.56%	3.56%	6.59%	-	-	5.60%
ABR Chesapeake Fund III	10,196,177	8.11%	14.13%	14.13%	8.17%	7.71%	4.39%	4.02%
ABR Chesapeake Fund IV	27,904,190	5.58%	10.53%	10.53%	11.25%	11.81%	-	11.63%
AG Core Plus Realty Fund II	1,484,591	10.59%	17.95%	17.95%	12.11%	14.46%	11.97%	8.66%
AG Core Plus Realty Fund III	27,253,222	17.92%	41.53%	41.53%	28.31%	-	-	23.56%
AG Core Plus Realty Fund IV, L.P.	3,168,667	1.99%	1.99%	-	-	-	-	-1.03%
Apollo Real Estate Finance Corp.	3,232,652	-3.29%	8.22%	8.22%	1.86%	1.25%	-1.97%	-1.64%
AREFIN Co-Invest ²	17,157.00	-	-	-	-	-	-	8.50%
BPG Investment Partnership IX	24,822,583	6.03%	18.01%	18.01%	-	-	-	18.15%
CBRE Strategic Partners US Value Fund 6	19,736,588	10.05%	18.64%	18.64%	16.84%	-	-	16.97%
CBRE Strategic Partners US Value Fund 7	24,348,304	10.52%	16.64%	16.64%	-	-	-	13.44%
DRA Growth & Income Fund VI	7,946,396	8.77%	19.44%	19.44%	26.60%	20.66%	13.60%	11.19%
DRA Growth & Income Fund VII	29,657,917	5.72%	16.33%	16.33%	16.58%	-	-	16.24%
DRA Growth and Income Fund VIII	10,574,180	3.16%	13.82%	13.82%	-	-	-	13.82%
Equus Investment Partnership X, LP	4,548,575	-3.42%	-3.42%	-	-	-	-	-4.23%
Five Arrows Securities V, L.P.	15,956,019	4.00%	5.07%	5.07%	15.10%	14.18%	12.67%	11.72%
Harbert US Real Estate Fund V, LP	16,104,229	0.19%	11.40%	11.40%	-	-	-	15.62%
Hudson RE Fund IV Co-Invest	65,339	-	-	-	-	-	-	6.25%
Hudson Realty Capital Fund IV	4,271,595	-6.36%	0.63%	0.63%	6.45%	1.30%	-2.39%	-4.56%
Landmark Real Estate Partners VI	9,464,931	1.13%	10.79%	10.79%	17.77%	-	-	25.06%
Realty Associates Fund VIII	13,468,358	2.56%	15.22%	15.22%	10.23%	6.65%	-0.02%	-0.97%
Realty Associates Fund IX	16,588,710	2.27%	14.65%	14.65%	12.11%	11.69%	-	11.27%
Realty Associates Fund X	21,747,079	3.64%	15.04%	15.04%	-	-	-	13.88%
Stockbridge Value Fund, LP	16,820,275	8.71%	28.94%	28.94%	21.63%	-	-	21.64%
Stockbridge Value Fund II, LP	19,032,573	1.84%	1.84%	-	-	-	-	10.37%
Stoltz Real Estate Fund V, LP	10,639,665	0.54%	0.54%	-	-	-	-	9.79%
Strategic Partners Value Enhancement Fund	5,285,516	-7.62%	27.86%	27.86%	9.96%	10.09%	0.66%	1.73%
Value Added	344,335,488	5.49%	17.32%	17.32%	16.02%	14.12%	9.66%	8.45%
AG Realty Fund VII L.P.	4,590,076	3.99%	3.71%	3.71%	23.27%	17.60%	16.51%	13.56%
AG Realty Fund VIII L.P.	15,597,209	8.02%	23.53%	23.53%	17.66%	-	-	15.80%
AG Realty Fund IX, L.P.	2,450,401	-5.10%	-5.10%	-	-	-	-	-5.10%
ARC (GP1) Ltd ³	1,635,733	-2.74%	13.52%	13.52%	5.96%	9.40%	-0.35%	-1.43%
Beacon Capital Strategic Partners V	4,544,914	-3.87%	2.65%	2.65%	8.52%	8.88%	-0.43%	-7.56%
Carlyle Europe Real Estate Partners III	10,654,232	-1.03%	4.59%	4.59%	-8.48%	-2.83%	-2.50%	-5.28%
CIM Fund III, L.P.	28,761,539	0.88%	9.54%	9.54%	15.11%	17.29%	13.21%	11.50%
GEM Realty Fund IV	5,692,355	2.60%	38.75%	38.75%	25.98%	21.10%	-	21.09%
GEM Realty Fund V	9,451,384	0.15%	22.37%	22.37%	-	-	-	10.35%
MGP Asia Fund III, LP	18,527,530	0.15%	-3.68%	-3.68%	9.27%	11.54%	7.64%	5.56%
MSREF VI International	3,848,865	-0.02%	5.64%	5.64%	6.36%	6.76%	-8.44%	-16.46%
O'Connor North American Property Partners II	4,405,661	5.39%	6.85%	6.85%	16.93%	13.20%	8.41%	-2.03%
PCCP Equity VII, LP	4,283,508	-5.94%	-5.94%	-	-	-	-	-5.94%
Opportunistic	114,443,407	1.33%	9.60%	9.60%	10.65%	11.82%	5.98%	0.96%
Total	583,111,130	3.79%	12.81%	12.81%	12.80%	12.00%	7.99%	5.47%

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.

4) Aggregate historical returns include exited investments.

Returns for Timberland, Value Added and the Total Portfolio outperformed relative to Q3 by 142bps, 251bps and 168bps respectively while Opportunistic underperformed relative to Q3 by 34bps.

Q4 2015 Commitment Summary

	Vintage Year	Capital			Remaining Capital		Net Asset Value	NAV %	Total Exposure	Total Exposure %	Since Inception	
		Commitment	Contributed ¹	Contributed %	Commitment	Distributed					IRR	Multiple
Core		275,000,000	275,000,000	100%	-	64,206,731	367,669,141	38.67%	367,669,141	32.88%	6.26%	1.48
Ciarion Lion Properties Fund	2006	45,000,000	45,000,000	100%	-	33,671,352	23,378,037	2.46%	23,378,037	2.09%	1.81%	1.20
INVESCO Core Real Estate-USA	2007	45,000,000	45,000,000	100%	-	10,851,764	49,755,727	5.23%	49,755,727	4.45%	3.28%	1.27
JP Morgan Strategic Property Fund	2007	95,000,000	95,000,000	100%	-	1,759,599	168,426,039	17.71%	168,426,039	15.06%	7.17%	1.67
TIAA-CREF Asset Management Core Property	2013	40,000,000	40,000,000	100%	-	4,226,007	48,447,118	5.10%	48,447,118	4.33%	10.71%	1.30
UBS-Trumbull Property Fund	2010	50,000,000	50,000,000	100%	-	13,698,009	77,662,219	8.17%	77,662,219	6.95%	11.24%	1.70
Montana Office Portfolio	2011	17,674,045	17,674,045	100%	-	3,518,351	19,474,552	2.05%	19,474,552	1.74%	6.09%	1.30
Timberland		99,457,253	99,412,253	100%	45,000	11,647,882	104,857,682	11.03%	104,902,682	9.38%	5.60%	1.17
Molpus Woodlands Fund III, LP ²	2011	44,664,311	44,664,311	100%	-	8,167,420	47,618,891	5.01%	47,618,891	4.26%	6.54%	1.24
ORM Timber Fund III, LLC	2012	30,000,000	29,955,000	100%	45,000	783,895	29,597,652	3.15%	30,002,652	2.68%	1.69%	1.02
RMS Forest Growth III LP	2011	24,792,942	24,792,942	100%	-	2,696,567	27,281,139	2.87%	27,281,139	2.44%	5.69%	1.21
Value Added		570,751,319	464,929,638	81%	105,821,681	240,200,905	344,335,488	36.22%	450,157,169	40.26%	8.45%	1.23
ABR Chesapeake Fund III	2006	20,000,000	20,000,000	100%	-	16,090,949	10,196,177	1.07%	10,196,177	0.91%	4.02%	1.30
ABR Chesapeake Fund IV	2010	30,000,000	30,000,000	100%	-	9,132,593	27,904,190	2.93%	27,904,190	2.50%	11.63%	1.22
AG Core Plus Realty Fund II	2007	20,000,000	16,625,976	83%	3,374,024	18,584,704	1,484,591	0.16%	4,858,615	0.43%	8.66%	1.20
AG Core Plus Realty Fund III	2011	35,000,000	27,164,990	78%	7,835,010	11,468,826	27,253,222	2.87%	35,088,232	3.14%	23.56%	1.42
AG Core Plus Realty Fund IV, L.P.	2015	20,000,000	3,200,000	16%	16,800,000	83,817	3,168,667	0.33%	19,968,667	1.79%	-1.03%	0.99
Apollo Real Estate Finance Corp.	2007	10,000,000	10,000,000	100%	-	6,032,468	3,232,652	0.34%	3,232,652	0.29%	-1.64%	0.92
AREFIN Co-Invest	2008	8,336,000	8,336,000	100%	-	11,633,356	17,157	0.00%	17,157	0.00%	8.50%	1.39
BPG Investment Partnership IX	2013	30,000,000	27,602,510	92%	2,397,490	9,225,001	24,822,583	2.61%	27,220,073	2.43%	18.15%	1.23
CBRE Strategic Partners US Value Fund 6	2011	20,000,000	19,538,146	98%	461,854	8,591,105	19,736,588	2.08%	20,198,442	1.81%	16.97%	1.42
CBRE Strategic Partners US Value Fund 7	2014	25,000,000	22,413,131	90%	2,586,869	29,990	24,348,304	2.56%	26,935,173	2.41%	13.44%	1.09
DRA Growth & Income Fund VI	2007	23,215,319	22,655,319	98%	560,000	24,216,991	7,946,396	0.84%	8,506,396	0.76%	11.19%	1.25
DRA Growth & Income Fund VII	2011	30,000,000	28,362,000	95%	1,638,000	12,062,704	29,657,917	3.12%	31,295,917	2.80%	16.24%	1.38
DRA Growth and Income Fund VIII, LLC	2014	25,000,000	10,134,540	41%	14,865,460	690,975	10,574,180	1.11%	25,439,640	2.28%	13.82%	1.10
Equus Investment Partnership X, LP	2015	20,000,000	4,877,241	24%	15,122,759	99,008	4,548,575	0.48%	19,671,334	1.76%	-4.23%	0.95
Five Arrows Securities V, L.P.	2007	30,000,000	29,356,555	98%	643,445	26,270,224	15,956,019	1.68%	16,599,464	1.48%	11.72%	1.35
Harbert US Real Estate Fund V, LP	2014	20,000,000	15,747,693	78%	4,252,307	1,199,812	16,104,229	1.69%	20,356,536	1.82%	15.62%	1.08
Hudson RE Fund IV Co-Invest	2008	10,000,000	10,000,000	100%	-	14,828,495	65,339	0.01%	65,339	0.01%	6.25%	1.47
Hudson Realty Capital Fund IV	2007	15,000,000	15,000,000	100%	-	6,347,818	4,271,595	0.45%	4,271,595	0.38%	-4.56%	0.71
Landmark Real Estate Partners VI	2011	20,000,000	16,489,606	82%	3,510,394	16,589,606	9,464,931	1.00%	12,975,325	1.16%	25.06%	1.56
Realty Associates Fund VIII	2007	20,000,000	20,000,000	100%	-	5,231,493	13,468,358	1.42%	13,468,358	1.20%	-0.97%	0.93
Realty Associates Fund IX	2009	20,000,000	20,000,000	100%	-	12,156,260	16,588,710	1.74%	16,588,710	1.48%	11.27%	1.43
Realty Associates Fund X	2012	20,000,000	20,000,000	100%	-	2,996,179	21,747,079	2.29%	21,747,079	1.94%	13.88%	1.23
Stockbridge Value Fund, LP	2011	25,000,000	19,661,189	79%	5,338,811	10,278,917	16,820,275	1.77%	22,159,086	1.98%	21.64%	1.33
Stockbridge Value Fund II, LP	2014	35,000,000	18,564,743	53%	16,435,257	773,356	19,032,573	0.00%	35,467,831	3.17%	10.37%	1.07
Stoltz Real Estate Fund V, LP	2014	20,000,000	10,000,000	50%	10,000,000	404,221	10,639,665	1.12%	20,639,665	1.85%	9.79%	1.10
Strategic Partners Value Enhancement Fund	2007	19,200,000	19,200,000	100%	-	15,182,037	5,285,516	0.56%	5,285,516	0.47%	1.73%	1.06
Opportunistic		277,206,871	215,666,092	78%	61,540,779	101,219,858	114,443,407	12.04%	175,984,186	15.74%	0.96%	0.95
AG Realty Fund VII L.P.	2007	20,000,000	16,054,000	80%	3,946,000	17,457,754	4,590,076	0.48%	8,536,076	0.76%	13.56%	1.37
AG Realty Fund VIII L.P.	2011	20,000,000	16,715,668	84%	3,284,332	5,424,261	15,597,209	1.64%	18,881,541	1.69%	15.80%	1.26
AG Realty Fund IX, L.P.	2015	20,000,000	2,550,000	13%	17,450,000	-	2,450,401	0.26%	19,900,401	1.78%	-5.10%	0.96
ARC (GP1) Ltd ³	2011	18,818,203	18,818,202	100%	1	17,713,148	1,635,733	0.17%	1,635,734	0.15%	-1.43%	0.93
Beacon Capital Strategic Partners V	2007	23,750,000	22,500,000	95%	1,250,000	9,936,198	4,544,914	0.48%	5,794,914	0.52%	-7.56%	0.64
Carlyle Europe Real Estate Partners III ⁴	2007	30,994,690	26,763,647	86%	4,231,043	9,751,260	10,654,232	1.12%	14,885,275	1.33%	-5.28%	0.75
CIM Fund III, L.P.	2007	25,000,000	25,000,000	100%	-	9,163,467	28,761,539	3.03%	28,761,539	2.67%	11.50%	1.35
GEM Realty Fund IV	2010	15,000,000	11,359,300	76%	3,640,700	9,101,308	5,692,355	0.60%	9,333,055	0.83%	21.09%	1.28
GEM Realty Fund V	2013	20,000,000	8,921,250	45%	11,078,750	226,018	9,451,384	0.99%	20,530,134	1.84%	10.35%	1.07
MGP Asia Fund III, LP	2007	26,143,978	20,083,259	77%	6,060,719	8,706,883	18,527,530	1.95%	24,588,249	2.20%	5.56%	1.34
MSREF VI International ⁵	2007	27,500,000	27,500,000	100%	-	4,366,927	3,848,865	0.40%	3,848,865	0.34%	-16.46%	0.29
O'Connor North American Property Partners II ⁶	2007	15,000,000	14,961,772	100%	38,228	9,350,448	4,405,661	0.46%	4,443,889	0.40%	-2.03%	0.90
PCCP Equity VII, LP	2015	15,000,000	4,438,993	30%	10,561,007	22,185	4,283,508	0.45%	14,844,515	1.33%	-5.94%	0.96
Montana Real Estate		1,240,089,488	1,072,682,029	87%	167,407,459	420,793,727	950,780,271		1,118,187,730		5.79%	1.23

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.

7) Aggregate historical returns include exited investments.

No new commitments have been made since last quarter.

Holdings Summary through March 31, 2016

Investment Name	Vintage Year	Total Commitment	Net Capital Contributed	Unfunded Commitment	% of Unfunded	Adjusted NAV ³
Total		1,235,993,561	1,108,805,335	129,637,982	10.49%	929,435,050
Core						
INVESTCO Core Real Estate-USA	2007	230,000,000	230,000,000	0	0.00%	344,602,977
JP Morgan Strategic Property Fund	2007	45,000,000	45,000,000	0	0.00%	49,755,727
TIAA-CREF Core Property Fund	2013	95,000,000	95,000,000	0	0.00%	168,426,039
UBS-Trumbull Property Fund	2010	40,000,000	40,000,000	0	0.00%	48,758,992
		50,000,000	50,000,000	0	0.00%	77,662,219
Montana Office Portfolio	2011	0	0	0	0.00%	19,474,552
Timber						
Molpus Woodlands Fund III, L.P.	2011	104,792,942	99,267,628	5,525,314	5.27%	104,227,860
ORM Timber Fund III, LLC	2012	50,000,000	44,519,686	5,480,314	10.96%	47,618,891
RMS Forest Growth III LP	2011	30,000,000	29,955,000	45,000	0.15%	29,579,652
		24,792,942	24,792,942	0	0.00%	27,029,317
Value Added						
ABR Chesapeake Fund III	2006	570,751,319	503,774,206	66,977,113	11.73%	351,332,196
ABR Chesapeake Fund IV	2010	20,000,000	20,000,000	0	0.00%	10,188,019
AG Core Plus Realty Fund II	2007	30,000,000	30,000,000	0	0.00%	27,904,190
AG Core Plus Realty Fund III	2011	20,000,000	18,500,000	1,500,000	7.50%	1,484,591
AG Core Plus Realty Fund IV	2015	35,000,000	34,426,334	573,666	1.64%	19,935,099
Apollo Real Estate Finance Corp.	2015	20,000,000	3,200,000	16,800,000	84.00%	3,168,667
AREFIN Co-Invest	2007	10,000,000	10,000,000	0	0.00%	3,758,290
BPG Investment Partnership IX, LP	2008	8,336,000	8,336,000	0	0.00%	17,157
CBRE Strategic Partners U.S. Value Fund 6	2013	30,000,000	27,602,510	2,397,490	7.99%	24,759,103
CBRE Strategic Partners US Value Fund 7	2011	20,000,000	19,538,146	461,854	2.31%	18,356,428
DRA Growth & Income Fund VII	2014	25,000,000	22,465,919	2,534,081	10.14%	24,348,304
DRA Growth & Income Fund VI	2007	30,000,000	29,982,000	18,000	0.06%	29,302,812
DRA Growth and Income Fund VIII	2011	23,215,319	22,655,319	560,000	2.41%	7,946,396
Equus Investment Partnership X, LP	2014	25,000,000	25,000,000	0	0.00%	25,439,640
Five Arrows Securities V, L.P.	2015	20,000,000	5,988,325	14,011,675	70.06%	5,942,344
Harbert US Real Estate Fund V, LP	2007	30,000,000	29,787,020	212,980	0.71%	13,515,172
Hudson RE Fund IV Co-Invest	2014	20,000,000	17,242,567	2,757,433	13.79%	16,415,150
Hudson Realty Capital Fund IV	2008	10,000,000	10,000,000	0	0.00%	65,339
Landmark Real Estate Partners VI	2007	15,000,000	15,000,000	0	0.00%	4,271,595
Realty Associates Fund IX	2011	20,000,000	16,337,993	3,662,007	18.31%	8,475,984
Realty Associates Fund VIII	2007	20,000,000	20,000,000	0	0.00%	16,118,376
Realty Associates Fund X	2009	20,000,000	20,000,000	0	0.00%	11,605,090
Stockbridge Value Fund	2012	20,000,000	20,000,000	0	0.00%	21,681,394
Stockbridge Value Fund II, LP	2011	25,000,000	19,947,331	5,052,669	20.21%	11,074,534
Stoltz Real Estate Fund V, LP	2014	35,000,000	18,564,743	16,435,257	46.96%	18,809,739
Strategic Partners Value Enhancement Fund	2014	20,000,000	20,000,000	0	0.00%	20,539,665
	2007	19,200,000	19,200,000	0	0.00%	6,209,117
Opportunistic						
AG Realty Fund VII L.P.	2007	274,706,871	220,050,118	57,106,509	20.79%	109,797,464
AG Realty Fund VIII L.P.	2011	20,000,000	18,800,000	1,200,000	6.00%	4,557,831
AG Realty Fund IX, L.P.	2015	20,000,000	16,715,668	3,284,332	16.42%	14,239,480
ARC (GP1) Ltd ¹	2011	20,000,000	4,400,000	15,600,000	78.00%	4,300,401
Beacon Capital Strategic Partners V	2011	18,818,203	18,818,203	0	0.00%	1,691,738
Carlyle Europe Real Estate Partners III	2007	22,500,000	22,500,000	1,250,000	5.26%	4,544,914
CIM Fund III, L.P.	2007	30,994,690	28,774,805	2,219,885	7.16%	9,677,459
GEM Realty Fund IV	2010	25,000,000	25,000,000	0	0.00%	27,695,995
GEM Realty Fund V	2010	15,000,000	11,031,791	3,968,209	26.45%	4,979,742
MGP Asia Fund III, LP	2013	20,000,000	8,865,000	11,135,000	55.68%	9,451,384
MSREF VI International ²	2007	26,143,978	19,889,928	6,254,050	23.92%	18,298,666
OConnor North American Partners II	2008	25,000,000	27,500,000	0	0.00%	3,378,321
PCCP Equity VII, LP	2008	15,000,000	14,684,623	265,133	1.77%	4,066,920
	2015	15,000,000	3,070,099	11,929,901	79.53%	2,914,614

1. GP gave a voluntary reduction in commitment to MT on 3/24/2014.

2. 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.

3. Reflects some 9/30/15, mostly 12/31/15 NAVs adjusted for contributions, distributions and market value changes through 3/31/16.

Q4 2015 Leverage

	<u>Q1 2015</u>	<u>Q2 2015</u>	<u>Q3 2015</u>	<u>Q4 2015</u>
Core (0% - 50%)	23.36%	22.78%	22.74%	23.85%
Timber (0% - 30%)	5.63%	5.63%	5.68%	5.07%
Non-Core (Total) (0% - 75%)	55.55%	56.26%	57.03%	56.86%
Total (0% - 60%)	42.36%	42.54%	42.96%	43.31%
Non-Core Breakout:				
Opportunistic	44.62%	43.10%	44.61%	47.15%
Value Add	59.06%	60.21%	60.35%	58.47%

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, Director of Private Investments
Date: May 24, 2016
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. Net Asset Values shown are as of 12/31/2015. No new funds have been added since the last Board meeting. JER Real Estate Partners IV, LP has liquidated and has dropped from the list. Final performance for the fund is as follows: net IRR of -5.66% and a net MOIC of 0.51x.

MPEP Partnership Focus List

May 2016

Partnership	Strategy	Reason	Net Asset Value	Inclusion Date
J.C. Flowers II, L.P.	Buyout	Performance	\$5,658,791	August 2010
Terra Firma Capital Partners III, L.P.	Buyout	Performance, Risk Management	\$12,217,124	August 2010

MTRP Partnership Focus List

May 2016

Partnership	Strategy	Reason	Net Asset Value	Inclusion Date
ARC (GP1) Ltd. (fka Liquid Realty Partners IV, L.P.)	Opportunistic	Staff Turnover	\$1,635,733	August 2010
Morgan Stanley Real Estate Fund VI International-TE, L.P.	Opportunistic	Performance, Risk Management, Staff Turnover	\$3,848,865	August 2010
Strategic Partners Value Enhancement Fund, L.P.	Value-Added	Performance, Platform Stability	\$5,285,516	November 2010
Hudson Realty Capital Fund IV, L.P.	Value-Added	Performance	\$4,271,595	May 2011
O'Connor North American Property Partners II, L.P.	Opportunistic	Performance, Platform Stability	\$4,405,661	May 2011
Beacon Capital Strategic Partners V, LP	Opportunistic	Performance, Platform Stability	\$4,544,914	August 2012
Carlyle European Real Estate Partners III, LP	Opportunistic	Performance, Staff Turnover	\$10,654,232	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.

[Back to Agenda](#)

MDEP & MTIP

Montana Domestic Equity Pool
Rande R. Muffick, CFA, Director of Public Market Investments
May 25, 2016

3/31/2016 Domestic Equity Pool By Manager				
Manager Name	Benchmark	Market Value (Millions)	%	Approved Range
STATE STREET		93.2	2.5%	
CASH EQUIVALENT Total		93.2	2.5%	
BLACKROCK	S&P 500	2,049.6	55.3%	
STATE STREET SPIF	S&P 500	5.6	0.2%	
LARGE CAP INDEXED Total		2,055.3	55.4%	45-70%
INTECH	S&P 500	130.1	3.5%	
T ROWE PRICE	S&P 500	299.4	8.1%	
LARGE CAP ENHANCED Total		429.5	11.6%	8-12%
ANALYTIC	S&P 500	131.7	3.6%	
JP MORGAN	S&P 500	293.6	7.9%	
PARTIAL LONG/SHORT Total		425.3	11.5%	8-12%
COMBINED LARGE CAP Total		3,003.3	81.0%	72-90%
ARTISAN	Russell Mid Cap Value	126.4	3.4%	
BLACKROCK	S&P Mid Cap	72.2	1.9%	
IRIDIAN	Russell Mid Cap Value	65.2	1.8%	
NICHOLAS	Russell Mid Cap Growth	59.4	1.6%	
TIMESQUARE	Russell Mid Cap Growth	145.5	3.9%	
MID CAP Total		468.5	12.6%	6-17%
ALLIANCE BERNSTEIN	Russell 2000 Growth	32.0	0.9%	
DIMENSIONAL FUND ADVISORS	Russell 2000	67.1	1.8%	
MET WEST CAPITAL	Russell 2000 Value	25.0	0.7%	
VAUGHAN NELSON	Russell 2000 Value	79.6	2.1%	
VOYA	Russell 2000 Growth	32.4	0.9%	
SMALL CAP Total		236.1	6.4%	3-11%
MDEP Total	S&P 1500	3,707.8	100.0%	

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. There were no significant changes to the allocations within the pool during the quarter.

The first quarter saw wild action within the U.S. equity market as stocks sold off sharply to start the quarter, only to rally back by the end of March. Recession fears drove the selloff, but when it became apparent the Fed was willing to adjust its monetary strategy investors took heart and bought stocks.

At the low on February 11, the S&P 500 Index had fallen -10.5% from where it had ended 2015. From there it rallied 12.6% to end the quarter up 0.8%. The January sell off was the sharpest in history to start a calendar year.

Other indexes experienced more volatility than the large caps within the S&P 500. Small cap stocks characterized by the Russell 2000 Index declined into bear market territory, down -27% from their 2015 highs at the February low. The Nasdaq flirted with bear market levels, down -18% from its 2015 highs. Both indexes rallied into the end of the quarter though and finished just slightly lower than where they had started the calendar year.

Stock action across sectors was volatile as well. Energy stocks initially led the market lower but then rallied off the bottom to a gain of 3.1% for the quarter. The high yielding defensive stocks were the best performers within the S&P 500, as telecom services gained 15.1% for the quarter followed by utilities with a 14.5% gain. Consumer staples were next with a 4.9% gain.

US Market Environment											
1Q 2016									Last Twelve Months		
	Value	Neutral	Growth					Value	Neutral	Growth	
Large	1.6%	1.2%	0.7%				Large	-1.5%	0.5%	2.5%	
Mid	3.9%	2.2%	0.6%				Mid	-3.4%	-4.0%	-4.8%	
Small	1.7%	-1.5%	-4.7%				Small	-7.7%	-9.8%	-11.8%	

Returns data sourced from Dimensional Fund Advisors.

Large cap is defined as approximately the largest 70% of total US market capitalization; Mid cap is approximately the next 20%; and Small cap is approximately the bottom 10%. Growth is defined as approximately the bottom 25% of securities based on book-to-market; neutral is approximately the next 50%; and value is approximately the highest 25% of securities based on book-to-market.

In US dollars. MSCI indices are total returns net of foreign withholding taxes on dividends. Marketwide returns use MSCI's Global Investable Market Indices Methodology and comprise large, mid, and small cap equities.

Russell data copyright © Russell Investment Group 1995–2012, all rights reserved. Indices are not available for direct investment. Their performance does not reflect the expenses associated with the management of an actual portfolio.

MSCI data copyright MSCI 2013, all rights reserved. Indices are not available for direct investment. Their performance does not reflect the expenses associated with the management of an actual portfolio.

Small caps lagged within the quarter as recession fears caused major concerns about the future profitability of small companies.

Value outperformed growth in the first quarter, particularly within the smaller capitalizations. Small cap growth was the worst performing style category, down almost -5% for the quarter. Despite the outperformance by value within the quarter, value stocks continue to lag growth stocks for the past twelve months due to the influence of energy stocks and cyclicals within the value space.



The VIX chart shows the jump in volatility in the January/February timeframe as market stress rose to levels not seen since September. However, by the end of the quarter, the market had settled down to very low levels again.

Active management within the investment industry had a difficult quarter. The majority of small cap managers outperformed their benchmarks, but close to 67% of active large cap managers and 68% of mid cap managers underperformed.

This was largely what was experienced within MDEP. All four large cap active portfolios underperformed for the quarter and within mid caps three of the four active portfolios lagged their benchmarks. The small cap active portfolios did slightly better with two of the five active portfolios outperforming.

Going forward the overweight in mid caps and small caps and the active/passive weights will continue. In addition the cash level will remain elevated.

