REGULAR MEETING OF THE
MONTANA BOARD OF INVESTMENTS
DEPARTMENT OF COMMERCE
2401 Colonial Drive, 3rd Floor, Helena, Montana
April 3, 2018

AGENDA

AUDIT COMMITTEE 8:30 AM
1. Public Comment – Public Comment on issues with Committee Jurisdiction
2. Approval of February 13, 2018 and March 13, 2018 Committee Minutes
3. FY 2017 Financial Audit Follow-up
4. Internal Controls RFP – Decision
5. FY 2018 Financial Compliance Audit – Update
6. Audit Committee Checklist

HUMAN RESOURCE COMMITTEE 9:30 AM
1. Public Comment – Public Comment on issues with Committee Jurisdiction
2. Executive Director Comments
3. Organizational Chart – Decision

LOAN COMMITTEE 10:15 AM
1. Public Comment – Public Comment on issues with Committee Jurisdiction
2. Approval of February 13, 2018 Committee Minutes
3. In-State Loan Program – Decision
4. Review Policies – Montana Veterans’ Home Loan Mortgage Program – Decision

BREAK 11:00 AM

Tab 1 CALL TO ORDER – Mark Noennig, Chairman 11:15 AM
A. Roll Call
B. Notice of Video Recording
C. Public Comment – Public Comment on issues with Board Jurisdiction
D. Approval of February 13-14, 2018 Minutes
E. Introduce New Board Member
F. Introduce New Employee
G. Administrative Business
   1. Audit Committee Report – Decision
   2. Human Resource Committee Report – Decision
   3. Loan Committee Report – Decision
H. Comments from TRS and PERS Board Members
I. Comments from Board Legislative Liaisons

Tab 2 EXECUTIVE DIRECTOR REPORTS – David Ewer 11:35 AM
A. Member Requests or Follow-up from Prior Meeting
B. Monthly Snapshot
C. FY 2017 Financial Audit Report
D. Custodial Banking Relationship, Performance, Continuity
E. Board’s Website
F. Audit Matters
The Board of Investments makes reasonable accommodations for any known disability that may interfere with a person’s ability to participate in public meetings. Persons needing an accommodation must notify the Board (call 444-0001 or write to P.O. Box 200126, Helena, Montana 59620) no later than three days prior to the meeting to allow adequate time to make needed arrangements.

**LUNCH SERVED**

12:00 PM

Tab 3 [CAPITAL MARKET ASSUMPTIONS & ASSET ALLOCATION]– RVK, Inc. 12:45 PM

**BREAK**

2:15 PM

Tab 4 [PUBLIC MARKET INVESTMENTS]– Investment Manager Changes –
Rande Muffick, CFA, Jason Brent, CFA, and Steve Strong 2:30 PM

Tab 5 [RETIREMENT PLANS INVESTMENT POLICY REVIEW]– Decision
Joe Cullen, CFA, CAIA, FRM 2:45 PM

Tab 6 [INVESTMENT POLICIES]– Decisions
Jon Putnam, CFA, FRM, CAIA, and John Romasko, CFA 3:30 PM

A. Short-Term Investment Pool
B. Trust Funds Investment Pool
C. Separate Accounts
   1. Clark Fork Site Response Action Fund
   2. Streamside Tailings Operable Settlement Fund
   3. Upper Blackfoot Response Action and Restoration Fund
   4. Public School Trust
   5. Resource Indemnity Trust Fund
   6. Cultural Trust Fund

**RECAP OF STAFF TO DO LIST AND ADJOURNMENT** – Mark Noennig, Chairman 4:30 PM

**Appendix**

A. Annual Board Meeting Schedule
B. 24 Month Work Plan
C. Acronym Index
D. Terminology List
MONTANA BOARD OF INVESTMENTS
DEPARTMENT OF COMMERCE
2401 Colonial Drive, 3rd Floor
Helena, Montana

MINUTES OF THE MEETING – February 13-14, 2018

BOARD MEMBERS PRESENT:
Mark Noennig, Chairman
Karl Englund, Vice Chair
Terry Cohea
Jack Prothero
Jon Satre
Maggie Peterson
Jeff Greenfield

BOARD MEMBERS ABSENT:
Quinton Nyman

LEGISLATIVE LIAISONS PRESENT:
Senator Scott Sales

LEGISLATIVE LIAISONS ABSENT:
Representative Kelly McCarthy

STAFF PRESENT:
Polly Boutin, Associate Financial Manager
Jason Brent, CFA, Investment Officer
Public Markets
Geri Burton, Deputy Director
Dana Chapman, Board Secretary
Frank Cornwell, Associate Financial Manager
Joseph M. Cullen, CFA, CAIA, FRM
Chief Investment Officer
David Ewer, Executive Director
Julie Feldman, CPA, Financial Manager
Julie Flynn, Bond Program Officer
Kirsten Haswell, Investment Analyst
Tim House, Investment Analyst
Douglas Hill, Director of In-State Loan Programs
Ethan Hurley, CAIA
Director of Private Investments
Emily Kovarik, CPA, Investment Analyst
Teri Kolnik, CFA, Investment Analyst
Eron Krpan, CFA, CIPM, Investment Analyst
April Madden, Investment Accountant
Rande Muffick, CFA, Director of Public
Market Investments
Michael Nguyen, Investment Officer
Private Investments
Mike Pettit, Director of Investment Operations
Jon Putnam, CFA, FRM, CAIA
Director of Fixed Income
John Romasko, CFA, Investment Officer
Steve Strong, Investment Analyst
Louise Welsh, Senior Bond Program Officer
Dan Zarling, CFA,
Director of Risk Management

GUESTS:
Jim Voytko, RVK, Inc.
Becky Gratsinger, CFA, RVK, Inc.
Amy Barnes, Legal Counsel, Department of Commerce
Mark Barry, Corporate Support VP, Montana State Fund
Sherri Scurr, Legislative Services Division
Tom Swenson, Bank of Montana
Daniel Day, Bank of Montana
Eric Morse, Bank of Montana
Michael Borchetta, Harrison Street Real Estate Capital
Gregory Smith, The Springs Living, LLC
Fee Stubblefield, The Springs Living, LLC
Phil Drake, Great Falls Tribune
Cliff Sheets
Richard Miltenberger
CALL TO ORDER
Chairman Mark Noennig called the regular meeting of the Board of Investments (Board) to order at 11:00 a.m. As noted above a quorum of Board Members was present. Chairman Noennig advised video recording of the meeting was underway and called for public comment. There was none.

ADMINISTRATIVE BUSINESS
Chairman Noennig called for approval of the November 14-15, 2017 Board Meeting minutes and the January 25, 2018 Special Conference Call Board Meeting minutes and asked if there were any changes or corrections.

Member Jack Prothero made a motion to approve the November 14-15, 2017 Board Meeting minutes. Member Maggie Peterson seconded the motion. The motion carried.

Member Jack Prothero made a motion to approve the January 25, 2018 Special Conference Call Board Meeting minutes. Member Maggie Peterson seconded the motion. The motion carried.

Audit Committee Report
The Audit Committee met prior to the Board Meeting. Committee Chairman Jon Satre stated the Committee discussed the Fiscal Year 2017 Financial Audit and the upcoming Legislative Audit Committee Meeting. Legislative Audit Division (LAD) staff included one recommendation in the Audit. The Committee reviewed staff’s written response addressing the recommendation, which has been submitted to LAD. The Legislative Audit Committee is scheduled to meet on February 28 at the Capitol to review and accept the Fiscal Year 2017 Financial Audit. Executive Director Ewer will not be available, although a couple of Board members and other staff will attend.

Vice Chairman Karl Englund made a motion to accept and formally adopt staff’s written response to the Legislative Audit Division. Audit Committee Chairman Jon Satre seconded the motion. Board Chairman Mark Noennig noted Board Members provided significant input to staff on the written response. The motion carried.

The Committee reviewed the Committee Charter Check List. Since it is the first meeting of the year, there are no actions recorded yet. Committee Chairman Satre noted there will be a 2018 Financial Compliance Audit this year, and he provided an update of on the RFP for Internal Controls Audit Activities. The RFP was issued January 30, and responses to the submitted questions were answered on February 10. Nine firms have shown interest in responding. The RFP closes on February 19.

Human Resources (HR) Committee Report
The HR Committee met prior to the Board Meeting. Committee Chairman Karl Englund stated there were no decisions in front of the Committee.

Loan Committee Report
The Loan Committee met prior to the Board Meeting. Committee Chairman Jack Prothero reported the first action before the Committee was an INTERCAP loan to the City of Poplar for $1.434 million to upgrade the City’s wastewater treatment plant. Full Board approval is not required.

The second loan before the Committee was a loan request from The Springs of Bozeman, LLC for a total BOI loan amount of $28 million. The Committee reviewed the request and received a detailed report from In-State Loan Director Doug Hill. Several guests associated with the loan attended the meeting and answered Committee Member questions. Committee Chairman Prothero asked Mr. Hill to provide a recap.

Mr. Hill explained the BOI loan amount is $28 million; the total loan amount is $38 million and is a participation loan with the Bank of Montana over a 20-year term. The loan will provide long term financing
for a 175-unit senior care facility. There is sufficient demand for the facility in Bozeman and it will be a nice addition to the community. Staff met with the management of The Springs at Bozeman, LLC, Harrison Street Real Estate Capital and Bank of Montana.

Committee Chairman Jack Prothero made a motion to approve the loan request to The Springs of Bozeman, LLC as presented. Member Terry Cohea seconded the motion. Member Karl Englund recused himself from the vote. The motion carried.

Public Employees’ Retirement System (PERS) and Teachers’ Retirement System (TRS) Updates
Member Jeff Greenfield stated the TRS Board meets later in the week and Mr. Cullen will attend on Friday.

Member Maggie Peterson stated the PERS Board met last week. The Board hired an internal auditor which audited 15 different entities. Seven had no issues and had no recommendations, and seven had optional recommendations with six findings; all but two have been corrected. There were five errors in reporting that have been corrected.

Legislative Liaisons Comments
Senator Scott Sales reported the special legislative session went smoothly. Representative McCarthy was absent.

EXECUTIVE DIRECTOR’S REPORT

Overall Comments
Executive Director David Ewer reviewed prior requests from the previous meeting.

- The loan program outreach is included in the packet. There have been extensive outreach efforts by both INTERCAP staff and by Doug Hill for the Commercial Loan Program. Mr. Hill sent a letter out to the Montana economic development organizations and has received some feedback.
- RVK has met the Board’s request to provide the longest available time frame for rates of return.

Director Ewer briefly reviewed other items included in the Board Packet:
- The quarterly cost report.
- The monthly snapshot, which Board Members receive via email monthly.
- The Ethics Policy. All staff have signed the policy and Board Members are asked to sign the form and turn in to staff.
- The Annual Report and financial statement updates were covered extensively in the Audit Committee. The Financials are unmodified, although some deficiencies were noted by Legislative Audit Division (LAD). Board and staff will be present at the Legislative Audit Committee February 28. Staff is taking steps to address all items.
- Emergency Preparedness and Disaster Recovery. Staff emergency preparedness includes gathering annually at BOI with relevant state agencies, State Street Bank and US Bank. Protocols are tested and include integration with the states’ disaster recovery plan. BOI is in a good position to carry on core services should building entry be prevented for any reason. Network Administrator Mary Noack is the lead on disaster recovery.

Deputy Director Geri Burton added this was the fourth annual meeting with the Department of Administration (DOA), US Bank and State Street Bank. Staff will continue to hold meetings annually. Ms. Feldman and Mr. Romasko agreed, a system is in place in the event of an emergency.

Director Ewer stated staff is proposing a transfer of the Montana real estate holdings from pensions to the Trust Fund Investment Pool (TFIP) as a more appropriate fit. It is not an action item; although staff welcomes Board input and intends to bring it to the Board at the May meeting. The properties are owned by BOI as fiduciary on behalf of the pension plans. Staff feels income generation is more of a concern than capital appreciation and would be better met through the TFIP. Staff will recommend the pensions sell to the TFIP at market value. The final proposal will be presented at the May Board meeting. Staff
previously offered the properties for purchase to the Department of Administration (DOA). Cost for updating the existing appraisals would be under $20,000 for the four properties.

Responding to a question from Member Maggie Peterson, Director Ewer stated TRS Director Shawn Graham and MPERA Director Dore Schwinden, as well as the budget director, have been notified and were provided with the same information included in the Board packet. Director Graham seems to agree it is a better fit and the Administration agrees as well.

Director Ewer noted RVK has extended an invitation for Board Members to visit the Portland home office for education and training from the consultant view point, and he encouraged any Board Members who are interested to take part.

**MONTANA IN-STATE LOAN PROGRAM**

Mr. Doug Hill provided an overview of In-State Loan Program activity since the last meeting. The commercial loan portfolio has a balance of $180,971,940 which includes 108 individual loans. Four IRP (Intermediary Relending Program) loans were funded totaling $213,370; there are four new reservations totaling $29,463,000 and five commitments totaling $5,388,822. The portfolio yield is 3.07%, excluding the Science and Tech and VA loans. The Great Falls On The Border property is still for sale. As of December 31, 2017, the residential portfolio balance was $5,089,468 with a yield of 6.68%. There are two loans past due, both are FHA guaranteed, therefore no loss is anticipated.

The Veterans Home Mortgage (VA) portfolio balance is $34,387,397 with 203 loans. The available remaining funds total $5,612,602 and the portfolio yield is 1.78%. There are 12 reservations totaling $2,410,956 and no loans over 90 days past due.

Mr. Hill provided information on the IRP (Intermediary Relending Program) program. IRP loans include matching funds from the USDA (U.S. Department of Agriculture) and provide funds to economic development organizations around Montana for equity capital on business loans. For every BOI dollar, the USDA puts in $2 or $3 or $4. The Program has $200,000 available and the Department of Commerce (DOC) is seeking to increase that amount, which requires legislative approval.

Member Prothero asked how long the $5 million remaining balance in the VA Program will last. Mr. Hill responded it will be depleted by the end of this year, considering the recent changes in down payment requirements and rising interest rates. The maximum $40 million allotted is set by the legislature.

**BOND PROGRAM REPORTS**

**Activity Report**

Ms. Louise Welsh presented details on the annual INTERCAP bond remarketing. Bonds outstanding total nearly $108 million; some are maturing and there are some paydowns, so the amount outstanding will decrease. The bonds are guaranteed by BOI by four funds -- the Treasurer’s Fund and three sub-funds in the Coal Severance Tax Trust Fund, for a total of over $1 billion coverage. The market response is hard to predict this year, considering the new Federal Reserve chair and the recent tax bill. The guarantee for bonds is capped at $190 million for INTERCAP and $190 million for MFFA. The Municipal Finance Consolidation Act, QZAB (Qualified Zone Academy Bonds) and QSCB (Qualified School Construction Bonds) combined total outstanding is currently $116 million under INTERCAP. MFFA does not have any loans closing in the next couple of months, although they do have an application from Big Horn. The bonds are remarketed out to investors, and so far, remarketing has been successful each year.

On February 22, staff will know the price and how many bonds are still tendered and if remarketing will continue. The Board interest rate to borrowers is set when the bonds are tendered. For BOI’s credit enhancement of the bonds, there is a 15 basis point annual fee; although previously it was a onetime fee. There is a 25 basis point fee for any bonds not remarkeited, which the Board would purchase. There
is an advantage to the ITNERCAP program for BOI to enhance the credit. The Moody’s bond rating is Aa2.

State Fund Transfer to Fire Suppression Account
Executive Director Ewer explained that due to the budget shortfall, the governor called a special session and made several proposals. One was an assessment on the investment assets of Montana State Fund, a state agency, requiring a transfer to the Fire Suppression Fund. The legislation, Senate Bill 4 (the “Act”) names BOI as the agency to effectuate the legislation. Staff prepared a draft Resolution (#240) incorporating the direction to BOI in the Act. The Act applies to agencies in control of $1 billion in assets or more subject to any limitation in the Montana Constitution; State Fund is the only eligible agency. The Act requires BOI to transfer 3% of the average asset balance in excess of $1 billion to the Fire Suppression Fund on or before April 1, 2018 and April 1, 2019. The Resolution in the packet includes a copy of the Act, and a draft legal opinion confirming BOI has followed the provisions of the Act. Department of Commerce counsel Amy Barnes is in attendance and available for questions. Exhibit C shows the calculation of the 3% of funds over $1 billion. A report provided by State Fund from Willis Towers Watson is included showing the undiscounted liabilities equal less than the total investments of State Fund. BOI is an activating agency, along with DOA and State Fund.

Chairman Noennig call for discussion, questions or comments.

Vice Chairman Englund referenced the case filed in Lake County by State Fund customers/insured policy holders and asked if the Board had been served.

Director Ewer replied no. The state has been served, although no TRO (Temporary Restraining Order) or preliminary injunction have been filed in the case.

Chairman Noennig asked Ms. Barnes if there was anything prohibiting BOI from going forward with the transfer of funds.

Ms. Barnes stated no, and added the basis of the legal complaint includes a few allegations: that the legislation is unconstitutional, that there is an issue with the fiduciary duty of BOI via the State Constitution, and the proposed taking of private property from policy holders who claim they have a protected interest in the funds at Montana State Fund.

Vice Chairman Englund asked if there is an issue with contracts that the policy holders have with State Fund and if the attorney general’s office is handling the case.

Ms. Barnes stated the policy holders do have contracts with State Fund. There is no case where similar legislation violates the contracts clause that State Fund has with each policy holder. Section 1 subsection 3 of SB 4 provides that State Fund may not raise rates or offset dividends to policy holders. Stuart Segrest in the attorney general’s office is handling the complaint.

Chairman Noennig asked if there should be any pause with BOI relying on the changes in legislation, regarding our fiduciary duty.

Ms. Barnes stated if BOI moves forward, it is in accordance with the law, since at this point it has not been overturned. BOI would be in breach of law if they did not comply.

State Fund VP of Corporate Support Mark Barry introduced himself and stated he was available for informational questions.

Vice Chairman Englund stated BOI has relied on data from State Fund provided in the Willis Tower report, and asked Mr. Barry if more current data was available.

Mr. Barry stated the information BOI received is complete.
Ms. Julie Feldman added BOI accounting staff prepared the calculation for the fund transfer. Mr. Barry concurred with the accuracy of the calculation.

Mr. Richard Miltenerberger from Clancy, Montana, spoke representing himself as a State Fund policy holder and noted he is in support of the legal action. Mr. Miltenerberger stated until recently he served on the State Fund Board, a position he took seriously. The Board of Investments is a separate entity with a Board and a fiduciary duty and he encouraged the Board to look into the issue thoroughly, adding he believes the legislature overreached. As a policy holder, the money paid in is for injured workers, not revenue for the state.

Vice Chairman Englund asked Ms. Barnes and Senator Sales if either of them was aware of discussion around the Act on the constitutional provision that assets shall be managed in a fiduciary capacity.

Senator Sales stated he did not vote for the bill, as when funds were raided previously from State Fund, it did not work out well, adding it was a practicality and history issue for him.

Vice Chairman Englund made a motion to approve Resolution #240 as presented. Member Jon Satre seconded the motion. The motion carried.

**Domestic Equity Asset Class Review**

Mr. Rande Muffick stated the domestic equity asset class is one of the most important, due to its sheer size as 36% of the total pension pool; the next largest is international equity at 18%. Domestic equities are the major driver of returns and growth, although volatility is a factor and returns can vary up or down. As highly liquid assets, they can be sold on short notice, a major advantage. As with all asset classes, staff follows a policy statement which determines the investment guidelines to achieve the highest returns possible. Returns have been slightly below the benchmark due to active managers struggling. However, over the long-term, equities returned 20+% for one year, and over 15% for 5-years.

Compared to the benchmark, MSCI USA IMI, domestic equity trailed slightly, although returns were higher than other asset classes. All active managers with over a 10-year track record have added value, although a couple are lagging slightly over 5-years.

Mr. Steve Strong noted large caps still dominate the market, but relative to the benchmark, BOI has a higher allocation to small caps and midcaps.

Mr. Muffick reviewed recent changes. In May 2017 the benchmark was switched to the MSCI USA IMI index from the S&P 1500. Staff processed seven transitions, some due to the changing benchmark and some more recently, such as shifting additional small cap assets from passive to active. Staff is currently finalizing the addition of two active managers.

Vice Chairman Karl Englund asked how much total money was moved in the seven transitions.

Mr. Muffick replied the index change from the S&P 1500 to the MSCI was roughly $2 billion, and the active manager transitions another $500 million, for a combined total of approximately $2.5 billion.

Mr. Muffick stated staff is also exploring performance based fees which would be a change. Underperformance of active managers is a factor for fee based structure. Fixed fees are based on assets under management, usually a dollar based fee; performance based fees are based on whether a manager beats their benchmark. The fees charged are less, unless they beat the benchmark over a predetermined, usually longer, time frame. Excess fees are paid for overperformance.

Member Satre asked if there is a concern a lagging manager may take more risks under a performance based structure?
Mr. Muffick replied although there is some concern; the structure is based over a longer-term, which discourages short term market manipulation. The fee structure sets the agreed upon fees; you could end up with an increase in fees. Managers are monitored and staff would detect any attempt to game the system.

Ms. Becky Gratsinger added the topic is coming up as more modest markets are expected and could be used to push down fees. The key is to ensure the fee schedule does not result in higher fees.

Mr. Voytko added in the world of private equity, performance fees are highly constricted and hard to negotiate and they must apply equally to all LPs. For domestic stocks, fees can be custom crafted for each manager and are structured around base fees. If a manager does very well, you will pay more; although fees should be negotiated according to market expectations.

Mr. Muffick stated staff has increased manager onsite visits. Visits provide a valuable sense of culture; Mr. Jason Brent has been conducting most onsite manager visits.

Mr. Brent added staff talks to managers each quarter. At in person meetings we talk about other things, meet team members and compliance people. It is a valuable tool to get a sense of philosophy and attitude, and is helpful with new managers.

Mr. Strong reviewed the portfolio structure of domestic equities. The portfolio is diversified by capitalization, and tends to be overweight in small cap and midcaps, especially with active managers. Over the long term, small/midcaps tend to have better returns on a risk adjusted basis. Large caps have a lot more analyst coverage, making it difficult to create an advantage over other investors. Midcaps and small caps have less coverage; managers are paid for their insights and research into smaller companies. Trading volume makes for a more inefficient market as well, providing better opportunities.

Director Ewer asked how BOI compares to other large pension funds.

Mr. Muffick stated with the size of BOI, staff must be careful when investing in small caps when trading positions, although BOI has an advantage over larger plans. Reaching a 15% exposure to small caps is a lot easier with BOI’s portfolio size, compared to a pension the size of CALPERs.

Ms. Becky Gratsinger added since small cap managers have hard caps on assets under advisement, large pension plans must hire many managers to achieve their allocations. Finding active money managers with sufficient room is a challenge, and in some cases, indexing makes more sense.

Mr. Muffick stated staff uses a diversified mix; significantly passive in large cap and active in small/midcaps. Different styles such as quantitative vs. qualitative offer different capture profiles, upside vs. downside, and the different correlation of returns for managers over time, aiming for a non-correlated mix. As of December 31, 2017, the approved combined range of large and midcap was 82% and for small caps from 8-18%; (currently 16%). Some managers have been with BOI for many years.

There is not a lot of change on the expense ratio overall. When staff moved to predominately passive large cap, fees dropped from 36 basis points to 24 basis points, dramatic over a 5-year period. Staff monitors fees on a consistent basis. With performance-based fees, every basis point counts.

Mr. Strong explained the external manager evaluation policy provides guidance for hiring managers and then, once hired, ongoing monitoring for cost, performance measurement, benchmarking, and the reporting they must provide. Once hired, staff evaluates portfolios for compliance with the investment guidelines, return objectives, benchmark, prohibited investments, and cash holdings. Staff uses a scorecard, which is relatively new, to track ongoing performance. Changes within the company, adherence to guidelines and style, quality of client service, and ongoing litigation are all tracked.

Vice Chairman Karl Englund asked how staff monitors managers.
Mr. Strong explained that manager contracts state managers must disclose staff turnover, and staff assesses data managers provide. Staff conducts its own attribution process to determine which factors drove returns and completes write-ups after quarterly meetings. Attribution is generated through FactSet. Staff also make use of eVestment, a new analysis tool at BOI, which is helpful for screening new managers. Staff maintains a bench of potential managers and RVK is important for sourcing managers and providing an assessment if an event occurs with a manager.

Mr. Muffick summarized domestic equities will continue to be regular source of funds, and the small/midcap overweight will continue. Staff has reduced risk over the last 6-9 months, tilting to a lower beta. Managers that have lower beta have less risk, along with downside protection. The downside protection managers include TimesSquare and Artisan in midcaps, and Voya in small cap growth. Staff is broadening the ongoing manager selection process and plans more onsite visits.

**Diversifying Strategies**

Mr. Joe Cullen presented the proposed objectives and guidelines for diversifying strategies. A question and answer sheet included in the packet provides information on the asset class.

Member Prothero commented he considered diversifying strategies a strategy rather than an asset class.

Mr. Cullen agreed, they are not a strict asset class. Diversifying strategies is a collection of strategies that help provide diversification to other asset classes. Without its own class, there is no good place to put these types of strategies. For convenience, the grouping is referred to as an asset class. The range dedicated to these strategies would be 0% to 4%.

Member Satre asked for specificity with how the different components fit together, aside from providing downside protection.

Mr. Cullen stated there are five permitted investments, as detailed in the investment guidelines. They include securities of broader public markets, like U.S. equities and investment grade bonds, convertible bonds and emerging market debt. If there is a specialty manager, that has multi-asset classes, the strategy may be to go long or go short, or partial long/short. A multi-asset class strategy manager may strive for absolute return based on the actuarial return; however, there is no place currently in the portfolio for those assets. Some of the asset classes BOI does not have exposure to today. Each class by itself may not be suitable as a separate asset class, such as preferred securities, emerging market debts, or convertible bonds. Staff would invest with managers that invest in asset classes where there is no current exposure, such as emerging market debt—the current portfolio has no debt outside of the U.S. with international fixed income—or preferred securities or currencies. Assets would not include private investments or investments without liquidity.

Member Terry Cohea noted the benchmark proposed for diversifying strategies is the Bloomberg Barclays US Intermediate Treasury Index. Since intermediates are currently returning 2.8%, is the strategy more about absolute return and lowering risk?

Mr. Cullen replied while cash is safe, it offers no return. Diversifying strategies should yield two benefits: longer term it will protect against down markets and returns are better than cash. The Bloomberg Barclays US is a standard benchmark.

Member Cohea asked that while she appreciates the small allocation, will it be able to accomplish the goal?

Mr. Cullen replied over the short term, no; the Board has directed using incremental steps. Over time, there may be reason to increase the allocation. If a new manager is hired, staff will gain more information. Market conditions will dictate and absolute return is the goal.
Member Satre asked if there are similarities to multi asset class managers such as GTAA (Global Tactical Asset Allocation).

Mr. Cullen agreed they will be dynamic and change allocations over time. The goal is to add value and help the overall plan.

Member Prothero asked if BOI has the staff to monitor this asset class.

Mr. Cullen replied yes, but we will also leverage the resources of RVK. There are some overlaps with our current activity in public markets, and some strategies would be monitored by the risk management team.

Member Prothero noted BOI is a long-term investor and it seems these assets are for shorter term tactical moves.

Mr. Cullen stated there are assets that could benefit over the long term. Multi-asset strategies can be adjusted going forward, depending on market conditions. This adds another layer of diversification.

Member Prothero asked from a total portfolio standpoint, does this increase management fees when we are trying to decrease them?

Mr. Cullen stated fees would comparable to what we pay for international and small cap managers; however, they would not be as high as private investment fees. Manager fees would be between approximately 80 and 120 basis points.

Member Prothero asked if based on return expectations, are we guaranteeing achieving less than actuarial return? And if so, why do it?

Mr. Cullen replied while it will have some impact, it will be dwarfed when compared to other asset classes and added he would support a higher allocation. Staff expectations for actuarial returns are lower than the mid 7’s. The asset class has been approved at a range of 0-4% to fill existing current gaps and utilize strategies that will respond to overvalued markets.

Chairman Noennig stated with an expected return of 2.8%, the asset class is primarily for downside risk. With a focus on downside risk protection, that dictates high returns are not expected.

Mr. Cullen agreed, yes, which is why it uses a fixed income benchmark rather than equities. With the appropriate balance, diversifying strategies would likely do better than cash and fixed income.

Responding to a question from Vice Chairman Englund, Mr. Cullen stated staff would only select managers that are transparent. Even for a multi-asset class fund, staff would receive a list of holdings. Any manager unwilling to provide that information would not be hired.

Director Ewer asked RVK to comment on whether they believe diversifying strategies is additive.

Mr. Voytko stated this is where institutional memory/history helps. This is similar to when the Board considered real estate, exposure to hedge funds, and 130/30. The real estate was easier to understand, although the entry point was difficult. The Board considered hedge funds, but opted not to invest. For 130/30 it is a little more complicated; the decision to invest was made, and it has contributed. Diversifying strategies is another messy option, although it is not unique and is reflective of the struggle for all institutional investors. Adding fixed income helps risk, but returns are a far cry from the actuarial return. Real estate has done well, but there is already an allocation to it.

There are other institutional funds also investing in “opportunistic” with allocations of 0-5% of diversifying assets, but they do differ. Some are engineered for higher returns. Simplicity is a virtue, but there are
tradeoffs; the sweet spot is somewhere between simplicity and complicated. Some asset exposures will mirror the current assets, with ups and downs. When trying to add another angle of diversification, it requires adjustment, a benchmark, and capital market assumptions. BOI has extensively granular reviews of the portfolios; most clients do not have the staff. Achieving the actuarial rate of 7.65% is not likely, but only real estate and private equity may achieve that.

The exposures could increase over time. What assets will be invested in? There are guidelines, but no specifics at this time. The multi-asset managers are more asset strategic; if you want a more dynamic asset allocation, it is better to approach it with a limited allocation and limited managers.

Director Ewer asked Mr. Voytko, is it additive?

Mr. Voytko stated yes; it could be a hedge to the equity portfolio and seems like a reasonable thing to do with a small portion of the portfolio.

Responding to a question from Chairman Noennig, Mr. Cullen stated the public market staff will be responsible for diversifying strategies.