ACTIVE DOMESTIC EXPOSURE-MARKET CAP % (Active Portfolios Only)

March 31, 2016

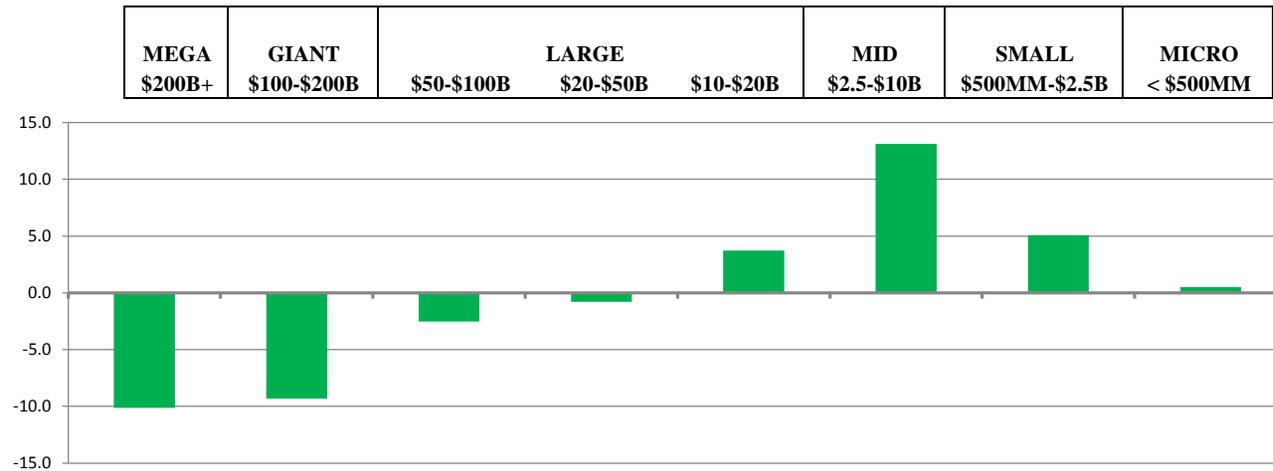
MANAGERS	MEGA	GIANT	LARGE			MID	SMALL	MICRO	WTD AVG
	\$200B+	\$100-\$200B	\$50-\$100B	\$20-\$50B	\$10-\$20B	\$2.5-\$10B	\$500MM-\$2.5B	< \$500MM	MARKET CAP (\$B)
Alliance Bernstein	--	--	--	--	1.4	52.7	43.3	2.6	2,918
Analytic Investors, Inc	21.0	22.5	13.3	22.0	4.8	14.6	-0.5	--	116,408
Artisan Partners	--	--	--	6.6	29.2	60.3	3.9	--	10,259
Dimensional Fund Advisors	--	--	--	--	0.2	27.6	60.4	11.8	1,841
INTECH Investment Management	12.0	13.2	12.7	34.3	20.2	7.6	--	--	89,156
Iridian Asset Mgmt	--	--	--	23.7	21.0	47.4	7.9	--	13,793
J.P. Morgan	18.5	13.0	29.5	29.4	7.2	1.6	0.5	--	124,666
Met West Capital Mgt	--	--	--	--	--	48.7	50.3	1.0	2,809
Nicholas Investment Partners	--	--	1.6	27.8	26.2	43.5	0.9	--	13,943
T. Rowe Associates	23.6	19.3	16.4	21.7	12.8	6.2	--	--	134,188
TimesSquare Cap Mgmt	--	--	--	13.7	40.7	43.1	2.6	--	11,751
Vaughan Nelson Mgmt	--	--	--	--	--	62.8	36.7	0.5	3,093
Voya Investment Management	--	--	--	--	--	47.0	51.4	1.7	2,628

ACTIVE DOMESTIC EQUITY PORTFOLIOS

Benchmark: S&P Composite 1500

Over/underweight(-)

11.5	9.7	11.6	19.3	14.6	23.9	8.5	0.7	74
21.6	19.1	14.1	20.1	10.9	10.7	3.4	0.2	125
-10.1	-9.3	-2.5	-0.8	3.7	13.1	5.1	0.5	



ACTIVE DOMESTIC EXPOSURE-SECTOR % (Active Portfolios Only)

March 31, 2016

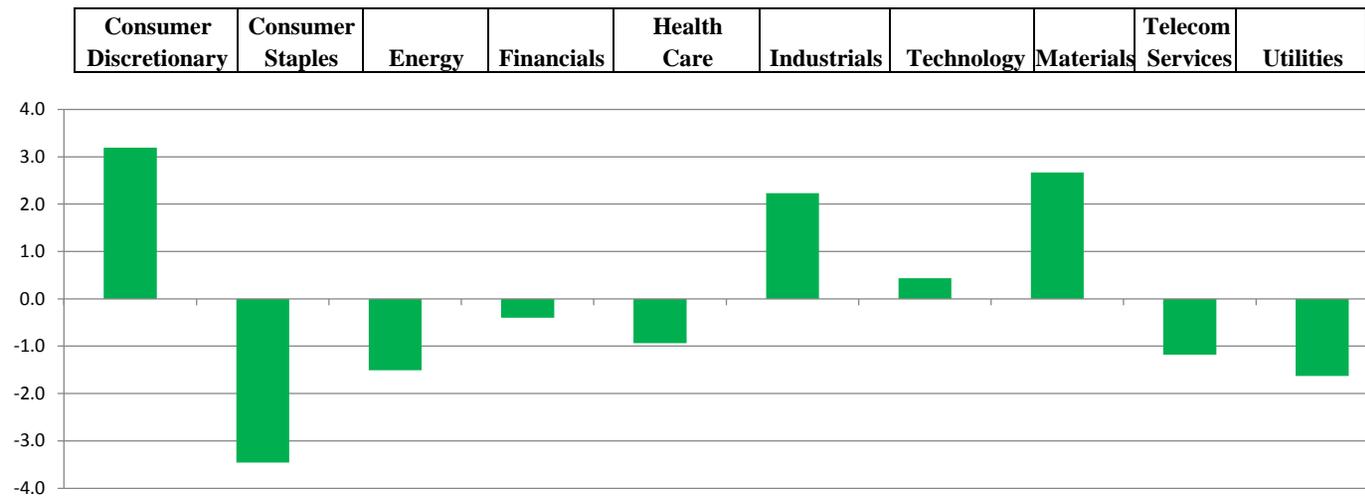
MANAGERS

Alliance Bernstein
 Analytic Investors, Inc
 Artisan Partners
 Dimensional Fund Advisors
 INTECH Investment Management
 Iridian Asset Mgmt
 J.P. Morgan
 Met West Capital Mgt
 Nicholas Investment Partners
 T. Rowe Associates
 TimesSquare Cap Mgmt
 Vaughan Nelson Mgmt
 Voya Investment Management

	Consumer Discretionary	Consumer Staples	Energy	Financials	Health Care	Industrials	Technology	Materials	Telecom Services	Utilities
Alliance Bernstein	22.3	1.8	2.5	7.0	21.7	13.7	28.2	2.9	--	--
Analytic Investors, Inc	14.3	10.4	5.0	12.3	15.6	8.5	22.4	3.0	3.6	2.7
Artisan Partners	18.6	--	10.6	23.6	--	18.4	16.6	10.7	--	1.6
Dimensional Fund Advisors	17.9	5.0	2.7	19.6	9.0	18.0	17.6	4.5	1.0	4.7
INTECH Investment Management	16.7	13.3	3.6	17.5	14.5	9.5	16.7	3.9	0.6	3.7
Iridian Asset Mgmt	15.7	4.8	0.9	3.1	12.0	14.4	17.9	31.3	--	--
J.P. Morgan	18.7	4.5	6.1	17.8	15.2	8.0	25.2	3.8	--	-0.1
Met West Capital Mgt	11.7	5.9	7.1	25.4	9.8	18.6	13.5	2.2	--	1.6
Nicholas Investment Partners	25.4	7.7	0.8	14.2	8.5	16.5	21.7	5.3	--	--
T. Rowe Associates	13.3	9.5	6.3	15.1	14.6	9.8	22.5	3.5	2.0	3.4
TimesSquare Cap Mgmt	17.0	3.4	1.5	12.2	12.6	23.1	19.4	5.6	5.1	--
Vaughan Nelson Mgmt	5.0	--	3.8	27.7	11.7	19.3	12.7	7.8	--	8.1
Voya Investment Management	16.6	3.0	1.3	9.4	20.1	16.9	26.0	5.5	--	--

Active Domestic Equity Portfolios
 Benchmark: S&P Composite 1500
 Over/underweight(-)

16.2	6.2	4.9	16.2	12.8	13.0	20.8	5.9	1.4	2.0
13.0	9.7	6.4	16.6	13.8	10.8	20.4	3.2	2.5	3.7
3.2	-3.5	-1.5	-0.4	-0.9	2.2	0.4	2.7	-1.2	-1.6



ACTIVE DOMESTIC PORTFOLIO CHARACTERISTICS (Active Portfolios Only)

March 31, 2016

MANAGERS	Market Value	Number of Securities	3Yr Historical EPS Growth	Price/Earnings	Price/Book	Dividend Yield
Alliance Bernstein	31,949,010	99	24.1	26.2	3.6	0.4
Analytic Investors, Inc	134,871,646	164	22.9	15.6	3.1	3.0
Artisan Partners	127,465,884	53	-1.3	16.8	1.6	1.9
Dimensional Fund Advisors	67,068,079	1,941	12.4	19.0	1.9	1.3
INTECH Investment Management	130,381,523	318	19.4	20.4	3.0	1.7
Iridian Asset Mgmt	64,152,769	41	17.4	15.1	3.3	1.3
J.P. Morgan	295,580,598	293	24.8	16.1	2.2	1.6
Met West Capital Mgt	25,113,236	62	6.6	21.7	1.7	1.8
Nicholas Investment Partners	59,963,590	95	24.3	20.5	3.5	1.0
T. Rowe Associates	299,603,866	245	18.8	20.3	2.7	1.9
TimesSquare Cap Mgmt	146,151,766	74	22.6	21.7	3.3	1.0
Vaughan Nelson Mgmt	80,902,809	65	1.5	19.6	1.8	1.5
Voya Investment Management	32,575,128	151	17.3	25.6	2.8	1.0

Active Domestic Equity Portfolios

1,495,779,904	2,699	18.1	18.4	2.5	1.7
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BENCHMARKS

S&P Composite 1500	1,505	17.1	19.5	2.6	2.1
S&P/Citigroup 1500 Pure Growth	350	32.1	23.3	3.3	0.8
S&P/Citigroup 1500 Pure Value	362	4.4	13.6	1.0	2.0
S&P 500	504	17.8	19.4	2.7	2.1
Russell 1000	1,020	16.9	19.4	2.6	2.1
Russell 1000 Growth	635	26.9	21.4	5.3	1.6
Russell 1000 Value	684	6.5	17.6	1.7	2.6
Russell Midcap	821	13.3	20.9	2.4	1.8
Russell Midcap Growth	498	17.2	22.3	4.7	1.2
Russell Midcap Value	554	9.3	19.6	1.7	2.4
Russell 2000	1,959	12.9	19.0	1.9	1.6
Russell 2000 Growth	1,181	19.1	23.2	3.4	0.8
Russell 2000 Value	1,325	7.5	16.3	1.3	2.3

DOMESTIC EXPOSURE-MARKET CAP % (All Portfolios)

March 31, 2016

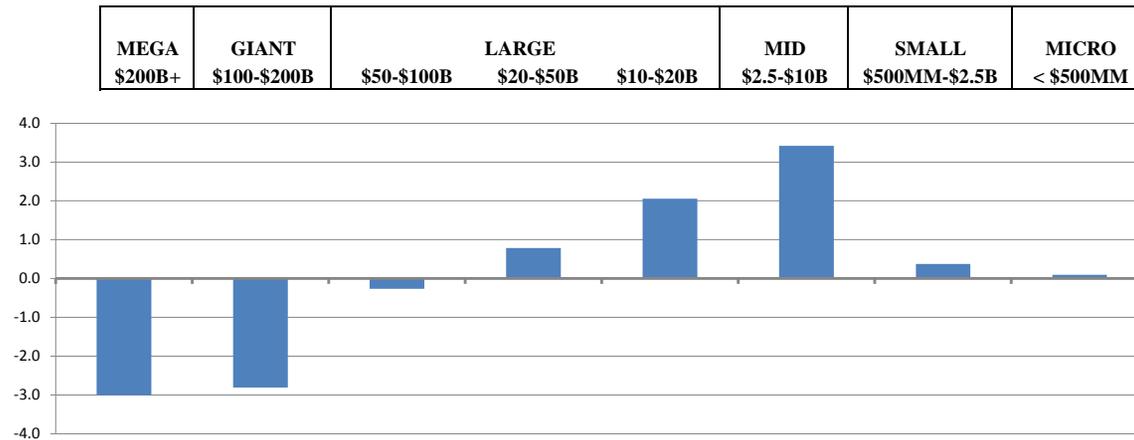
MANAGERS	MEGA	GIANT	LARGE			MID	SMALL	MICRO	WTD AVG
	\$200B+	\$100-\$200B	\$50-\$100B	\$20-\$50B	\$10-\$20B	\$2.5-\$10B	\$500MM-\$2.5B	< \$500MM	MARKET CAP (\$B)
Alliance Bernstein	--	--	--	--	1.4	52.7	43.3	2.6	2,918
Analytic Investors, Inc	21.0	22.5	13.3	22.0	4.8	14.6	-0.5	--	116,381
Artisan Partners	--	--	--	6.6	29.2	60.3	3.9	--	10,260
Dimensional Fund Advisors	--	--	--	--	0.2	27.6	60.4	11.8	1,842
INTECH Investment Management	12.0	13.2	12.7	34.3	20.2	7.6	0.0	--	89,145
Iridian Asset Mgmt	--	--	--	23.7	21.0	47.4	7.9	--	13,794
J.P. Morgan	18.5	13.0	29.5	29.4	7.2	1.6	0.5	--	124,634
Met West Capital Mgt	--	--	--	--	--	48.7	50.3	1.0	2,809
Nicholas Investment Partners	--	--	1.6	27.8	26.2	43.5	0.9	--	13,942
T. Rowe Associates	23.6	19.3	16.4	21.7	12.8	6.2	--	--	134,159
TimesSquare Cap Mgmt	--	--	--	13.7	40.7	43.1	2.6	--	11,754
Vaughan Nelson Mgmt	--	--	--	--	--	62.8	36.7	0.5	3,093
Voya Investment Management	--	--	--	--	--	47.0	51.4	1.7	2,629
BlackRock S&P 500 Index Fund	24.4	21.6	16.0	22.7	12.1	4.6	--	--	139,425
BlackRock Midcap Equity Index Fund	--	--	--	--	2.7	85.3	12.7	--	4,863
Domestic Equity Pool SPIF	24.1	21.3	15.8	22.4	11.9	4.5	--	--	139,419

ALL DOMESTIC EQUITY PORTFOLIOS

Benchmark: S&P Composite 1500

Over/underweight(-)

18.6	16.3	13.9	20.9	12.9	14.2	3.8	0.3	110
21.6	19.1	14.1	20.1	10.9	10.7	3.4	0.2	125
-3.0	-2.8	-0.3	0.8	2.1	3.4	0.4	0.1	



DOMESTIC EXPOSURE-SECTOR % (All Portfolios)

March 31, 2016

MANAGERS

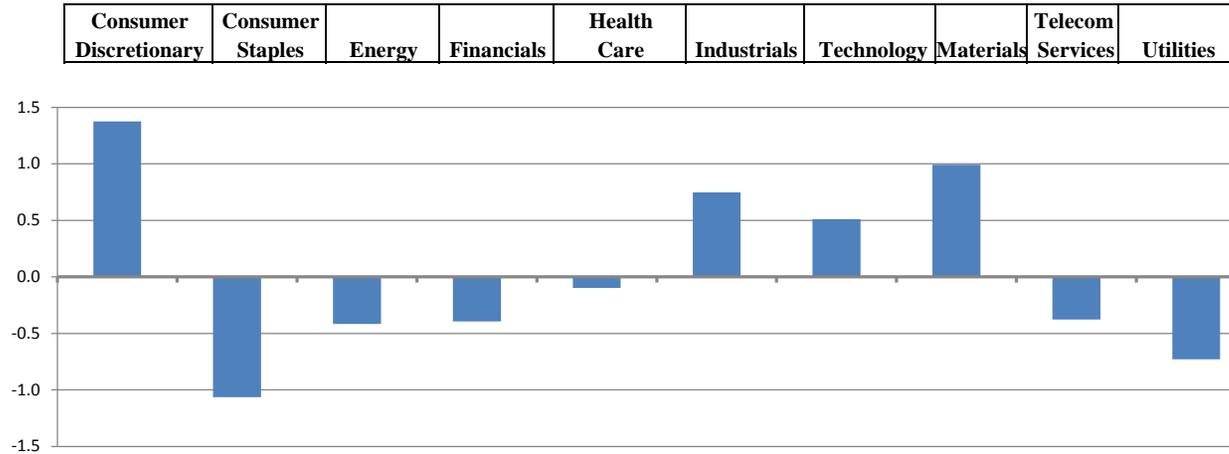
	Consumer Discretionary	Consumer Staples	Energy	Financials	Health Care	Industrials	Technology	Materials	Telecom Services	Utilities
Alliance Bernstein	22.3	1.8	2.5	7.0	21.7	13.7	28.2	2.9	--	--
Analytic Investors, Inc	14.3	10.4	5.0	12.3	15.6	8.5	22.4	3.0	3.6	2.7
Artisan Partners	18.6	--	10.6	23.6	--	18.4	16.6	10.7	--	1.6
Dimensional Fund Advisors	17.9	5.0	2.7	19.6	9.0	17.9	17.7	4.5	1.0	4.7
INTECH Investment Management	16.7	13.3	3.6	17.5	14.5	9.5	16.7	3.9	0.6	3.7
Iridian Asset Mgmt	15.7	4.8	0.9	3.1	12.0	14.4	17.9	31.3	--	--
J.P. Morgan	18.7	4.5	6.1	17.8	15.2	8.0	25.2	3.8	0.2	-0.1
Met West Capital Mgt	11.7	5.9	7.1	25.4	9.8	18.6	13.5	2.2	--	1.6
Nicholas Investment Partners	25.4	7.7	0.8	14.2	8.5	16.5	21.7	5.3	--	--
T. Rowe Associates	13.3	9.5	6.3	15.1	14.6	9.8	22.5	3.5	2.0	3.4
TimesSquare Cap Mgmt	17.0	3.4	1.5	12.2	12.6	23.1	19.4	5.6	5.1	--
Vaughan Nelson Mgmt	5.0	--	3.8	27.7	11.7	19.3	12.7	7.8	--	8.1
Voya Investment Management	16.6	3.0	1.3	9.4	20.1	16.9	26.0	5.5	--	--
BlackRock S&P 500 Index Fund	13.1	10.5	6.9	15.9	14.5	10.3	21.1	2.9	2.8	3.5
BlackRock Midcap Equity Index Fund	13.7	4.2	3.3	25.5	8.1	15.7	16.6	7.2	0.2	6.1
Domestic Equity Pool SPIF	12.9	10.4	6.8	15.6	14.3	10.1	20.8	2.8	2.8	3.4

All Domestic Equity Portfolios

Benchmark: S&P Composite 1500

Over/underweight(-)

14.4	8.6	6.0	16.2	13.7	11.5	20.9	4.2	2.2	2.9
13.0	9.7	6.4	16.6	13.8	10.8	20.4	3.2	2.5	3.7
1.4	-1.1	-0.4	-0.4	-0.1	0.7	0.5	1.0	-0.4	-0.7



DOMESTIC PORTFOLIO CHARACTERISTICS (All Portfolios)

March 31, 2016

MANAGERS	Market Value	Number of Securities	3Yr Historical EPS Growth	Price/Earnings	Price/Book	Dividend Yield
Alliance Bernstein	31,949,010	99	24.1	26.3	3.7	0.4
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Artisan Partners	127,465,884	53	-1.3	16.7	1.6	1.9
Dimensional Fund Advisors	67,068,079	1,941	12.4	19.1	1.9	1.3
INTECH Investment Management	130,381,523	318	19.2	20.6	3.0	1.7
Iridian Asset Mgmt	64,152,769	41	17.4	15.0	3.3	1.3
J.P. Morgan	295,580,598	293	24.9	16.2	2.3	1.6
Met West Capital Mgt	25,113,236	62	6.5	21.7	1.7	1.8
Nicholas Investment Partners	59,963,590	95	24.6	20.5	3.5	1.0
T. Rowe Associates	299,603,866	245	18.7	20.3	2.7	1.9
TimesSquare Cap Mgmt	146,151,766	74	22.6	21.7	3.3	1.0
Vaughan Nelson Mgmt	80,902,809	65	1.3	19.8	1.8	1.5
Voya Investment Management	32,575,128	151	17.3	26.1	2.8	1.0
BlackRock S&P 500 Index Fund	2,049,641,228	506	17.5	19.5	2.7	2.1
BlackRock Midcap Equity Index Fund	72,163,487	402	11.1	20.9	2.1	1.7
Domestic Equity Pool SPIF	5,609,000	504	17.5	19.5	2.7	2.1
Domestic Equity Pool SPY	--	504	--	--	--	--
iShares S&P 600 Index ETF	--	601	--	--	--	--

All Domestic Equity Portfolios

3,623,193,619	2,895	17.6	19.1	2.6	1.9
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BENCHMARKS

S&P Composite 1500	1,505	16.9	19.6	2.6	2.1
S&P/Citigroup 1500 Pure Growth	350	32.1	23.4	3.3	0.8
S&P/Citigroup 1500 Pure Value	362	4.2	13.6	1.0	2.0
S&P 500	504	17.5	19.5	2.7	2.1
Russell 1000	1,020	16.7	19.5	2.6	2.1
Russell 1000 Growth	635	26.8	21.6	5.3	1.6
Russell 1000 Value	684	6.1	17.6	1.7	2.6
Russell Midcap	821	13.3	20.9	2.4	1.8
Russell Midcap Growth	498	17.2	22.3	4.6	1.2
Russell Midcap Value	554	9.3	19.6	1.7	2.4
Russell 2000	1,959	12.9	19.1	1.9	1.6
Russell 2000 Growth	1,181	19.1	23.4	3.4	0.8
Russell 2000 Value	1,325	7.4	16.3	1.3	2.3

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
Date: May 25, 2016
Subject: Public Equity External Managers Watch List - Quarterly Update

There were no changes to the Watch List this quarter.

**PUBLIC EQUITIES
MANAGER WATCH LIST
May 2016**

<u>Manager</u>	<u>Style Bucket</u>	<u>Reason</u>	<u>\$ Invested (mil)</u>	<u>Inclusion Date</u>
Artisan	Domestic – MC Value	Performance	\$126.4	November 2014
Alliance Bernstein	Domestic – SC Growth	Performance	\$32.0	February 2015

Montana International Equity Pool
Rande R. Muffick, CFA, Director of Public Market Investments
May 25, 2016

3/31/2016 International Equity Pool By Manager				
<u>Manager Name</u>	<u>Benchmark</u>	<u>Market Value (Millions)*</u>	<u>%</u>	<u>Approved Range</u>
STATE STREET		30.0	1.9%	
CASH EQUIVALENT		30.0	1.9%	
BLACKROCK	MSCI ACWI ex US	955.9	61.2%	
BLACKROCK	MSCI Emerging Markets	29.5	1.9%	0-5%
STATE STREET ISPIFF	MSCI EAFE	12.2	0.8%	
PASSIVE Total		997.6	63.9%	42-66%
ACADIAN	MSCI ACWI ex US Value	92.6	5.9%	
LAZARD	MSCI ACWI ex US Value	88.4	5.7%	
VALUE Total		181.0	11.6%	
BAILLIE GIFFORD	MSCI ACWI ex US Growth	85.5	5.5%	
INVESCO	MSCI ACWI ex US Growth	85.6	5.5%	
GROWTH Total		171.2	11.0%	
AMERICAN CENTURY	MSCI ACWI ex US Small Cap Growth	29.3	1.9%	
BLACKROCK	MSCI ACWI ex US Small Cap	27.7	1.8%	
DIMENSIONAL FUND ADVISORS	MSCI ACWI ex US Small Cap	77.1	4.9%	
TEMPLETON	MSCI ACWI ex US Small Cap Value	46.7	3.0%	
SMALL CAP Total		180.8	11.6%	8-16%
MTIP Total		1,560.6	100.0%	
*Total does not reflect closed and transition accounts.				

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. There were no significant changes to the allocations within the pool.

International equity markets were whipsawed in the first quarter. First selling off sharply through the first half of February on global growth concerns and lower commodity prices and then rallying just as sharply on central bank optimism. The EAFE Index of developed markets was down -13.0% through February 12. The MSCI ACWI ex-US Index dropped -12.0% during the same six week period.

Both indexes reversed those losses from there and ended the quarter basically flat. The perceived value opportunities rebounded the most as oil stocks and emerging market stocks surged. Emerging market stocks ended up posting mid single digit returns for the quarter, leading all global markets as investors saw value and returned to riskier assets. Ironically, March marked the biggest monthly gain for emerging markets since January 2012.

Non-US Developed Market Environment									
1Q 2016						Last Twelve Months			
	Value	Neutral	Growth			Value	Neutral	Growth	
Large	-3.2%	-2.6%	-1.9%			Large	-13.4%	-9.9%	-6.0%
Mid	0.9%	0.5%	0.3%			Mid	-6.3%	-2.4%	0.2%
Small	1.2%	0.6%	0.0%			Small	-1.4%	2.0%	5.4%
Emerging Market Environment									
1Q 2016						Last Twelve Months			
	Value	Neutral	Growth			Value	Neutral	Growth	
Large	7.8%	5.8%	3.7%			Large	-12.0%	-12.2%	-12.4%
Mid	7.6%	5.2%	3.3%			Mid	-15.8%	-11.2%	-7.3%
Small	3.1%	1.0%	-1.2%			Small	-8.1%	-9.2%	-10.4%

Returns data sourced from Dimensional Fund Advisors.

Large cap is defined as approximately the largest 70% of total US market capitalization; Mid cap is approximately the next 20%; and Small cap is approximately the bottom 10%. Growth is defined as approximately the bottom 25% of securities based on book-to-market; neutral is approximately the next 50%; and value is approximately the highest 25% of securities based on book-to-market.

In US dollars. MSCI indices are total returns net of foreign withholding taxes on dividends. Marketwide returns use MSCI's Global Investable Market Indices Methodology and comprise large, mid, and small cap equities.

Russell data copyright © Russell Investment Group 1995–2012, all rights reserved. Indices are not available for direct investment. Their performance does not reflect the expenses associated with the management of an actual portfolio.

MSCI data copyright MSCI 2013, all rights reserved. Indices are not available for direct investment. Their performance does not reflect the expenses associated with the management of an actual portfolio.

Emerging market value stocks within the large and mid capitalizations posted the strongest returns at 7.8% and 7.6% respectively. Overall, value stocks posted better returns than growth stocks as beaten up cyclicals and energy stocks led the rally off the bottom. Even so, both value stocks and emerging market stocks have a long way to go to erase substantial negative returns for the past twelve months.



The U.S. dollar weakened significantly during the quarter which helped commodity markets and equity markets alike. It approached twelve months lows as March drew to a close. All in all it experienced about a -4% decline when compared to the basket of six major international currencies.

The weakness near quarter end resulted mainly from the Federal Reserve's change to a more dovish approach to U.S. interest rates.

Active management within the international investment industry had a challenging quarter. Less than half of large cap active portfolios beat their benchmarks. Small cap active portfolios fared even worse with two-thirds of active portfolios underperforming. This is in stark contrast to the previous few quarters where a high proportion of actively managed portfolios provided value added performance.

Within MTIP, actively managed portfolios had mixed performance. All four of the large cap active portfolios outperformed while the three small cap active portfolios lagged.

Going forward the proportion of large cap/small cap and the active/passive weights will continue. In addition the cash level will remain elevated.

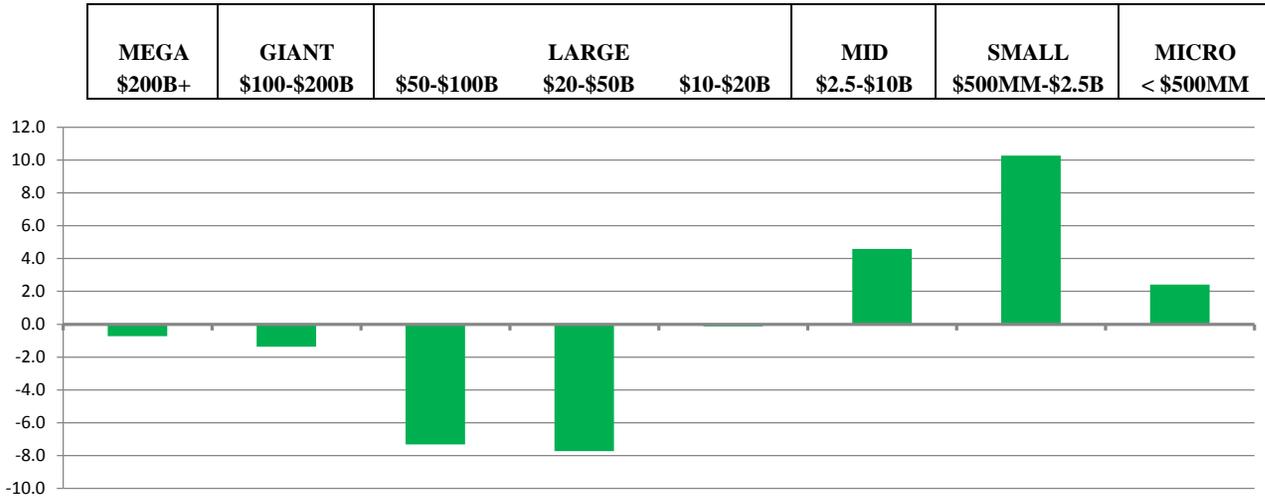
ACTIVE INTERNATIONAL EXPOSURE-MARKET CAP % (Active Portfolios Only)

March 31, 2016

Managers

Acadian Asset Management
 American Century Invt Mgmt
 Baillie Gifford
 DFA International Small Cap
 Invesco
 Lazard Asset Mgmt LLC
 Templeton Invt Counsel LLC

	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	2.2	5.4	10.2	13.6	17.4	32.2	11.9	6.9	20.8
American Century Invt Mgmt	--	--	--	--	--	47.5	49.6	2.9	2.1
Baillie Gifford	1.7	11.3	6.3	21.0	22.5	33.1	4.2	--	25.6
DFA International Small Cap	--	--	--	--	0.4	33.3	53.1	13.1	1.8
Invesco	1.4	10.2	20.1	30.6	30.9	6.7	--	--	39.2
Lazard Asset Mgmt LLC	2.7	14.5	14.4	25.1	20.2	20.0	3.1	--	33.9
Templeton Invt Counsel LLC	--	--	0.5	--	--	31.8	63.0	4.7	1.7
ACTIVE INTERNATIONAL EQUITY PORTFOLIOS	1.4	7.1	8.9	15.6	15.8	27.0	20.3	3.9	21.1
International Custom Benchmark	2.1	8.5	16.2	23.3	15.9	22.4	10.0	1.5	33.4
Over/underweight(-)	-0.7	-1.4	-7.3	-7.7	-0.1	4.6	10.3	2.4	-



ACTIVE INTERNATIONAL EXPOSURE-SECTOR % (Active Portfolios Only)

March 31, 2016

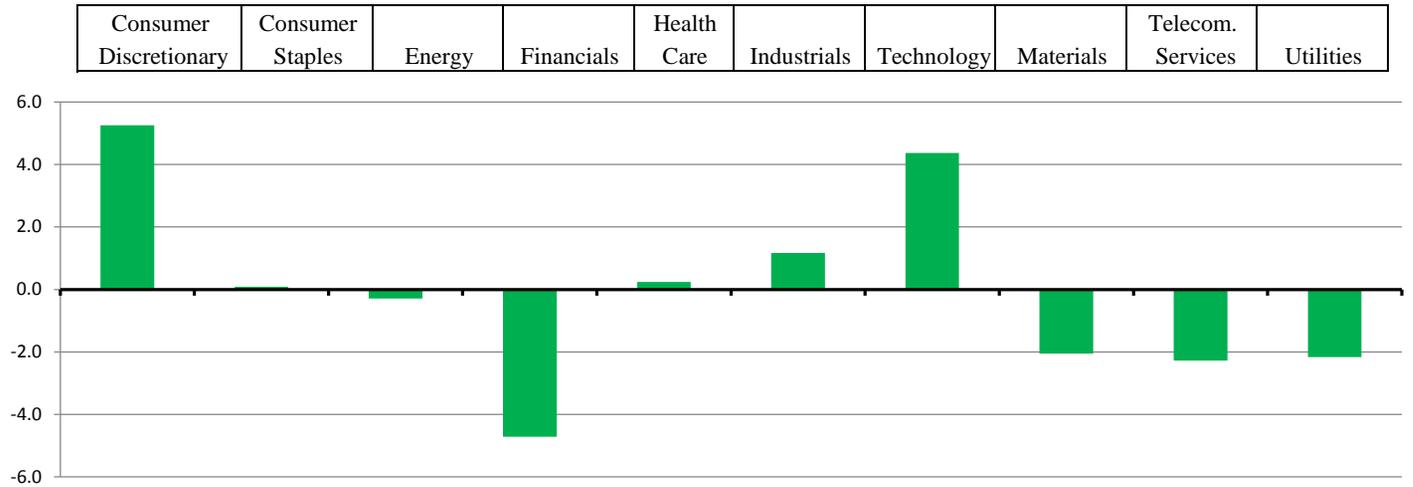
MANAGERS

Acadian Asset Management
 American Century Invt Mgmt
 Baillie Gifford
 DFA International Small Cap
 Invesco
 Lazard Asset Mgmt LLC
 Templeton Invt Counsel LLC

	Consumer Discretionary	Consumer Staples	Energy	Financials	Health Care	Industrials	Technology	Materials	Telecom. Services	Utilities
Acadian Asset Management	6.1	3.6	15.6	30.0	9.9	12.2	11.7	5.5	3.2	2.2
American Century Invt Mgmt	21.7	5.9	2.6	16.5	8.5	17.9	14.4	7.7	1.0	2.0
Baillie Gifford	18.4	20.3	0.7	16.8	10.6	14.7	16.0	2.5	--	--
DFA International Small Cap	18.8	6.9	3.6	15.1	6.5	24.6	9.2	11.5	1.6	2.4
Invesco	24.0	12.9	3.9	19.2	9.4	8.5	18.2	3.5	--	--
Lazard Asset Mgmt LLC	15.6	12.9	5.6	23.7	9.2	8.2	9.9	3.7	9.3	2.0
Templeton Invt Counsel LLC	29.4	8.9	3.5	14.9	6.4	16.1	13.9	4.7	--	--

Active International Equity Portfolios
 International Custom Benchmark
 Over/underweight(-)

Active International Equity Portfolios	17.8	10.7	5.7	20.4	8.9	13.9	13.2	5.3	2.5	1.2
International Custom Benchmark	12.6	10.7	6.0	25.1	8.7	12.7	8.8	7.4	4.8	3.4
Over/underweight(-)	5.3	0.1	-0.3	-4.7	0.2	1.2	4.4	-2.1	-2.3	-2.2



INTERNATIONAL EQUITY
Active Region and Market Exposure
March 31, 2016

Developed Countries	Active Int'l Portfolio Weight (%)	MSCI ACWI ex US IMI	difference
Asia/Pacific	23.8%	25.4%	-1.58%
Australia	4.55%	5.01%	
Hong Kong	2.16%	2.28%	
Japan	15.76%	16.83%	
New Zealand	0.33%	0.22%	
Singapore	1.00%	1.04%	
European Union	25.8%	25.2%	0.61%
Austria	0.71%	0.20%	
Belgium	1.36%	1.07%	
Denmark	1.99%	1.37%	
Finland	1.87%	0.76%	
France	3.87%	6.61%	
Germany	6.19%	6.28%	
Ireland	0.40%	0.41%	
Italy	1.46%	1.73%	
Netherlands	1.49%	2.09%	
Portugal	0.34%	0.14%	
Spain	1.75%	2.21%	
Sweden	4.38%	2.35%	
Non-EU Europe	5.5%	6.6%	-1.13%
Norway	0.74%	0.53%	
Switzerland	4.74%	6.08%	
North America	7.5%	6.6%	0.86%
Canada	5.87%	6.60%	
USA	1.60%	0.00%	
United Kingdom	16.9%	13.8%	3.07%
United Kingdom	16.89%	13.82%	
Other			
Other	1.01%	0.55%	
DEVELOPED TOTAL	80.47%	78.18%	2.29%
Emerging & Frontier Market Countries			
Asia/Pacific	10.9%	15.6%	-4.72%
China	3.43%	5.15%	
India	0.26%	1.84%	
Indonesia	0.46%	0.58%	
South Korea	2.69%	3.52%	
Malaysia	0.18%	0.77%	
Philippines	0.46%	0.31%	
Taiwan	2.86%	2.87%	
Thailand	0.53%	0.53%	
European Union	0.4%	0.5%	-0.06%
Czech Republic	0.01%	0.04%	
Greece	0.00%	0.09%	
Hungary	0.00%	0.06%	
Poland	0.42%	0.29%	
Non-EU Europe	0.1%	0.7%	-0.63%
Russia	0.10%	0.72%	
Latin America/Caribbean	3.6%	2.7%	0.92%
Brazil	2.34%	1.32%	
Chile	0.16%	0.27%	
Colombia	0.00%	0.10%	
Mexico	1.06%	0.96%	
Peru	0.08%	0.08%	
Mid East/Africa	2.4%	2.3%	0.10%
Egypt	0.00%	0.05%	
Qatar	0.00%	0.20%	
South Africa	1.69%	1.53%	
Turkey	0.72%	0.33%	
United Arab Emirates	0.00%	0.20%	
Frontier	0.00%	0.00%	0.00%
EMERGING & FRONTIER TOTAL	17.4%	21.8%	-4.39%

ACTIVE INTERNATIONAL PORTFOLIO CHARACTERISTICS (Active Portfolios Only)

March 31, 2016

	Market Value	Number of Securities	3Yr Hist EPS Growth	Price/Earnings	Price/Book	Dividend Yield
Active International External Portfolios	506,603,681	4,489	12.7	15.4	1.9	2.65

International Equity Managers

Acadian Asset Management	92,650,808	384	15.2	10.5	1.3	3.0
American Century Invt Mgmt	29,521,601	116	24.9	24.4	3.3	1.4
Baillie Gifford	85,818,398	74	13.6	21.0	2.7	1.9
Lazard Asset Mgmt LLC	88,484,110	69	12.9	16.7	2.2	3.4
Invesco	86,009,077	69	8.7	16.7	2.4	2.8
DFA International Small Cap	77,337,561	4,069	11.1	15.0	1.4	2.6
Templeton Invt Counsel LLC	46,782,127	113	8.5	14.8	1.6	2.6

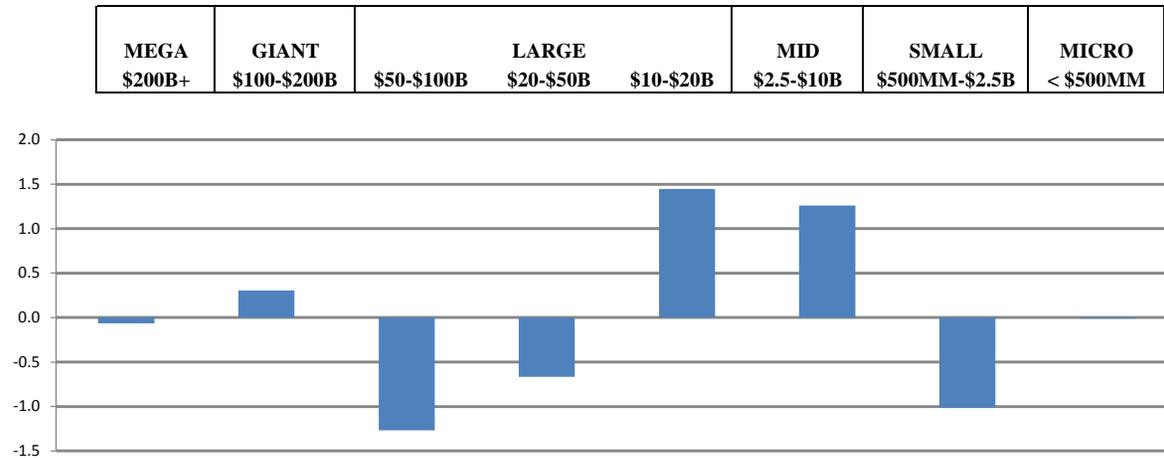
Benchmarks

MSCI AC World ex USA IMI	6,110	11.23	14.73	1.48	3.17
MSCI All Country World Ex-United States	1,856	10.85	14.64	1.50	3.28
MSCI All Country World Ex-United States Growth	1,059	15.89	19.02	2.48	2.24
MSCI All Country World Ex-United States Value	1,007	5.54	11.71	1.07	4.35
MSCI EAFE Small Cap	2,170	16.06	15.84	1.45	2.49
MSCI World Ex-United States Small Cap	2,397	15.40	15.98	1.44	2.52
MSCI All Country Pacific	949	18.32	12.74	1.28	2.91
MSCI Europe	446	5.42	16.41	1.68	3.69

INTERNATIONAL EXPOSURE-MARKET CAP % (All Portfolios)

March 31, 2016

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	
Acadian Asset Management	2.2	5.4	10.2	13.6	17.4	32.2	11.9	6.9	20.8
American Century Invt Mgmt	--	--	--	--	--	47.5	49.6	2.9	2.1
Baillie Gifford	1.7	11.3	6.3	21.0	22.5	33.1	4.2	--	25.6
DFA International Small Cap	--	--	--	--	0.4	33.3	53.1	13.1	1.8
Invesco	1.4	10.2	20.1	30.6	30.9	6.7	0.0	--	39.2
Lazard Asset Mgmt LLC	2.7	14.5	14.4	25.1	20.2	20.0	3.1	--	33.9
Templeton Invt Counsel LLC	--	--	0.5	--	--	31.8	63.0	4.7	1.7
BlackRock ACWI Ex US Superfund A	2.4	9.8	18.7	27.0	18.5	21.7	1.7	--	38.5
BlackRock Emerging Market Fund look through	1.9	12.3	5.3	18.7	23.3	32.0	6.4	--	23.3
BlackRock Intl Small Cap Index look through	--	--	--	--	--	27.2	62.2	10.6	1.4
Intl Equity Pool SPIF	2.8	10.0	22.7	28.8	16.9	18.4	0.4	--	43.8
ALL INTERNATIONAL EQUITY PORTFOLIOS	2.0	8.8	14.9	22.6	17.4	23.7	9.0	1.5	32.2
International Custom Benchmark	2.1	8.5	16.2	23.3	15.9	22.4	10.0	1.5	33.4
Over/underweight(-)	-0.1	0.3	-1.3	-0.7	1.4	1.3	-1.0	0.0	-



INTERNATIONAL EXPOSURE-SECTOR % (All Portfolios)

March 31, 2016

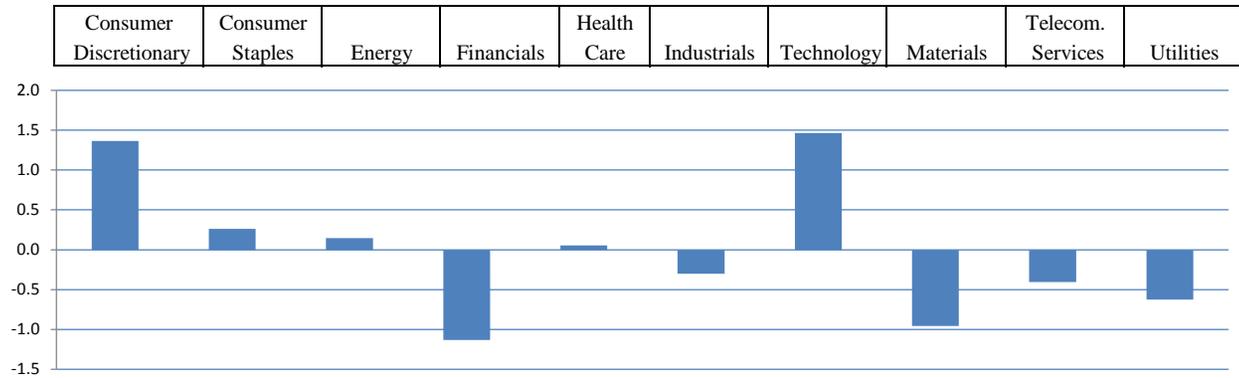
MANAGERS

Acadian Asset Management
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 BlackRock ACWI Ex US Superfund A
 BlackRock Emerging Market Fund look through
 BlackRock Intl Small Cap Index look through
 Intl Equity Pool SPIF

	Consumer Discretionary	Consumer Staples	Energy	Financials	Health Care	Industrials	Technology	Materials	Telecom. Services	Utilities
Acadian Asset Management	6.1	3.6	15.6	30.0	9.9	12.5	11.7	5.2	3.2	2.1
American Century Invt Mgmt	21.7	5.9	2.6	16.5	8.5	17.9	14.4	7.7	1.0	2.0
Baillie Gifford	18.4	20.3	0.7	16.8	10.6	14.7	16.0	2.5	--	--
DFA International Small Cap	19.0	6.9	3.6	15.1	6.5	24.5	9.2	11.4	1.6	2.3
Invesco	24.0	12.9	3.9	19.2	9.4	8.5	18.2	3.5	--	--
Lazard Asset Mgmt LLC	15.6	12.9	5.6	23.7	9.2	8.2	9.9	3.7	9.3	2.0
Templeton Invt Counsel LLC	29.4	8.9	3.5	14.9	6.4	17.1	13.9	3.7	--	--
BlackRock ACWI Ex US Superfund A	12.0	11.2	6.4	25.8	8.8	11.5	8.5	6.9	5.3	3.6
BlackRock Emerging Market Fund look through	9.8	8.2	7.6	27.5	2.7	6.7	20.6	6.6	6.9	3.3
BlackRock Intl Small Cap Index look through	16.4	7.3	3.2	20.9	7.4	20.4	11.1	9.8	1.2	2.3
Intl Equity Pool SPIF	13.2	12.7	4.7	23.8	11.5	13.3	5.2	6.7	5.1	3.9

All International Equity Portfolios
International Custom Benchmark
Over/underweight(-)

All International Equity Portfolios	14.0	10.9	6.1	24.0	8.7	12.4	10.3	6.4	4.4	2.8
International Custom Benchmark	12.6	10.7	6.0	25.1	8.7	12.7	8.8	7.3	4.8	3.4
Over/underweight(-)	1.4	0.3	0.1	-1.1	0.1	-0.3	1.5	-1.0	-0.4	-0.6



INTERNATIONAL EQUITY
Region and Market Exposure
March 31, 2016

Developed Countries	Aggregate Int'l Portfolio Weight (%)	MSCI ACWI ex US IMI	difference
Asia/Pacific	23.9%	25.4%	-1.44%
Australia	4.79%	5.01%	
Hong Kong	2.24%	2.28%	
Japan	15.73%	16.83%	
New Zealand	0.21%	0.22%	
Singapore	0.97%	1.04%	
European Union	25.1%	25.2%	-0.15%
Austria	0.33%	0.20%	
Belgium	1.13%	1.07%	
Denmark	1.56%	1.38%	
Finland	1.08%	0.76%	
France	5.83%	6.61%	
Germany	6.26%	6.28%	
Ireland	0.37%	0.41%	
Italy	1.52%	1.73%	
Netherlands	1.91%	2.09%	
Portugal	0.18%	0.14%	
Spain	2.03%	2.21%	
Sweden	2.85%	2.35%	
Non-EU Europe	6.2%	6.6%	-0.39%
Norway	0.53%	0.53%	
Switzerland	5.68%	6.08%	
North America	6.7%	6.6%	0.07%
Canada	6.14%	6.60%	
USA	0.53%	0.00%	
United Kingdom	14.4%	13.8%	0.59%
United Kingdom	14.42%	13.82%	
Other			
Other	0.66%	0.55%	
DEVELOPED TOTAL	76.96%	78.18%	-1.22%
Emerging & Frontier Market Countries			
Asia/Pacific	14.7%	15.6%	-0.88%
China	4.90%	5.15%	
India	1.38%	1.84%	
Indonesia	0.58%	0.58%	
South Korea	3.34%	3.52%	
Malaysia	0.62%	0.77%	
Philippines	0.38%	0.31%	
Taiwan	2.97%	2.87%	
Thailand	0.53%	0.53%	
European Union	0.5%	0.5%	0.01%
Czech Republic	0.03%	0.04%	
Greece	0.07%	0.09%	
Hungary	0.05%	0.06%	
Poland	0.36%	0.29%	
Non-EU Europe	0.6%	0.7%	-0.11%
Russia	0.61%	0.72%	
Latin America/Caribbean	3.3%	2.7%	0.56%
Brazil	1.80%	1.32%	
Chile	0.25%	0.27%	
Colombia	0.07%	0.10%	
Mexico	1.07%	0.96%	
Peru	0.09%	0.08%	
Mid East/Africa	2.5%	2.3%	0.22%
Egypt	0.04%	0.05%	
Qatar	0.15%	0.20%	
South Africa	1.71%	1.53%	
Turkey	0.48%	0.33%	
United Arab Emirates	0.14%	0.20%	
Frontier	0.01%	0.00%	0.01%
EMERGING & FRONTIER TOTAL	21.6%	21.8%	-0.20%

INTERNATIONAL PORTFOLIO CHARACTERISTICS (All Portfolios)

March 31, 2015

	Market Value	Number of Securities	3Yr Hist EPS Growth	Price/Earnings	Price/Book	Dividend Yield
International Accounts with look throughs	1,532,237,805	8,267	11.6	14.8	1.6	3.06

International Equity Managers

Acadian Asset Management	92,650,808	384	15.2	10.5	1.3	3.0
American Century Invt Mgmt	29,521,601	116	25.1	24.4	3.3	1.4
Baillie Gifford	85,818,398	74	12.3	21.0	2.7	1.9
Lazard Asset Mgmt LLC	88,484,110	69	12.9	16.7	2.2	3.4
Invesco	86,009,077	69	8.7	16.7	2.4	2.8
DFA International Small Cap	77,337,561	4,069	11.2	15.0	1.4	2.6
Templeton Invt Counsel LLC	46,782,127	113	8.6	14.8	1.6	2.6
BlackRock ACWI Ex US Superfund A	956,233,454	1,879	11.1	14.6	1.5	3.3
BlackRock Emerging Market Fund look through	29,546,032	849	10.9	12.4	1.4	2.8
BlackRock Intl Small Cap Index look through	27,640,639	4,278	14.2	15.3	1.4	2.5
Intl Equity Pool SPIF	12,214,000	928	11.3	15.3	1.5	3.4

Benchmarks

MSCI AC World ex USA IMI	6,110	11.32	14.73	1.48	3.17
MSCI All Country World Ex-United States	1,856	10.94	14.64	1.50	3.28
MSCI All Country World Ex-United States Growth	1,059	15.81	19.02	2.48	2.24
MSCI All Country World Ex-United States Value	1,007	5.82	11.71	1.07	4.35
MSCI EAFE Small Cap	2,170	16.14	15.84	1.45	2.49
MSCI World Ex-United States Small Cap	2,397	15.50	15.98	1.44	2.52
MSCI All Country Pacific	949	18.60	12.74	1.28	2.91
MSCI Europe	446	5.42	16.41	1.68	3.69

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Montana Retirement Funds Bond Pool

Montana Retirement Funds Bond Pool

Rande R. Muffick, CFA, Director of Public Market Investments
May 25, 2016

	RFBP - 3/31/16		Policy Range
CORE INTERNAL BOND PORTFOLIO	1,821,583,075	81.78%	
REAMS ASSET MGMT CO	232,102,106	10.42%	
CORE (U.S. INVESTMENT GRADE) MANAGERS	2,053,685,181	92.20%	80-100%
NEUBERGER BERMAN	101,641,319	4.56%	
POST TRADITIONAL HIGH YIELD FUND	72,197,447	3.24%	
TOTAL HIGH YIELD MANAGERS	173,838,766	7.80%	0-15%
TOTAL RETIRMENT FUND BOND POOL	2,227,523,947	100.00%	

Retirement Funds Bond Pool Composition and Performance:

The pool consists of the Core Internal Bond Portfolio (CIBP), Reams the core-plus portfolio, and the two high yield portfolios, Post Advisory, and Neuberger Berman. At this time weightings are within the approved ranges. During the quarter there was a \$15 million additional investment into the Post Advisory portfolio.

For the quarter the pool returned 3.27% vs 3.03% for the Barclays US Aggregate Bond Index. Relative performance was impacted by the overall volatility of the fixed income markets and the volatility of credit spreads across various economic sectors. The energy and materials sectors experienced significant volatility during the quarter.

Fixed income managers of active portfolios had a challenging quarter industry wide. A little more than half of active core portfolios outperformed their respective benchmarks. High yield active portfolios had a more difficult time with 87% of active portfolios underperforming their benchmarks.

Within RFBP, active portfolios as a whole fared better than most. CIBP, Reams and Neuberger Berman outperformed while Post Advisory lagged.

Retirement Funds Bond Pool Characteristics:

The RFBP continues to be typically underweight treasuries and agencies and overweight corporates, asset backed and CMBS.

Duration is slightly less than the Merrill U.S. Broad Index at 5.46.

Overall credit quality is steady at A1 as compared to Aa1 for the Merrill U.S. Broad Index.

The pool has an effective overweight in high yield due to the core plus portfolio and the dedicated high yield portfolios. The overweight has increased slightly from the additional funds invested in the Post Advisory portfolio.

Cash level is 3.4% compared to 2.7% last quarter.

Strategy:

Going forward the intent is to gradually increase the high yield allocation within the pool.

	3 Month	Fiscal YTD	1 Year	3 Year	5 Year	10 Year	Since Incept
RETIREMENT FUNDS BOND POOL	3.27	3.38	1.92	2.81	4.51	5.65	6.79
CORE INTERNAL BOND PORTFOLIO	3.19	3.83	2.20	2.83	4.38	5.51	6.67
REAMS ASSET MANAGEMENT	3.95	3.58	2.36	2.44	4.54		6.60
NEUBERGER BERMAN	3.80	-2.76	-3.06	2.05	4.75		7.05
POST ADVISORY GROUP	2.53	0.10	0.62	4.70	6.60		9.99
BARCLAYS AGGREGATE (DAILY)	3.03	3.71	1.96	2.50	3.78	4.90	5.83
BARCLAYS US UNIVERSAL INDEX - DAILY	3.07	3.20	1.75	2.51	3.95		5.18
BARCLAYS US HIGH YIELD - 2% ISSUER CAP	3.35	-3.66	-3.66	1.86	4.93		9.81

Portfolio Characteristics - Retirement Fund Bond Pool: March 31, 2016

Portfolio Metrics

	RFBP	Merrill U.S. Broad Index
Total Market Value	\$2.31B	\$23.02T
# of issues	938	13,294
Effective Duration	5.46	5.51
Spread Duration	5.73	5.83
Yield to Maturity	2.68%	2.09%
Average Quality	A1	Aa1

Sector Weights

	RFBP	Barclays Aggregate	Difference
Treasuries	22.60%	36.59%	-13.99%
Agency/Govt Related	5.34%	8.13%	-2.79%
ABS	4.68%	0.50%	4.18%
MBS	20.61%	28.21%	-7.60%
CMBS	7.34%	1.76%	5.58%
Financial	11.70%	7.63%	4.07%
Industrial	22.01%	15.24%	6.77%
Utility	2.32%	1.86%	0.46%
TOTAL Corporate	36.03%	24.73%	11.30%
Cash	3.40%	0.08%	3.32%
Total	100.00%	100.00%	

Credit Quality (Moody's)

	RFBP	Barclays Aggregate	Difference
AAA	60.78%	71.52%	-10.74%
AA	5.54%	4.32%	1.22%
A	10.30%	11.14%	-0.84%
BBB	14.24%	13.02%	1.22%
BB	4.45%	0.00%	4.45%
B	3.41%	0.00%	3.41%
CCC/D	1.28%	0.00%	1.28%
Total	100.00%	100.00%	0.00%

* Internal ratings have been applied to certain bonds.

INTERNAL FIXED INCOME MANAGEMENT OVERVIEW

Nathan Sax, CFA, Director of Fixed Income

May 25, 2016

Despite a hike in short-term interest rates by the Federal Reserve Board in December, interest rates fell in the first quarter of 2016. Expectations entering the new calendar year were for a series of quarter-point interest rate hikes, although the Fed was talking about four such moves and the market was counting on perhaps two. As time went on, however, it became clearer that first quarter growth in real GDP would be a lot lower than previously thought. Growth is now estimated at an annual rate of 0.5% in the first three months of the year, down from 1.4%. Economists are scrambling to gauge prospects for a second quarter rebound.

There has been widespread disagreement regarding the possibility of a pickup in the domestic economy. Job growth has been steady and robust, although there is some conjecture about the quality of those jobs. Many U.S. workers now hold multiple part-time jobs and the lower paying service sector is growing at a better clip than the goods-producing sectors. The rate of inflation as measured by the core PCE index has moved up, from an annual rate of 1.3% to 1.6%. Credit spreads narrowed versus Treasuries as shown:



The tighter spreads shown in the first quarter indicate that investors were willing to accept less of a yield premium for their exposure to credit risk. This usually means an expectation for improving economic conditions and a willingness to forgo Treasury securities for riskier, higher-yielding corporate debt. A corresponding rally in commodity prices seemed to back up this scenario. A 20-month slide in commodity prices bottomed on February 10, 2016 before turning upward through quarter-end. This would seem to point to better activity in manufacturing and economic growth in general.

Alternatively, those believing that economic growth and inflation will remain at low or declining levels may be inclined to hold safer, more liquid securities. Although few economists are predicting a near-term recession, the current economic expansion began in 2009, making it a relatively long-lived recovery.

Another interesting feature of the state of global economic affairs is the increasingly common sight of negative interest rates. Central bankers in several countries are willing to push short-term rates into negative territory in order to push up inflation. Two-year rates are negative in France, Germany, Italy, Spain, Sweden, the Netherlands, Switzerland and Japan. They range from -6 basis points in Italy to -95 basis points in Switzerland. Where deflation does gain a foothold, we know from history that affected populations tend to hoard cash, increase savings and defer consumption. Prices and wages decline and asset values typically fall. Although this is not the situation now, some of the symptoms are apparent. Central bankers will do what they can to forestall deflation. The United States is likely less threatened based on our comparatively higher rates of growth and inflation.