Vice Chairman Englund stated part of the role of the Board is to bring collective common sense for Montanans, which is why the Board is representative of different segments. This has helped the Board to avoid getting involved in some things, such as in 2008 when exotic choices were avoided. Hedge funds were not transparent. It is important to know what is contained in the bucket and avoid a collection of assets you are unable to name, with strategies that are expensive to manage. Board members should understand it. The Board answers to the people whose money is invested, and to the legislature. Vice Chairman Englund asked Senator Scott Sales to weigh in.

Senator Sales stated the market is overvalued, with low interest rates. Corporations have bought back stock to inflate earnings, and there is a lot of debt both consumer and private/public. He added he thinks it is wise to be diversified. Wealth preservation is as good as wealth growth in certain environments.

Mr. Cullen stated nothing will be purchased that is not liquid, public, and transparent. Investments will include stocks, bonds, futures; nothing exotic, although combined in a different way.

Chairman Noennig stated the Board has already approved the diversifying strategy asset class. Approval of the investment guidelines is now on the table.

Director Ewer stated it is an important point. With a motion to adopt, the Board empowers staff to invest.

Member Terry Cohea made a motion to adopt Schedule II-M Investment Objectives and Guidelines Diversifying Strategies Asset Class. Member Jon Satre seconded the motion. The motion carried via roll call vote of 5-2.

The Active vs. Passive Debate

Ms. Becky Gratsinger stated there is traction with investors to take on passive assets. RVK conducts asset allocation studies starting with a cap on market assumptions, assuming all investments in passive as a starting place, although real estate and private equity do not have options for passive.

Ms. Gratsinger stated the rationale for considering active managers is whether you can beat the benchmark? Markets are inefficient and there is information investors can exploit to outperform the benchmark for excess return. On the passive side, there are portfolios designed to replicate or closely match an entire market. For passive investments, the belief is certain markets, such as large cap, are highly efficient. The number of analysts working with large cap is eight vs. one, or none, compared to small cap or midcap. Large cap has a lot of available information. With passive investing, manager skill is unable to overcome the fees charged, therefore there is no net of fee benefit. Even skilled investors
are not that different from those that are merely lucky. If there is nothing you can do to outperform, passive is the better option.

Mr. Voytko noted even index management takes some management, such as deployment of cash and rebalancing. Often international markets are favorable due to tax treatment. The debate over passive/active is dominated by who will get the higher return. But risk is also a factor; with passive investments, you accept market returns as well as market risk. During 1998-2000, tech weights were heavy, and passive investors accepted the risk; as it turns out, there was a lot. One thing to watch is the degree of concentration in an index, when the market has a love affair with a specific sector. Active managers consistently invest with lower equity beta, such as 0.8.

Ms. Gratsinger stated there are several investor related factors, such as risk tolerance, opportunity cost, the degree of asset class efficiencies, as well as the fee levels of active vs. passive which may take active managers out of play. Some investors have a bigger loss aversion, others are more opportunistic or optimistic.

Mr. Voytko stated when looking at active/passive, where in the portfolio are you considering and what are the probable outcomes for active vs. passive? Do you have a process? A model? And do you have conviction in your method? How much excess return are you aiming for and are you happy somewhere in the middle? Risk tolerance and the investment time horizon are factors; special funds have finite time horizons. Have you devoted sufficient resources to the decision making, re: people, tools, and process? You must assess probabilities based on past experience and the likelihood of success with active management.

The median manager for U.S. large cap growth equity, over 3-year rolling periods, net of fees, has underperformed since 2001 by 27 basis points. Without a strong conviction in the decision-making process, U.S. large cap growth equity is not a great opportunity for active managers. The top quartile will still outperform, by over 160 basis points, but the losers lose more than the winners win. The downside tail stretches further than the upside, so the deck is stacked against you. For core-plus fixed income, the median manager does better than the benchmark. The tail is positively skewed and the top quartile outperformed by 160 basis points with minimal downside; adding additional value.

Mr. Voytko added indexes can get concentrated; the Barclay’s Aggregate has become concentrated on U.S. paper. In the international area, there is an expectation of a higher probability active management can produce a reasonable chance of positive return. This is also true with emerging market equities; having the least amount of research available. Investors have learned over time; know thyself. We all have tendencies to behave with specific biases. Some tend towards more defensive than is rational, or hug the benchmark, which feels safe. During manias, optimistic bias can be very powerful with a tendency to push valuations higher than reasonable. Even with good processes and decision making, you could end up with a bottom quartile manager.

Ms. Gratsinger stated compared to peers, BOI is close to the median for active managers, with an on-par allocation for U.S. equity, although peers are a bit higher for international management. Passive management has increased since 2011. International equity has changed to become more efficient over time. It is a good idea to continue to look for fee negotiations with active managers.

Member Satre stated he has heard talk about a passive investing bubble.

Mr. Voytko replied over the long term, active and passive go in cycles, but it is unclear if there is a passive bubble. Over the last seven years, we have discussed the trouble with active managers and correlations have been low. The Federal Reserve has created the calmness which only broke two weeks ago. The argument is that active management will begin performing better and median active manager results have tweaked up a bit. The concern is whether a small group of stocks account for a large segment of the S&P 500. Many active managers would avoid that risk and diversify more broadly.
The meeting was adjourned for the day at 4:30 p.m.

**CALL TO ORDER**

Board Vice Chairman Karl Englund called the regular meeting of the Board of Investments (Board) to order at 8:31 a.m. As noted above a quorum of Board Members was present. Vice Chairman Englund advised video recording of the meeting was underway and called for public comment. There was none. (Chairman Noennig arrived 8:35.)

**CONSULTANT REPORT**

**Capital Market Overview**

Mr. Jim Voytko started with a summary of capital markets. For quite a few years, cash returns were near zero and risky assets were higher by a wide margin. Investors were getting paid to take risk on stocks on a cash flow basis. Stocks now have competition, as cash has a positive return. While cash is not high relative to need or expectation, it beats zero. The yield curve is at 2.87% for the 10-year as of today; in two years it has gone from 60 basis point to over 2%. The competition for flows into risk assets vs. safe alternatives is now a discussable issue, which it has not been up to this point.

**Executive Summary**

Mr. Voytko reviewed the executive summary. Foreign stocks for first time in years have beat U.S. stocks, and emerging market stocks have beat them handily at almost 16% in a single year. Emerging markets are volatile; the issue is whether the portfolio is protected to some measure. Although there is no sure way to “protect” it, unless it is in cash. Diversification is important. Beta is one measure of how vulnerable a total portfolio is in the case of a market decline. The main source of risk in the portfolio is equity. Equity declines have their own characteristics and equity values can be depressed due to fear of inflation, although earnings may not be affected. Long treasuries have historically been a good hedge. Rising inflation tends to take bonds down initially, although bonds are a bit self-curing as you reinvest at higher rates. We will watch the market for a correction to gauge the dynamics of the portfolio; it is well diversified and real estate and fixed income will both aid.

Ms. Becky Gratsinger stated employment has ticked down to a low of 4% over the last few years. CPI (Consumer Price Index) has been below the median. U.S. government debt is high, and we are waiting to see the effect of the tax cuts. Investors started moving prices around and consumer confidence remains high. The Fed is watching employment and inflation; both are now meeting expectations.

Member Prothero asked if there is a prediction on how much higher debt will go.

Mr. Voytko replied no, a lot will depend on GDP. There is no question government debt is rising, except for Germany and Scandinavia. Japan has historically been way above other countries, and continues to rise. There is deep concern over the degree of indebtedness, from individuals to sovereign debt and if it will suppress economic growth. Japan has gone through a lost decade with almost no growth. We do not know exactly what the effect will be; but global debt is an issue.

Ms. Gratsinger noted we have seen a flattening of the yield curve, the short end came up and the long end did not see much movement. Rates have gone up since the recent market volatility. Plans that had more international equity performed better; the market performance is astounding for quarter and calendar year to date. Performance for PERS was 14.8% net of fees last year. U.S. stock prices have been very high, and are therefore vulnerable. For U.S. large cap equity since 1995, prices have been expensive, and small cap even more so.

The value of the retirement plans was $11.5 billion at year end; the two largest plans are PERS at $5.8 billion and TRS at $4.1 billion. CAPP totaled $11.3 billion. Relative to the benchmark, private equity still drags, even though a new benchmark was implemented. CAPP had 35% U.S. equity, where the median plan had 27%; and international was 18%; compared to the median at 22%.
Mr. Voytko added the heavy portfolio overweight to U.S. equity is showing the performance over last five years. Foreign markets have caught up, and if it continues, they will increase the headwind for heavily dominant U.S. equity portfolios.

Ms. Gratsinger reviewed the structural differences between BOI and the median plan. One factor is more fixed income, 25% vs. 20% for the median, and 8% real estate vs. the median at 5%. These differences drive the near-term rankings. Over the long-term, BOI is at the 27th percentile for 3-years, the 4th percentile over 5-years and ranked number one over 10-years.

Mr. Voytko added rank is the least of the three ways we measure performance. The takeaway for Montana is for 1, 3, 5 and 7 years and for calendar year to date, all periods have exceeded the assumed contributions. Asset allocation has been well structured.

Vice Chairman Karl Englund asked if it is true that the since inception figures are the most important.

Mr. Voytko replied yes, and the since inception number is at 7.84%, still above actuarial return. The next market cycle is unknown; however, you must prepare for it as best you can.

Ms. Gratsinger reviewed portfolio risk. Overall, BOI has had higher return and less risk vs. other plans. Overall portfolio equity beta is at .54, compared with the median at .49, so slightly more than other plans.

Mr. Voytko added when it comes to downside risk and beta, there is no indication in any of the metrics that the structure of the plan is unusually risky; it rates at the center for institutional investors.

Ms. Gratsinger reviewed asset class performances. Quarter to date, fiscal year to date and calendar to date returns of plans were dominated by international equity which returned 28.7% net of fees, domestic equity was just under 21%, real estate was 9% and private equity was up about 15%; equity dominated the market. While high yield was helpful, traditional fixed income had more modest returns. There was a little underperformance for domestic equity, due in part to the small cap allocation.

Short Term Investment Pool (STIP) - Management Overview

Mr. John Romasko presented an overview of STIP management. There were over 1,450 STIP transactions moving $34 billion over the last year. The objective is to achieve a high level of income, to the extent compatible with preservation of principal. Staff looks at risk first, liquidity second, and income third. The fundamental risk is the inability to return $1 to participants for each unit. Risk is the sum of credit, interest and liquidity risks.

Ms. Kirsten Haswell explained the credit risk of an individual security is that it will underperform. Overall, risk is mitigated by diversification and credit quality. By policy, no more than 3% may be invested in any one issuer, other than U.S. agency/treasury. The fixed income team maintains an approved list which is reviewed with the risk team twice a year and monitored daily. Staff is not allowed to purchase anything not on the list. Market risk cannot be reduced to zero; although it is managed through maturity caps and sector limits.

Mr. Romasko explained liquidity risk is when redemptions cannot be covered with maturities or money market funds, forcing a sale at a loss. Staff can predict the liquidity needs in STIP and state agencies are not allowed to just pull money out, although local government participants can. The local government percent of STIP is generally predictable, such as tax collection influx; however, when there is a significant increase of local governments, it can cause difficulty with finances for state agencies, as well as several large high school bonds invested, as the timing is uncertain when it will come out. Local governments have the same challenge of receiving a return on cash, making STIP a better option.

Vice Chairman Englund asked if there is a point at which local governments make up such a large percentage of STIP that it is difficult to manage.
Mr. Romasko explained although it does affect earnings, it is not necessarily difficult. Local governments can leave at any time, requiring increased liquidity, meaning shorter term investments, which in turn costs yield. Overall, staff measures and manages risk, and then look to increase yield.

Director Ewer noted staff monitors the concentrations with local governments. During the SIV issue, $40 million in losses in were written down in STIP, but no participants lost money. The original purpose of STIP is state agencies cannot take money out. Staff have ramped up the written exchange with participants via the STIP Resolution, which discloses it is not guaranteed. They are advised of the statute, and the Reserve, which is taken out of yield. If a security causes an issue, the Reserve is there to cover.

**Investment Policies**

Mr. Jon Putnam presented nine revised investment policies and one new policy (Belt Water Treatment Plant Fund) which are included in the Separate Accounts Investment Policy. If adopted, all policies will comply with policy, with the exception of the University of Montana System Group Insurance Policy, which is revised to eliminate investments in individual corporate securities. All account clients have seen the proposed changes and have no objections.

Member Jack Prothero made a motion to approve the policies as presented. Member Terry Cohea seconded the motion. The motion carried.

**Investment Operations/Domestic Equity Transition**

Mr. Mike Pettit reviewed a Consolidated Asset Pension Pool (CAPP) transition of international equity that occurred in November. The decision was made to transfer $150 million from the passive BlackRock MSCI ACWI ex-US Fund to three international active managers, Baille Gifford, Invesco and Lazard. A total of $150 million was transferred.

The goal was to take advantage of active international managers in the markets. The asset overlap with the legacy fund and the new transition funds was 22%; 11% was traded in external crossing markets, which lessens market impact, and 67% was sold in the open market. Blackrock has access to external crossing networks; this avoids open market transactions and uses end of day closing prices. The transaction is more anonymous, and avoids using traders for buys/sells. There are external crossing networks and internal crossing, which may avoid commissions. External networks charge commissions, but there is no market impact.

Mr. Pettit provided a summary of transition costs. The pre-transition estimate was 22 basis points and implementation was in line with the estimate. Costs include commissions, taxes and fees, as well as implicit costs of bid/ask spread, market impact and opportunity costs. One goal is to try and minimize market movement. Total transition cost was $323,662 or 22 basis points of the assets’ market value.

Member Jeff Greenfield asked if sufficient performance expectations over time warrant the transition. Mr. Pettit replied yes, staff agreed it was best to change from passive to active managers.

**Public Market Investments**

Mr. Rande Muffick stated staff hired two high yield fixed income managers; Jon Putnam and Jason Brent conducted the due diligence. Oaktree Capital Management and Shenkman Capital Management were funded in December for $50 million each. Both are downside protection managers. Funding cash was provided from equity and both may receive more down the road. There are now four high yield managers and staff does not anticipate adding more at this time.

**Private Equity**

Mr. Hurley stated there were seven new commitments since the last meeting, summarized below:

- Denham International Power Fund, L.P. – Operational experience, power managers and experience with a large active pipeline; market terms were good. A good fit for the portfolio.
• Trilantic Energy Partners (North America) II, LP – A BOI re-up, they focus on upstream energy production and exploration, and have performed well during the downturn; terms were good. They have done well for BOI and have a great track record, both with controlling and minority roles.
• White Deer Energy Fund III, LP – Also a re-up, they had decent performance in their first fund (BOI did not invest in). BOI invested in the second fund; they pulled back on capital deployment during the downturn in oil prices, and had the first exit a few months ago. They focus on equipment and service aspects; strictly a control buyout manager.
• Levine Leichtman Capital Partners VI, LP – BOI subscribed to Fund VI for $40 million. In business since 1986, they have a differentiated focus. Their strategy is investing through a combination of debt and equity securities. This is BOI’s first investment in Levine; they are entrepreneurial and their style is a modified J curve, a little more unique; and firm leadership is focused on providing downside protection. They invest in companies that provide revenue streams, and perform operational improvements on companies. They have proven returns over time and staff have been familiar with them going back to Fund IV. They are largely generalist but avoid certain sectors, such as energy and technology.
• BKM Industrial Value Fund II, LP – Staff committed to BKM Capital Partners’ Fund II for $30 million. BKM is a value add real estate investor in the niche market of multi-tenant light industrial with an exclusive focus on the western U.S. They have been part of a very successful specialty fund for emerging managers that CALPRS has put forth. BKM is a new manager for BOI. Multi-tenant industrial properties account for about 50% of industrial properties in U.S. They purchase assets, fix the broken pieces of management or do renovations and have a boots-on-the-ground strategy.
• Centerbridge Partners Real Estate Fund, LP – Staff has invested in five Centerbridge funds and have a high conviction in them. They do direct properties, invest in corporate entities and debt investments. Staff serves on the LP advisory team and BOI was an anchor as part of the initial investor group. As such, BOI requested for received discounts as a first in and historical partner.
• Stoltz Real Estate Fund VI, LP – BOI invested in Fund V which is tracking well and there are high quality properties in the portfolio. Stoltz should track well on the downside: they are opportunistic on the type of properties they focus on.