Regional		97) Settings		World Bond Markets									
Maturity 2 Year		Trading Mode		Data Range 3 Months									
Country	CMI	Security	Bid	Ask	Yield	Yld Chg	Yield	Low	Range	High	3M Chg		
1) Americas													
10) United States		T 0 3/4 04/18	100-02+	100-02 3/4	0.706	-1.2		.650		.964	-1.6		
11) Canada		CANO 1/4 05/18	99.436	99.447	0.532	-3.0		.338		.693	+16.6		
2) EMEA													
20) United Kingdom		UKT1 1/4 07/18	101.855	101.875	0.394	-1.9		.302		.549	+3.7		
21) France		FRTR 1 05/18	102.935	102.950	-0.436	-0.2		-.481		-.397	-1.2		
22) Germany		BK00 03/16/18	100.955	100.965	-0.518	-0.3		-.587		-.455	-2.1		
23) Italy		BTPS 0 3/4 18	101.360	101.370	-0.064	-0.1		-.079		.109	-5.8		
24) Spain		SPGB 4 1/2 18	107.895	107.915	-0.079	-0.4		-.084		.098	-3.7		
25) Portugal		PGB4.45 06/18	107.910	107.975	0.613	-0.5		.515		1.180	+22.7		
26) Sweden		SGB3 3/4 08/17	105.506	105.533	-0.624	+0.1		-.679		-.598	-4.0		
27) Netherlands		NETHER0 1/2 17	100.915	100.930	-0.494	+0.2		-.537		-.461	-2.4		
28) Switzerland		SWISS 3 01/18	106.455	106.720	-0.990	-4.3		-1.241		-.938	+4.9		
29) Greece		GGB3 3/8 07/17	92.720	93.915	8.992	-35.4		6.228		14.716	-188.3		
3) Asia/Pacific													
30) Japan		JGB 0.1 05/18	100.698	100.718	-0.258	-0.9		-.291		-.152	-5.7		
31) Australia		ACGB 3 1/4 18	103.988	104.012	1.572	-10.9		1.561		2.051	-27.0		
32) New Zealand		NZGB 6 12/17	106.242	106.320	1.963	-4.2		1.935		2.422	-45.6		
33) South Korea		NDFB 1 5/8 18	101.055	101.066	1.431			1.419		1.543	-5.1		

Australia 61 2 9777 8600 Brazil 5511 2395 9000 Europe 44 20 7330 7500 Germany 49 69 9204 1210 Hong Kong 852 2977 6000
Japan 81 3 3201 8900 Singapore 65 6212 1000 U.S. 1 212 318 2000 Copyright 2016 Bloomberg Finance L.P.
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The internally managed fixed income portfolios have been managed consistent with expectations for a long period of slow growth, low-inflation and low interest rates since the onset of the financial crisis in 2008. Since that time, numerous institutional investors have been burned by bets on rising interest rates that have gone unfulfilled. Our strategy, however, has been to maintain a neutral to modestly long duration in the portfolios. This posture has allowed us to realize a higher level of income, keeping the total return of the internally managed portfolios up and avoiding ill-timed predictions of impending inflation. Economically speaking, we saw the world's central banks as being caught in a liquidity trap, meaning that normally effective stimulus programs were unable to spark growth.

Portfolio Characteristics - Core Internal Bond Portfolio: March 31, 2016

Portfolio Metrics

	CIBP	Merrill U.S. Broad Index
Total Market Value	\$1.89B	\$23.02T
# of issues	298	13,294
Effective Duration	5.59	5.51
Spread Duration	5.89	5.83
Yield to Maturity	2.38%	2.09%
Average Quality	Aa3	Aa1

Sector Weights

	CIBP	Barclays Aggregate	Policy Range
Treasuries	22.28%	36.59%	15-45%
Agency/Govt Related	6.51%	8.13%	5-15%
ABS	5.55%	0.50%	0-7%
MBS	23.75%	28.21%	20-40%
CMBS	8.16%	1.76%	0-12%
Financial	12.03%	7.63%	
Industrial	17.07%	15.24%	
Utility	2.65%	1.86%	
TOTAL Corporate	31.75%	24.73%	10-40%
Cash	2.01%	0.08%	
Total	100.00%	100.00%	

Credit Quality (Moody's)

	CIBP	Barclays Aggregate	Difference
AAA	64.37%	71.52%	-7.15%
AA	6.67%	4.32%	2.35%
A	11.31%	11.14%	0.17%
BBB	15.76%	13.02%	2.74%
BB	1.46%	0.00%	1.46%
B	0.43%	0.00%	0.43%
CCC/D	0.00%	0.00%	0.00%
Total	100.00%	100.00%	

Duration Distribution

	CIBP	Merrill U.S. Broad Index	Difference
0 -1	5.85%	1.76%	4.09%
1 - 3	21.49%	32.28%	-10.79%
3 - 5	29.08%	31.30%	-2.22%
5 - 7	20.62%	11.87%	8.75%
7 - 10	11.16%	8.03%	3.13%
10+	11.80%	14.76%	-2.96%
Total	100.00%	100.00%	

* Internal ratings have been applied to certain bonds.

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Trust Funds

Trust Fund Investment Pool Performance
3/31/2016

	Cumulative		Annualized					Annual				
	QTD	FYTD	1 Year	3 Years	5 Years	7 Years	10 Years	2015	2014	2013	2012	2011
Trust Fund Investment Pool	3.23	4.24	3.04	3.78	5.12	6.42	5.96	1.83	6.96	(0.25)	6.99	8.20
Fixed Income	3.37	4.14	2.43	3.22	4.69	6.05	5.64	1.04	6.96	(1.47)	6.26	8.41
Real Estate	2.86	9.35	13.18	11.90	12.32			12.94	11.18	10.53	12.47	15.64
High Yield	2.88	0.62	1.23	5.51	7.28			1.44	6.00	10.28	18.65	3.13
Cash Equivalents	0.13	0.27	0.31	0.14	0.89	0.70	2.96	0.21	0.20	(0.06)	3.80	0.27
Fixed Income - Average Monthly Weight	85.75	85.61	85.71	85.87	86.44	87.72	89.90	85.75	85.94	86.44	87.69	86.78
Real Estate - Average Monthly Weight	7.68	7.56	7.47	7.14	6.42	5.40	4.14	7.33	7.11	6.36	5.24	5.15
High Yield - Average Monthly Weight	4.40	4.53	4.58	4.83	4.88	4.50	3.44	4.65	4.95	5.05	4.93	5.09
Cash Equivalents - Average Monthly Weight	2.17	2.30	2.24	2.16	2.26	2.38	2.51	2.26	2.00	2.15	2.14	2.97
Approximat												
Fixed Income - Contribution to Return	2.89	3.51	2.02	2.69	3.98			0.85	5.88	(3.79)	5.37	7.24
Real Estate - Contribution to Return	0.22	0.70	0.96	0.83	0.78			0.91	0.78	2.00	0.64	0.80
High Yield - Contribution to Return	0.13	0.03	0.05	0.26	0.35			0.06	0.29	1.55	0.90	0.16
Cash Equivalents - Contribution to Return	0.00	0.01	0.01	0.00	0.02			0.00	0.00	(0.00)	0.08	0.01

Barclays Aggregate Bond	3.03	3.71	1.96	2.50	3.78	4.52	4.90	0.55	5.97	(2.02)	4.21	7.84
NCREIF ODCE	2.18	9.49	13.67	13.63	13.26	9.06	6.36	15.02	12.50	13.94	10.94	15.99
Barclays US High Yield - 2% Issuer Cap	3.35	(3.66)	(3.66)	1.86	4.93	12.36	7.03	(4.43)	2.46	7.44	15.78	4.96
Libor 1 Month Index	0.11	0.23	0.28	0.20	0.21	0.23	1.35	0.21	0.16	0.19	0.23	0.23
Fixed Income - Relative Return	0.34	0.43	0.47	0.72	0.91	1.53	0.75	0.49	0.99	0.55	2.05	0.57
Real Estate - Relative Return	0.68	(0.14)	(0.49)	(1.73)	(0.94)			(2.07)	(1.32)	(3.41)	1.53	(0.34)
High Yield - Relative Return	(0.47)	4.28	4.89	3.65	2.36			5.87	3.54	2.84	2.87	(1.83)
Cash Equivalents - Relative Return	0.03	0.04	0.04	(0.06)	0.67	0.47	1.61	0.00	0.04	(0.25)	3.56	0.03

Portfolio Characteristics - Trust Fund Bond Portfolio: March 31, 2016

Portfolio Metrics

	TFBP	Merrill U.S. Broad Index
Total Market Value	\$2.02B	\$23.02T
# of issues	323	13,294
Effective Duration	5.54	5.51
Spread Duration	5.86	5.83
Yield to Maturity	2.43%	2.09%
Average Quality	Aa3	Aa1

Sector Weights

	TFBP	Barclays Aggregate	Policy Range
Treasuries	23.50%	36.59%	15-45%
Agency/Govt Related	5.78%	8.13%	5-15%
ABS	5.27%	0.50%	0-7%
MBS	23.72%	28.21%	20-40%
CMBS	8.22%	1.76%	0-12%
Financial	10.06%	7.63%	
Industrial	18.25%	15.24%	
Utility	2.88%	1.86%	
TOTAL Corporate	31.19%	24.73%	10-40%
Cash	2.32%	0.08%	
Total	100.00%	100.00%	

Credit Quality (Moody's)

	TFBP	Barclays Aggregate	Difference
AAA	67.20%	71.52%	-4.32%
AA	2.96%	4.32%	-1.36%
A	10.50%	11.14%	-0.64%
BBB	16.53%	13.02%	3.51%
BB	2.39%	0.00%	2.39%
B	0.40%	0.00%	0.40%
CCC/D	0.02%	0.00%	0.02%
Total	100.00%	100.00%	

Duration Distribution

	TFBP	Merrill U.S. Broad Index	Difference
0 - 1	8.24%	1.76%	6.48%
1 - 3	18.61%	32.28%	-13.67%
3 - 5	28.59%	31.30%	-2.71%
5 - 7	20.68%	11.87%	8.81%
7 - 10	12.08%	8.03%	4.05%
10+	11.80%	14.76%	-2.96%
Total	100.00%	100.00%	

* Internal ratings have been applied to certain bonds.

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Insurance Funds

State Fund Performance
3/31/2016

	Cumulative		Annualized					Annual				
	QTD	FYTD	1 Year	3 Years	5 Years	7 Years	10 Years	2015	2014	2013	2012	2011
Montana State Fund	2.21	3.11	2.85	3.66	4.75	6.57	5.28	2.20	4.98	3.10	7.23	5.26
Fixed Income	2.35	3.14	2.53	2.36	3.82	5.44	5.02	1.76	3.89	(0.40)	6.31	5.99
Domestic Equities	1.39	1.55	1.90	11.99	11.70	17.14		1.46	13.79	32.71	16.02	2.26
International Equities	(0.40)	(9.68)	(9.17)	0.39	0.39			(5.62)	(3.80)	15.40	16.94	(13.59)
Real Estate	2.86	9.30	12.99	10.68				12.78	10.76	5.52		
Cash Equivalents	0.14	0.29	0.33	0.20	0.24	0.28	1.89	0.22	0.11	0.19	0.30	0.28
Fixed Income - Average Monthly Weight	81.35	80.56	80.63	80.59	82.76	84.05	85.62	80.41	80.16	82.03	86.55	86.51
Domestic Equities - Average Monthly Weight	9.74	9.85	9.92	10.09	10.00	9.74	9.04	10.01	10.20	10.16	9.93	9.65
International Equities - Average Monthly Weight	1.14	1.20	1.23	1.29	1.27	1.08	0.83	1.27	1.36	1.29	1.16	1.32
Real Estate - Average Monthly Weight	6.13	5.96	5.89	5.30	3.31	2.49	1.93	5.77	5.28	3.28	0.00	0.00
Cash Equivalents - Average Monthly Weight	1.64	2.43	2.33	2.73	2.67	2.64	2.58	2.54	3.00	3.25	2.35	2.52
Approximate												
Fixed Income - Contribution to Return	1.90	2.51	2.01	1.89				1.39	3.08	(0.30)	5.44	5.22
Domestic Equities - Contribution to Return	0.14	0.15	0.19	1.20				0.14	1.39	3.05	1.59	0.22
International Equities - Contribution to Return	(0.00)	(0.12)	(0.11)	0.00				(0.07)	(0.05)	0.18	0.20	(0.18)
Real Estate - Contribution to Return	0.17	0.55	0.76	0.56				0.73	0.56	0.17	0.00	0.00
Cash Equivalents - Contribution to Return	0.00	0.01	0.01	0.01				0.01	0.00	0.01	0.01	0.01
State Fund Composite Benchmark	2.24	2.35	1.84	2.80	3.80	4.92	4.63	0.98	4.01	2.49	5.11	5.13
Barclays Gov/Credit Intermediate	2.45	2.70	2.06	1.83	3.01	3.79	4.34	1.07	3.13	(0.86)	3.89	5.80
S&P 500 Index	1.35	1.50	1.78	11.82	11.58	16.97	7.01	1.38	13.69	32.39	16.00	2.11
MSCI AC World ex US (Net)	(0.38)	(9.66)	(9.19)	0.32	0.31	9.18	1.94	(5.66)	(3.87)	15.29	16.83	(13.71)
NCREIF ODCE	2.18	9.49	13.67	13.63	13.26	9.06	6.36	15.02	12.50	13.94		
Libor 1 Month Index	0.11	0.23	0.28	0.20	0.21	0.23	1.35	0.21	0.16	0.19	0.23	0.23
Fixed Income - Relative Return	(0.09)	0.44	0.46	0.53	0.82	1.65	0.68	0.69	0.76	0.46	2.42	0.18
Domestic Equities - Relative Return	0.05	0.05	0.12	0.17	0.12	0.18		0.07	0.10	0.32	0.02	0.15
International Equities - Relative Return	(0.03)	(0.02)	0.01	0.07	0.08			0.04	0.06	0.11	0.11	0.12
Real Estate - Relative Return	0.68	(0.19)	(0.68)	(2.95)				(2.24)	(1.74)	(8.42)		
Cash Equivalents - Relative Return	0.03	0.06	0.06	0.00	0.02	0.05	0.54	0.01	(0.05)	0.01	0.07	0.05
Difference from Benchmark	(0.03)	0.76	1.01	0.86	0.95	1.65	0.65	1.22	0.98	0.61	2.12	0.13

STATE FUND INSURANCE

Jon Putnam, CFA, FRM, CAIA

May 25, 2016

Asset Type	Investment	MV% 3/31/2016	Policy	Target
Fixed Income	State Fund Bond Pool (ex. cash)	82.10%	Minimum 75%	
Equity	Blackrock Equity Index	9.16%	Maximum 12%	
	Blackrock ACWI ex. US	1.18%	Maximum 4%	
Total Equity		10.35%	Maximum 15%	10%
Real Estate	TIAA CREF Core Property	2.90%		
	American Core Realty Fund	3.25%		
Total Real Estate		6.14%	Maximum 8%	5%
Cash	Short Term Investment Pool	1.41%	Between 1%-5%	
Total		100.00%		

During the 1st quarter, there was a sale of \$15M from the Blackrock S&P 500 Equity Index fund. This brought State Fund's allocation to equities closer to the target weight of 10%. The sale was executed on March 29th. The equity markets have underperformed bonds on a relative basis over the last year although have added significant value over a longer time frame.

There was no change to the real estate allocation during the quarter. The two core real estate managers continue to perform well. Core real estate has added significant value with double-digit return over the last three years.

The bond portfolio slightly underperformed the Barclays Govt/Credit Intermediate index, which was primarily driven by spread widening within corporates during the quarter, particularly Financials.

There was \$84M in purchases and \$72M of maturities and sales during the quarter. The majority of purchase activity was in higher quality names that widened during the first half of the quarter. We also swapped out of some short maturity Treasuries and Agencies into longer maturity Treasuries and Agencies in order to keep the portfolio duration from getting too short relative to the index.

We sold one corporate credit during the quarter, PSEG Power. Management indicated that they intend to spin-off the unregulated power generation business similar to what we experienced with PPL Energy Supply. The timing of this action is uncertain. However, it would likely result in a significant downgrade to our bonds. We did not believe that prices fully reflected this risk and took advantage of a reasonable bid.

The chart on the following page shows the characteristics of the State Fund Bond Portfolio as of quarter end. The portfolio had a slightly shorter duration than the benchmark in the 1st quarter. The bond pool has an overweight in agencies, asset backed securities (ABS) and corporate bonds and is underweight Treasuries relative to the benchmark. The portfolio seeks to build in a yield advantage to the index. The primary objective of this portfolio is to maximize investment income consistent with safety of principal.

There were no major changes to the overall credit quality of the portfolio. However, Moody's downgraded Marathon Oil to Ba1 during the quarter. Marathon Oil is an energy exploration and production company with global operations. We hold bonds that mature in March 2018 and Marathon has quickly adjusted its operations and balance sheet for lower energy prices.

State Fund Bond Portfolio Characteristics: March 31, 2016

Portfolio Metrics

	SFBP	Merrill U.S. Govt/Corp 1-10yr
Total Market Value	\$1.22B	\$12.97T
# of issues	209	6,240
Effective Duration	3.66	3.94
Spread Duration	3.67	3.94
Yield to Maturity	1.71%	1.64%
Average Quality	Aa3	Aa2

Sector Weights

	SFBP	Merrill U.S. Govt/Corp 1-10yr	Difference
Treasuries	16.93%	57.92%	-40.99%
Agency/Govt Related	23.14%	10.68%	12.46%
ABS	3.74%	0.00%	3.74%
MBS	0.32%	0.00%	0.32%
CMBS	0.00%	0.00%	0.00%
Financial	26.76%	10.51%	16.25%
Industrial	23.94%	19.17%	4.77%
Utility	3.47%	1.72%	1.75%
Cash	1.70%	0.00%	1.70%
Other	0.00%	0.00%	0.00%
Total	100.00%	100.00%	

Credit Quality (Lowest Rating)

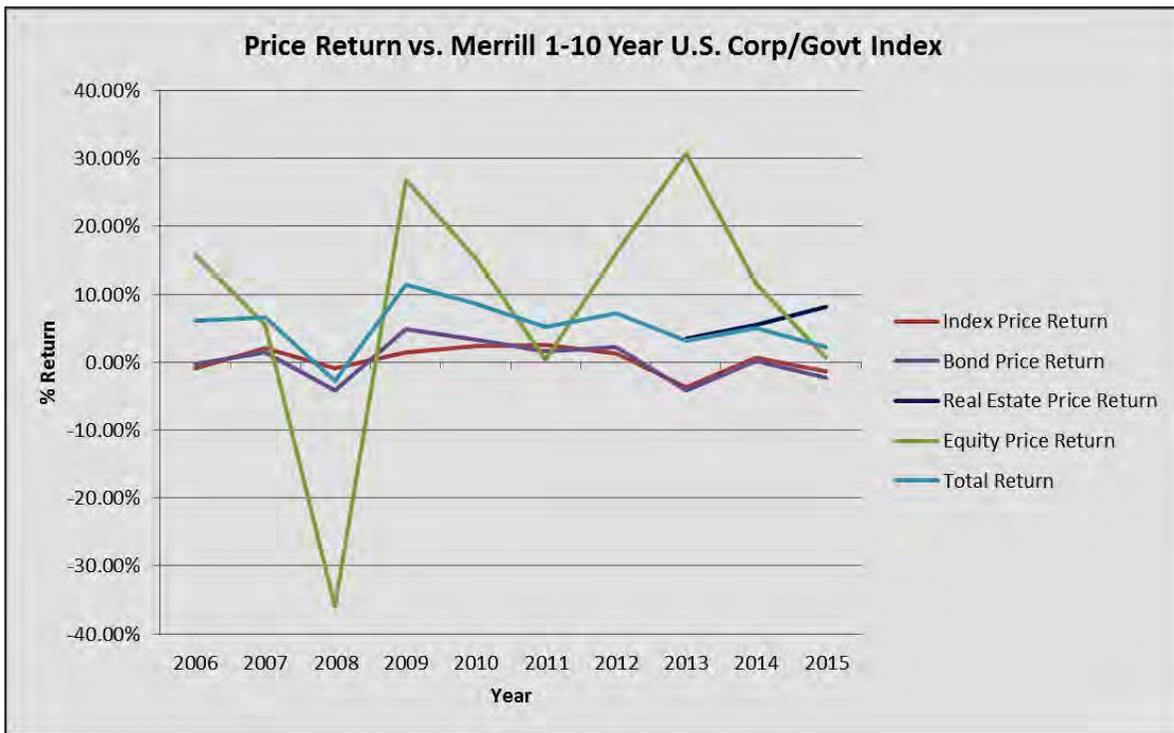
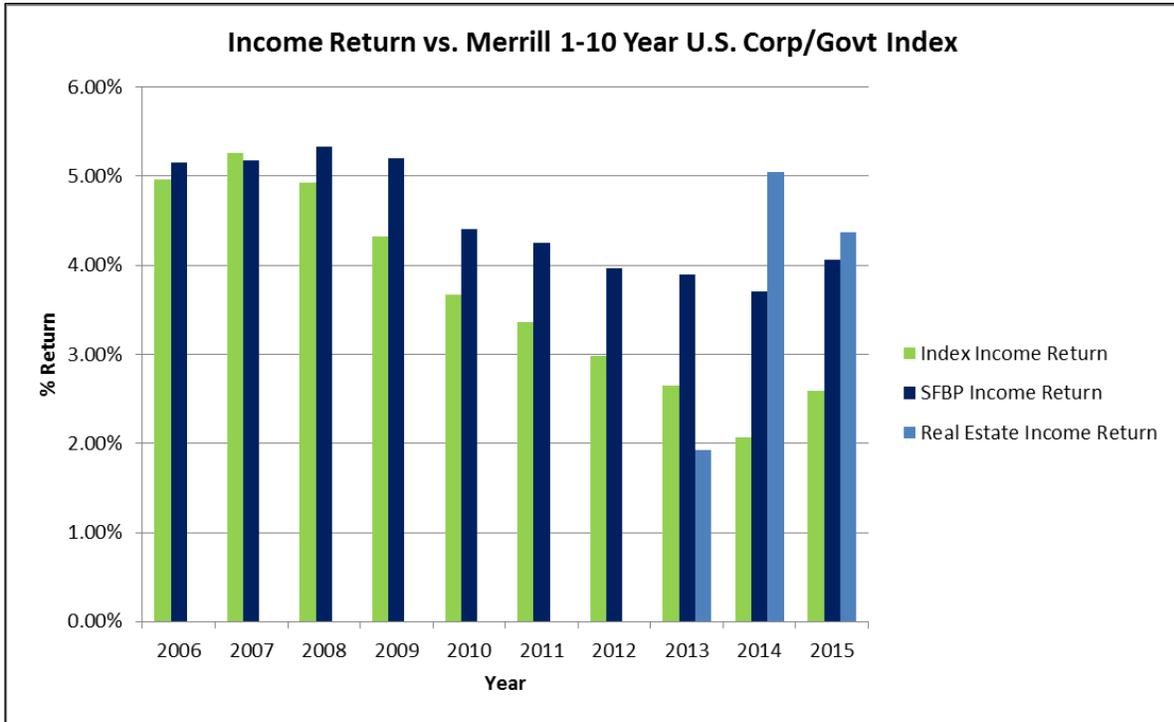
	SFBP	Merrill U.S. Govt/Corp 1-10yr	Difference
AAA	6.31%	4.50%	1.81%
AA	42.06%	65.37%	-23.31%
A	29.55%	12.84%	16.71%
BBB	21.67%	16.64%	5.03%
BB	0.38%	0.65%	-0.27%
B	0.00%	0.00%	0.00%
CCC/D	0.03%	0.00%	0.03%
Total	100.00%	100.00%	

Duration Distribution

	SFBP	Merrill U.S. Govt/Corp 1-10yr	Difference
0 - 1	15.19%	1.28%	13.91%
1 - 3	27.16%	38.75%	-11.59%
3 - 5	29.54%	30.17%	-0.63%
5 - 7	18.02%	19.66%	-1.64%
7 - 9	10.09%	9.79%	0.30%
9 - 10	0.00%	0.35%	-0.35%
Total	100.00%	100.00%	

* Internal ratings have been applied to 1 bond representing .03% of the portfolio.

State Fund Investment Portfolio has a primary objective of providing investment income while assuming a prudent amount of risk. Long term capital appreciation is a secondary consideration. The two tables below show the return realized from income vs. the return realized from price appreciation in a given year. Price return is a more volatile component of total return and is driven primarily by the portfolio's exposure to the equity market.



[Return to Agenda](#)

Investment Consultant



Montana Board of Investments

Investment Performance Analysis

Period Ended: March 31, 2016



Montana Board of Investments
Comparative Performance
Retirement Plans

As of March 31, 2016

	QTD	FYTD	1 Year	3 Years	5 Years	7 Years	10 Years	2015	2014	2013	2012	2011
Public Employees' Retirement - Net	1.24	0.48	0.99	7.53	7.70	11.34	5.67	1.86	8.07	17.38	13.24	2.13
Public Employees' Benchmark	2.36	0.94	1.34	8.42	8.29	11.96	5.96	1.40	9.08	17.94	14.88	1.67
Difference	-1.12	-0.46	-0.35	-0.89	-0.59	-0.62	-0.29	0.46	-1.01	-0.56	-1.64	0.46
Public Employees' Retirement - Gross	1.35	0.79	1.44	8.04	8.24	11.92	6.17	2.31	8.61	17.96	13.83	2.68
All Public Plans > \$3B Total Fund Median	1.02	-1.36	-0.50	5.83	6.35	10.79	5.51	0.33	6.81	14.65	13.08	1.24
Rank	28	3	1	1	1	5	8	7	8	6	32	32
Teachers' Retirement - Net	1.26	0.49	1.01	7.54	7.71	11.35	5.67	1.86	8.09	17.38	13.24	2.14
Teachers' Benchmark	2.36	0.93	1.34	8.42	8.29	11.96	5.96	1.40	9.11	17.94	14.89	1.66
Difference	-1.10	-0.44	-0.33	-0.88	-0.58	-0.61	-0.29	0.46	-1.02	-0.56	-1.65	0.48
Teachers' Retirement - Gross	1.37	0.80	1.46	8.05	8.25	11.93	6.18	2.32	8.63	17.96	13.84	2.68
All Public Plans > \$3B Total Fund Median	1.02	-1.36	-0.50	5.83	6.35	10.79	5.51	0.33	6.81	14.65	13.08	1.24
Rank	27	3	1	1	1	5	8	7	8	6	32	31
Police Retirement - Net	1.25	0.49	1.01	7.55	7.70	11.33	5.63	1.86	8.07	17.41	13.23	2.10
Police Benchmark	2.36	0.95	1.35	8.42	8.28	11.94	5.91	1.41	9.10	17.92	14.80	1.66
Difference	-1.11	-0.46	-0.34	-0.87	-0.58	-0.61	-0.28	0.45	-1.03	-0.51	-1.57	0.44
Police Retirement - Gross	1.36	0.80	1.45	8.05	8.23	11.91	6.14	2.31	8.61	18.00	13.78	2.65
All Public Plans > \$3B Total Fund Median	1.02	-1.36	-0.50	5.83	6.35	10.79	5.51	0.33	6.81	14.65	13.08	1.24
Rank	28	3	1	1	1	5	10	7	8	5	36	34

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 March 31, 2016

	QTD	FYTD	1 Year	3 Years	5 Years	7 Years	10 Years	2015	2014	2013	2012	2011
Firefighters' Retirement - Net	1.24	0.49	1.01	7.54	7.70	11.32	5.66	1.87	8.07	17.41	13.22	2.10
Firefighters' Benchmark	2.36	0.95	1.35	8.42	8.28	11.93	5.93	1.41	9.10	17.92	14.80	1.66
Difference	-1.12	-0.46	-0.34	-0.88	-0.58	-0.61	-0.27	0.46	-1.03	-0.51	-1.58	0.44
Firefighters' Retirement - Gross	1.36	0.80	1.46	8.05	8.23	11.90	6.16	2.32	8.61	17.99	13.81	2.64
All Public Plans > \$3B Total Fund Median	1.02	-1.36	-0.50	5.83	6.35	10.79	5.51	0.33	6.81	14.65	13.08	1.24
Rank	28	3	1	1	1	5	9	7	8	5	34	34
Sheriffs' Retirement - Net	1.24	0.49	1.00	7.52	7.68	11.29	5.66	1.86	8.05	17.35	13.19	2.12
Sheriffs' Benchmark	2.36	0.95	1.35	8.41	8.27	11.91	5.95	1.40	9.07	17.91	14.84	1.65
Difference	-1.12	-0.46	-0.35	-0.89	-0.59	-0.62	-0.29	0.46	-1.02	-0.56	-1.65	0.47
Sheriffs' Retirement - Gross	1.35	0.79	1.45	8.03	8.22	11.87	6.16	2.32	8.59	17.93	13.79	2.66
All Public Plans > \$3B Total Fund Median	1.02	-1.36	-0.50	5.83	6.35	10.79	5.51	0.33	6.81	14.65	13.08	1.24
Rank	28	3	1	1	1	5	9	7	8	6	36	33
Highway Patrol Retirement - Net	1.24	0.49	1.01	7.54	7.70	11.36	5.67	1.87	8.08	17.38	13.24	2.12
Highway Patrol Benchmark	2.37	0.95	1.35	8.43	8.30	11.99	5.97	1.41	9.10	17.94	14.88	1.65
Difference	-1.13	-0.46	-0.34	-0.89	-0.60	-0.63	-0.30	0.46	-1.02	-0.56	-1.64	0.47
Highway Patrol Retirement - Gross	1.35	0.80	1.45	8.05	8.24	11.95	6.18	2.32	8.62	17.96	13.84	2.66
All Public Plans > \$3B Total Fund Median	1.02	-1.36	-0.50	5.83	6.35	10.79	5.51	0.33	6.81	14.65	13.08	1.24
Rank	28	3	1	1	1	5	8	7	8	6	32	33

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 March 31, 2016

	QTD	FYTD	1 Year	3 Years	5 Years	7 Years	10 Years	2015	2014	2013	2012	2011
Game Wardens' Retirement - Net	1.23	0.49	1.01	7.51	7.67	11.26	5.65	1.88	8.03	17.34	13.20	2.09
Game Wardens' Benchmark	2.36	0.96	1.36	8.40	8.27	11.88	5.95	1.41	9.06	17.90	14.85	1.64
Difference	-1.13	-0.47	-0.35	-0.89	-0.60	-0.62	-0.30	0.47	-1.03	-0.56	-1.65	0.45
Game Wardens' Retirement - Gross	1.34	0.80	1.46	8.02	8.21	11.84	6.15	2.33	8.57	17.92	13.79	2.63
All Public Plans > \$3B Total Fund Median	1.02	-1.36	-0.50	5.83	6.35	10.79	5.51	0.33	6.81	14.65	13.08	1.24
Rank	28	3	1	1	1	5	9	7	8	6	35	34
Judges' Retirement - Net	1.24	0.49	1.01	7.53	7.69	11.32	5.67	1.86	8.06	17.36	13.20	2.12
Judges' Benchmark	2.36	0.95	1.35	8.41	8.28	11.94	5.96	1.40	9.08	17.92	14.84	1.64
Difference	-1.12	-0.46	-0.34	-0.88	-0.59	-0.62	-0.29	0.46	-1.02	-0.56	-1.64	0.48
Judges' Retirement - Gross	1.35	0.80	1.45	8.04	8.22	11.90	6.18	2.32	8.60	17.94	13.79	2.66
All Public Plans > \$3B Total Fund Median	1.02	-1.36	-0.50	5.83	6.35	10.79	5.51	0.33	6.81	14.65	13.08	1.24
Rank	28	3	1	1	1	5	8	7	8	6	35	33
Volunteer Firefighters' Retirement - Net	1.25	0.48	1.06	7.57	7.70	11.33	5.68	1.91	8.09	17.42	13.18	2.09
Volunteer Firefighters' Benchmark	2.35	0.93	1.35	8.43	8.29	11.92	5.96	1.42	9.11	17.97	14.79	1.70
Difference	-1.10	-0.45	-0.29	-0.86	-0.59	-0.59	-0.28	0.49	-1.02	-0.55	-1.61	0.39
Volunteer Firefighters' Retirement - Gross	1.36	0.79	1.51	8.08	8.23	11.91	6.18	2.36	8.63	18.00	13.77	2.63
All Public Plans > \$3B Total Fund Median	1.02	-1.36	-0.50	5.83	6.35	10.79	5.51	0.33	6.81	14.65	13.08	1.24
Rank	28	3	1	1	1	5	8	7	8	5	36	34

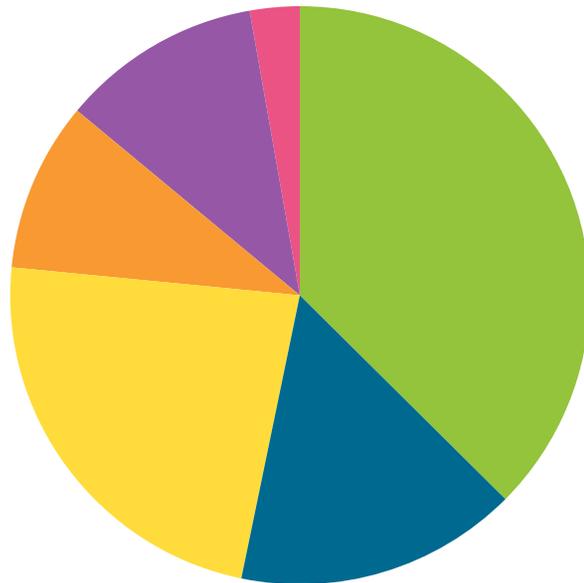
Net performance shown is net of all manager fees and expenses (Net-All). All Public Plans > \$3B Total Fund Median is reported gross of fees. Benchmark returns reflect unmanaged indices which are not impacted by management fees.

**Montana Board of Investments
Asset Allocation by Segment
Retirement Plans**

As of March 31, 2016

	Domestic Equity		International Equity		Domestic Fixed Income		Real Estate		Private Equity		Cash Equivalent		Total Fund	
	(\$)	%	(\$)	%	(\$)	%	(\$)	%	(\$)	%	(\$)	%	(\$)	%
Public Employees' Retirement	1,865,884,747	37.46	786,377,467	15.79	1,160,271,938	23.29	472,519,042	9.49	556,837,521	11.18	139,623,536	2.80	4,981,514,250	50.15
Teachers' Retirement	1,348,724,733	37.48	568,431,616	15.79	838,699,892	23.30	341,559,408	9.49	402,508,949	11.18	98,910,838	2.75	3,598,835,436	36.23
Police Retirement	122,428,543	37.42	51,601,778	15.77	76,135,220	23.27	31,006,238	9.48	36,539,363	11.17	9,494,128	2.90	327,205,270	3.29
Firefighters' Retirement	125,391,881	37.45	52,847,230	15.78	77,973,809	23.29	31,754,801	9.48	37,421,339	11.18	9,421,150	2.81	334,810,209	3.37
Sheriffs' Retirement	110,383,795	37.43	46,519,857	15.77	68,638,100	23.27	27,952,824	9.48	32,940,906	11.17	8,507,602	2.88	294,943,085	2.97
Highway Patrol Retirement	47,742,370	37.54	20,120,661	15.82	29,687,966	23.34	12,090,245	9.51	14,247,581	11.20	3,291,311	2.59	127,180,135	1.28
Game Wardens' Retirement	56,566,130	37.42	23,837,542	15.77	35,171,859	23.27	14,323,600	9.48	16,879,501	11.17	4,375,686	2.89	151,154,318	1.52
Judges' Retirement	32,359,483	37.42	13,637,443	15.77	20,121,782	23.27	8,194,520	9.48	9,656,756	11.17	2,514,436	2.91	86,484,420	0.87
Volunteer Firefighters' Retirement	11,976,105	37.51	5,047,955	15.81	7,447,932	23.33	3,033,188	9.50	3,574,474	11.20	845,879	2.65	31,925,532	0.32
Retirement Plans Total Fund Composite	3,721,457,787	37.46	1,568,421,551	15.79	2,314,148,500	23.30	942,433,864	9.49	1,110,606,390	11.18	276,984,565	2.79	9,934,052,657	100.00

March 31, 2016 : \$9,934,052,657



Segments

- Domestic Equity
- International Equity
- Domestic Fixed Income
- Real Estate
- Private Equity
- Cash Equivalent

**Market Value
(\$)**

3,721,457,787
1,568,421,551
2,314,148,500
942,433,864
1,110,606,390
276,984,565

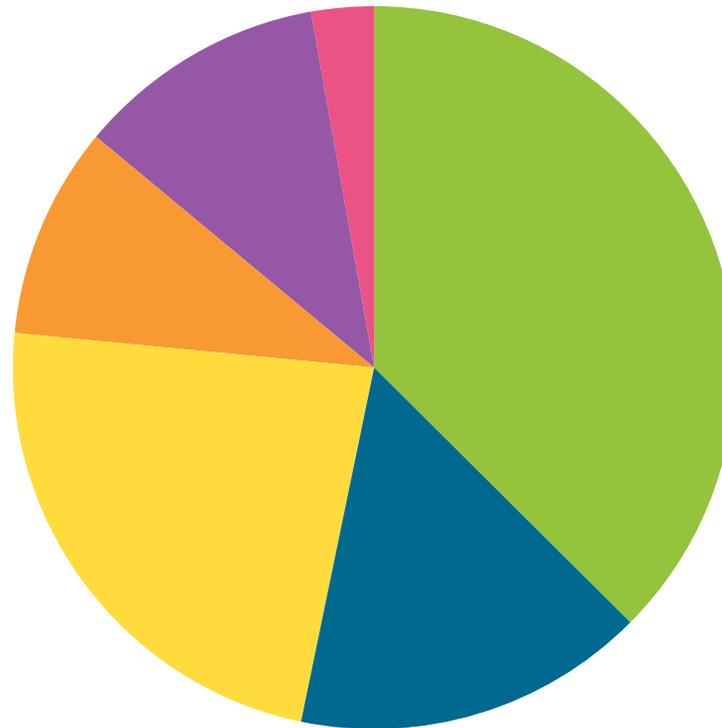
**Allocation
(%)**

37.46
15.79
23.30
9.49
11.18
2.79

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.



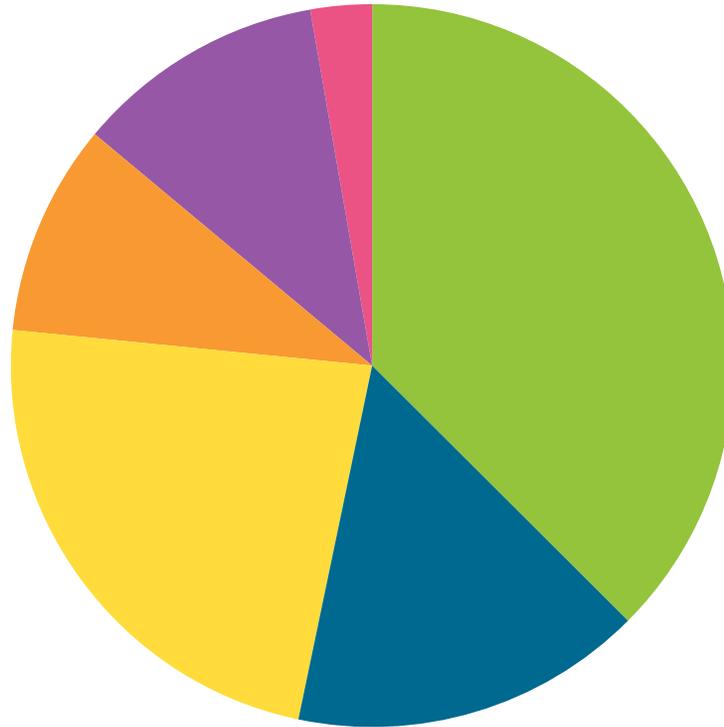
March 31, 2016 : \$4,981,514,250



Segments	Market Value (\$)	Allocation (%)
Domestic Equity	1,865,884,747	37.46
International Equity	786,377,467	15.79
Domestic Fixed Income	1,160,271,938	23.29
Real Estate	472,519,042	9.49
Private Equity	556,837,521	11.18
Cash Equivalent	139,623,536	2.80

Allocations shown may not sum up to 100% exactly due to rounding.

March 31, 2016 : \$3,598,835,436



Segments	Market Value (\$)	Allocation (%)
Domestic Equity	1,348,724,733	37.48
International Equity	568,431,616	15.79
Domestic Fixed Income	838,699,892	23.30
Real Estate	341,559,408	9.49
Private Equity	402,508,949	11.18
Cash Equivalent	98,910,838	2.75

Allocations shown may not sum up to 100% exactly due to rounding.

March 31, 2016 : \$327,205,270



Segments	Market Value (\$)	Allocation (%)
Domestic Equity	122,428,543	37.42
International Equity	51,601,778	15.77
Domestic Fixed Income	76,135,220	23.27
Real Estate	31,006,238	9.48
Private Equity	36,539,363	11.17
Cash Equivalent	9,494,128	2.90

Allocations shown may not sum up to 100% exactly due to rounding.

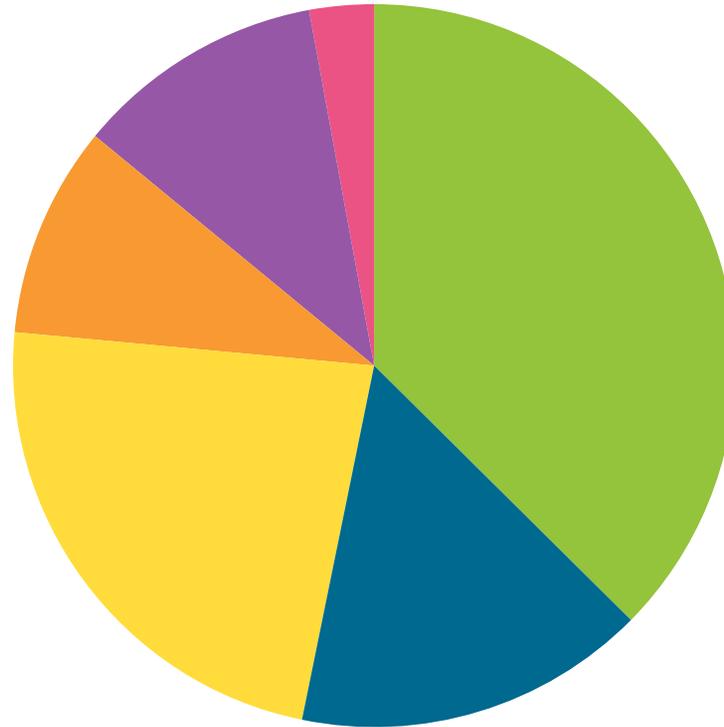
March 31, 2016 : \$334,810,209



Segments	Market Value (\$)	Allocation (%)
Domestic Equity	125,391,881	37.45
International Equity	52,847,230	15.78
Domestic Fixed Income	77,973,809	23.29
Real Estate	31,754,801	9.48
Private Equity	37,421,339	11.18
Cash Equivalent	9,421,150	2.81

Allocations shown may not sum up to 100% exactly due to rounding.

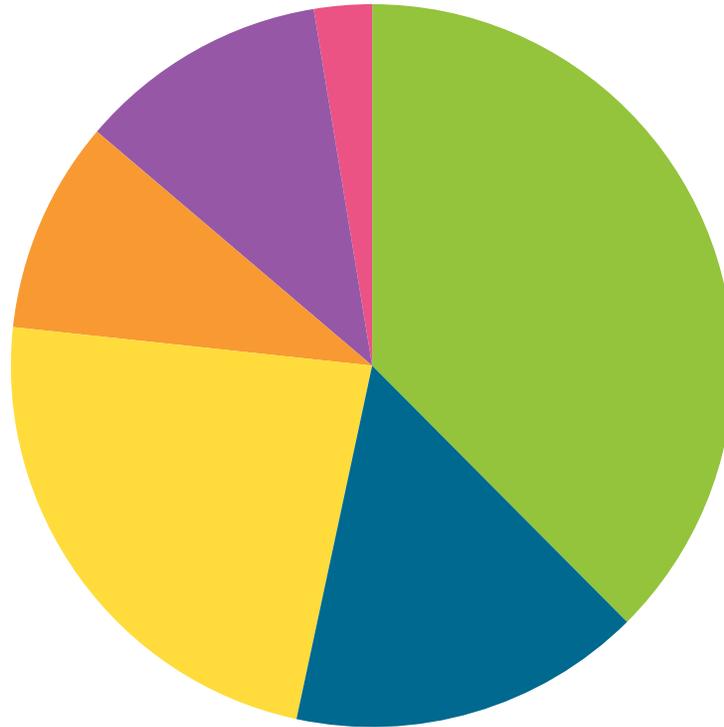
March 31, 2016 : \$294,943,085



Segments	Market Value (\$)	Allocation (%)
Domestic Equity	110,383,795	37.43
International Equity	46,519,857	15.77
Domestic Fixed Income	68,638,100	23.27
Real Estate	27,952,824	9.48
Private Equity	32,940,906	11.17
Cash Equivalent	8,507,602	2.88

Allocations shown may not sum up to 100% exactly due to rounding.

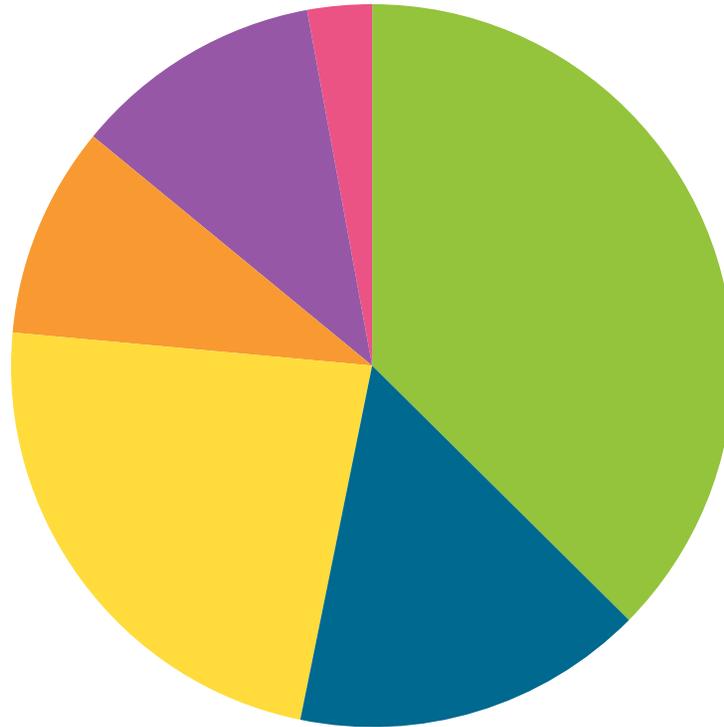
March 31, 2016 : \$127,180,135



Segments	Market Value (\$)	Allocation (%)
Domestic Equity	47,742,370	37.54
International Equity	20,120,661	15.82
Domestic Fixed Income	29,687,966	23.34
Real Estate	12,090,245	9.51
Private Equity	14,247,581	11.20
Cash Equivalent	3,291,311	2.59

Allocations shown may not sum up to 100% exactly due to rounding.

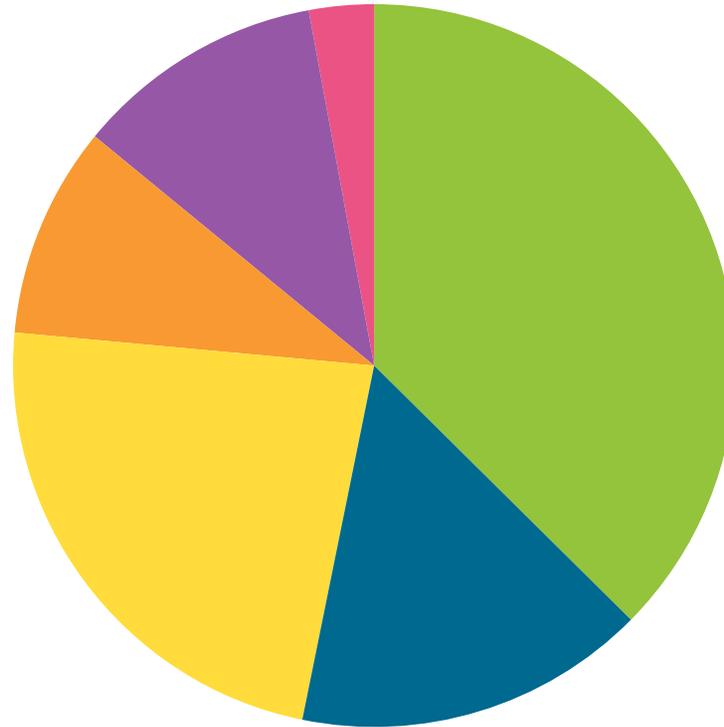
March 31, 2016 : \$151,154,318



Segments	Market Value (\$)	Allocation (%)
Domestic Equity	56,566,130	37.42
International Equity	23,837,542	15.77
Domestic Fixed Income	35,171,859	23.27
Real Estate	14,323,600	9.48
Private Equity	16,879,501	11.17
Cash Equivalent	4,375,686	2.89

Allocations shown may not sum up to 100% exactly due to rounding.

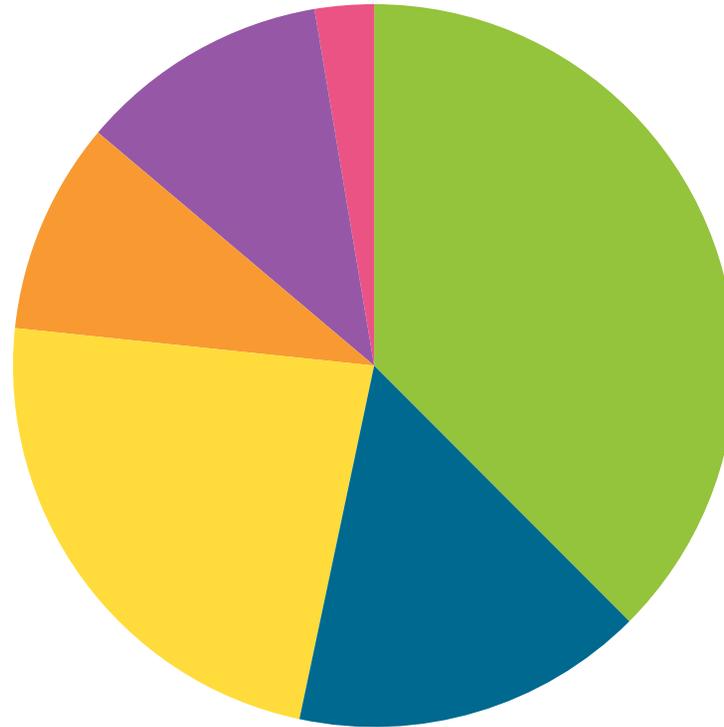
March 31, 2016 : \$86,484,420



Segments	Market Value (\$)	Allocation (%)
Domestic Equity	32,359,483	37.42
International Equity	13,637,443	15.77
Domestic Fixed Income	20,121,782	23.27
Real Estate	8,194,520	9.48
Private Equity	9,656,756	11.17
Cash Equivalent	2,514,436	2.91

Allocations shown may not sum up to 100% exactly due to rounding.

March 31, 2016 : \$31,925,532



Segments	Market Value (\$)	Allocation (%)
Domestic Equity	11,976,105	37.51
International Equity	5,047,955	15.81
Domestic Fixed Income	7,447,932	23.33
Real Estate	3,033,188	9.50
Private Equity	3,574,474	11.20
Cash Equivalent	845,879	2.65

Allocations shown may not sum up to 100% exactly due to rounding.

Montana Board of Investments
Comparative Performance
Investment Pools

As of March 31, 2016

	QTD	FYTD	1 Year	3 Years	5 Years	7 Years	10 Years	2015	2014	2013	2012	2011
Montana Domestic Equity Pool	0.62	-0.59	-0.34	11.18	10.94	16.90	6.62	0.86	12.28	34.19	16.44	0.44
S&P 1500 Comp Index	1.57	1.01	1.18	11.59	11.37	17.17	7.07	1.01	13.08	32.80	16.17	1.75
Difference	-0.95	-1.60	-1.52	-0.41	-0.43	-0.27	-0.45	-0.15	-0.80	1.39	0.27	-1.31
Montana International Equity Pool	0.00	-8.25	-7.15	1.32	0.79	9.34	1.45	-3.57	-4.00	16.39	17.11	-14.63
International Custom Benchmark	-0.23	-8.99	-8.08	0.70	0.55	9.60	2.18	-4.60	-4.03	15.62	16.96	-14.08
Difference	0.23	0.74	0.93	0.62	0.24	-0.26	-0.73	1.03	0.03	0.77	0.15	-0.55
Retirement Funds Bond Pool	3.27	3.38	1.92	2.81	4.51	6.63	5.65	0.48	6.19	-0.95	7.31	7.69
Barclays US Agg Bond Index	3.03	3.71	1.96	2.50	3.78	4.52	4.90	0.55	5.97	-2.02	4.21	7.84
Difference	0.24	-0.33	-0.04	0.31	0.73	2.11	0.75	-0.07	0.22	1.07	3.10	-0.15
Trust Funds Investment Pool	3.23	4.24	3.04	3.78	5.12	6.42	5.96	1.83	6.96	-0.25	6.99	8.20
Barclays US Agg Bond Index	3.03	3.71	1.96	2.50	3.78	4.52	4.90	0.55	5.97	-2.02	4.21	7.84
Difference	0.20	0.53	1.08	1.28	1.34	1.90	1.06	1.28	0.99	1.77	2.78	0.36
Real Estate Pool*	2.85	9.98	13.94	12.66	11.77	3.75	N/A	14.27	12.13	10.16	9.90	14.19
NCREIF ODCE Index (AWA) (Net) (Qtr Lag)	3.11	10.48	13.96	12.77	12.60	5.47	5.55	13.87	11.36	11.97	10.47	17.18
Difference	-0.26	-0.50	-0.02	-0.11	-0.83	-1.72	N/A	0.40	0.77	-1.81	-0.57	-2.99
Short Term Investment Pool	0.12	0.27	0.32	0.19	0.23	0.27	1.42	0.22	0.10	0.19	0.30	0.28
1 Month LIBOR Index	0.11	0.23	0.28	0.20	0.21	0.23	1.35	0.21	0.16	0.19	0.23	0.24
Difference	0.01	0.04	0.04	-0.01	0.02	0.04	0.07	0.01	-0.06	0.00	0.07	0.04
iMoneynet Money Fund (Gross) Median	0.13	0.27	0.32	0.24	0.25	0.30	1.47	0.25	0.17	0.22	0.30	0.27
Difference	-0.01	0.00	0.00	-0.05	-0.02	-0.03	-0.05	-0.03	-0.07	-0.03	0.00	0.01

Performance shown is net of all manager fees and expenses (Net-All). The NCREIF ODCE Index (AWA) (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 March 31, 2016

	QTD	FYTD	1 Year	3 Years	5 Years	7 Years	10 Years	2015	2014	2013	2012	2011
Private Equity Pool*	0.80	5.08	7.35	11.76	12.04	11.94	10.02	7.20	15.47	14.52	14.28	16.11
S&P 1500 + 4% (Qtr Lag)	7.59	2.63	5.01	18.90	16.39	18.97	11.41	3.70	22.57	24.43	34.18	4.92
<i>Difference</i>	-6.79	2.45	2.34	-7.14	-4.35	-7.03	-1.39	3.50	-7.10	-9.91	-19.90	11.19

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 March 31, 2016

	QTD	FYTD	1 Year	3 Years	5 Years	7 Years	10 Years	2015	2014	2013	2012	2011
Montana Domestic Equity Pool	0.70	-0.38	-0.06	11.51	11.28	17.30	6.96	1.14	12.59	34.61	16.77	0.85
All Public Plans-US Equity Segment Median	0.87	-1.62	-1.36	10.70	10.34	17.14	6.72	0.13	11.41	33.76	16.57	0.86
Rank	67	27	27	18	18	43	31	22	20	41	39	51
Population	101	91	91	80	71	63	39	94	51	48	44	45
Montana International Equity Pool	0.07	-8.06	-6.92	1.60	1.08	9.71	1.81	-3.35	-3.77	16.80	17.45	-14.32
All Public Plans-Intl. Equity Segment Median	-0.37	-8.30	-7.29	2.44	2.41	10.67	2.84	-2.48	-3.00	18.68	18.94	-12.65
Rank	35	44	39	74	88	82	93	69	75	78	81	90
Population	96	87	87	74	64	55	36	88	47	44	39	39
Retirement Funds Bond Pool	3.29	3.45	2.02	2.92	4.62	6.74	5.74	0.59	6.30	-0.83	7.44	7.82
All Public Plans-US Fixed Income Segment Median	3.05	2.89	1.48	2.54	4.22	5.91	5.17	0.30	6.01	-1.41	7.52	7.97
Rank	32	30	24	27	35	32	24	36	39	38	52	58
Population	88	82	82	72	65	56	37	82	49	49	48	45
Trust Funds Investment Pool	3.25	4.28	3.10	3.87	5.22	6.51	6.03	1.89	7.08	-0.14	7.11	8.30
All Public Plans-US Fixed Income Segment Median	3.05	2.89	1.48	2.54	4.22	5.91	5.17	0.30	6.01	-1.41	7.52	7.97
Rank	35	9	4	8	18	38	18	4	26	27	57	45
Population	88	82	82	72	65	56	37	82	49	49	48	45
Real Estate Pool	3.01	10.50	15.02	13.97	13.29	5.25	N/A	15.68	13.51	11.73	11.44	15.96
All Public Plans-Real Estate Segment Median	2.39	9.14	12.52	13.48	13.11	8.60	6.75	13.42	14.01	13.91	12.36	N/A
Rank	36	22	11	39	47	95	N/A	10	60	69	85	N/A
Population	44	39	39	31	24	20	10	34	18	16	13	N/A

Performance shown is gross of fees.