Investment Update
Mr. Joe Cullen stated RVK has already provided a market review. The portfolio saw strong one-year returns as of December 31, 2017 and since inception returns align with actuarial expectations. Net cash need for one year had $297 million from the retirement plans paid out to fund benefit payments and plan expenses. Net comparisons from 2016 to 2017 shows a $1.2 billion fund increase, which is exceptional. The MSCI ACWI Ex-USA benchmark performed the best. All pensions have same the allocation in CAPP; the composite average for the pensions should fall in the middle of asset class returns. All asset classes in are compliance with policy.

Risk Management
Mr. Dan Zarling stated risk management of pension assets is divided by broad factors. The team has discussed reducing exposure to growth equity, such as with the new diversifying strategies asset class. The goal is to reduce equity exposure and diversify into other asset classes. There is room to add to natural resources and timber, and some room to add to real estate. Those assets will have a sensitivity to inflation, and will protect in a rising inflation environment.

Member Prothero asked if there is concern over being too consolidated with managers.

Mr. Zarling responded he is not concerned. BlackRock is one of the largest managers due to the degree of passive assets; however, staff prefers to be with one manager if possible. They are the biggest and have other options should staff choose them.

Private Equity
Mr. Ethan Hurley stated the main takeaway in private equity is deal flow is strong and stable across the globe. The fundraising market remains strong; all GPs (General Partners) are raising cash for new funds
and are having an easy time raising capital. Dollars are chasing the deals and investors are chasing deals as the denominator effect is shrinking private equity allocations due to the booming equity market. Staff is not chasing an allocation; therefore, the approach will not change. Investments are based on opportunity. Finding deals is not difficult, although it may be more difficult for staff to keep up with review of available deals.

Mr. Michael Nguyen added it does inform our investment process. We are critical of valuations, and want to make sure our managers are not overpaying for deals, as well as providing downside protection.

Mr. Hurley noted staff may do additional secondary market sales if they are a good fit and based on fair value. Staff spends more time with existing relationships, but whether new or prior, staff conducts due diligence and can walk away at any point in the negotiations or due diligence process, which we sometimes do. The portfolio is North American centric and staff uses a detailed due diligence process, evaluating the terms of deals, manager expertise, and operational staff.

**Real Estate**

Mr. Hurley stated real estate fundamentals are strong, prices are stable, and supply and demand remain steady. Going forward, we expect income to make up more of returns, rather than capital appreciation. Portfolio characteristics are North American centric, broadly diversified by real estate type and sector, and there is positive net cash flow. There have been some major distributions; TIAA CREF continues to redeem.

Member Terry Cohea noted the real estate asset class had an IRR of 6.2%; however, the Montana office buildings had the same return. If the buildings are managed for income rather than growth, why are they the same?

Mr. Hurley explained for the office portfolio, the lease terms are driven to target a rate of return. Real estate since inception has an IRR at 6.2%, which is reasonable considering the market timing of entry causing a little drag from the cycle.

Mr. Cullen added expectations going forward, there will be more income than in the past. However, looking at the Montana buildings portfolio, Montana is stable, the buildings are fully leased, and there are no activities to change appreciation as in other parts of the portfolio. The past returns on the buildings have been in line with the private real estate portfolio.

Member Satre asked how staff arrived at the net IRR for the Montana office buildings.

Mr. Hurley replied cash flows and the ending market value, according to the December 2015 appraisals.

**Natural Resources**

Mr. Hurley reviewed Natural Resources and stated timber/lumber prices continue on demand, and exports and construction are picking up. Crude oil prices have recovered in a good way, due to OPEC and Russian production cuts. The forecasts are for continued growth and good performance. Energy is diversified across the value chain, and timber is North American centric and diversified by species and age class. Cash flow for energy was negative for the quarter, due to funding two managers. The first quarter of 2018 should also have negative cash flow for timber, also due to a capital call funding.

**Internally Managed Fixed Income**

Mr. Jon Putnam reviewed internal fixed income. The U.S. Treasury curve flattened as the short end was up about 70 basis points; the 10-year was relatively flat for the year. There was a little volatility over the year, spreads tightened, and it was close to record year of new issuance, which drove the corporate spread close to multi-year record lows. Staff added over $200 million in Treasuries/Agencies to the portfolio over the quarter which came out of the CAPP.
**TIPS**
Mr. Putnam reported TIPS performed a little better than Treasuries and Agencies as inflation expectations rose, especially in the second half of year.

**Mortgage-Backed Securities**
Mr. Putnam stated the Fed is starting to unwind their balance sheet. Spreads are very low; the portfolio is near the bottom of the range in corporates.

**Domestic Equities**
Mr. Muffick reviewed the domestic equity portfolio and stated the pool is still overweight small/midcaps although the overall position is relatively unchanged. Staff recently funded a midcap manager and are close to signing the final contract to fund a new 130/30 manager. Staff will provide information on both at the next meeting. There is $80 million allocated to the new midcap manager, and $170 million will go to the new 130/30 manager.

**International Equities**
Mr. Muffick reported international equities performed in line with the benchmark over the quarter. Emerging markets and small caps added to performance; the portfolio is overweight in both areas. One change in the portfolio is the move covered by Mike Pettit from the passive large cap BlackRock fund to three active managers.

Executive Director Ewer asked Mr. Muffick for an update on domestic policy on the dollar.

Mr. Muffick stated there is no question the president wants a weaker dollar to push investment abroad. A lot of the return from international equities vs. domestic equities is due to the weaker dollar, although the sense is it will not be as dramatic going forward as over the past 12 months.

**High Yield**
Mr. Muffick reviewed the high yield portfolio and noted markets in the quarter continued to grind tighter, as interest rates have moved up. Staff hired the two new high yield mangers, allocating $50 million each, and will add incrementally as we get more comfortable.

**Broad Fixed Income**
Mr. Muffick noted due to the restructuring of the fixed income asset class into sub-classes, Reams is the only broad fixed income external manager. Reams continues to be defensive, with a large position in Treasuries; duration is close to the benchmark and they are defensively positioned. Staff has had discussions with them and they are expected to continue that strategy.

**Trust Funds, State Fund and STIP**
Mr. Jon Putnam stated the market environment was covered earlier, and John Romasko and Kirsten Haswell reported on STIP.

The $40 million State Fund annual dividend payment was made in October. Staff sold $14 million from the S&P 500 Index Fund in December as the allocation was approaching the range ceiling.

Mr. Putnam stated the Trust Fund Investment Pool (TFIP) changed little over the quarter; there was $7.5 million in additions. The one difference is a relative underweight on the long end of the curve. There is not a lot of value there compared to the benchmark, the Barclay's Aggregate.
RECAP OF STAFF TO DO LIST AND ADJOURNMENT

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

1. The April 3, 2018 meeting is a one-day meeting, although it is likely all three committees will meet.
2. The 2018 Work and Education Plan will be reviewed and RVK is scheduled for an education presentation.
3. RVK will share their thoughts on Asset Allocation during the April meeting and staff will propose some changes to the Investment Policy statements.
4. Any Board members interested in visiting RVK’s headquarters in Portland should see the office manager after the meeting.

Having no further business before the Board, the meeting adjourned at 12:30 p.m.

Next Meeting
The next regular meeting of the Board will be April 3, 2018 in Helena, Montana. Complete copies of 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 3/20/18
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: April 3, 2018

Subject: Executive Director Reports

1. **Member or Committee Requests or Follow up from Prior Meeting**
   a. Allow more time for Committee Meetings

2. **Monthly Snapshot**-Attached

3. **FY 2017 Financial Audit Report** – Update to Audit Committee

4. **Custodial Banking Relationship**-See memorandum

5. **Board’s Website**-See memorandum

6. **Audit Matters**-See memorandum
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: April 3, 2018
Subject: State Street Bank, Custodial Relationship Review as per Work Plan

State Street Bank (SSB) 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, SSB 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 domestic securities class action claims on behalf of the Board. SSB investment products are also used to sweep cash into temporary, short term investments or SSB’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 hands-on. Board staff has daily contact with various SSB personnel and SSB brings a sizeable team to Helena three times a year.

SSB and the State’s depository bank, U.S. Bank, are paid by an on-going ‘statutory’ appropriation. Currently, SSB charges the Board $1.655 million per year and 20% of the securities lending income. An additional $80,000 is charged annually for Transfer Agency Services. For private investment accounts over 175, SSB receives an additional fee of $2,000 per account. The management fee for cash swept into SSB’s liquidity funds is .18%.

Within this tab is RVK’s report, RVK Comments on Custodial Marketplace and State Street, outlining the current custodial banking market place, summary of State Street, and some challenges custodial banking is facing.

Although SSB has a history of employee turnover through downsizing efforts, our experience over the last 18 months has shown improved stability with staff assigned to the Board’s relationship team.

Generally, SSB ably performs the custodial bank services it has contracted to do. Occasionally we experience some minor service issues but SSB and MBOI staff actively work through open issues through daily contact and regularly held, biweekly service calls in which all SSB service groups attend. While staff believe that there are no pending matters that merit Board Member attention, this agenda item may prompt further inquiry from Members.
Executive Summary

The Montana Board of Investment ("MBOI") requested that RVK provide a memo addressing 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 the MBOI’s current custodian, State Street. 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.

- **Key Factors in Custodial Banking 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 supports the need for clients to understand revenue drivers and the transparency of custodial services provided.

- **Core Evaluation Metrics Remain Relevant Despite Substantial Industry Evolution over the Past Several Years.**
  - Performance and evaluation criteria have not changed materially since the MBOI 2014 Custodial RFP.

- **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 can include unreasonably high...
personnel turnover with associated service degradation, higher structural cost rigidity/levels, and inefficient custom process, 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 are market leaders that, in RVK’s estimation, 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 generated a significant amount of market attention due to a wide variety of issues across cash fund services, securities lending programs, foreign exchange, transition management services, and other related businesses. Allegations of wrongdoing have focused increased scrutiny on the degree to which an asset owner is 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 them to make difficult discussions regarding 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.

Specific to State Street, RVK acknowledges that the firm routinely discloses a meaningful level of litigation and regulatory settlements. While these factors taken in isolation may not be material to State Street’s ability to provide ongoing services, their presence in sum have eroded trust and market perceptions and introduced new legal and compliance limitations, potentially limiting business responsiveness.

**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
RVK considers the components above to be important factors when evaluating custodial service providers. Additional factors or RFP criteria which have been considered with increasing frequency in recent RFPs include cyber security and additional analytics around risk, compliance, and the support of alternative investment assets.

**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 centralization has continued within 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 reorganization of staff including the introduction of globally distributed virtual teams. There are positives and negatives to this development: while cost efficiencies may be introduced through such efforts, which may lower the cost of asset servicing to asset owners, the distributed and virtual nature of teams can also be accompanied by near term personnel turnover and the potential loss of experienced professionals and institutional knowledge. Within the business aspect of information technology and data transformation, including its data warehouse initiatives, State Street has also invested significant resources in the creation and commercialization of data and analytics services (State Street Global Exchange). Commercialized products and services offered through State Street Global Exchange are not currently broadly consumed by clients like the MBOI. However, the increasing sophistication of the data model provided by such initiatives is constructive for the overall State Street offering and may introduce potentially valuable new analytics.
Overall Assessment

RVK is comfortable with State Street as a custody service provider to our clients. That said, we do identify a few factors that likely garner careful attention and ongoing monitoring.

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 respective relationship.

Furthermore, we have 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 meeting client needs or successfully advocating for client needs within the larger organization. To this end, personnel turnover driven by processing efficiency initiatives at State Street and its peers, has affected satisfaction with services provided. We view the relatively high level of personnel turnover (albeit moderating somewhat in recent years) as a potential weakness for State Street.

Lastly, the presence of inefficient custom process maintenance, which can lead to errors or additional manual requirements for some clients, is another potential weakness for State Street.
State Street: Summary Facts and Figures

Among the largest global master custodians at December 31, 2017:

- Total Assets under Custody of $33.12 Trillion
- US Institutional client base of 653 clients and $4.41 Trillion in assets

Two lines of business:
- Investment Servicing – 81.85% of 2017 revenue
- Investment Management – 18.15% of 2017 revenue

Highly Rated Financial Franchise:

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<th></th>
<th>Moody’s</th>
<th>S&amp;P</th>
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<tr>
<td>Short Term Deposits</td>
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<td>A-1+</td>
<td>F1+</td>
<td>R-1 (High)</td>
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<td>12/02/2015</td>
<td>5/19/2015</td>
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Significant Staffing:
- 36,554 total headcount at 12/31/2017 (up from 33,815 at 12/31/2016)
  - 20,704 in Global Services/Markets (up from 18,834 at 12/31/2016)
  - 2,814 in Global Advisors/Marketing/Research (up from 2,693 at 12/31/2016)
  - Remainder in Other and Corporate Functions

Personnel Turnover Rates have moderated in recent periods:
- 2013: 14.48%
- 2014: 15.29%
- 2015: 16.33%
- 2016: 14.64%
Significant Client Base, particularly with large Public Funds:
- 120 Public Fund Clients with Assets of $2.370 Trillion at 12/31/2017.
- 38 >$5 Billion Public Fund Clients with Assets of $2.297 Trillion at 12/31/2017.
- Relatively stable client franchise, albeit with overall client and asset losses, which have increased in recent history.

Global Coverage for Assets:
- Global Custody Network in 107 markets worldwide through 114 sub-custodian relationships and depository memberships.

Meaningful Dedication to and Investment in Technology:
- 6,500 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 ($3.86 Trillion Lendable / $397 Billion on loan at 12/31/2017) 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 500 clients globally. Over 400 dedicated investment performance and compliance professionals in 18 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: April 3, 2018

Subject: Board of Investments’ Website

The Board’s website is the principal access point for information regarding Board programs, meetings and organization in general. Staff offers the following observations for your consideration.

1. The website aligns with the State’s and the Commerce Department’s current style and presentation manner.

2. The major headings, i.e., the top information gateways to Board information, are Board Meetings, Policies, STIP, Investments, Pension Returns, INTERCAP, Loan Programs and Annual Report & Audits. In 2017 we inserted “Pension Returns” into the top level.

3. The website is almost exclusively overseen and updated by Board staff with occasional assistance from the Department of Commerce.

4. The Board has received no feedback as to the website’s structure or presentation; staff receives only occasional questions about material on the website.

With so little public reaction to the Board’s website regarding ease of use and comprehensiveness, it falls onto staff and other interested parties to assure the Board’s website meets the public’s needs.

We appreciate any Board feedback, observations, and suggestions.
This audit memorandum addresses three subjects: 1) my opinion regarding external professional review of our internal control processes, 2) an update in addressing deficiencies noted in our recent audit and the Board’s action going forward 3) the legislative auditor’s criticism of the Board regarding working capital via the Department of Commerce’s financial audit.

We have received several responses to the RFP for external professional review of our internal controls. The bids for SOC-1 are generally twice as much as a review without the opinion, i.e., approximately $40,000 vs. approximately $20,000 yearly. I believe receiving a SOC 1 report for an additional $20,000 is excellent value for what the Board will receive: a formal opinion that can be relied upon by other parties. With fiduciary assets now approaching $19 billion, the Board would add another level of safeguard by choosing an annual SOC-1 type 2 independent review.

The legislative audit report for the Board’s FY 2017 financial statements found several deficiencies and concluded that the Board needed to update its internal control processes. The Board concurred and the staff and certain Members attending the legislative audit committee assured legislators of the Board’s commitment to regain a completely clean audit report. Staff has already taken several steps. Some of our accountants will be attending a conference on GASB/GAAP accounting as it pertains to investment practices in May. We will be reaching out to GASB staff to discuss the single biggest possible change for FY 2018’s financials involving accreting or depreciating discounts or premiums on fixed income investments. We are working to hire an independent expert on GASB as it relates to investments. We are also working to retain an outside accountant deeply familiar with presentation standards to provide a ‘cold review’ of our draft financial statement and notes.

In the exit interview meeting between legislative audit staff, Audit Chairman Satre and Board staff, Legislative Auditor Angus Maciver stressed that addressing the spirit of the audit findings involved improving quality control. The audit committee already has a checklist to assure proper accounting and reporting and it is already quite comprehensive as to specific review requirements by the Committee and staff. The current language is inserted here:

V. Responsibilities
The committee will carry out the following responsibilities:
A. Financial Statements

1. Review with management and the external auditors:
   a. the results of the audit, including any difficulties encountered;
   b. significant accounting and reporting issues, including complex or unusual transactions and highly judgmental areas;
   c. recent professional and regulatory pronouncements, and understand their impact on the financial statements;
   d. review the annual financial statements, and consider whether they are complete, consistent with information known to committee members, and reflect appropriate accounting principles;
   e. review other sections of the annual report before release and consider the accuracy and completeness of the information; and
   f. review with management and the external auditors all matters required to be communicated to the committee under generally accepted auditing standards.

2. Understand how management develops interim financial information, and the nature and extent of internal and external auditor involvement.

3. Review interim financial reports with management and the external auditors, before filing with state agencies and constituent groups, and consider whether they are complete and consistent with the information known to committee members.

I believe even more specific language with deadlines may help the Committee better monitor the preparation of its financial statements. The following is DRAFT language for your consideration.

Before March 1st of every calendar year, the Executive Director will report to the Committee on each of the following:

1. A plan for testing the reasonableness and compliance with GASB presentation requirements of the financial statements before final submission to the legislative auditors which may contain such elements as using outside reviewers, a 'cold' review by Board staff, additional training in GAAP presentation compliance, or the use of outside accounting experts, or any combination or any other elements in furtherance of the goal for clean reports and GAAP compliant statements,

2. If any new standard as set by the Government Accounting Standards Board can be reasonably expected to be adopted and required for implementation on the Board’s next occurring financial statement, the Director will explain what steps will be taken to implement and comply; furthermore, the agenda of every subsequent Audit Committee meeting will include a specific item to review this matter until the standard is either adopted or a satisfactory explanation is given as to why the standard will not be adopted or is not applicable to the Board,
3.  If any audit report issued within the previous 12 months contains any adverse findings, deficiencies, or recommendations, a **written** report as to how such findings, deficiencies or recommendations will be addressed and an explanation as to why the committee should have a reasonable expectation that such issues will not be repeated in the next recurring audit

Turning to Working Capital: The Board of Investment is attached to the Department of Commerce for administrative purposes. Legislative audits performed on the Department include operational issues of the Board with respect to the Unified Investment Program (because it is an internal service fund). The most recent audit report for Commerce concluded that the Board had accumulated too much working capital in violation of State policy. The limit is a working capital balance may not exceed the total expenses of the previous 60 days. The Board does review working capital levels monthly. For April 2018, there will be no charge against the asset base which should bring the Board into compliance.
Asset Allocation Update

Total Pension Plan Expected Returns with 2018 Forward Looking Capital Market Assumptions

• MTBOI Long Term Expected Return = 6.57%*

• Factoring in the lower expected return for some asset classes following sustained periods of strong returns and relative pricing, the above return represents an 18 basis point lower expected return than the study presented in 2017.

• Actuarial Assumed Rate of Return = 7.75%

*Net of fees projected return, inclusive of index strategies where available
Focus of Today’s Discussion…

*Primary Topics Covered*

- How do we arrive at the 6.57% long-term expected return for the MBOI?
  - (Asset Allocation study)

- How do we gauge confidence in those expectations and what is the range of potential returns?
  - (Monte Carlo testing)

- How do we create our underlying assumptions for expected market returns?
  - (Capital Market Assumptions)
**Asset Allocation Studies**

**Objectives of Asset Allocation Studies**

- Help investors select an efficient (the lowest risk for a given level of return, or the highest return for a given level of risk) target asset allocation given the Fund’s objectives, risk tolerance, implementation constraints, and other factors.

- Used as an “interim” check on the strategic asset allocation as capital market return, risk, and correlation assumptions change.

**Asset Allocation Study is…**

- A systematic analysis of the properties of specified asset classes to determine the allocation of those assets that meet the expected return and risk target of a portfolio.

- A tool intended to review and update the expected return, risk and correlation with other asset classes over the long term in order to select a target portfolio from multiple options that best meets the needs of the Fund.

- An analysis that leads to the creation of a portfolio structure that is: (1) consistent with current capital market conditions, (2) consistent with assumptions about the long-term path of capital market conditions, (3) consistent with the current risk preference of the fiduciary, and (4) executable.

**Asset Allocation Study is not…**

- An analysis of the projected liabilities of the Fund.

- The sole determinant of the final asset allocation adopted by the Fund.
Importance of Asset Allocation Studies

Asset Allocation Structure:

A Primary Driver of Returns Over Time

- Studies have found that, in aggregate, Funds making timing and selection bets against their long-term policy mix were unsuccessful in adding significant value by engaging in timing and/or manager selection.¹

Provides a Material Level of Return Variability Over Time

- Study concluded that roughly 90% of the movement of a Fund’s total return was explained by target policy fluctuation. ¹

Considerations for Institutional Investors:

- Multiple studies conclude that asset allocation “drives” portfolio return and risk.

- Focus on the asset allocation is the highest investment priority.

- “Governance” should take a superior, but non investment, role in the hierarchy of responsibilities

- Asset allocation decision making is an exercise in uncertainty as it involves making judgments about magnitude and patterns of future returns and risk.

- Mean Variance Optimization, combined with appropriate forward-looking capital markets research that result in an Asset Allocation Study, provides a structured framework to assist with asset allocation decisions.

Asset Allocation Studies
What do Asset Allocation Studies consist of?

Mean Variance Optimization (MVO)

– An optimization model that incorporates capital market assumptions (return, risk, and correlation) to calculate optimal, or efficient, asset allocations.

– The analysis is intended to capture the expected return, risk and correlation with other asset classes over the long term in order to select a target portfolio that best meets the needs of the Fund, and is consistent with the investment approach indicated in periodic Asset Liability Studies.

– Optimal or “efficient” asset allocations consist of portfolios that achieve the highest level of return for a given level of risk, or the lowest level of risk for a given level of return.

Monte Carlo Analysis

– Monte Carlo simulation uses a random sampling of asset class returns, based on the probability distribution implied by the empirical returns, to create 10,000 estimates of portfolio performance.

– The simulations allows us to estimate the real-world probability of achieving various return targets over time as well as the associated risks.
Assumptions are Generally Passive

- Index data is used to construct capital markets assumptions, both return and risk figures.
- Asset classes such as Real Estate utilize peer group indexes (i.e. NCREIF ODCE), as investable market indexes do not exist.
- The active management component of forward-looking assumptions are addressed at the asset class structure level using a slightly different, but related approach.
- As the most important factor for long-term returns is asset allocation targets, using passive assumptions is more reliable during the portfolio construction process.

### Benefits

- Introduces the concept of diversification
- Focuses portfolio management activities on asset allocation
- Provides a powerful tool to support optimal risk/return tradeoffs for asset allocation targets

### Shortcomings

- Correlations are treated as static rather than dynamic
- Volatility is the only proxy for risk
- Models are sensitive to small changes in input values
- Unconstrained models can produce highly concentrated portfolios
- Assumption of risk/return trade-off fails to capture true investor behavior

Asset Allocation Process

Mean Variance Optimization, Key Inputs, Benefits, & Shortcomings
Asset Allocation Studies

Process Overview

• When conducting an asset allocation review, RVK employs a process called Mean Variance Optimization, in conjunction with RVK’s Capital Market Assumptions, which produce a set of optimal (aka “efficient”) portfolios providing the highest level of expected return for a given level of risk. This set of optimal portfolios is called the Efficient Frontier.

• To ensure that the Efficient Frontier consists of portfolios that are sufficiently diversified, RVK incorporates Minimum, Maximum and Global Constraints resulting in a range of allowable allocation percentages to each asset class.
  – These constraints are subjective, but are based on our firm’s 30+ years of experience creating and recommending portfolios to clients.
  – If the model is used without constraints, the results are too often far less diversified as the model first allocates fully to the asset class with the slightest return/risk advantage.

• The Efficient Frontier is then referenced when identifying alternative portfolios as additional adjustments are typically necessary to take into account the qualitative factors that the model simply cannot account for (e.g. a Board’s desire for a lower allocation to hedge funds, or its liquidity tolerance).
  – These additional adjustments may result in the recommended portfolio falling marginally below the Efficient Frontier.
## Asset Allocation: MTBOI Efficient Portfolios

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<th>Min</th>
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### Capital Allocation

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### Expected Return

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### Risk (Standard Deviation)

|------------------------------|------|------|------|-------|-------|-------|-------|-------|-------|-------|-------|

### Return (Compound)

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### Return/Risk Ratio

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### RVK Expected Eq Beta (LCUS Eq = 1)

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<th>0.71</th>
<th>0.82</th>
<th>0.70</th>
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</table>

### RVK Liquidity Metric (T-Bills = 100)

| Asset Class                  | 79   | 75   | 72   | 69   | 68   | 67   | 67   | 67   | 67   | 75   | 77   |
Asset Allocation: Efficient Frontier
Future Considerations for the MTBOI Portfolio

Are there enhancements to discuss?

• Fixed Income Exposure:
  – As presented in the November 2017 Asset Allocation Analysis, and consistent with the recently hired high-yield managers and the Board’s approval of the Diversifying Strategies asset class, should the Committee consider additional investments in non-core fixed income assets such as preferred securities or EM Debt?

• US Equity vs. International Equity
  – As suggested by the analysis, should the MTBOI consider increasing international equity exposure to potentially capture greater returns with a similar level of current risk?
Based on RVK’s Capital Market Assumptions, MTBOI has a 34% chance of achieving a 7.75% return over the next 10 years, and a 41% chance of hitting 7.00%.
Does the Forecast of Probabilities Less than the Optimal 50% Matter?

Yes…with the following caveats…

– If the 34% and 41% probabilities were static
  – (they are not!)

– If the MTBOI didn’t have an established strategy supported by an engaged Board
  – (it does!)

– If the MTBOI did not review the fund’s asset allocation each year
  – (it does!)

– If the MTBOI was not concerned with asset risks
  – (it is!)
### Monte Carlo Results: Expected Returns

<table>
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<tr>
<th></th>
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<th>3 Year</th>
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### 3 Years

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### 5 Years

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### 10 Years

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## Monte Carlo Results: Target Probabilities

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Capital Market Assumptions
First...What we mean by Expectations or “Assumptions”...

**Consistently forecasting exact returns for asset classes is impossible...**

The below chart plots the forecasted 10-year return based on a well established model\(^1\), against the actual return of the S&P 500 over the respective time period. The model is reasonably accurate with expected direction, but consistently misses the magnitude of actual returns.

\(^1\)Build-up model, consistent with Grinold & Kroner methodology and CFA Candidate Body of Knowledge
What are Capital Market Assumptions (CMA’s)?

**Defining and Determining Impact**

Capital market assumptions—risk, return, and correlation—are widely accepted as the most powerful drivers of the total fund return over the long run.

- The mix of asset classes and “behaviors” are the most powerful drivers of total fund return over the long run.
- The “behaviors” we estimate include:
  1. **Expected Risk** (Standard Deviation)
  2. **Expected Returns** (Arithmetic and Geometric)
  3. **Expected Correlation Coefficients** (the relationship of asset class returns with all other asset classes)

Takeaways…

- Foundation of any meaningful Asset Allocation Study.
- **Forward-looking, long-run** estimates of the behavior of asset classes (i.e., groups of closely related investment opportunities).
- Assumptions are **forecasts only**, and their chief purpose is to optimally structure the portfolio.
- Well-structured funds end up with higher long-term returns and lower risk.
- A well-structured and well-executed fund will produce the highest returns the markets will allow, regardless of what we consultants forecast for total return.
RVK Capital Markets Process in Brief

CMA Process Highlights

- Annual process that entails firm-wide participation by more than 20 investment professionals throughout the firm
- Coverage of 34 major asset classes and sub asset classes
- Led by senior investment professionals with decades of collective investment experience
- Grounded in quantitative, bottom-up analysis of individual asset and sub asset classes
- Supplemented by qualitative judgment based on experience and external research
- All assumptions are long-term (10+ years) and are not intended to guide or encourage short-term tactical allocation
How are CMA’s Developed?

**Sequence and Steps Involved**

1. **Quantitative and Qualitative Inputs**: Our models utilize historical and current market data, macroeconomic forecasts from various sources, qualitative considerations and financial theory to inform and support our models.

2. **Triangulation**: Our Triangulation team reviews asset class interdependencies to ensure consistency and relative accuracy.

3. **Peer Review**: General consulting staff formally review, critique, and ultimately support our capital market assumptions.

4. **Testing**: We test the assumptions by conducting asset allocation studies on actual client portfolios, looking for major changes in the output.

It’s important to reiterate that RVK’s assumptions are “set” with each risk-and-return estimate for an asset class bearing a rational relationship to others in the set and that these assumptions are long-run in nature (>10 years).