Montana Board of Investments
Comparative Performance
Equity Composites

As of March 31, 2016

	QTD	FYTD	1 Year	3 Years	5 Years	7 Years	10 Years	2015	2014	2013	2012	2011
Domestic Large Cap Equity - Net	0.79	1.05	1.33	11.97	11.37	16.97	N/A	1.76	13.82	33.14	16.14	0.54
S&P 500 Index (Cap Wtd)	1.35	1.50	1.78	11.82	11.58	16.97	7.01	1.38	13.69	32.39	16.00	2.11
Difference	-0.56	-0.45	-0.45	0.15	-0.21	0.00	N/A	0.38	0.13	0.75	0.14	-1.57
Domestic Large Cap Equity - Gross	0.83	1.17	1.48	12.14	11.59	17.24	N/A	1.91	13.99	33.34	16.39	0.87
IM U.S. Large Cap Equity (SA+CF) Median	0.43	-1.00	-0.68	11.44	11.10	16.75	7.20	0.95	12.89	33.55	15.87	1.19
Rank	42	27	26	34	38	35	N/A	40	32	54	43	55
Domestic Large Cap Active - Net	-0.57	-0.14	-0.03	12.17	11.38	16.99	N/A	2.40	14.01	34.90	16.03	-0.10
S&P 500 Index (Cap Wtd)	1.35	1.50	1.78	11.82	11.58	16.97	7.01	1.38	13.69	32.39	16.00	2.11
Difference	-1.92	-1.64	-1.81	0.35	-0.20	0.02	N/A	1.02	0.32	2.51	0.03	-2.21
Domestic Large Cap Active - Gross	-0.44	0.23	0.45	12.71	11.91	17.53	N/A	2.88	14.56	35.55	16.56	0.35
IM U.S. Large Cap Equity (SA+CF) Median	0.43	-1.00	-0.68	11.44	11.10	16.75	7.20	0.95	12.89	33.55	15.87	1.19
Rank	62	36	37	26	32	29	N/A	33	25	33	39	59
Domestic Mid Cap Equity - Net	1.50	-5.34	-6.10	7.98	9.29	16.88	6.60	-3.31	6.45	38.18	16.27	1.28
Russell Mid Cap Index	2.24	-2.54	-4.04	10.45	10.30	19.12	7.45	-2.44	13.22	34.76	17.28	-1.55
Difference	-0.74	-2.80	-2.06	-2.47	-1.01	-2.24	-0.85	-0.87	-6.77	3.42	-1.01	2.83
Domestic Mid Cap Equity - Gross	1.66	-4.91	-5.53	8.62	9.90	17.54	7.16	-2.74	7.07	38.95	16.83	1.79
IM U.S. Mid Cap Equity (SA+CF) Median	0.65	-4.39	-4.76	10.27	9.75	18.05	7.97	-1.19	9.76	36.37	16.39	-1.10
Rank	40	54	56	77	48	64	77	68	73	34	47	25
Domestic Small Cap Equity - Net	-0.64	-8.59	-6.88	8.90	8.53	17.13	5.85	-1.61	5.44	40.65	15.76	-2.50
Russell 2000 Index	-1.52	-10.14	-9.76	6.84	7.20	16.42	5.26	-4.41	4.89	38.82	16.34	-4.18
Difference	0.88	1.55	2.88	2.06	1.33	0.71	0.59	2.80	0.55	1.83	-0.58	1.68
Domestic Small Cap Equity - Gross	-0.60	-8.24	-6.37	9.59	9.26	17.90	6.51	-0.93	6.16	41.54	16.40	-1.64
IM U.S. Small Cap Equity (SA+CF) Median	0.23	-7.15	-6.79	8.61	8.91	18.19	6.75	-2.39	5.38	41.28	16.51	-1.83
Rank	58	59	48	36	43	57	55	35	44	48	52	48

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 March 31, 2016

	QTD	FYTD	1 Year	3 Years	5 Years	7 Years	10 Years	2015	2014	2013	2012	2011
International Large Cap Passive - Net	-0.18	-8.70	-8.10	0.73	0.57	N/A	N/A	-4.71	-3.70	14.95	16.92	-13.55
MSCI ACW Ex US Index (Net)	-0.38	-9.66	-9.19	0.32	0.31	9.18	1.94	-5.66	-3.87	15.29	16.83	-13.71
Difference	0.20	0.96	1.09	0.41	0.26	N/A	N/A	0.95	0.17	-0.34	0.09	0.16
International Large Cap Passive - Gross	-0.16	-8.65	-8.03	0.81	0.66	N/A	N/A	-4.63	-3.62	15.05	17.02	-13.48
International Equity Active - Net	0.91	-5.26	-3.61	3.16	2.00	10.30	1.39	-0.31	-4.30	19.23	17.87	-15.39
MSCI ACW Ex US Index (Net)	-0.38	-9.66	-9.19	0.32	0.31	9.18	1.94	-5.66	-3.87	15.29	16.83	-13.71
Difference	1.29	4.40	5.58	2.84	1.69	1.12	-0.55	5.35	-0.43	3.94	1.04	-1.68
International Equity Active - Gross	1.03	-4.92	-3.17	3.61	2.45	10.81	1.86	0.12	-3.90	19.75	18.36	-14.98
IM International Large Cap Core Equity (SA+CF) Median	-2.23	-8.11	-6.37	3.64	3.50	11.11	3.03	0.29	-3.83	23.31	19.46	-12.25
Rank	10	18	12	51	65	58	92	55	51	74	66	82
International Value - Net	0.69	-7.48	-7.92	1.75	0.63	9.56	N/A	-5.94	-1.49	17.15	15.88	-15.46
MSCI ACW Ex US Val Index (Net)	-0.42	-12.72	-12.31	-1.34	-1.03	8.39	1.11	-10.06	-5.10	15.04	16.97	-13.20
Difference	1.11	5.24	4.39	3.09	1.66	1.17	N/A	4.12	3.61	2.11	-1.09	-2.26
International Value - Gross	0.83	-7.10	-7.44	2.30	1.19	10.20	N/A	-5.46	-0.94	17.82	16.55	-14.96
IM International Large Cap Value Equity (SA+CF) Median	-1.99	-8.29	-7.11	2.90	2.82	10.40	3.15	-1.58	-4.04	23.25	17.91	-10.74
Rank	17	34	54	65	80	56	N/A	86	16	78	65	77
International Growth - Net	1.38	-3.94	-2.69	3.08	2.08	10.34	N/A	1.69	-6.15	18.55	18.37	-14.99
MSCI ACW Ex US Grth Index (Net)	-0.34	-6.63	-6.08	1.92	1.60	9.93	2.71	-1.25	-2.65	15.49	16.67	-14.21
Difference	1.72	2.69	3.39	1.16	0.48	0.41	N/A	2.94	-3.50	3.06	1.70	-0.78
International Growth - Gross	1.55	-3.49	-2.15	3.58	2.56	10.91	N/A	2.21	-5.72	19.09	18.89	-14.56
IM International Large Cap Growth Equity (SA+CF) Median	-2.17	-6.78	-5.65	3.59	3.91	11.76	3.87	2.05	-3.36	20.98	19.70	-11.39
Rank	7	22	23	51	78	65	N/A	48	79	70	60	80
International Small Cap - Net	-0.65	-4.39	-0.11	5.42	3.73	13.47	N/A	5.16	-4.87	25.30	18.64	-15.36
MSCI ACWI Ex US Sm Cap Index IMI (Net)	0.68	-4.63	-0.60	3.67	2.39	14.01	3.89	2.60	-4.03	19.73	18.52	-18.50
Difference	-1.33	0.24	0.49	1.75	1.34	-0.54	N/A	2.56	-0.84	5.57	0.12	3.14
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	-0.73	-1.78	2.57	8.37	7.20	17.09	5.26	10.46	-3.14	31.05	23.44	-13.67
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 March 31, 2016

	QTD	FYTD	1 Year	3 Years	5 Years	7 Years	10 Years	2015	2014	2013	2012	2011
Domestic Large Cap Passive - Net	1.36	0.90	1.24	11.64	11.49	16.99	6.98	0.83	13.73	32.41	16.06	2.20
S&P 500 Index (Cap Wtd)	1.35	1.50	1.78	11.82	11.58	16.97	7.01	1.38	13.69	32.39	16.00	2.11
Difference	0.01	-0.60	-0.54	-0.18	-0.09	0.02	-0.03	-0.55	0.04	0.02	0.06	0.09
Domestic Large Cap Passive - Gross	1.36	0.91	1.25	11.65	11.50	16.97	7.04	0.84	13.74	32.42	16.07	2.21
IM U.S. Large Cap Index Equity (SA+CF) Median	1.29	0.92	0.84	11.59	11.42	17.02	7.04	0.95	13.28	32.56	16.18	1.56
Rank	33	52	44	50	43	58	49	58	18	64	55	22
Domestic Large Cap Enhanced - Net	0.36	1.50	1.71	12.14	11.78	18.04	N/A	3.18	13.19	32.89	16.87	1.94
S&P 500 Index (Cap Wtd)	1.35	1.50	1.78	11.82	11.58	16.97	7.01	1.38	13.69	32.39	16.00	2.11
Difference	-0.99	0.00	-0.07	0.32	0.20	1.07	N/A	1.80	-0.50	0.50	0.87	-0.17
Domestic Large Cap Enhanced - Gross	0.44	1.74	2.04	12.50	12.12	18.40	N/A	3.50	13.54	33.31	17.21	2.25
IM U.S. Large Cap Core Equity (SA+CF) Median	0.61	-0.52	-0.20	11.67	11.35	16.63	7.31	1.26	13.41	33.02	15.70	1.95
Rank	53	26	24	29	28	11	N/A	23	48	48	32	47
Domestic Large Cap 130/30 - Net	-1.51	-1.78	-1.78	12.18	11.68	16.91	N/A	1.61	14.84	36.94	18.42	-1.74
S&P 500 Index (Cap Wtd)	1.35	1.50	1.78	11.82	11.58	16.97	7.01	1.38	13.69	32.39	16.00	2.11
Difference	-2.86	-3.28	-3.56	0.36	0.10	-0.06	N/A	0.23	1.15	4.55	2.42	-3.85
Domestic Large Cap 130/30 - Gross	-1.34	-1.30	-1.14	12.91	12.42	17.68	N/A	2.26	15.59	37.83	19.18	-1.05
IM U.S. Large Cap Core Equity (SA+CF) Median	0.61	-0.52	-0.20	11.67	11.35	16.63	7.31	1.26	13.41	33.02	15.70	1.95
Rank	86	58	60	24	23	20	N/A	37	21	13	15	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 composites.

Montana Board of Investments
Comparative Performance
Domestic Equity Managers

As of March 31, 2016

	QTD	FYTD	1 Year	3 Years	5 Years	7 Years	10 Years	2015	2014	2013	2012	2011	Since Incep.	Inception Date
Domestic Large Cap Equity														
Analytic Investors 130/30 (SA) - Net	0.29	5.23	3.84	13.10	12.64	17.14	N/A	5.94	13.33	35.22	17.38	3.13	7.55	03/01/2008
S&P 500 Index (Cap Wtd)	1.35	1.50	1.78	11.82	11.58	16.97	7.01	1.38	13.69	32.39	16.00	2.11	7.88	
Difference	-1.06	3.73	2.06	1.28	1.06	0.17	N/A	4.56	-0.36	2.83	1.38	1.02	-0.33	
Analytic Investors 130/30 (SA) - Gross	0.41	5.57	4.31	13.63	13.19	17.73	N/A	6.42	13.88	35.86	17.94	3.70	8.10	03/01/2008
IM U.S. Large Cap Core Equity (SA+CF) Median	0.61	-0.52	-0.20	11.67	11.35	16.63	7.31	1.26	13.41	33.02	15.70	1.95	8.09	
Rank	53	8	11	16	14	18	N/A	6	41	25	24	33	49	
BlackRock Equity Idx Fund A (CF) - Net	1.36	1.52	1.86	11.87	11.63	17.06	7.10	1.44	13.73	32.41	16.05	2.19	4.29	05/01/2000
S&P 500 Index (Cap Wtd)	1.35	1.50	1.78	11.82	11.58	16.97	7.01	1.38	13.69	32.39	16.00	2.11	4.22	
Difference	0.01	0.02	0.08	0.05	0.05	0.09	0.09	0.06	0.04	0.02	0.05	0.08	0.07	
BlackRock Equity Idx Fund A (CF) - Gross	1.37	1.53	1.87	11.88	11.64	17.07	7.11	1.45	13.74	32.42	16.06	2.22	4.30	05/01/2000
IM U.S. Large Cap Index Equity (SA+CF) Median	1.29	0.92	0.84	11.59	11.42	17.02	7.04	0.95	13.28	32.56	16.18	1.56	4.48	
Rank	32	27	20	22	19	46	26	23	17	64	56	21	53	
Domestic Equity Pool SPIF - Net	1.37	1.31	1.40	11.24	11.44	16.78	6.70	0.78	13.13	31.85	17.26	1.81	7.92	07/01/2003
S&P 500 Index (Cap Wtd)	1.35	1.50	1.78	11.82	11.58	16.97	7.01	1.38	13.69	32.39	16.00	2.11	8.25	
Difference	0.02	-0.19	-0.38	-0.58	-0.14	-0.19	-0.31	-0.60	-0.56	-0.54	1.26	-0.30	-0.33	
Domestic Equity Pool STIF - Net	0.10	0.18	0.20	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.20	04/01/2015
1 Month LIBOR Index	0.11	0.23	0.28	0.20	0.21	0.23	1.35	0.21	0.16	0.19	0.23	0.24	0.28	
Difference	-0.01	-0.05	-0.08	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	-0.08	
INTECH Enhanced Plus (SA) - Net	0.50	1.66	0.46	12.45	12.10	17.37	N/A	2.83	14.91	32.46	14.89	4.33	7.58	06/01/2006
S&P 500 Index (Cap Wtd)	1.35	1.50	1.78	11.82	11.58	16.97	7.01	1.38	13.69	32.39	16.00	2.11	7.30	
Difference	-0.85	0.16	-1.32	0.63	0.52	0.40	N/A	1.45	1.22	0.07	-1.11	2.22	0.28	
INTECH Enhanced Plus (SA) - Gross	0.59	1.92	0.81	12.84	12.48	17.77	N/A	3.18	15.31	32.92	15.28	4.68	7.96	06/01/2006
IM U.S. Large Cap Core Equity (SA+CF) Median	0.61	-0.52	-0.20	11.67	11.35	16.63	7.31	1.26	13.41	33.02	15.70	1.95	7.59	
Rank	51	25	35	26	21	17	N/A	25	25	51	59	21	35	

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	QTD	FYTD	1 Year	3 Years	5 Years	7 Years	10 Years	2015	2014	2013	2012	2011	Since Incep.	Inception Date
T. Rowe U.S. Structured Research (SA) - Net	0.30	1.43	2.17	12.06	11.71	16.96	N/A	3.30	12.58	33.23	16.42	1.67	7.73	06/01/2006
S&P 500 Index (Cap Wtd)	1.35	1.50	1.78	11.82	11.58	16.97	7.01	1.38	13.69	32.39	16.00	2.11	7.30	
Difference	-1.05	-0.07	0.39	0.24	0.13	-0.01	N/A	1.92	-1.11	0.84	0.42	-0.44	0.43	
T. Rowe U.S. Structured Research (SA) - Gross	0.38	1.67	2.48	12.40	12.05	17.31	N/A	3.61	12.92	33.63	16.77	1.98	8.06	06/01/2006
IM U.S. Large Cap Core Equity (SA+CF) Median	0.61	-0.52	-0.20	11.67	11.35	16.63	7.31	1.26	13.41	33.02	15.70	1.95	7.59	
Rank	54	26	21	30	31	31	N/A	23	59	44	36	50	31	
J.P. Morgan 130/30 (SA) - Net	-2.24	-4.35	-3.90	11.77	11.27	17.05	N/A	0.01	15.38	37.55	18.64	-3.38	8.97	03/01/2008
S&P 500 Index (Cap Wtd)	1.35	1.50	1.78	11.82	11.58	16.97	7.01	1.38	13.69	32.39	16.00	2.11	7.88	
Difference	-3.59	-5.85	-5.68	-0.05	-0.31	0.08	N/A	-1.37	1.69	5.16	2.64	-5.49	1.09	
J.P. Morgan 130/30 (SA) - Gross	-2.04	-3.82	-3.20	12.57	12.07	17.89	N/A	0.72	16.21	38.53	19.48	-2.65	9.75	03/01/2008
IM U.S. Large Cap Core Equity (SA+CF) Median	0.61	-0.52	-0.20	11.67	11.35	16.63	7.31	1.26	13.41	33.02	15.70	1.95	8.09	
Rank	92	82	79	29	30	15	N/A	57	15	11	13	86	9	
Domestic Mid Cap Equity														
Artisan Partners (SA) - Net	6.11	-4.66	-6.27	4.86	7.79	15.93	N/A	-9.68	2.12	37.20	12.02	6.93	6.89	03/01/2007
Russell Mid Cap Val Index	3.92	-1.45	-3.39	9.88	10.52	19.48	7.23	-4.78	14.75	33.46	18.51	-1.38	6.25	
Difference	2.19	-3.21	-2.88	-5.02	-2.73	-3.55	N/A	-4.90	-12.63	3.74	-6.49	8.31	0.64	
Artisan Partners (SA) - Gross	6.29	-4.18	-5.65	5.55	8.52	16.73	N/A	-9.09	2.79	38.11	12.79	7.69	7.65	03/01/2007
IM U.S. Mid Cap Value Equity (SA+CF) Median	3.00	-3.15	-3.94	10.22	10.23	18.77	7.98	-3.88	11.73	36.06	17.16	-0.98	7.35	
Rank	9	65	70	98	84	83	N/A	88	97	40	88	2	43	
BlackRock Mid Cap Eq Idx A (CF) - Net	3.79	-2.55	-3.58	9.46	9.53	18.52	7.82	-2.17	9.75	33.51	17.90	-1.72	8.78	01/01/2005
S&P Mid Cap 400 Index (Cap Wtd)	3.78	-2.56	-3.60	9.46	9.52	18.51	7.78	-2.18	9.77	33.50	17.88	-1.73	8.73	
Difference	0.01	0.01	0.02	0.00	0.01	0.01	0.04	0.01	-0.02	0.01	0.02	0.01	0.05	
BlackRock Mid Cap Eq Idx A (CF) - Gross	3.81	-2.49	-3.50	9.55	9.62	18.61	7.90	-2.09	9.85	33.62	18.00	-1.65	8.85	01/01/2005

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	QTD	FYTD	1 Year	3 Years	5 Years	7 Years	10 Years	2015	2014	2013	2012	2011	Since Incep.	Inception Date
Iridian Asset Management (SA) - Net	0.11	-4.36	-3.54	N/A	N/A	N/A	N/A	-1.62	12.84	N/A	N/A	N/A	12.50	05/01/2013
Russell Mid Cap Val Index	3.92	-1.45	-3.39	9.88	10.52	19.48	7.23	-4.78	14.75	33.46	18.51	-1.38	9.76	
Difference	-3.81	-2.91	-0.15	N/A	N/A	N/A	N/A	3.16	-1.91	N/A	N/A	N/A	2.74	
Iridian Asset Management (SA) - Gross	0.31	-3.79	-2.80	N/A	N/A	N/A	N/A	-0.87	13.73	N/A	N/A	N/A	13.38	05/01/2013
IM U.S. Mid Cap Value Equity (SA+CF) Median	3.00	-3.15	-3.94	10.22	10.23	18.77	7.98	-3.88	11.73	36.06	17.16	-0.98	10.01	
Rank	85	61	39	N/A	N/A	N/A	N/A	19	23	N/A	N/A	N/A	6	
Nicholas Investment Partners (SA) - Net	-4.99	-12.39	-12.55	N/A	N/A	N/A	N/A	-2.74	8.01	N/A	N/A	N/A	7.89	05/01/2013
Russell Mid Cap Grth Index	0.58	-3.65	-4.75	10.99	9.99	18.71	7.43	-0.20	11.90	35.74	15.81	-1.65	10.77	
Difference	-5.57	-8.74	-7.80	N/A	N/A	N/A	N/A	-2.54	-3.89	N/A	N/A	N/A	-2.88	
Nicholas Investment Partners (SA) - Gross	-4.80	-11.89	-11.90	N/A	N/A	N/A	N/A	-2.03	8.82	N/A	N/A	N/A	8.70	05/01/2013
IM U.S. Mid Cap Growth Equity (SA+CF) Median	-1.30	-7.16	-7.00	10.02	9.05	17.47	7.63	1.17	8.45	36.29	15.03	-1.15	10.01	
Rank	86	86	88	N/A	N/A	N/A	N/A	77	45	N/A	N/A	N/A	72	
TimesSquare Capital Mgmt. (SA) - Net	0.05	-4.57	-5.27	8.90	10.06	16.75	N/A	0.96	5.69	37.79	19.19	-1.37	8.02	03/01/2007
Russell Mid Cap Grth Index	0.58	-3.65	-4.75	10.99	9.99	18.71	7.43	-0.20	11.90	35.74	15.81	-1.65	7.48	
Difference	-0.53	-0.92	-0.52	-2.09	0.07	-1.96	N/A	1.16	-6.21	2.05	3.38	0.28	0.54	
TimesSquare Capital Mgmt. (SA) - Gross	0.23	-4.07	-4.61	9.65	10.83	17.58	N/A	1.65	6.42	38.75	20.03	-0.64	8.80	03/01/2007
IM U.S. Mid Cap Growth Equity (SA+CF) Median	-1.30	-7.16	-7.00	10.02	9.05	17.47	7.63	1.17	8.45	36.29	15.03	-1.15	8.04	
Rank	25	29	32	55	19	48	N/A	44	71	35	15	45	29	

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	QTD	FYTD	1 Year	3 Years	5 Years	7 Years	10 Years	2015	2014	2013	2012	2011	Since Incep.	Inception Date
Domestic Small Cap Equity														
Alliance Bernstein (SA) - Net	-7.85	-17.17	-13.60	5.62	N/A	N/A	N/A	-0.84	-1.61	45.22	N/A	N/A	6.24	04/01/2012
Russell 2000 Grth Index	-4.68	-13.55	-11.84	7.91	7.70	17.23	6.00	-1.38	5.60	43.30	14.59	-2.91	9.53	
Difference	-3.17	-3.62	-1.76	-2.29	N/A	N/A	N/A	0.54	-7.21	1.92	N/A	N/A	-3.29	
Alliance Bernstein (SA) - Gross	-7.62	-16.59	-12.81	6.59	N/A	N/A	N/A	0.05	-0.71	46.52	N/A	N/A	7.20	04/01/2012
IM U.S. Small Cap Growth Equity (SA+CF) Median	-4.10	-12.40	-10.31	8.10	8.17	17.88	6.42	-0.71	4.01	45.15	14.76	-1.20	9.84	
Rank	84	77	67	71	N/A	N/A	N/A	42	82	44	N/A	N/A	82	
DFA US Small Cap Trust (CF) - Net	1.67	-5.30	-4.74	9.56	9.58	18.91	6.54	-2.64	4.75	42.42	18.20	-2.07	12.04	03/01/2003
Russell 2000 Index	-1.52	-10.14	-9.76	6.84	7.20	16.42	5.26	-4.41	4.89	38.82	16.34	-4.18	10.46	
Difference	3.19	4.84	5.02	2.72	2.38	2.49	1.28	1.77	-0.14	3.60	1.86	2.11	1.58	
DFA US Small Cap Trust (CF) - Gross	1.76	-5.05	-4.40	9.94	9.96	19.33	6.91	-2.29	5.12	42.90	18.59	-1.70	12.35	03/01/2003
IM U.S. Small Cap Core Equity (SA+CF) Median	0.02	-6.78	-6.41	9.62	9.72	18.53	7.10	-1.39	6.57	41.01	16.81	-1.38	12.04	
Rank	21	33	28	46	44	34	54	63	63	40	33	54	38	
Voya Investment Management (SA) - Net	-2.86	-10.72	-8.65	N/A	N/A	N/A	N/A	-1.01	5.41	N/A	N/A	N/A	8.33	05/01/2013
Russell 2000 Grth Index	-4.68	-13.55	-11.84	7.91	7.70	17.23	6.00	-1.38	5.60	43.30	14.59	-2.91	8.39	
Difference	1.82	2.83	3.19	N/A	N/A	N/A	N/A	0.37	-0.19	N/A	N/A	N/A	-0.06	
Voya Investment Management (SA) - Gross	-2.63	-10.12	-7.84	N/A	N/A	N/A	N/A	-0.15	6.35	N/A	N/A	N/A	9.29	05/01/2013
IM U.S. Small Cap Growth Equity (SA+CF) Median	-4.10	-12.40	-10.31	8.10	8.17	17.88	6.42	-0.71	4.01	45.15	14.76	-1.20	8.79	
Rank	33	41	36	N/A	N/A	N/A	N/A	44	31	N/A	N/A	N/A	44	

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	QTD	FYTD	1 Year	3 Years	5 Years	7 Years	10 Years	2015	2014	2013	2012	2011	Since Incep.	Inception Date
Metropolitan West Capital Mgmt (SA) - Net	1.13	-8.84	-7.34	N/A	N/A	N/A	N/A	-5.70	7.45	N/A	N/A	N/A	7.57	05/01/2013
Russell 2000 Val Index	1.70	-6.60	-7.72	5.73	6.67	15.54	4.42	-7.47	4.22	34.52	18.05	-5.50	5.93	
Difference	-0.57	-2.24	0.38	N/A	N/A	N/A	N/A	1.77	3.23	N/A	N/A	N/A	1.64	
Metropolitan West Capital Mgmt (SA) - Gross	1.37	-8.21	-6.49	N/A	N/A	N/A	N/A	-4.85	8.43	N/A	N/A	N/A	8.54	05/01/2013
IM U.S. Small Cap Value Equity (SA+CF) Median	2.32	-4.84	-5.00	8.51	8.93	18.26	6.98	-4.35	5.71	38.10	17.48	-3.13	8.97	
Rank	67	78	63	N/A	N/A	N/A	N/A	57	20	N/A	N/A	N/A	60	
Vaughan Nelson Mgmt. (SA) - Net	0.16	-7.47	-5.63	10.55	9.16	17.14	N/A	0.16	9.09	39.30	15.36	-3.61	9.10	03/01/2007
Russell 2000 Val Index	1.70	-6.60	-7.72	5.73	6.67	15.54	4.42	-7.47	4.22	34.52	18.05	-5.50	3.88	
Difference	-1.54	-0.87	2.09	4.82	2.49	1.60	N/A	7.63	4.87	4.78	-2.69	1.89	5.22	
Vaughan Nelson Mgmt. (SA) - Gross	0.38	-6.89	-4.85	11.48	10.08	18.13	N/A	0.98	10.00	40.47	16.32	-2.77	10.03	03/01/2007
IM U.S. Small Cap Value Equity (SA+CF) Median	2.32	-4.84	-5.00	8.51	8.93	18.26	6.98	-4.35	5.71	38.10	17.48	-3.13	6.91	
Rank	82	67	47	9	25	53	N/A	7	10	36	60	49	5	

Gross of fees performance is not available (N/A) for the following funds: Domestic Equity Pool SPIF and Domestic Equity Pool STIF.
The current annual expense ratios for the Domestic Equity Pool SPIF and the Domestic Equity Pool STIF are 0.15% and 0.12%, respectively.

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	QTD	FYTD	1 Year	3 Years	5 Years	7 Years	10 Years	2015	2014	2013	2012	2011	Since Incep.	Inception Date
International Developed Large Cap Equity														
Acadian Asset Non-US Equity (SA) - Net	0.38	-8.38	-8.44	1.08	1.85	10.74	N/A	-7.75	0.00	17.60	18.66	-10.60	0.14	11/01/2006
MSCI ACW Ex US Val Index (Net)	-0.42	-12.72	-12.31	-1.34	-1.03	8.39	1.11	-10.06	-5.10	15.04	16.97	-13.20	0.14	
Difference	0.80	4.34	3.87	2.42	2.88	2.35	N/A	2.31	5.10	2.56	1.69	2.60	0.00	
Acadian Asset Non-US Equity (SA) - Gross	0.52	-8.01	-7.95	1.62	2.41	11.36	N/A	-7.26	0.52	18.22	19.37	-10.10	0.71	11/01/2006
IM International Large Cap Value Equity (SA+CF) Median	-1.99	-8.29	-7.11	2.90	2.82	10.40	3.15	-1.58	-4.04	23.25	17.91	-10.74	2.15	
Rank	23	48	59	76	60	40	N/A	91	12	78	34	38	90	
Baillie Gifford (SA) - Net	0.61	-4.33	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	-6.58	06/01/2015
MSCI ACW Ex US Grth Index (Net)	-0.34	-6.63	-6.08	1.92	1.60	9.93	2.71	-1.25	-2.65	15.49	16.67	-14.21	-9.06	
Difference	0.95	2.30	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.48	
Baillie Gifford (SA) - Gross	0.75	-3.95	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	-6.17	06/01/2015
IM International Large Cap Growth Equity (SA+CF) Median	-2.17	-6.78	-5.65	3.59	3.91	11.76	3.87	2.05	-3.36	20.98	19.70	-11.39	-9.17	
Rank	12	25	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	22	
BlackRock ACWI Ex-US SuperFund A (CF) - Net	-0.32	-9.59	-9.03	0.51	0.50	N/A	N/A	-5.49	-3.73	15.51	17.07	-13.54	5.60	06/01/2009
MSCI ACW Ex US Index (Net)	-0.38	-9.66	-9.19	0.32	0.31	9.18	1.94	-5.66	-3.87	15.29	16.83	-13.71	5.41	
Difference	0.06	0.07	0.16	0.19	0.19	N/A	N/A	0.17	0.14	0.22	0.24	0.17	0.19	
BlackRock ACWI Ex-US SuperFund A (CF) - Gross	-0.30	-9.54	-8.96	0.59	0.58	N/A	N/A	-5.42	-3.65	15.61	17.17	-13.46	5.68	06/01/2009
International Equity Pool SPIF - Net	-3.02	-9.22	-8.98	1.64	1.60	8.69	1.27	-1.48	-5.66	20.79	17.97	-13.22	2.46	12/01/2005
MSCI EAFE Index (Net)	-3.01	-8.83	-8.27	2.23	2.29	9.69	1.80	-0.81	-4.90	22.78	17.32	-12.14	3.08	
Difference	-0.01	-0.39	-0.71	-0.59	-0.69	-1.00	-0.53	-0.67	-0.76	-1.99	0.65	-1.08	-0.62	
International Equity Pool STIF - Net	0.10	0.17	0.19	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.19	04/01/2015
1 Month LIBOR Index	0.11	0.23	0.28	0.20	0.21	0.23	1.35	0.21	0.16	0.19	0.23	0.24	0.28	
Difference	-0.01	-0.06	-0.09	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	-0.09	
Invesco (SA) - Net	2.16	-3.51	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	-6.44	06/01/2015
MSCI ACW Ex US Grth Index (Net)	-0.34	-6.63	-6.08	1.92	1.60	9.93	2.71	-1.25	-2.65	15.49	16.67	-14.21	-9.06	
Difference	2.50	3.12	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.62	
Invesco (SA) - Gross	2.35	-3.01	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	-5.89	06/01/2015
IM International Large Cap Growth Equity (SA+CF) Median	-2.17	-6.78	-5.65	3.59	3.91	11.76	3.87	2.05	-3.36	20.98	19.70	-11.39	-9.17	
Rank	3	18	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	20	

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Lazard Asset Management (SA) - Net	1.00	-6.44	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	-8.02	06/01/2015
MSCI ACW Ex US Val Index (Net)	-0.42	-12.72	-12.31	-1.34	-1.03	8.39	1.11	-10.06	-5.10	15.04	16.97	-13.20	-15.32	
Difference	1.42	6.28	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	7.30	
Lazard Asset Management (SA) - Gross	1.15	-6.04	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	-7.59	06/01/2015
IM International Large Cap Value Equity (SA+CF) Median	-1.99	-8.29	-7.11	2.90	2.82	10.40	3.15	-1.58	-4.04	23.25	17.91	-10.74	-10.63	
Rank	16	25	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	18	
International Developed Small Cap Equity														
American Century Investment Mgmt (SA) - Net	-3.46	-3.30	1.31	N/A	N/A	N/A	N/A	11.32	N/A	N/A	N/A	N/A	-1.64	03/01/2014
MSCI ACW Ex US Sm Cap Grth Index (Net)	-0.22	-3.37	1.67	4.59	2.84	14.18	3.70	6.50	-3.59	18.52	16.87	-17.86	-0.51	
Difference	-3.24	0.07	-0.36	N/A	N/A	N/A	N/A	4.82	N/A	N/A	N/A	N/A	-1.13	
American Century Investment Mgmt (SA) - Gross	-3.25	-2.67	2.17	N/A	N/A	N/A	N/A	12.25	N/A	N/A	N/A	N/A	-0.80	03/01/2014
IM International Small Cap Growth Equity (SA+CF) Median	-1.54	-0.37	4.34	8.18	6.83	16.89	5.83	12.85	-3.62	31.15	23.40	-14.67	1.47	
Rank	89	72	62	N/A	N/A	N/A	N/A	52	N/A	N/A	N/A	N/A	74	
BlackRock ACWI Ex-US Small Cap (CF) - Net	0.75	-4.61	-0.44	3.89	N/A	N/A	N/A	2.87	-3.84	19.87	N/A	N/A	6.54	02/01/2012
MSCI ACWI Ex US Sm Cap Index IMI (Net)	0.68	-4.63	-0.60	3.67	2.39	14.01	3.89	2.60	-4.03	19.73	18.52	-18.50	6.36	
Difference	0.07	0.02	0.16	0.22	N/A	N/A	N/A	0.27	0.19	0.14	N/A	N/A	0.18	
BlackRock ACWI Ex-US Small Cap (CF) - Gross	0.78	-4.49	-0.28	4.06	N/A	N/A	N/A	3.04	-3.67	20.08	N/A	N/A	6.72	02/01/2012
DFA Intl Sm Co;l (DFISX) - Net	0.38	-2.78	2.32	6.13	4.15	14.09	4.11	5.89	-6.29	27.49	18.75	-15.36	7.48	11/01/2004
MSCI Wrld Ex US Sm Cap Index (Net)	0.60	-2.09	1.99	5.54	3.84	14.44	3.09	5.46	-5.35	25.55	17.48	-15.81	6.81	
Difference	-0.22	-0.69	0.33	0.59	0.31	-0.35	1.02	0.43	-0.94	1.94	1.27	0.45	0.67	

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 March 31, 2016

	QTD	FYTD	1 Year	3 Years	5 Years	7 Years	10 Years	2015	2014	2013	2012	2011	Since Incep.	Inception Date
Templeton Investment Counsel (SA) - Net	-1.34	-7.59	-4.58	N/A	N/A	N/A	N/A	1.81	N/A	N/A	N/A	N/A	-1.78	03/01/2014
MSCI ACW Ex US Sm Cap Val Index (Net)	1.60	-5.94	-2.93	2.71	1.91	13.81	4.03	-1.25	-4.49	20.92	20.15	-19.12	-3.46	
Difference	-2.94	-1.65	-1.65	N/A	N/A	N/A	N/A	3.06	N/A	N/A	N/A	N/A	1.68	
Templeton Investment Counsel (SA) - Gross	-1.11	-6.93	-3.70	N/A	N/A	N/A	N/A	2.73	N/A	N/A	N/A	N/A	-0.88	03/01/2014
IM International Small Cap Value Equity (SA+CF) Median	-0.20	-4.36	0.47	6.79	6.24	17.31	5.26	5.52	-3.91	30.97	23.58	-13.53	0.00	
Rank	90	86	90	N/A	N/A	N/A	N/A	79	N/A	N/A	N/A	N/A	62	
International Emerging Equity														
BlackRock Emerging Mkts (CF) - Net	5.61	-12.77	-12.27	-4.68	N/A	N/A	N/A	-15.15	-2.49	-2.79	N/A	N/A	-2.49	02/01/2012
MSCI Emg Mkts Index (Net)	5.71	-12.63	-12.03	-4.50	-4.13	8.21	3.02	-14.92	-2.19	-2.60	18.23	-18.42	-2.24	
Difference	-0.10	-0.14	-0.24	-0.18	N/A	N/A	N/A	-0.23	-0.30	-0.19	N/A	N/A	-0.25	
BlackRock Emerging Mkts (CF) - Gross	5.66	-12.65	-12.11	-4.49	N/A	N/A	N/A	-14.99	-2.30	-2.57	N/A	N/A	-2.30	02/01/2012

Gross of fees performance is not available (N/A) for the following funds: International Equity Pool SPIF, International Equity Pool STIF, and DFA Intl Sm Co;I (DFISX).
The current annual expense ratios for the International Equity Pool SPIF, International Equity Pool STIF, and the DFA Intl Sm Co;I (DFISX) are 0.18%, 0.12% and 0.54%, 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 March 31, 2016

	QTD	FYTD	1 Year	3 Years	5 Years	7 Years	10 Years	2015	2014	2013	2012	2011	Since Incep.	Inception Date
Core Internal Bond Portfolio	3.19	3.83	2.20	2.83	4.38	6.16	5.52	0.83	6.82	-2.02	6.07	8.20	6.67	04/01/1995
Barclays US Agg Bond Index	3.03	3.71	1.96	2.50	3.78	4.52	4.90	0.55	5.97	-2.02	4.21	7.84	5.83	
Difference	0.16	0.12	0.24	0.33	0.60	1.64	0.62	0.28	0.85	0.00	1.86	0.36	0.84	
Core Internal Bond Portfolio	3.19	3.83	2.20	2.83	4.38	6.16	5.52	0.83	6.82	-2.02	6.07	8.20	6.67	04/01/1995
IM U.S. Broad Market Core FI (SA+CF)	3.04	3.70	2.06	2.71	4.14	5.46	5.30	0.81	6.14	-1.56	5.73	7.83	6.16	
Rank	22	38	36	30	33	27	32	48	23	74	45	24	7	
Trust Funds Bond Portfolio	3.30	4.05	2.38	3.15	4.59	5.90	5.58	1.03	6.79	-1.43	6.15	8.16	6.36	10/01/1995
Barclays US Agg Bond Index	3.03	3.71	1.96	2.50	3.78	4.52	4.90	0.55	5.97	-2.02	4.21	7.84	5.57	
Difference	0.27	0.34	0.42	0.65	0.81	1.38	0.68	0.48	0.82	0.59	1.94	0.32	0.79	
Trust Funds Bond Portfolio	3.30	4.05	2.38	3.15	4.59	5.90	5.58	1.03	6.79	-1.43	6.15	8.16	6.36	10/01/1995
IM U.S. Broad Market Core FI (SA+CF)	3.04	3.70	2.06	2.71	4.14	5.46	5.30	0.81	6.14	-1.56	5.73	7.83	5.92	
Rank	12	22	23	12	20	33	29	28	25	42	42	25	9	
Neuberger Berman High Yield (SA) - Net	3.80	-2.76	-3.06	2.05	4.75	N/A	N/A	-4.32	1.93	7.78	15.90	4.07	7.04	01/01/2010
Barclays US Hi Yld - 2% Issuer Cap Index	3.35	-3.66	-3.66	1.86	4.93	12.36	7.03	-4.43	2.46	7.44	15.78	4.96	6.91	
Difference	0.45	0.90	0.60	0.19	-0.18	N/A	N/A	0.11	-0.53	0.34	0.12	-0.89	0.13	
Neuberger Berman High Yield (SA) - Gross	3.92	-2.43	-2.63	2.50	5.22	N/A	N/A	-3.89	2.38	8.26	16.42	4.54	7.53	01/01/2010
IM U.S. High Yield Bonds (SA+CF) Median	2.50	-3.10	-2.57	2.42	5.14	11.47	6.94	-2.27	2.72	7.63	15.37	5.26	7.12	
Rank	4	40	51	46	48	N/A	N/A	74	58	33	30	65	33	

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 March 31, 2016

	QTD	FYTD	1 Year	3 Years	5 Years	7 Years	10 Years	2015	2014	2013	2012	2011	Since Incep.	Inception Date
Reams Asset Core Plus (SA) - Net	3.95	3.58	2.36	2.44	4.54	8.28	N/A	0.07	4.47	-0.85	8.64	7.54	6.60	10/01/2008
Barclays US Unv Bond Index	3.07	3.20	1.75	2.51	3.95	5.10	5.03	0.43	5.56	-1.35	5.53	7.40	5.18	
Difference	0.88	0.38	0.61	-0.07	0.59	3.18	N/A	-0.36	-1.09	0.50	3.11	0.14	1.42	
Reams Asset Core Plus (SA) - Gross	3.99	3.71	2.53	2.62	4.72	8.47	N/A	0.24	4.65	-0.68	8.83	7.72	6.78	10/01/2008
IM U.S. Broad Market Core+ FI (SA+CF)	2.91	2.79	1.23	2.67	4.57	7.04	5.64	0.27	6.20	-0.55	8.16	7.46	6.49	
Rank	4	9	6	54	39	22	N/A	51	90	56	43	39	37	
Post High Yield Plus (SA) - Net	2.53	0.10	0.62	4.70	6.60	N/A	N/A	0.82	4.99	10.19	16.97	2.60	9.98	06/01/2009
Barclays US Hi Yld - 2% Issuer Cap Index	3.35	-3.66	-3.66	1.86	4.93	12.36	7.03	-4.43	2.46	7.44	15.78	4.96	9.81	
Difference	-0.82	3.76	4.28	2.84	1.67	N/A	N/A	5.25	2.53	2.75	1.19	-2.36	0.17	
Post High Yield Plus (SA) - Gross	2.68	0.55	1.22	5.32	7.24	N/A	N/A	1.43	5.62	10.85	17.67	3.22	10.65	06/01/2009
IM U.S. High Yield Bonds (SA+CF) Median	2.50	-3.10	-2.57	2.42	5.14	11.47	6.94	-2.27	2.72	7.63	15.37	5.26	9.67	
Rank	42	11	6	2	4	N/A	N/A	7	3	10	14	82	16	
Post Trad'l High Yield LP (CF) - Gross	2.89	0.61	1.21	5.50	7.21	N/A	N/A	1.42	6.01	9.98	18.62	3.08	9.83	09/01/2009
IM U.S. High Yield Bonds (SA+CF) Median	2.50	-3.10	-2.57	2.42	5.14	11.47	6.94	-2.27	2.72	7.63	15.37	5.26	8.42	
Rank	33	11	6	1	4	N/A	N/A	7	3	14	10	83	5	

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 March 31, 2016

	QTD	FYTD	1 Year	3 Years	5 Years	7 Years	10 Years	2015	2014	2013	2012	2011
Abandoned Mine Trust	0.66	0.91	0.95	1.13	1.51	2.96	3.03	0.90	1.49	0.63	2.82	1.49
Big Sky Economic Development Fund	3.17	4.17	2.99	3.72	5.00	6.29	5.83	1.82	6.77	-0.22	6.72	8.13
Butte Area One Restoration	1.97	2.54	2.01	2.14	2.84	3.62	N/A	1.20	3.57	-0.08	3.68	4.61
Clark Fork River Restoration	2.07	2.72	2.09	2.43	3.28	4.17	N/A	1.37	4.26	-0.12	4.36	5.33
Coal Tax Cultural Trust Fund	3.14	4.14	2.97	3.70	4.99	6.28	5.83	1.79	6.79	-0.23	6.76	8.09
Coal Tax Park Acquisition	3.13	4.12	2.96	3.65	4.96	6.26	5.81	1.78	6.66	-0.25	6.78	8.10
East Helena Compensation Fund	1.46	1.97	1.49	1.70	N/A	N/A	N/A	0.91	3.01	-0.13	N/A	N/A
Endowment for Children	2.93	3.87	2.69	3.54	4.87	6.12	N/A	1.70	6.66	-0.28	6.69	8.00
FWP License Account	0.45	0.71	0.74	0.62	0.93	1.21	2.34	0.61	0.59	0.42	1.64	1.08
FWP Mitigation Trust Fund	0.62	0.92	0.97	1.05	1.46	2.87	2.89	0.87	1.37	0.61	2.85	1.46
FWP Real Property Trust	3.04	3.99	2.88	3.55	4.79	6.02	5.60	1.73	6.47	-0.24	6.51	7.76
Group Benefits	0.90	1.18	1.23	1.07	1.38	2.25	2.91	1.06	1.17	0.32	2.22	1.43
Montana Pole	2.50	3.39	2.45	3.01	4.07	5.22	5.01	1.56	5.44	-0.17	5.50	6.61
Montana Tech-UM Agency Funds	0.22	0.39	0.39	0.32	0.42	0.58	1.65	0.27	0.35	0.17	0.57	0.66
Montana State University	0.40	0.64	0.53	0.56	0.77	1.02	1.98	0.39	0.85	0.12	1.07	1.23
MT BOI - Clark Fork Site	2.85	3.70	2.76	3.13	4.03	4.98	N/A	1.56	5.37	-0.09	5.23	6.23
MT BOI UOFM Other	1.52	1.86	1.64	1.61	1.87	2.23	2.86	1.13	2.57	-0.12	2.54	2.21
MUS Group Insurance	0.87	1.21	1.28	1.13	N/A	N/A	N/A	1.26	1.30	0.17	1.56	N/A
Older Montanans Trust	3.07	4.05	2.89	3.58	4.33	5.80	N/A	1.72	6.57	-0.23	6.01	5.85
Permanent Coal Trust Excl Crp	2.48	3.62	3.02	3.76	4.79	5.62	5.43	2.23	6.14	0.99	6.29	7.16
PERS Defined Cont Disability	0.12	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	3.22	4.22	3.03	3.77	5.07	6.31	5.85	1.82	6.94	-0.27	6.86	8.18
Smelter Hill Up Restorative	1.22	1.61	1.35	1.48	1.90	2.21	N/A	0.92	2.49	0.01	2.47	2.83
State Fund Insurance	2.21	3.11	2.85	3.67	4.76	6.58	5.38	2.21	5.00	3.11	7.25	5.26
Streamside Tailings Operable Unit	2.80	3.73	2.65	3.39	4.52	5.56	5.42	1.69	6.22	-0.21	6.14	7.20
Tobacco Trust Fund	3.22	4.22	3.03	3.75	5.03	6.32	5.88	1.82	6.89	-0.27	6.77	8.12
Treasurers	0.20	0.31	0.36	0.28	0.29	0.33	1.49	0.27	0.19	0.23	0.31	0.31
Treasure State Endowment	3.18	4.18	3.00	3.75	5.03	6.31	5.86	1.82	6.84	-0.21	6.76	8.14
Treasure State Reg. Water System	3.17	4.17	2.99	3.73	5.01	6.30	5.83	1.82	6.80	-0.22	6.73	8.13
Trust and Legacy Account	3.21	4.22	3.02	3.77	5.03	6.30	5.85	1.82	6.92	-0.26	6.78	8.04
UCFRB Assess/Litig Cost Rec	3.03	4.00	2.86	3.49	4.59	5.72	5.64	1.65	6.40	-0.24	6.45	6.87
UCFRB Restoration Fund	2.90	3.85	2.75	3.44	4.69	5.95	5.57	1.70	6.28	-0.20	6.43	7.66
Upper Blackfoot Response	1.19	1.55	1.38	1.21	1.48	N/A	N/A	0.84	1.59	0.13	1.60	2.30
Weed Control Trust	3.22	4.23	3.03	3.79	4.91	6.21	5.47	1.82	6.94	-0.23	6.69	7.42
Wildlife Habitat Trust	3.01	3.95	2.83	3.54	4.77	6.01	5.61	1.73	6.49	-0.24	6.46	7.74
Zortman/Landusky LT H20	0.78	0.69	0.75	0.85	3.86	4.52	6.10	0.84	1.78	-0.51	5.47	11.21
Z/L Long Term H20 Trust Fund	0.81	0.75	0.97	0.82	3.61	3.52	5.48	1.15	1.76	-0.96	3.91	11.64

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.
- Gross of fees performance is not available (N/A) for the following funds. The current annual expense ratios are as listed below.

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.

Manager Transition Comments

- Effective May 2014, ING rebranded to Voya. The ING Investment Management (SA) has been updated to Voya Investment Management (SA) to reflect the change.
- iShares S&P SmallCap 600 Index ETF (IJR) was liquidated in January 2016.

Miscellaneous Comments

- Client fiscal year ends June 31.

Expense Ratios

- Domestic Equity Pool SPIF: 0.15%
- Domestic Equity Pool STIF: 0.12%
- DFA Intl Sm Co;l (DFISX): 0.54%
- International Equity Pool SPIF: 0.18%
- International Equity Pool STIF: 0.12%

PORTLAND

CHICAGO

NEW YORK

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APPENDIX

2016 CALENDAR - Revised

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

- Feb. 23-24** **Quarterly Meeting**
Quarterly reports and subcommittee meetings
Annual Report and Financial Statements – reception and status
Financial Audit
Ethics
Disaster recovery
INTERCAP program
Outreach efforts – loan and municipal programs
- April 5** **Non-Quarterly Meeting**
All policy review, scrub and revise
Capital market/asset allocation overview
RVK presentation (TBD)
- May 24-25** **Quarterly Meeting**
Quarterly reports and subcommittee meetings
Exempt pay compensation review
Domestic Equities Review
Staffing level review
Custodial banking relationship
- August 16-17** **Quarterly Meeting**
Quarterly reports and subcommittee meetings
CEM Benchmarking
International Equities Review
MBOI Budget and legislative-related action-decision
Internal Controls
Fiscal Year performance through June 30th
RVK presentation (TBD)
- October 6** **Non-Quarterly Meeting**
(Joint TRS/PERS)
Cash management of state monies
Real Estate and Timber Review
Staff Asset Allocation Educational Presentation
- Nov. 15-16** **Quarterly Meeting**
Quarterly reports and subcommittee meetings
Annual Report and Financial Statements Submission for FY 2016
Affirm or Reset Asset Allocation Ranges
Benchmark Review
Private Investments Review
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 2016

Completed	Completed	Completed	In-Process	
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	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 Investments Review
	X		X	Proxy voting public equities
	X		X	Public Domestic Equities Review
	X		X	Public International Equities Review
	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

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 PUBLIC RETIREMENT PLANS
INVESTMENT POLICY**

Approved April 5, 2016

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1. Introduction:

Montana Public Retirement Plan assets are commingled for investment purposes into six investment pools created by the Board. The pools are shared, that is co-mingled funds, which operate similar to mutual funds. The use of pools allows for simplified investing and accounting, broader diversification and thus less risk than would otherwise be available for the smaller Plans and provides additional opportunities for fee savings. Each investment pool has an underlying set of investment objectives and investment guidelines. Each of the nine Plans is separately identified for accounting and record keeping purposes.

This policy is effective upon adoption and supersedes all previous Investment Policies related to the investment management of the Montana Public Retirement Plans and the policies related to the underlying Investment Pools utilized by the Montana Retirement Plans with the exception of the Short-Term Investment Pool (STIP) Policy, which is addressed under its own investment policy statement because STIP has other participants beyond the Montana Public Retirement Plans.

2. Purpose:

The purpose of this policy statement is to provide a broad strategic framework for the Montana Public Retirement Plans' investments under the guidance of the Board of Investments.

3. Legal and Constitutional Authority:

The Montana Constitution, Article VIII, Section 13, requires that the Legislature provide for a Unified Investment Program for public funds. Section 17-6-201, MCA, established the Unified Investment Program, created the Montana Board of Investments (the "Board") and gave the Board sole authority to invest state funds, including the public retirement plans (Plans) in accordance with state law and the state constitution.

The Unified Investment program for public funds must be administered by the Board of Investments in accordance with the "prudent expert principle," defined as:

- 1) discharging its duties with the care, skill, prudence, and diligence, under the circumstances then prevailing, that a prudent person acting in a like capacity with the same resources and familiar with like matters exercises in the conduct of an enterprise of like character with like aims;
- 2) diversifying the holdings of each fund to minimize the risk of loss and maximize the rate of return, unless under the circumstances it is clearly prudent not to do so; and
- 3) discharging its duties solely in the interest of and for the beneficiaries of the funds managed.

MCA section 17-6-201 (2) (a) states... "Retirement funds may be invested in common stocks of any corporation."

MCA section 17-6-201 (3) (b) states..."The Board is urged under the prudent expert principle to invest up to three percent (3%) of retirement funds in Venture Capital companies. Whenever

possible, preferences should be given to investments in those Venture Capital companies which demonstrate an interest in making investments in Montana.”

MCA section 17-6-201 (3) (c) states...”In discharging its duties, the board shall consider the preservation of purchasing power of capital during periods of high monetary inflation.”

The Board, as the investment fiduciary of the Plans, is responsible for establishing the investment parameters for the Plans. The Board has the authority to allocate portfolios to any previously board-approved asset class in the proportions it considers prudent, under the prudent expert rule. There are currently no statutory or constitutional restrictions on the investment of the Plans. Asset allocation decisions made by the Board must be made in a public meeting.

4. Strategic Investment Objectives

The Board’s overall objective is to achieve the highest level of investment performance that is compatible with its risk tolerance and prudent investment practices. Because of the long-term nature of the state’s various pension liabilities, the Board maintains a long-term perspective in formulating and implementing its investment policies, and in evaluating its investment performance.

5. Time Horizon

The Board expects to meet or exceed these objectives over a long-term investment horizon. Over shorter periods, the anticipated market volatility and specific actions, including risk mitigation efforts of the Board, may lead to unfavorable, but expected, deviation from these objectives.

6. Performance Measurement

Investment performance is measured by three integrated long-term return objectives:

- a) The **actuarial target rate of return** is the key actuarial assumption affecting future funding rates and liabilities. Investment performance that exceeds or underperforms the target rate may materially impact future funding rates and liabilities. The Board seeks to generate long-term investment performance that will exceed the actuarial annual target rate of return of 7.75%, as determined by the governing boards of the public retirement systems, net of all investment and administrative expenses. There may be years, or a period of years, when the Plans do not achieve this goal followed by years when the goal is exceeded. But over a long period of time, the Board seeks to achieve an average net rate of return of 7.75%, as determined by the governing boards of the public retirement systems, at risk levels (measured by expected volatility) broadly consistent with other public fund peers.
- b) The **investment policy benchmark** is calculated by applying the investment performance of the asset class benchmarks to the Plans’ actual asset allocation during the measurement period. The investment policy benchmark represents the return that would be achieved if the Plan implemented a passively managed portfolio. Deviations from the policy

benchmark measure the contribution of active investment management throughout the fund, rebalancing policy and its execution, and investment implementation generally.

- c) The Board also compares each Plan's total performance, before all fees, to appropriate **public plan sponsor universes**. This process permits the Board to compare its total performance to other public pension plans. While the Board seeks to rank consistently in the top half of comparable public pension plans, the Board recognizes that other plans may have investment objectives and risk tolerances that differ substantially from the Board's.

7. Roles and Responsibilities

- a) **Board of Investments** – The Board is responsible for approving the Investment Policy Statement for the Montana Public Retirement Plans and has the authority to allocate portfolios to any asset class in the proportions it considers prudent, subject to such limitations as contained in law and the Constitution. The Board reviews this document periodically and, as needed, approves any changes to the policy.

As described in the Board of Investments Governance Manual, the Board delegates authority to the Executive Director, Chief Investment Officer, and other Staff to execute the day to day duties required to carry out the Board's mission.

- b) **Executive Director** – The Executive Director is empowered by the Board to sign any and all documents required to conduct Board business, unless there are specific written policies or instructions from the Board to the contrary. The Executive Director and the Chief Investment Officer are authorized jointly to contract for investment manager services and if deemed appropriate, terminate them.
- c) **Chief Investment Officer** – The Chief Investment Officer (CIO) is empowered by the Board to serve as the principal staff person responsible for overseeing the investment activities under the Board's jurisdiction in compliance with the Board's policies. The CIO, with the support of other staff, is responsible for recommending investment policy changes for Board approval.
- d) **Staff** – The staff is responsible for:
 - I. Managing day-to-day operations and delegating work to external resources as appropriate;
 - II. Monitoring allocations and overseeing all investment manager due diligence activities and recommending changes to the CIO;
 - III. Monitoring and reporting to the Board the performance of each asset class and the individual managers performance;
 - IV. Informing the Board of any new managers or terminations; and
 - V. Reporting any deviations from this Investment Policy to the Board.
- e) **Investment Consultant** – The investment consultant assists the CIO and staff with policy recommendations and provides advice to the Board. The investment consultant also assists staff in monitoring all external managers and reports to the Board independently.

- f) **External Managers** – Managers are responsible for all aspects of portfolio management as set forth in the contract specific to each manager. Managers must communicate with staff as needed, regarding investment strategies and results. Managers must also cooperate fully with staff regarding administrative, accounting, and reconciliation issues as well as any requests from the investment consultant and the master custodian.

8. Strategic Asset Allocation

The Board finds that it is in the best interest of the state's nine retirement Plans to set out investment policies for the Plans in one comprehensive document utilizing the same asset allocation. In the future, individual Plan requirements may vary and this common approach could change.

Nine Public Retirement Plans:

Public Employees Retirement System

Teachers Retirement System

Police Officers Retirement

Firefighters Retirement

Sheriffs Retirement

Highway Patrol Retirement

Game Wardens Retirement

Judges Retirement

Volunteer Firefighters Retirement

The current asset allocation ranges for the Plans are in **Appendix I**. The asset allocation ranges are subject to change as modifications are adopted by the Board, at which time **Appendix I** will be revised to reflect these changes. The Board will formally affirm or revise the asset allocation ranges for the Plans at least annually.

9. Rebalancing

The actual asset allocation mix may deviate from time to time from the approved asset allocation ranges due to financial market performance, cash flows, and manager performance. Material deviations from the asset allocation ranges can alter the expected return and risk of the Plans. Rebalancing the Plans' assets to remain within the Board-approved allocation ranges is delegated to the Chief Investment Officer (CIO), in consultation with the Executive Director. Any necessary rebalancing will be made in a timely manner and will take into consideration associated costs and current market conditions. In addition to maintaining actual allocations within the ranges, the CIO will also consider contractual investment commitments to private investments and real estate partnerships, the liquidity necessary to meet benefit payments and administrative costs for the Plans, and current market conditions. This may prompt asset rebalancing when asset allocations fall within the established ranges. The CIO shall inform the Board of rebalancing activity at the Board's next regularly scheduled quarterly meeting.

10. Risk Management

a) Monitoring Public Markets Investment Managers

The Public Markets Manager Evaluation Policy is a distinct policy that is regularly reviewed and updated separate from the Retirement Plans Investment Policy because staff utilizes this Evaluation Policy to oversee and manage other assets in addition to the Pension Plan assets. However, reference is made in this Investment Policy to recognize the importance of a disciplined and thorough assessment of relevant evaluation criteria as a means of managing risks and prior to implementing any investment manager changes within the Public Market asset classes.

b) Private Investments Evaluation Policy

INVESTMENT SELECTION PROCESS

Portfolio Management: Staff reviews and selects appropriate funds to fulfill the objectives of the pools. The management of the underlying assets will be executed by the General Partners of Fund-of-Funds and/or Direct Limited Partnerships. Fund-of-Funds managers may be chosen to manage assets where particular expertise is required and cannot be provided by Staff or where the Fund-of-Funds manager can cost-effectively provide relevant information/assistance to Staff in the selection of Direct Limited Partnership investments.

Monitoring:

- I. Staff shall monitor MPEP and MTRP characteristics to ensure diversification across vintage years and other risk factors that change throughout the business cycle.
- II. Staff shall continually review the pace and timing of private investment commitments, funding, and return of capital relative to expectations.
- III. Staff shall assess the performance of Managers relative to the following criteria:
 - a. Objectives established by the Managers or the principals managing the investment relative to their stated performance objectives;
 - b. Degree of risk undertaken across sectors, industry, geography, investment style, and other dimensions as appropriate;
 - c. Performance comparisons to other managers with similar investment styles and/or within the same vintage year; and
 - d. The MPEP and MTRP performance versus the selected benchmark.
- IV. Staff shall oversee pacing analysis for MPEP. The pacing analysis will use historical private equity data to estimate the level of new commitments needed to maintain MPEP assets at a level that is consistent with MPEP and Pension strategies. The pacing analysis will be reviewed and updated at least biennially.

Risk Considerations: Private investments typically involve the following risks:

- I. Financial Risk: These investments may employ financial leverage (debt) leading to a higher degree of volatility in investment returns.
- II. Operating and Business Risk: These investments typically involve operating and business

- risk, due to risks associated with the underlying businesses being acquired.
- III. Valuation Risk: Given the lack of public pricing of the underlying private equity investments, unrealized asset valuations are based on appraised values.
 - IV. Structure Risk: The funds involve extensive legal documentation which set out terms that address investment constraints, fund governance, costs, and the distribution of economic returns to investors.
 - V. Country Risk: Investing in international investments include all of the risks associated with the particular asset class along with political, economic, and currency risks associated with investing outside of the U.S.
 - VI. Manager Risk: Fund managers have significant discretion in investing partnership assets. This may lead to funds which are poorly diversified or which contain investments that had not been anticipated by investors. Private funds are often dependent on a few key investment staff, the loss of which may materially impact fund operations and performance.
 - VII. Industry Risk: Private equity firms are permitted to invest in a wide variety of industries without many restrictions. Diversification across industries is the means by which this risk is controlled in a private equity portfolio.