- Shorter time horizons lead to less certainty of outcome, while longer time horizons allow for increased certainty.
# 2018 RVK Capital Market Assumptions

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<td>11.00%</td>
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<td>6.00%</td>
<td>24.00%</td>
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<td>0.00%</td>
<td>0.00%</td>
</tr>
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<td>2.50%</td>
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<tr>
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<td>3.00%</td>
<td>2.46%</td>
<td>0.25%</td>
<td>0.00%</td>
<td>0.25%</td>
</tr>
</tbody>
</table>

*Represents assets of particular interest to the MTBOI
CMA Conclusions for 2018

**Themes Observed**

1. **Modest absolute expectations across asset classes**
   - Only private equity is expected to provide a compound return near 7.0% per year

2. **Reduced return expectations for several key equity segments relative to 2017**
   - 25 basis point declines across U.S., international, and private equity
   - 50 basis point decline for emerging market equity

3. **Continuation of low return expectations for capital preservation**
   - Example: Intermediate Duration Fixed Income expectations remain at 3.33% expected compound return

4. **Low to moderate compound return expectations for other alternative asset classes**
   - Commodities = ~4.0%
   - Diversified Inflation Strategies = ~4.6%
   - Diversified Hedge funds & GTAA= ~5.4%
Looking Ahead

**Anticipated Sources of Market Uncertainty**

1. **Fiscal Policy**
   - There remains considerable uncertainty regarding the future actions of the administration on key policies related to regulation, international trade, and infrastructure spending; including a material increase in U.S. debt issuance and inflation expectations.

2. **Monetary Policy**
   - The speed and magnitude of U.S. monetary policy tightening will likely impact the U.S. economy and influence policies pursued by other foreign central banks.

3. **Geopolitical Developments**
   - Several global uncertainties persist and the risk of shock events remains elevated.
   - Examples include elections in Europe and ongoing tensions with North Korea.

4. **Market Sentiment**
   - Market reaction to events has become increasingly difficult to predict.
Appendix
Annual Volatility of Return Assumptions for the MTBOI

<table>
<thead>
<tr>
<th></th>
<th>.3 St Dev</th>
<th>.2 St Dev</th>
<th>.1 St Dev</th>
<th>Expected Return</th>
<th>+1 St Dev</th>
<th>+2 St Dev</th>
<th>+3 St Dev</th>
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<tr>
<td>Broad US Equity</td>
<td>-46.72</td>
<td>-28.88</td>
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<td>6.80</td>
<td>24.64</td>
<td>42.48</td>
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<td>Broad International Equity</td>
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<td>-33.00</td>
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<td>29.40</td>
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<td>Int. Duration Fixed Income</td>
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<td>9.88</td>
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<td>22.64</td>
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<td>TIPS</td>
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<td>20.51</td>
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<td>9.75</td>
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<td>5.67</td>
<td>8.84</td>
<td>12.01</td>
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Estimated Compound Return of Current Target: 5.78%

Estimated Expected Return of Current Target: 6.57%

Actuarial Assumed Rate of Return: 7.75%

-1 Standard Deviation: -6.45%

-2 Standard Deviations: -19.47%

-3 Standard Deviations: -32.49%

+1 Standard Deviation: 19.59%

+2 Standard Deviations: 32.61%

+3 Standard Deviations: 45.63%
Monte Carlo Simulation

Monte Carlo simulation uses a random sampling of asset class returns, based on the probability distribution implied by the empirical returns, to create several thousand estimates of portfolio performance. Undergoing a Monte Carlo simulation provides insight into the performance of the asset allocation by examining many randomly sampled return outcomes.

An asset allocation study allows for the construction of an "efficient," or return-maximizing, portfolio of asset class investments at each given level of portfolio volatility. These calculations are based on expected return, risk, and correlations for each asset class. The asset allocation process provides a snapshot of portfolio performance that is highly dependent on the mean return expectations. A Monte Carlo simulation process "stress tests" these assumptions and asset allocation recommendations that stem from them through thousands of independent samplings of portfolio returns, based on the assumptions and indicated asset allocations. Through the Monte Carlo simulation process, we are better able to ascertain the real-world probability of achieving various return targets over time.

Our Monte Carlo simulation model assumes a non-normal (downside log-stable (DLS), or "fat-tailed") distribution of returns, which we believe provides a more realistic representation of historical market experience than the typically used normal or log-normal (LN) distribution. Given this non-normal distribution of random returns derived from our assumption inputs and empirical return dispersion, we can estimate the potential return for a given portfolio over the indicated time period. The charts below illustrate the differences between the above mentioned distributions.

It is important to note that the output that follows refers to geometric (compound) return, rather than the arithmetic return assumptions used in the asset allocation analysis. The geometric return of a portfolio will be less than (or equal to) its arithmetic return over time, because geometric return accounts for the dampening effect of volatility on the portfolio's compound returns.
Following an in depth due diligence process and successful completion of contracting with two new equity managers, staff funded the accounts in February and March. The two mandates included Jacobs Levy Equity Management Inc., a domestic large cap, partial long/short portfolio in the amount of $170 million and Congress Asset Management, a domestic midcap growth portfolio in the amount of $80 million.

In selecting the most efficient method of funding the managers, staff reviewed and compared the options of using a transition manager to trade and transfer stock and cash versus funding with cash only.

Congress Asset Management was funded in two tranches on February 9th and 12th to correspond with the manager’s trading, aimed at minimizing market impact. Although a transition of securities and cash was initially contemplated, staff chose to take advantage of the February market pullback by using cash available from the Cash Asset Class.

The funding of the Jacobs Levy account on March 8, 2018 was also reviewed with BlackRock for a possible transition. Because the portfolio is a 130/30 partial long/short strategy, BlackRock would have been able to complete just the purchases for the long only portion of the target positions, requiring Jacobs Levy to complete the 30% extended long/short positions. In addition, the cost analysis of a transition indicated the overlap between the BlackRock MSCI US Equity Index Fund and the manager’s target long positions was less than desired and the cost of a cash funding was nearly identical to that of a transition. Consequently, staff chose to fund the Jacobs Levy account with cash. Jacobs Levy traded securities at or near the market close to coincide with the timing of the cash redemption from the BlackRock fund, thus minimizing market impact.

The table on the following page outlines the explicit costs of funding both mandates.
<table>
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<th>Jacobs Levy Partial Long/Short</th>
<th>Congress MidCap Growth</th>
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<td>$13,008.19</td>
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<td>Taxes and Fees</td>
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<td>Total Explicit Costs</td>
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<td>Cost of BlackRock Withdrawal</td>
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<tr>
<td><strong>Total</strong></td>
<td><strong>$38,586.88</strong></td>
<td><strong>$23,191.00</strong></td>
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</table>

Manager Funding Amount $170,000,000.00 $80,000,000.00

Cost as percent of funding amount 0.0227% 0.0290%

Cost in basis points 2.269816471 2.898875
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: Joseph M. Cullen, CFA, CAIA, FRM
Chief Investment Officer

Date: April 3, 2018

Subject: Retirement Plans Investment Policy

The purpose of this memo is to highlight a few proposed changes to the Montana Public Retirement Plans Investment Policy statement. Following this memo is the Montana Public Retirement Plans Investment Policy with redlines showing the proposed changes. Staff believes a few revisions to the Investment Policy are warranted. These revisions can be broadly divided into two categories: improve consistency and substance. All the proposed changes are in the Appendix section of the Policy.

Most of the proposed changes are intended to improve the consistency of the guideline language across the different asset classes. For example, in several asset classes the current policy uses “market value” to help define guideline restrictions, but in some other asset classes reference is made to “net asset value”. In many situations these terms are used interchangeably. “Net asset value” includes “market value”, but also accounts for any receivables or payables. Staff believes “net asset value” is a more accurate term. Also under the “improve consistency” category are changes to better align the leverage guidelines across asset classes.

With respect to substance, there are a few changes that are summarized below. None of these proposed changes will have an impact on the approved Asset Allocation ranges.

1) The market capitalization restrictions within Domestic and International Equities focuses on restricting small-cap securities;
2) In asset classes where public equity securities are permitted it is clarified that both long-only and long/short strategies may be utilized;
3) Instead of monitoring Emerging Market exposure at a mandate level the refinement is to more precisely measure it at the security level for both equity and debt;
4) The maximum restriction in the Real Estate Asset Class on a single investment is clarified to refer to the less liquid “Non-Core” strategies;
5) Additional clarifications are added to restrict direct co-investments;
6) A few percentages have been marginally adjusted;
7) We recognize that a fixed-income investment may not always have a credit rating from more than one rating agency; and
8) A new proposed benchmark for the Cash Asset Class.

Recommendation:
Staff recommends the Board approve and adopt the revised Montana Public Retirement Plans Investment Policy.
MONTANA PUBLIC RETIREMENT PLANS
INVESTMENT POLICY

Approved April 5, 2017
Proposed April 3, 2018
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1. **Introduction:**

Montana Public Retirement Plan assets are commingled for investment purposes into a Consolidated Asset Pension Pool (CAPP) created by the Board. The use of a commingled pool 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. The Consolidated Asset Pension Pool invests directly in the underlying Asset Classes. Each Asset Class has an underlying set of investment objectives and investment guidelines. Each of the nine Plans, CAPP, and each of the Asset Classes are 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.*

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, 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** for the Retirement Plans is calculated by applying the investment performance of the benchmarks for CAPP, STIP, and direct exposure to any of the underlying asset classes to the Plans’ actual allocation to these investments 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 management, 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 CAPP, STIP, and 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 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.

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, 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) Evaluation of Investment Managers

The Investment Manager Evaluation Policy is a distinct policy that is regularly reviewed and updated separate from the Retirement Plans Investment Policy because staff utilizes the Investment Manager Evaluation Policy to oversee and manage other assets in addition to the retirement plan assets.
b) **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.

A significant percentage of the investments in the Real Estate, Natural Resources and Private Equity Asset Classes are considered 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 these assets.

The investments held in the Domestic Equity, International Equity, TIPS, Broad Fixed Income, US Treasury/Agency Fixed Income, Investment Grade Credit, Agency Mortgage-Backed Securities, and High Yield Asset Classes are categorized as publicly traded securities. In “normal market” conditions many of the underlying assets from these Asset Classes can be liquidated in a relatively short period to accommodate both expected and unexpected withdrawals as well as any repositioning of the asset allocation to stay within approved ranges.

To improve liquidity and manage both the expected and unexpected Retirement Plans need for cash, this Investment Policy specifies a strategic allocation to the Cash Asset Class, which invests in approved investments including the Short-Term Investment Pool (STIP).

c) **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 Asset Classes to confirm these items are known and adhere to all Investment Policy requirements and expectations.

Staff will discuss and communicate any key information discovered due to 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.

d) **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.
e) **Cash Investments**

Cash investments held at the Retirement Plan, CAPP level, or any managed account within it, 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 approved by the CIO, all of which specifically address credit risk in their respective investment guidelines.

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 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. **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.

13. **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

Permitted Ranges:

Approved November 14, 2017

#### All Nine Retirement Plans’ Allocations

<table>
<thead>
<tr>
<th>Pools</th>
<th>Range Low</th>
<th>Range High</th>
</tr>
</thead>
<tbody>
<tr>
<td>STIP</td>
<td>1%</td>
<td>4%</td>
</tr>
<tr>
<td>CAPP</td>
<td>96%</td>
<td>99%</td>
</tr>
</tbody>
</table>

#### CAPP Asset Class Allocations

<table>
<thead>
<tr>
<th>Asset Class</th>
<th>Range Low</th>
<th>Range High</th>
</tr>
</thead>
<tbody>
<tr>
<td>Domestic Equities</td>
<td>24</td>
<td>38</td>
</tr>
<tr>
<td>International Equities</td>
<td>12</td>
<td>24</td>
</tr>
<tr>
<td>Private Equity</td>
<td>9</td>
<td>15</td>
</tr>
<tr>
<td>Natural Resources</td>
<td>0</td>
<td>6</td>
</tr>
<tr>
<td>Real Estate</td>
<td>4</td>
<td>12</td>
</tr>
<tr>
<td>TIPS</td>
<td>0</td>
<td>4</td>
</tr>
<tr>
<td>Broad Fixed Income ¹</td>
<td>0</td>
<td>3</td>
</tr>
<tr>
<td>US Treasury/Agency Fixed Income ¹</td>
<td>5</td>
<td>14</td>
</tr>
<tr>
<td>Investment Grade Credit ¹</td>
<td>2</td>
<td>6</td>
</tr>
<tr>
<td>Agency Mortgage-Backed Securities ¹</td>
<td>2</td>
<td>8</td>
</tr>
<tr>
<td>High Yield ¹</td>
<td>1</td>
<td>5</td>
</tr>
<tr>
<td>Diversifying Strategies ²</td>
<td>0</td>
<td>4</td>
</tr>
<tr>
<td>Cash</td>
<td>1</td>
<td>6</td>
</tr>
</tbody>
</table>

**Total**

1. Related fixed income asset classes may not go below a minimum of 15 percent of the portfolio.
2. Diversifying Strategies will hold no investments until the Diversified Strategies objectives and guidelines are formally approved by the board. CAPP shall have no greater than 5% of its Net Asset Value managed by any one external manager using an active investment strategy.
Appendix II: Investment Objectives and Guidelines

Schedule II-A:
Investment Objectives and Guidelines
Domestic Equities Asset Class

Effective Date of Schedule: by May 1, 2018

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

Statement of Purpose:
The purpose of these objectives and guidelines is to:

1. Establish the investment objectives and performance standards of the Asset Class; and
2. Provide diversified exposure to the domestic equity market in a prudent and cost-effective manner.

Investment Objective:

Strategic:
The objective of the Domestic Equities Asset Class 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 the Domestic Equity Asset Class to the **MSCI USA 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:

Staff will have full discretion to manage this Asset Class 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.

Most of the Domestic Equity investments will be managed by external investment managers.

*The Domestic Equities Asset Class may utilize public long-only and long/short strategies.*

*It is expected that Domestic Equities Asset Class shall invest in public market investments that provide liquidity and meaningful transparency to portfolio characteristics and risk exposures.*
Permitted Investments:

The Domestic Equity Equities Asset Class 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), a vehicle available through the Custodian, or an SEC registered money market fund that is considered a “US Treasury” or “US Government” money market fund per the SEC regulations.

Other Restrictions:

1. The Domestic Equity Equities Asset Class percentage of Net Asset Value invested in “small-cap” equities shall be no greater than +10% relative to the Benchmark; shall adhere to the following ranges as a percentage of the Domestic Equity Asset Class total market value:
   a. Large/Mid-Cap (“MSCI Standard”) 82 – 92%
   b. Small-Cap 8 – 18%
2. The Domestic Equity Equities Asset Class percentage of market value Net Asset Value invested in passive/index strategies shall be greater than 45%; and
3. Cash held at the Domestic Equity Equities Asset Class level (not including cash held by external managers in separate accounts or commingled funds) is limited to 5% of the Domestic Equity Equities Asset Class market value Net Asset Value;
4. The Domestic Equity Asset Class 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 Domestic Equity Asset Class 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 considering 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 Domestic Equity Asset Class allocations were outside of the limits and either inform the Board of the actions that were taken to return the Domestic Equity Equities Asset Class back within guidelines or a plan to do so.
Schedule II-B:
Investment Objectives and Guidelines
International Equities Asset Class

Effective Date of Schedule: April 5, 2017

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

Statement of Purpose:
The purpose of these objectives and guidelines is to:

1. Establish the investment objectives and performance standards of the Asset Class; 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 International Equities Asset Class 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 the International Equities Asset Class 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:

Staff will have full discretion to manage the International Equities Asset Class 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.

Most of the International Equities Asset Class investments will be managed by external investment managers.

The International Equities Asset Class may utilize public long-only and long/short strategies.

It is expected that the International Equities Asset Class shall invest in public market investments that provide liquidity and meaningful transparency to portfolio characteristics and risk exposures.
Permitted Investments:

The International Equities Asset Class 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), a vehicle available through the Custodian, or an SEC registered money market fund that is considered a “US Treasury” or “US Government” money market fund per the SEC regulations.