Evaluation Criteria:

- I. Managers shall demonstrate relevant experience in or directly applicable to the market in which they propose to invest;
- II. Managers shall demonstrate that they are specifically qualified to pursue the proposed strategy in the market in which they propose to invest;
- III. Managers shall demonstrate the requisite skills and experience necessary to execute successfully the proposed strategy, including evidence from similar endeavors of their ability to work successfully with Limited Partners;
- IV. Managers shall dedicate sufficient time and effort to the proposed opportunity and make, within the context of the particular investment, a meaningful personal financial commitment;
- V. The Manager's proposed strategy and business plan shall be set forth in sufficient detail to permit substantive and meaningful review of the opportunity, verification of the investment concept, and of the risk factors;
- VI. The risk/reward trade-off in the particular market in which the Manager proposes to invest shall be attractive based on reasonable assumptions;
- VII. Uniqueness of the investment strategy relative to existing Managers;
- VIII. Integrity and experience of the key principals, employees and the reputation of the firm;
- IX. Quality of the partnership corporate governance, including controls and reporting systems;
- X. Relationships with other Limited Partners, particularly public investment boards;
- XI. Past investment performance; and
- XII. Appropriateness of terms and conditions and alignment of interests of the firm's principals with the Limited Partners.

c) Liquidity

Based on the percentage of total plan assets necessary for ongoing benefit payments and other plan expenses, the liquidity needs for the Retirement Plans are generally low and participant

capital is not expected to change dramatically on short notice. However, illiquidity risk still needs to be monitored and managed by staff on a regular basis to ensure that assets are not required to be sold too quickly, or at an unfavorable time, and potentially at a discount to fair value to meet the cash needs of the Retirement Plans.

Even though a portion of the Real Estate Pool investments, primarily the portion invested in open-ended funds, is usually considered to have moderate liquidity, the majority of the investments in the Real Estate and Private Equity pools are considered extremely illiquid. Due to the limited liquidity of these assets, it will typically be impractical to fund plan cash needs or correct deviations from policy ranges through the purchase or sale of assets held in MTRP or MPEP.

The investments held in MDEP, MTIP, RFBP, and STIP are categorized as publicly traded securities. In “normal market” conditions the majority of the underlying assets from these pools can be liquidated in a relatively short period of time to accommodate both expected and unexpected withdrawals as well as any repositioning of the asset allocation to stay within approved ranges.

In order to improve liquidity and manage both the expected and unexpected Retirement Plans need for cash, this Investment Policy specifies a strategic allocation to the Short-Term Investment Pool (STIP).

d) Monitoring/Reporting – Transparency

Managers shall submit periodic reports to facilitate Staff’s monitoring of the Managers’ conformance to investment restrictions and performance objectives.

Staff shall provide regular reporting to the Board regarding the asset allocation and performance of the pension plans as well as the characteristics and performance of the various investment pools to confirm these items are known and adhere to all Investment Policy requirements and expectations.

Staff will discuss and communicate any key information discovered as a result of the ongoing Manager monitoring process that might assist the Board in understanding the underlying investment manager structure or risks embedded in the investment characteristics of the Retirement Plan asset allocations.

e) Leverage

Leverage is a significant risk factor. Investment managers may utilize leverage only when permitted in the manager’s investment guidelines approved by Staff. Staff shall monitor the use of leverage and its impact on risk and return.

The use of derivative securities can generate additional leverage even if the derivative is being used to reduce the risk in other investments. Investment managers may only use derivatives when permitted in the manager’s investment guidelines approved by Staff.

f) Cash Investments

Cash investments held at the pool level, any managed account within it, or any separate account entail an element of credit risk. Thus, only approved cash investment vehicles are permitted. These include the custodian's STIF vehicle, STIP, or any SEC-registered money market fund, all of which specifically address credit risk in their respective investment guidelines.

11. Investment Pools

a) Montana Domestic Equity Pool (MDEP)

The Montana Public Retirement Plans investment in the Montana Domestic Equity Pool (MDEP) will provide the Plans with exposure to a broad and diverse spectrum of equity-related securities across different industries and market capitalization ranges. Primarily, these equity investments will be managed by external asset managers that invest in the common shares of equity for entities that have their headquarters based in the United States and are traded on eligible U.S. exchanges. MDEP will be diversified across a number of investment portfolios and investment managers that will utilize either an active or an index focused investment strategy. The specific strategic objectives, performance criteria, and investment guidelines for MDEP are detailed in Appendix II: Pool Investment Objectives and Guidelines – Schedule II-A.

b) Montana International Equity Pool (MTIP)

The Montana Public Retirement Plans investment in the Montana International Equity Pool (MTIP) will provide the Plans with exposure to a broad and diverse spectrum of equity-related securities across different industries and market capitalization ranges. Primarily, these equity investments will be managed by external asset managers that invest in the common shares of equity for entities that have their headquarters based outside of the United States. MTIP will be diversified across a number of investment portfolios and investment managers that will utilize either an active or an index focused investment strategy. The specific strategic objectives, performance criteria, and investment guidelines for MTIP are detailed in Appendix II: Pool Investment Objectives and Guidelines, Schedule II-B.

c) Montana Private Equity Pool (MPEP)

The Montana Public Retirement Plans investment in the Montana Private Equity Pool (MPEP) will provide the Plans with exposure to a diverse spectrum of private investment opportunities across different industries, both within and outside the United States. Primarily, these investments will be private equity partnership interests, which may be direct limited partnerships or vehicles that primarily invest in direct limited partnerships, including fund-of-funds and secondary funds. MPEP will be diversified across a number of funds, vintage years, investment opportunities, and geographies. The specific strategic objectives, performance criteria, and investment guidelines for MPEP are detailed in Appendix II: Pool Investment Objectives and Guidelines, Schedule II-C.

d) Montana Real Estate Pool (MTRP)

The Montana Public Retirement Plans investment in the Montana Real Estate Pool (MTRP) will provide the Plans with exposure to a diverse spectrum of real estate related investment opportunities both within and outside the United States. Primarily, these investments will be made in an open-ended institutional commingled fund or a closed-ended private investment fund. MTRP will be diversified across a number of funds, vintage years, investment opportunities, and geographies. The specific strategic objectives, performance criteria, and investment guidelines for MTRP are detailed in Appendix II: Pool Investment Objectives and Guidelines, Schedule II-D.

e) Montana Retirement Funds Bond Pool (RFBP)

The Montana Public Retirement Plans investment in the Retirement Funds Bond Pool (RFBP) will provide the Plans with exposure to a broad and diverse spectrum of fixed income-related securities across different sectors, industries, credit ratings and maturities. These fixed income investments will be managed internally as well as by external asset managers utilizing an active investment strategy. The specific strategic objectives, performance criteria, and investment guidelines for RFBP are detailed in Appendix II: Pool Investment Objectives and Guidelines, Schedule II-E.

f) Short-Term Investment Pool (STIP)

The Montana Public Retirement Plans investment in the Short-Term Investment Pool (STIP) will provide the Plans with exposure to Cash related investments. STIP will be managed internally utilizing an active investment strategy. The specific strategic objectives, performance criteria, and investment guidelines for STIP are detailed in the Short-Term Investment Pool (STIP) Investment Policy.

12. Securities Lending

Section 17-1-113, MCA, authorizes the Board to lend securities held by the state. The Board may lend its publicly traded securities held in the investment pools, through an agent, to other market participants in return for compensation. Currently, through an explicit contract, State Street Bank and Trust, the state's custodial bank, manages the state's securities lending program. The Board seeks to assess counterparty and reinvestment risk, associated with each aspect of its securities lending program. The Board requires borrowers to maintain collateral at 102 percent for domestic securities and 105 percent for international securities. To ensure that the collateral ratio is maintained, securities on loan are marked to market daily and the borrower must provide additional collateral if the value of the collateral falls below the agreed-upon ratio of over-collateralization. In addition to the strict collateral requirements imposed by the Board, the credit quality of approved borrowers is monitored continuously by the contractor. From time to time, Staff or the investment manager may restrict a security from the loan program upon notification to State Street Bank. Staff will monitor the securities lending program, and the CIO will periodically report to the Board on the status of the program. The Board's participation in securities lending may change over time given Plan activity, market conditions and the agent agreement.

13. Exercise of Shareholder Rights

The Board recognizes that publicly traded securities and other assets of the Plans include certain ancillary rights, such as the right to vote on shareholder resolutions at companies' annual shareholders' meetings, and the right to assert claims in securities class action lawsuits or other litigation. The Board will prudently manage these assets of the Plans for the exclusive purpose of enhancing the value of the Plans for its participating systems' members and beneficiaries through such means as adopting and implementing a proxy voting policy and undertaking productive, cost-effective action to exercise its rights as shareholders or claimants in litigation.

a) Proxy Voting

Active voting of proxies is an important part of the Board's investment program. Under the contractual arrangements between the Board and its investment managers, the responsibility for voting proxies on the investments is delegated to the managers. Managers are contractually required to establish a proxy voting program in coordination with Board Staff and are required to vote proxies, excluding shares on loan under the Board's securities lending program, in the interest of the Plans' beneficiaries. Records of proxy votes shall be maintained by the Managers, and/or its third party designee, and submitted to Staff and/or an external service provider annually.

Staff will monitor the proxy voting practices of the Board's external investment managers. External service providers may be retained by either the Board or the Managers to assist in monitoring efforts. This monitoring will be coordinated with each manager to reasonably assure the Staff that Managers are fulfilling their fiduciary responsibilities with respect to proxy voting.

b) Class Action Litigation

Claims under state and federal securities laws arising out of losses on securities under the Board's management are assets subject to the Board's fiduciary duty of prudent management. The Board shall take reasonable, cost effective steps to identify, pursue and collect upon claims under securities laws for losses suffered by the Board on its investment. Accordingly, the Board maintains a detailed litigation policy, including process steps, outlined in the Montana Board of Investments Governance Manual, Appendix F.

14. Investment Policy Review

The Board intends to keep this Policy updated as it modifies or amends the underlying contents. As stated in the Governance Policy, "the Board shall review this Investment Policy at least annually or more frequently at the request of Board staff. Statements may only be revised in a public meeting. All Statements shall be posted on the Board's web site for review by the public."

Appendix I: Montana Public Retirement Plans Asset Allocation Ranges

All nine Montana Public Retirement Plans currently share the same asset allocation ranges but this may change in the future.

Permitted Ranges:

Pension Fund Asset Allocations Board Approved Ranges Approved 4/5/16	
Investment Type	Approved Range
Asset Class - Domestic Equity	28% - 44%
Large	72% - 91%
Passive	48% - 91%
Active	0% - 24%
Mid	6% - 17%
Small	3% - 11%
Asset Class - International Equity	14% - 22%
Large	79% - 92%
Passive	47% - 92%
Active	0% - 32%
Small	8% - 16%
Emerging - Dedicated	0% - 5%
Asset Class - Private Equity	9% - 15%
Venture Capital	10% - 25%
Debt Related	0% - 25%
Buyouts and all other private equity-related strategies	50% - 90%
Asset Class - Fixed Income	22% - 30%
Domestic High Yield	0% - 15%
International	0% - 10%
Core (U.S. Investment Grade)	80% - 100%
Asset Class - Real Estate	6% - 10%
Core/Timberland	35% - 65%
Non-Core	35% - 65%
Asset Class - Cash Equivalents	1% - 5%
*Existing Policy allows total equity range of 58% - 72% and Timber may not exceed 2% of total pension assets.	

Other Restrictions:

1. Total Plan Equities shall maintain a range between 58% and 72% of total Plan assets; and
2. Timberland Investments shall not exceed 2% of total Plan assets.

Appendix II: Investment Objectives and Guidelines

Schedule II-A: Investment Objectives and Guidelines Montana Domestic Equity Pool (MDEP)

Effective Date of Schedule: April 5, 2016

This Schedule is effective upon adoption by the Board of Investments and supersedes all previous Investment Objectives and Guidelines for this specific Pool.

Statement of Purpose:

The purpose of these objectives and guidelines is to:

1. Establish the investment objectives and performance standards of the Pool; and
2. Provide diversified exposure to the domestic equity market in a prudent and cost effective manner.

Investment Objective:

Strategic:

The objective of the MDEP is to attain the highest possible total return within the parameters of the Investment Guidelines set forth below.

Performance:

Success in achieving this objective will be measured by comparing the risk and after-fee return of MDEP to the **S&P 1500 Index** (the “Benchmark”). Performance results will be monitored and evaluated quarterly. However, the success in achieving the objective will be measured on a three-year, five-year, and ten-year annualized basis.

Investment Guidelines:

The Montana Board Investment Staff will have full discretion to manage MDEP consistent with the investment guidelines stated below. Compliance with the following guidelines for permitted investments and other restrictions is the sole responsibility of the Staff. Any exceptions or compliance violations are to be reported to the Board of Investments at the next scheduled quarterly Board meeting.

The majority of the MDEP investments will be managed by external investment managers.

Permitted Investments:

MDEP may invest only in the following:

1. Securities and derivatives held in separate accounts, commingled funds, limited partnerships, or limited liability companies managed by external investment managers and governed by their respective investment management contracts and investment guidelines;
2. Exchange-Traded Funds (ETFs) based on a domestic equity index that is approved by the Chief Investment Officer and purchased and monitored by Staff; and
3. Cash – either an investment in the Short-Term Investment Pool (STIP) or a vehicle available through the Custodian.

Other Restrictions:

1. The market capitalization by mandate shall adhere to the following ranges as a percentage of the Pool's total market value:
 - a. Large Cap 72 - 91%
 - b. Mid-Cap 6 - 17%
 - c. Small-Cap 3 - 11%
2. The Pool's percentage of market value invested in passive/index strategies shall be greater than 45%;
3. Cash held at the Pool level (not including cash held by external managers in separate accounts or commingled funds) is limited to 5% of the Pool's market value;
4. The Pool's percentage of market value invested in mandates using an active investment strategy by any one Manager shall be no greater than 15%; and
5. The Pool's percentage of market value invested in any single mandate/portfolio using an active investment strategy shall be no greater than 10%.
6. The Pool's percentage of market value invested in the Large Cap mandate using a long/short investment strategy shall be no greater than 12%.

If at any time, due to market fluctuations or any other circumstances, any of the guidelines are not maintained, Staff will use its best efforts to conform to these limits in a timely manner, while taking into account current market conditions and the associated costs of rebalancing. At the Board's next regularly scheduled quarterly meeting, the CIO shall inform the Board of any cases that the Pool allocations were outside of the limits and either inform the Board of the actions that were taken to return the Pool back within guidelines or a plan to do so.

**Schedule II-B:
Investment Objectives and Guidelines
Montana International Equity Pool (MTIP)**

Effective Date of Schedule: April 5, 2016

This Schedule is effective upon adoption by the Board of Investments and supersedes all previous Investment Objectives and Guidelines for this specific Pool.

Statement of Purpose:

The purpose of these objectives and guidelines is to:

1. Establish the investment objectives and performance standards of the Pool; and
2. Provide diversified exposure to the international and global equity markets in a prudent and cost effective manner.

Investment Objective:

Strategic:

The objective of the MTIP is to attain the highest possible total return within the parameters of the Investment Guidelines set forth below.

Performance:

Success in achieving this objective will be measured by comparing the risk and after-fee return of MTIP to the **MSCI All Country World ex-US Investable Market Index** (the “Benchmark”). Performance results will be monitored and evaluated quarterly. However, the success in achieving the objective will be measured on a three-year, five-year, and ten-year annualized basis.

Investment Guidelines:

The Montana Board Investment Staff will have full discretion to manage MTIP consistent with the investment guidelines stated below. Compliance with the following guidelines for permitted investments and other restrictions is the sole responsibility of the Staff. Any exceptions or compliance violations are to be reported to the Board of Investments at the next scheduled quarterly Board meeting.

The majority of the MTIP investments will be managed by external investment managers.

Permitted Investments:

MTIP may invest only in the following:

1. Securities and derivatives held in separate accounts, commingled funds, limited partnerships, or limited liability companies managed by external investment managers and governed by their respective investment management contracts and investment guidelines;

2. Exchange-Traded Funds (ETFs) based on an international equity index that is approved by the Chief Investment Officer and purchased and monitored by Staff; and
3. Cash – either an investment in the Short-Term Investment Pool (STIP) or a vehicle available through the Custodian.

Other Restrictions:

1. The market capitalization by mandate shall adhere to the following ranges as a percentage of the Pool's total market value:
 - a. Large Cap 79-92%
 - b. Small-Cap 8-16%
2. The Pool's percentage of market value invested in passive/index strategies shall be greater than 42%;
3. The Pool's percentage of market value invested in dedicated Emerging Market mandates shall be no greater than 5%;
4. Cash held at the Pool level (not including cash held by external managers in separate accounts or commingled funds) is limited to 5% of the Pool's market value;
5. The Pool's percentage of market value invested in mandates using an active investment strategy by any one Manager shall be no greater than 15%; and
6. The Pool's percentage of market value invested in any single mandate/portfolio using an active investment strategy shall be no greater than 10%.

If at any time, due to market fluctuations or any other circumstances, any of the guidelines are not maintained, Staff will use its best efforts to conform to these limits in a timely manner, while taking into account current market conditions and the associated costs of rebalancing. At the Board's next regularly scheduled quarterly meeting, the CIO shall inform the Board of any cases that the Pool allocations were outside of the limits and either inform the Board of the actions that were taken to return the Pool back within guidelines or a plan to do so.

**Schedule II-C:
Investment Objectives and Guidelines
Montana Private Equity Pool (MPEP)**

Effective Date of Schedule: April 5, 2016

This Schedule is effective upon adoption by the Board of Investments and supersedes all previous Investment Objectives and Guidelines for this specific Pool.

Statement of Purpose:

The purpose of these objectives and guidelines is to:

1. Establish the investment objectives and performance standards of the Pool; and
2. Provide diversified exposure to the Private Investment markets in a prudent and cost effective manner.

Investment Objective:

Strategic:

The objective of the MPEP is to attain the highest possible return within the parameters of the Investment Guidelines set forth below.

Performance:

There is no generally accepted benchmark index for private equity performance comparisons. Characteristically, private equity partnership investments are impacted by the “J-curve” effect, in which fees and transaction costs create negative returns during the initial investment years before distributions are realized. Private equity investing requires a long time horizon in order to realize the value provided by the creation or restructuring of private companies.

The performance objective for MPEP is the achievement of long-term net returns (after management fees and general partner’s carried interest) above a benchmark reflecting public equity market returns plus an appropriate premium to compensate for the higher degree of risk, including the illiquidity risk for Private Investments compared to Public Market Investments.

Success in achieving this objective will be measured by comparing the net return of MPEP to the **S&P 1500 Index plus 400 basis points** (the “Benchmark”) on an annualized basis. Performance results will be monitored quarterly. However, the success in achieving the objective will be measured on a five-year and ten-year annualized basis.

Investment Guidelines:

The Montana Board Investment Staff will have full discretion to manage MPEP consistent with the investment guidelines stated below. Compliance with the following guidelines for permitted investments and other restrictions is the sole responsibility of the Staff. Any exceptions or compliance violations are to be reported to the Board of Investments at the next scheduled quarterly Board meeting.

The majority of the MPEP investments will be managed by external investment managers via a partnership structure in which the Montana Board of Investments will have a limited partnership interest.

Permitted Investments:

MPEP may invest only in the following:

1. Private Investment partnership interests. These private partnerships may be direct limited partnerships, limited liability companies, or vehicles that primarily invest in partnerships, including Fund-of-Funds and Secondary Funds;
2. Investments held in separate accounts or commingled funds managed by external investment managers and governed by their respective investment management contracts and investment guidelines;
3. MPEP may co-invest with private investment managers in transactions that are suitable for inclusion into a private investment partnership;
4. Individual public or private securities received as distributions from funds;
5. "Equitized" liquidity strategies that provide exposure to public equity indexes; and
6. Cash – either an investment in the Short-Term Investment Pool (STIP) or a vehicle available through the Custodian.

Other Restrictions

1. No more than 7.5% of the aggregate of MPEP net asset value plus uncalled committed capital should be in a single Direct Limited Partnership;
2. No more than 15% of the aggregate of MPEP net asset value plus uncalled committed capital should be placed with a single fund manager or General Partner;
3. No more than 30% of the aggregate of MPEP net asset value plus uncalled committed capital should be considered "Non-U.S." exposure based on the primary objective of the Fund, Partnership, Separate Account, or Index;
4. Cash held at the Pool level (not including cash held in the underlying partnership interests/funds or cash that is equitized) is limited to 5% of the Pool's market value; and
5. Individual public securities received as distributions will be liquidated over a reasonable time period dependent on market conditions.

The following table provides a guideline range with respect to MPEP's strategy diversification. It is important to note that these ranges reference the sum of the pool's net asset value and uncalled commitments.

<u>Strategy</u>	<u>Policy Range</u>
Buyout and all other private equity related strategies not related to Venture Capital or Debt-Related	50% - 80%
Venture Capital	10% - 25%
Debt-related	0% - 25%

For the purpose of the ranges provided above, Special Situations and Secondary funds will be classified in the category that is most reflective of the underlying investments in the funds.

If at any time, due to market fluctuations or any other circumstances, any of the guidelines are not maintained, Staff will use its best efforts to conform to these limits in a timely manner, while taking into account current market conditions and the associated costs of rebalancing. At the Board's next regularly scheduled quarterly meeting, the CIO shall inform the Board of any cases that the Pool allocations were outside of the limits and either inform the Board of the actions that were taken to return the Pool back within guidelines or a plan to do so.

**Schedule II-D:
Investment Objectives and Guidelines
Montana Real Estate Pool (MTRP)**

Effective Date of Schedule: April 5, 2016

This Schedule is effective upon adoption by the Board of Investments and supersedes all previous Investment Objectives and Guidelines for this specific Pool.

Statement of Purpose:

The purpose of these objectives and guidelines is to:

1. Establish the investment objectives and performance standards of the Pool; and
2. Provide diversified exposure to Real Estate and Timberland investments in a prudent and cost effective manner.

Investment Objective:

Strategic:

The objective of the MTRP is to attain the highest possible return within the parameters of the Investment Guidelines set forth below.

Performance:

Success in achieving this objective will be measured by comparing the risk and after-fee return of MTRP to the **NCREIF Open End Diversified Core Equity Net Index** (the “Benchmark”). Performance results will be monitored and evaluated quarterly. However, the success in achieving the objective will be measured on a five-year, and ten-year annualized basis. Because MTRP’s underlying funds typically report their returns 30-90 days after quarter-end, the Benchmark will be compared on a one-quarter lagged basis.

Investment Guidelines:

The Montana Board Investment Staff will have full discretion to manage MTRP consistent with the investment guidelines stated below. Compliance with the following guidelines for permitted investments and other restrictions is the sole responsibility of the Staff. Any exceptions or compliance violations are to be reported to the Board of Investments at the next scheduled quarterly Board meeting.

The majority of the MTRP investments will be managed by external investment managers.

Permitted Investments:

MTRP may invest only in the following:

1. Open-Ended Commingled Funds investing in “Core” Real Estate. Real Estate is classified as “Core” if it is an investment in operating and substantially-leased institutional quality real estate in the traditional property types (apartments, office, retail, industrial, and hotel);
2. Private Investment partnership interests in “Non-Core” Real Estate and Timberland. These private partnerships may be direct limited partnerships, limited liability companies, or vehicles that primarily invest in partnerships, including Fund-of-Funds and Secondary Funds.
3. MTRP may co-invest with private investment managers in transactions that are suitable for inclusion into a private Real Estate investment partnership;
4. Individual public or private securities received as distributions from funds and equitized liquidity funds are also permitted to be held in MTRP;
5. Separate Accounts, Open-Ended Funds, Closed-Ended Funds, Exchange-Traded Funds (ETFs), or Master Limited Partnerships (MLPs) managing publicly traded Real Estate or Timberland related investments, where the funds are approved by the Chief Investment Officer and purchased and monitored by Staff; and
6. Cash – either an investment in the Short-Term Investment Pool (STIP) or a vehicle available through the Custodian.

Other Restrictions

1. No more than 7.5% of the aggregate of MTRP net asset value plus uncalled committed capital should be in a single Fund, Partnership, or Separate Account;
2. No more than 15% of the aggregate of MTRP net asset value plus uncalled committed capital should be placed with a single fund manager.
3. Separate Accounts, Open-Ended Funds, Closed-Ended Funds, Exchange-Traded Funds (ETFs), or Master Limited Partnerships (MLPs) managing publicly traded Real Estate or Timberland related investments may not exceed 20% of the aggregate of MTRP net asset value plus uncalled committed capital;
4. No more than 30% of the aggregate of MTRP net asset value plus uncalled committed capital should be considered “Non-U.S.” exposure based on the primary objective of the Fund, Partnership, Separate Account, or Index;
5. Cash held at the Pool level (not including cash held in the underlying partnership interests, funds, or accounts, or cash that is equitized) is limited to 5% of the Pool’s market value; and
6. Individual public securities received as distributions will be liquidated over a reasonable time period dependent on market conditions.

The following table provides a guideline range with respect to MTRP’s strategy diversification. It is important to note that these ranges reference the sum of the pool’s net asset value and uncalled commitments.

<u>Strategy</u>	<u>Pool Policy Range</u>	<u>Total Pensions Policy Range</u>
Core Real Estate / Timber Investments	35% - 65%	
Non-Core Real Estate Investments	35% - 65%	
Timberland Investments	Included w/Core	0% - 2%

For funds with exposure across these categories, the fund will be classified in the category that is most reflective of the underlying investments in the funds.

Leverage

Leverage is a significant risk factor. On an individual fund basis, the leverage level can range up to 75.0 percent. Leverage consists of the combined borrowing at the property level and the fund level. On a select basis, the leverage may exceed 75.0 percent for a given investment, if it is determined to be reasonable to do so. Leverage shall be monitored on an individual fund level and new investments shall be made with the intention that the total MTRP portfolio leverage shall not exceed 60%.

<u>Strategy</u>	<u>Leverage Policy Range</u>
Core Real Estate Investments	0% - 50%
Non-Core Real Estate Investments	0% - 75%
Timberland Investments	0% - 30%

If at any time, due to market fluctuations or any other circumstances, any of the guidelines are not maintained, Staff will use its best efforts to conform to these limits in a timely manner, while taking into account current market conditions and the associated costs of rebalancing. At the Board’s next regularly scheduled quarterly meeting, the CIO shall inform the Board of any cases that the Pool allocations were outside of the limits and either inform the Board of the actions that were taken to return the Pool back within guidelines or a plan to do so.

While no formal diversification ranges are set forth for property type diversification or regional diversification within the United States, it is expected that MTRP shall remain diversified across these factors. These and other factors shall be monitored and reported to the Board at least annually.

**Schedule II-E:
Investment Objectives and Guidelines
Montana Retirement Funds Bond Pool (RFBP)**

Effective Date of Schedule: April 5, 2016

This Schedule is effective upon adoption by the Board of Investments and supersedes all previous Investment Objectives and Guidelines for this specific Pool.

Statement of Purpose:

The purpose of these objectives and guidelines is to:

1. Establish the investment objectives and performance standards of the Pool; and
2. Provide diversified exposure to the Fixed Income markets in a prudent and cost effective manner.

Investment Objective:

Strategic:

The objective of the RFBP is to attain the highest possible total return within the parameters of the Investment Guidelines set forth below.

Performance:

Success in achieving this objective will be measured by comparing the risk and after-fee return of RFBP to the **Barclays US Aggregate Bond Index** (the "Benchmark"). Performance results will be monitored and evaluated quarterly. However, the success in achieving the objective will be measured on a three-year, five-year, and ten-year annualized basis.

Investment Guidelines:

The Montana Board Investment Staff will have full discretion to manage RFBP consistent with the investment guidelines stated below. Compliance with the following guidelines for permitted investments and other restrictions is the sole responsibility of the Staff. Any exceptions or compliance violations are to be reported to the Board of Investments at the next scheduled quarterly Board meeting.

Permitted Investments:

RFBP may invest only in the following:

1. Securities and derivatives held in separate accounts, commingled funds, limited partnerships, or limited liability companies managed by internal or external investment managers and governed by their respective investment management contracts and investment guidelines;
2. Individual securities issued and guaranteed by the U.S. Government that are approved for purchase by the Chief Investment Officer and purchased and monitored by Staff; and

3. Cash – either an investment in the Short-Term Investment Pool (STIP) or a vehicle available through the Custodian.

Other Restrictions

1. A minimum of 20% of the market value of the RFBP must be held in U.S. Treasury/Agency securities;
2. A maximum of 50% of the market value of the RFBP shall be held in corporate securities;
3. A maximum of 10% of the market value of the RFBP shall be held in Non-U.S. securities whether they are denominated in U.S. dollars or a foreign currency;
4. A maximum of 40% of the market value of the RFBP shall be held in U.S. residential Agency Mortgage-Backed Securities (MBS & CMO);
5. A maximum of 10% of the market value of the RFBP shall be held in asset backed securities (ABS);
6. A maximum of 10% of the market value of the RFBP shall be held in commercial mortgage backed securities (CMBS);
7. A maximum of 5% of the market value of the RFBP shall be held in all other Permitted Investments in the aggregate that are not classified as a Corporate, U.S. residential agency mortgage-backed, ABS, CMBS, or U.S. Treasury/Agency security;
8. The average duration of the RFBP will be maintained in a range of + or – 20% of the index duration;
9. A maximum of 15% of the market value of the RFBP shall be invested in fixed income securities either non-rated or rated lower than Baa3 by Moody's or BBB- by S&P. (In the case of split rated securities, the lowest rating will apply.);
10. A maximum of 5% of the market value of the RFBP shall be invested in dedicated Emerging Market mandates;
11. A maximum of 5% of the market value of the RFBP shall be invested in Cash held at the Pool level (not including cash held by internal or external managers in separate accounts or commingled funds);
12. The Pool's percentage of market value invested in mandates using an active investment strategy by any one Manager other than any internally managed assets shall be no greater than 15%; and
13. The Pool's percentage of market value invested in any single mandate/portfolio using an active investment strategy, other than internally managed mandates, shall be no greater than 10%.

If at any time, due to market fluctuations or any other circumstances, any of the guidelines are not maintained, Staff will use its best efforts to conform to these limits in a timely manner, while taking into account current market conditions and the associated costs of rebalancing. At the Board's next regularly scheduled quarterly meeting, the CIO shall inform the Board of any cases that the Pool allocations were outside of the limits and either inform the Board of the actions that were taken to return the Pool back within guidelines or a plan to do so.

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>