Other Restrictions:

1. The International Equities Asset Class percentage of Net Asset Value invested in “small-cap” equities shall be no greater than +10% relative to the Benchmark; The market capitalization by mandate shall adhere to the following ranges as a percentage of the International Equities Asset Class total market value:
   a. Large/Mid-Cap (“MSCI Standard”) 82-92%
   b. Small-Cap 8-18%
2. The International Equities Asset Class percentage of market value Net Asset Value invested in passive/index strategies shall be greater than 42%;
3. The International Equities Asset Class percentage of market value Net Asset Value invested in dedicated Emerging Market securities mandates shall be no greater than +105% relative to the Benchmark; and
4. Cash held at the International Equities Asset Class level (not including cash held by external managers in separate accounts or commingled funds) is limited to 5% of the International Equities Asset Class market value Net Asset Value;
5. The International Equities Asset Class 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 International Equities Asset Class 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, considering 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 International Equities Asset Class allocations were outside of the limits and either inform the Board of the actions that were taken to return the International Equities Asset Class back within guidelines or a plan to do so.
Schedule II-C:
Investment Objectives and Guidelines
Private Equity Asset Class

Effective Date of Schedule: April 5, 2017

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

Statement of Purpose:
The purpose of these objectives and guidelines is to:

1. Establish the investment objectives and performance standards of the Asset Class; and
2. Provide diversified exposure to the Private Investment markets in a prudent and cost-effective manner.

Investment Objective:

Strategic:
The objective of the Private Equity Asset Class 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 to realize the value provided by the creation or restructuring of private companies.

The performance objective for the Private Equity Asset Class 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.

Success in achieving this objective will be measured by comparing the net return of the Private Equity Asset Class to the MSCI USA Small Cap Index (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:

Staff will have full discretion to manage the Private Equity Asset Class 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.
Most of the Private Equity Asset Class 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:**

The Private Equity Asset Class 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. The Private Equity Asset Class 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. Exchange-Traded Funds (ETFs) based on a public equity index that is 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), a vehicle available through the Custodian, or an SEC registered money market fund that is considered a “US Treasury” or “US Government” money market fund per the SEC regulations.

**Other Restrictions**

1. No more than 7.5% of the aggregate of the Private Equity Asset Class net asset value plus uncalled committed capital should be in a single Direct Limited Partnership;
2. No more than 15% of the aggregate of the Private Equity Asset Class 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 the Private Equity Asset Class net asset value plus uncalled committed capital should considered “Non-U.S.” exposure based on the primary objective of the Fund, Partnership, Separate Account, or Index;
4. Cash held at the Private Equity Asset Class level (not including cash held in the underlying partnership interests/funds) is limited to 5% of the Private Equity Asset Class market value Net Asset 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 Private Equity strategy diversification. It is important to note that these ranges reference the sum of the Private Equity Asset Class net asset value and uncalled commitments.

<table>
<thead>
<tr>
<th>Strategy</th>
<th>Policy Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Buyout and all other private equity related strategies not related to Venture Capital or Debt-Related</td>
<td>50% - 100%</td>
</tr>
<tr>
<td>Venture Capital</td>
<td>0% - 25%</td>
</tr>
<tr>
<td>Debt-related</td>
<td>0% - 25%</td>
</tr>
</tbody>
</table>

For the purpose of the ranges provided above, 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 considering 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 Private Equity Asset Class allocations were outside of the limits and either inform the Board of the actions that were taken to return the Private Equity Asset Class back within guidelines or a plan to do so.
Schedule II-D:  
Investment Objectives and Guidelines  
Natural Resources Asset Class  

Effective Date of Schedule:  April 5, 2017May 1, 2018

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

Statement of Purpose:
The purpose of these objectives and guidelines is to:

1. Establish the investment objectives and performance standards of the Natural Resources Asset Class; and
2. Provide diversified exposure to the Natural Resources markets in a prudent and cost-effective manner.

Investment Objective:

Strategic:  
The objective of the Natural Resources Asset Class is to attain the highest possible return within the parameters of the Investment Guidelines set forth below.

Performance:  
There is no generally accepted performance comparisons benchmark index for private partnership investments in Natural Resources. Characteristically, private 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 investments usually require a long-time horizon to realize the value provided by the creation or restructuring of private companies.

The performance objective for the Natural Resources Asset Class is the achievement of long-term net returns (after management fees and general partner’s carried interest) above a benchmark reflecting public equity Natural Resource market returns.

Success in achieving this objective will be measured by comparing the net return of the Natural Resources Asset Class to the MSCI ACWI Commodity Producers Index (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:

Staff will have full discretion to manage the Natural Resources Asset Class 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 Natural Resources Asset Class may utilize public long-only and long/short strategies.

**Permitted Investments:**

The Natural Resources Asset Class (for the purpose of these guidelines, “Natural Resources” includes investments in Timber, Energy, Agriculture, Water, and other Commodities) may invest only in the following:

1. Private Investment partnership interests in Natural Resources. 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. The Natural Resources Asset Class may co-invest with private investment managers in transactions that are suitable for inclusion into a Natural Resources investment partnership;
3. Individual public or private securities received as distributions from funds;
4. Separate Accounts, Open-Ended Funds, Closed-Ended Funds, Exchange-Traded Funds (ETFs), or Master Limited Partnerships (MLPs) managing publicly traded Natural Resources related investments, where the investments are approved by the Chief Investment Officer and purchased and monitored by Staff; and
5. Cash – either an investment in the Short-Term Investment Pool (STIP), a vehicle available through the Custodian, or an SEC registered money market fund that is considered a “US Treasury” or “US Government” money market fund per the SEC regulations.

**Other Restrictions**

1. The CAPP (Consolidated Asset Pension Pool) percentage of market value Net Asset Value invested in Timber investments shall be no greater than 2%;
2. The CAPP (Consolidated Asset Pension Pool) percentage of market value invested with a single investment manager or General Partner within the Natural Resources Asset Class shall be no greater than 1%;
3. The CAPP (Consolidated Asset Pension Pool) percentage of market value Net Asset Value invested in a single investment within Natural Resources Asset Class shall be no greater than 0.51.0%;
4. No more than 30% of the aggregate of the Natural Resources Asset Class 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. No more than 10% of the aggregate of the Natural Resources Asset Class net asset value shall be invested in direct co-investments;
6. Cash held at the Natural Resources Asset Class level (not including cash held in the underlying partnership interests, funds, or accounts, or cash that is equitized) is limited to 5% of the Natural Resources Asset Class market value Net Asset Value; and
7. Individual public securities received as distributions will be liquidated over a reasonable time period dependent on market condition.

For funds with exposure across categories, the fund will be classified in the category that is most reflective of the underlying investments in the funds.
Timber Fund Leverage
Leverage is a significant risk factor. On an individual fund basis, the leverage level can range up to 30.0 percent. Leverage consists of the combined borrowing at the property level and the fund level. On a select basis, the leverage may exceed 30.0 percent for a given investment, if it is determined to be reasonable to do so, particularly in the early stages of the fund investment cycle when a fund level credit facility is utilized to finance early fund investments on a short-term basis prior to committed capital being drawn. Leverage shall be monitored on an individual fund level and new investments shall be made with the intention that the total timber fund investment leverage shall not exceed 30%.

<table>
<thead>
<tr>
<th>Strategy</th>
<th>Leverage Policy Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Timber Fund Investments</td>
<td>0% - 30%</td>
</tr>
</tbody>
</table>

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 considering 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 Natural Resources 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-E:  
Investment Objectives and Guidelines  
Real Estate Asset Class  

Effective Date of Schedule:  April 5, 2017May 1, 2018  

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

Statement of Purpose:  
The purpose of these objectives and guidelines is to:  

1. Establish the investment objectives and performance standards of the Real Estate Asset Class; and  
2. Provide diversified exposure to Real Estate in a prudent and cost-effective manner.  

Investment Objective:  

Strategic:  
The objective of the Real Estate Asset Class 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 the Real Estate Asset Class to the MSCI US REIT 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.  

Investment Guidelines:  

Staff will have full discretion to manage the Real Estate Asset Class 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.  

Most of the Real Estate Asset Class investments will be managed by external investment managers.  

The Real Estate Asset Class may utilize public long-only and long/short strategies.  

Permitted Investments:  
The Real Estate Asset Class may invest only in the following:  

1. Separate Accounts, Open-Ended Funds, Closed-Ended Funds, Exchange-Traded Funds (ETFs), Real Estate Investment Trusts (REITs), or Master Limited Partnerships (MLPs) managing publicly traded Real Estate, where the investments are approved by the Chief Investment Officer and purchased and monitored by Staff;
2. 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.

3. The Real Estate Asset Class 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 are also permitted to be held in the Real Estate Asset Class; and

5. Cash – either an investment in the Short-Term Investment Pool (STIP), a vehicle available through the Custodian, or an SEC registered money market fund that is considered a “US Treasury” or “US Government” money market fund per the SEC regulations.

Other Restrictions

1. No less than 30% of the aggregate of the Real Estate Asset Class net asset value plus capital shall be invested in “Core” Real Estate. Real Estate is classified as “Core” if it is an investment in operating, substantially leased, and positively cash flowing institutional quality real estate across property types, geographies and markets;

2. No more than 7.5% of the aggregate of the Real Estate Asset Class net asset value plus uncalled committed capital should be in a single “Non-Core” Fund, Partnership, or Separate Account;

3. No more than 15% of the aggregate of the Real Estate Asset Class net asset value plus uncalled committed capital should be placed with a single fund manager;

4. 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 the Real Estate Asset Class net asset value plus uncalled committed capital;

4.3. No more than 30% of the aggregate of the Real Estate Asset Class 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. No more than 10% of the aggregate of the Real Estate Asset Class net asset value shall be invested in direct co-investments;

6. Cash held at the Real Estate Asset Class level (not including cash held in the underlying partnership interests, funds, or accounts) is limited to 5% of the Real Estate Asset Class market value.Net Asset Value; and

7. Individual public securities received as distributions will be liquidated over a reasonable time period dependent on market conditions.

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, particularly in the early stages of the fund investment cycle when a fund level credit facility is utilized to finance early fund investments on a short-term basis prior to committed capital being drawn. Leverage shall be monitored on an individual fund level and new investments shall be made with the intention that the total Real Estate Asset Class leverage shall not exceed 60%.
<table>
<thead>
<tr>
<th>Strategy</th>
<th>Leverage Policy Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Core Real Estate Investments</td>
<td>0% - 50%</td>
</tr>
<tr>
<td>Non-Core Real Estate Investments</td>
<td>0% - 75%</td>
</tr>
</tbody>
</table>

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 considering 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 Real Estate Asset Class allocations were outside of the limits and either inform the Board of the actions that were taken to return the Real Estate Asset Class 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 the Real Estate Asset Class shall remain diversified across these factors. These and other factors shall be monitored and reported to the Board at least annually.
Schedule II-F:  
Investment Objectives and Guidelines  
TIPS Asset Class

Effective Date of Schedule:  April 5, 2017  
May 1, 2018

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

Statement of Purpose:
The purpose of these objectives and guidelines is to:

1. Establish the investment objectives and performance standards of the TIPS Asset Class; and
2. Provide diversified exposure to the TIPS Fixed Income markets in a prudent and cost-effective manner.

Investment Objective:

Strategic:
The objective of the TIPS Asset Class 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 TIPS Asset Class to the Bloomberg Barclays Intermediate US Treasury Inflation-Protected Securities 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:

Staff will have full discretion to manage the TIPS Asset Class 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:

The TIPS Asset Class may invest only in the following:

1. Fixed Income U.S. Treasury Inflation-Protected Securities (“TIPS”);
2. Fixed Income U.S. Treasury Securities; and
3. Cash – either an investment in the Short-Term Investment Pool (STIP), a vehicle available through the Custodian, or an SEC registered money market fund that is considered a “US Treasury” or “US Government” money market fund per the SEC regulations.
Other Restrictions

1. The average duration of the TIPS Asset Class will be maintained in a range of + or − 20% of the Benchmark duration;
2. Cash held at the TIPS Asset Class level (not including cash held in the underlying accounts) is limited to 5% of the TIPS Asset Class market value Net Asset Value.

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 considering 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 TIPS Asset Class allocations were outside of the limits and either inform the Board of the actions that were taken to return the TIPS Asset Class back within guidelines or a plan to do so.
Schedule II-G:  
Investment Objectives and Guidelines  
Broad Fixed Income Asset Class  

Effective Date of Schedule: April 5, 2017
May 1, 2018

This Schedule is effective upon adoption by the Board of Investments and supersedes all previous Investment Objectives and Guidelines for the Broad Fixed Income Asset Class.

Statement of Purpose:
The purpose of these objectives and guidelines is to:

1. Establish the investment objectives and performance standards of the Broad Fixed Income Asset Class; and
2. Provide diversified exposure to the Fixed Income markets in a prudent and cost-effective manner.

Investment Objective:

Strategic:
The objective of the Broad Fixed Income Asset Class 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 the Broad Fixed Income Asset Class to the Bloomberg 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:

Staff will have full discretion to manage the Broad Fixed Income Asset Class 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:

The Broad Fixed Income Asset Class may invest only in the following:

1. Fixed income 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 fixed income securities 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), a vehicle available through the Custodian, or an SEC registered money market fund that is considered a “US Treasury” or “US Government” money market fund per the SEC regulations.

Other Restrictions

1. The average duration of the Broad Fixed Income Asset Class will be maintained in a range of + or – 25% of the index duration;
2. A maximum of 15% of the market value Net Asset Value of the Broad Fixed Income Asset Class shall be invested in fixed income securities either non-rated or rated lower than Baa3 by Moody’s or BBB- by S&P or Fitch. (In the case of split rated securities, the lowest rating will apply.);
3. A maximum of 5% of the market value Net Asset Value of the Broad Fixed Income Asset Class shall be invested in dedicated Emerging Market mandates securities;
4. A maximum of 5% of the market value Net Asset Value of the Broad Fixed Income Asset Class shall be invested in Cash held at the Asset Class level (not including cash held by internal or external managers in separate accounts or commingled funds); and
5. The Broad Fixed Income Asset Class market value invested in any single mandate/portfolio using an active investment strategy, other than internally managed mandates, shall be no greater than 5% of the Total Retirement Plan Assets.

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 considering 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 Broad Fixed Income Asset Class allocations were outside of the limits and either inform the Board of the actions that were taken to return the Broad Fixed Income Asset Class back within guidelines or a plan to do so.
Schedule II-H:
Investment Objectives and Guidelines
US Treasury/Agency Fixed Income Asset Class

Effective Date of Schedule:  April 5, 2017May 1, 2018

This Schedule is effective upon adoption by the Board of Investments and supersedes all previous Investment Objectives and Guidelines for US Treasury/Agency Asset Class.

Statement of Purpose:
The purpose of these objectives and guidelines is to:

1. Establish the investment objectives and performance standards of the US Treasury/Agency Asset Class; and
2. Provide diversified exposure to the US Treasury/Agency markets in a prudent and cost-effective manner.

Investment Objective:

Strategic:
The objective of the US Treasury/Agency Asset Class 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 US Treasury/Agency Asset Class to the Bloomberg Barclays US Intermediate Treasury 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:

Staff will have full discretion to manage the US Treasury/Agency Asset Class 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:

The US Treasury/Agency Asset Class may invest only in the following:

1. Fixed Income 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 Fixed income 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), a vehicle available through the Custodian, or an SEC registered money market fund that is considered a “US Treasury” or “US Government” money market fund per the SEC regulations.

Other Restrictions

1. The average duration of the US Treasury/Agency Asset Class will be maintained in a range of + or – 20% of the Benchmark duration;
2. A minimum of 70% of the market value Net Asset Value of the US Treasury/Agency Asset Class shall be held in U.S. Treasury securities;
3. A maximum of 20% of the market value Net Asset Value of the US Treasury/Agency Asset Class shall be held in U.S. TIPS (Treasury Inflation-Protected Securities);
4. A maximum of 30% of the market value Net Asset Value of the US Treasury/Agency Asset Class shall be held in U.S. Agency Fixed Income securities;
5. A maximum of 10% of the market value Net Asset Value of the US Treasury/Agency Asset Class shall be held in U.S. Agency CMBS securities;
6. The maximum maturity for individual securities held in the US Treasury/Agency Asset Class shall be 12 years; and
7. A maximum of 10% of the market value Net Asset Value of the US Treasury/Agency Asset Class shall be invested in Cash held at the Asset Class level (not including cash held by internal or external managers in separate accounts or commingled 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 considering 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 US Treasury/Agency Asset Class allocations were outside of the limits and either inform the Board of the actions that were taken to return the Asset Class back within guidelines or a plan to do so.
Schedule II-I:
Investment Objectives and Guidelines
Investment Grade Credit Asset Class

Effective Date of Schedule: April 5, 2017
May 1, 2018

This Schedule is effective upon adoption by the Board of Investments and supersedes all previous Investment Objectives and Guidelines for Investment-Grade Credit Asset Class.

Statement of Purpose:
The purpose of these objectives and guidelines is to:

1. Establish the investment objectives and performance standards of the Investment Grade Credit Asset Class; and
2. Provide diversified exposure to the Fixed Income Investment Grade Credit markets in a prudent and cost-effective manner.

Investment Objective:

Strategic:
The objective of the Investment Grade Credit Asset Class 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 Investment Grade Credit Asset Class to the Bloomberg Barclays US Intermediate Corporate 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:

Staff will have full discretion to manage the Investment Grade Credit Asset Class 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:

The Investment Grade Credit Asset Class may invest only in the following:

1. Fixed income 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 fixed income securities 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), a vehicle available through the Custodian, or an SEC registered money market fund that is considered a “US Treasury” or “US Government” money market fund per the SEC regulations.

Other Restrictions

1. At the time of purchase, corporate securities must be rated investment-grade (Baa3/BBB-/BBB- or higher) using the middle rating of Moody’s, S&P, and Fitch. Securities must have a minimum of two ratings from Moody’s, S&P or Fitch; when a rating from only two agencies is available, in the case of split-rated securities, the lower rating is used;
2. Securities that drop below investment-grade as defined above may be held to maturity, however the Investment Grade Credit Asset Class may not hold more than 5% of its market value/Net Asset Value in securities rated below investment-grade;
3. A maximum of 10% of the market value/Net Asset Value of the Investment Grade Credit Asset Class shall be held in Non-U.S. securities in a foreign currency;
4. The average duration of the Investment Grade Credit Asset Class will be maintained in a range of + or – 20% of the Benchmark duration;
5. The maximum maturity for individual securities held in the Investment Grade Credit Asset Class will be 12 years;
6. A maximum of 5% of the market value/Net Asset Value of the Investment Grade Credit Asset Class shall be invested in Cash held at the Asset Class level (not including cash held by internal or external managers in separate accounts or commingled funds); and
7. The Investment Grade Credit Asset Class market value invested in any single mandate/portfolio using an active investment strategy, other than internally managed mandates, shall be no greater than 5% of the Total Retirement Plan Assets.

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 considering 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 Investment Grade Credit Asset Class allocations were outside of the limits and either inform the Board of the actions that were taken to return the Investment Grade Credit Asset Class back within guidelines or a plan to do so.
Schedule II-J:
Investment Objectives and Guidelines
Agency Mortgage-Backed Securities Asset Class

Effective Date of Schedule: April 5, 2017

This Schedule is effective upon adoption by the Board of Investments and supersedes all previous Investment Objectives and Guidelines for Agency Mortgage-Backed Securities.

Statement of Purpose:
The purpose of these objectives and guidelines is to:

1. Establish the investment objectives and performance standards of the Agency Mortgage-Backed Securities Asset Class; and
2. Provide diversified exposure to the Mortgage-Backed markets in a prudent and cost-effective manner.

Investment Objective:

Strategic:
The objective of the Agency Mortgage-Backed Asset Class 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 Agency Mortgage-Backed Asset Class to the Bloomberg Barclays US MBS 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:

Staff will have full discretion to manage the Agency Mortgage-Backed Asset Class 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:

The Agency Mortgage-Backed Asset Class 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 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), a vehicle available through the Custodian, or an SEC registered money market fund that is considered a “US Treasury” or “US Government” money market fund per the SEC regulations.

Other Restrictions:

1. A maximum of 20% of the Net Asset Value of the Agency Mortgage-Backed Asset Class may be held in U.S. Treasury/Agency securities;
2. A maximum of 10% of the Net Asset Value of the Agency Mortgage-Backed Asset Class shall be held in Non-U.S. securities whether they are denominated in U.S. dollars or a foreign currency;
3. A maximum of 10% of the Net Asset Value of the Agency Mortgage-Backed Asset Class shall be held in U.S. residential Non-Agency Mortgage-Backed Securities (MBS & CMO);
4. A maximum of 10% of the Net Asset Value of the Agency Mortgage-Backed Asset Class shall be held in asset backed securities (ABS);
5. A maximum of 10% of the Net Asset Value of the Agency Mortgage-Backed Asset Class shall be held in commercial mortgage backed securities (CMBS);
6. The average duration of the Agency Mortgage-Backed Asset Class will be maintained in a range of + or – 20% of the index duration;
7. A maximum of 10% of the Net Asset Value of the Agency Mortgage-Backed Asset Class shall be invested in fixed income securities either non-rated or rated lower than Aaa by Moody’s or AAA by S&P or Fitch. (In the case of split rated securities, the lowest rating will apply.);
8. A maximum of 5% of the Net Asset Value of the Agency Mortgage-Backed Asset Class shall be invested in Cash held at the Agency Mortgage-Backed Asset Class level (not including cash held by internal or external managers in separate accounts or commingled funds); and
9. The Agency Mortgage-Backed Asset Class market value invested in any single mandate/portfolio using an active investment strategy, other than internally managed mandates, shall be no greater than 5% of the Total Retirement Plan Assets

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 considering 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 Agency Mortgage-Backed Asset Class allocations were outside of the limits and either inform the Board of the actions that were taken to return the Asset Class back within guidelines or a plan to do so.
Schedule II-K:  
Investment Objectives and Guidelines  
High Yield Asset Class

Effective Date of Schedule:  April 5, 2017 \( \text{May 1, 2018} \)

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

Statement of Purpose:
The purpose of these objectives and guidelines is to:

1. Establish the investment objectives and performance standards of the High Yield Asset Class; and
2. Provide diversified exposure to the High Yield markets in a prudent and cost-effective manner.

Investment Objective:

Strategic:  
The objective of the High Yield Asset Class 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 the High Yield Asset Class to the Bloomberg Barclays US High Yield - 2% Issuer Cap 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:

Staff will have full discretion to manage the High Yield Asset Class 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:

The High Yield Asset Class 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 fixed income securities 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), a vehicle available through the Custodian, or an SEC registered money market fund that is considered a “US Treasury” or “US Government” money market fund per the SEC regulations.

Other Restrictions

1. A maximum of 510% of the market value/Net Asset Value of the High Yield Asset Class shall be held in Non-U.S. securities if they are denominated in a foreign currency;
2. The average duration of the High Yield Asset Class will be maintained in a range of + or – 25% of the index duration;
3. A maximum of 510% of the market value/Net Asset Value of the High Yield Asset Class shall be invested in dedicated Emerging Market Debt securities;
4. A maximum of 5% of the market value/Net Asset Value of the High Yield Asset Class shall be invested in Cash held at the Asset Class level (not including cash held by internal or external managers in separate accounts or commingled funds); and
5. The High Yield Asset Class market value invested in any single mandate/portfolio using an active investment strategy, other than internally managed mandates, shall be no greater than 5% of the Total Retirement Plan Assets

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 considering 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 High Yield Asset Class allocations were outside of the limits and either inform the Board of the actions that were taken to return the High Yield Asset Class back within guidelines or a plan to do so.
Schedule II-L:
Investment Objectives and Guidelines
Cash Asset Class

Effective Date of Schedule: April 5, 2017/May 1, 2018

This Schedule is effective upon adoption by the Board of Investments and supersedes all previous Investment Objectives and Guidelines for the Cash Asset Class that is part of the Consolidated Asset Pension Pool.

Statement of Purpose:
The purpose of these objectives and guidelines is to:

1. Establish the investment objectives and performance standards of the Cash Asset Class; and
2. Provide exposure to the cash-equivalent markets in a prudent and cost-effective manner.

Investment Objective:

Strategic:
The objective of the Cash Asset Class 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 the Cash Asset Class to the Federal Reserve US Treasury Constant Maturity 1-Month Index 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:
Staff will have full discretion to manage the Cash Asset Class 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:
The Cash Asset Class may invest only in the following:

1. Cash and Cash Equivalents – either an investment in the Short-Term Investment Pool (STIP), a vehicle available through the Custodian, or an SEC registered money market fund that is considered a “US Treasury” or “US Government” money market fund per the SEC regulations.

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 considering 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 Cash Asset Class allocations were outside of the limits and either inform the Board of the actions that were taken to return the Cash Asset Class back within guidelines or a plan to do so.
Schedule II-M:
Investment Objectives and Guidelines
Diversifying Strategies Asset Class

Effective Date of Schedule: February 13, 2018

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

Statement of Purpose:
The purpose of these objectives and guidelines is to:

1. Establish the investment objectives and performance standards of the Asset Class.
2. Provide diversified exposure to CAPP (Consolidated Asset Pension Pool) in a prudent and cost-effective manner.

Investment Objective:

Strategic:
The objective of the Diversifying Strategies Asset Class is to provide additional diversification to the Retirement Plans beyond the diversification derived from the other asset classes and to assist in achieving the long-term expected returns for the Retirement Plans.

These objectives are expected to be achieved over a long-period of time by:

1. Reducing the impact of negative investment performance for the Retirement Plans during periods of significant decline in the Public Equity markets.
2. Helping to complement the other asset classes in targeting investment strategies that are expected to produce investment returns greater than the level provided by cash or a short U.S. Treasury investment.

Performance and Risk:
Success in achieving this objective will be measured by comparing the risk and after-fee return of Diversifying Strategies Asset Class to the Bloomberg Barclays US Intermediate Treasury 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 Diversifying Strategies Asset Class shall invest in a wide spectrum of global public securities investment types (including, but not limited to, equities, commodities, currencies, preferred stocks, convertible bonds, fixed income, and cash equivalents).

It is expected that Diversifying Strategies shall invest in public market investments that provide liquidity and meaningful transparency to portfolio characteristics and risk exposures.
The Diversifying Strategies Asset Class may invest in both single-asset class strategies and multi-asset class strategies.

Diversifying Strategies will utilize long-only, short-only, and long/short strategies.

Permitted Investments:

The Diversifying Strategies Asset Class may invest in the following:

1. Securities and derivatives held in separate accounts, open-ended funds, closed-ended funds, 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. Individual public or private securities received as distributions from funds listed above;
3. Exchange-Traded Funds (ETFs) based on a public market index that is approved by the Chief Investment Officer and purchased and monitored by Staff;
4. Fixed Income Portfolios including longer-maturity U.S. Treasury fixed income securities that are approved for purchase by the Chief Investment Officer and purchased and monitored by Staff; and
5. Cash – either an investment in the Short-Term Investment Pool (STIP), a vehicle available through the Custodian, or an SEC registered money market fund that is considered a “US Treasury” or “US Government” money market fund per the SEC regulations.

Other Restrictions:

1. Cash held at the Diversifying Strategies Asset Class level (not including cash held by external managers in separate accounts or commingled funds) is limited to 5% of the Diversifying Strategies Asset Class market value / Net Asset Value;
2. The Diversifying Strategies Asset Class shall not invest in single-asset class dedicated mandates where the investment strategy is considered consistent with one of the other CAPP Asset Classes;
3. Individual public or private securities received as distributions will be liquidated over a reasonable time-period dependent on market conditions; and
4. The CAPP percentage of market value / Net Asset Value invested with a single external investment manager or General Partner within the Diversifying Strategies Asset Class shall be no greater than 1%.

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, considering current market conditions and the associated costs of rebalancing. At the Board’s next regularly scheduled quarterly meeting, the Chief Investment Officer shall inform the Board of any cases that the Diversifying Strategies Asset Class allocations were outside of the limits and either inform the Board of the actions that were taken to return the Diversifying Strategies Asset Class back within guidelines or provide a plan to do so.
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: Jon Putnam, Director of Fixed Income
Date: April 3, 2018
Subject: Proposed Investment Policy Statement Changes

Proposed Investment Policy Statements as well as the existing Investment Policy Statements follow this memo for the following accounts:

- Clark Fork Site Response Action Fund
- Streamside Tailings Operable Settlement Fund
- Upper Blackfoot Response Action and Restoration Fund
- Public School Trust
- Resource Indemnity Trust Fund
- Cultural Trust Fund

The Objectives and Guidelines for all accounts have been updated to conform with the new format. There is no significant change to how accounts are currently managed.
SHORT-TERM INVESTMENT POOL (STIP)
INVESTMENT POLICY

Approved February 14, 2017
Proposed April 3, 2018
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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 net asset value (NAV), to the extent deemed prudent by Staff.

A deduction from earnings will occur while the amount of the reserve is below 1.15% of the NAV.

The level of deduction will be calculated based on the deemed best balance between participants’ need for current earnings and the increase in safety from building the reserve. When the reserve is between 0.50% and 1.15% of the NAV the deduction from earnings will be an amount, including recoveries, sufficient to reach the target within 3 years. Should the reserve fall below 0.50% of the NAV, staff will evaluate the amount of deduction appropriate to return the reserve to 0.50% and make recommendations to that effect to the Board.

The STIP 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:

1) 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.

2) 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.

**STIP assets are currently not available for securities lending.**

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.”
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.

1. 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.

2. 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 Federal Reserve US Treasury Constant Maturity 1 Month 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.

3. 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 30% 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. ABCP, CP, BA or CD 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;
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
14.13. A maximum of 5% of the STIP Units Value shall be held in ABCP, CP, BA or CD rated at A-2 (S&P), P-2 (Moody’s), or F2 (Fitch), or at a lower rating at any time;

15. ABCP purchases shall be limited to maturities of 90 days or less;

16. A maximum of 10% of the STIP Units Value shall be held in ABCP with maturities greater than 60 days;

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;

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;

21. A maximum of 10% of the STIP Units Value shall be held in Repurchase Agreements;

22. A maximum of 5% of the STIP Units Value shall be held in Repurchase Agreements with any single primary dealer or financial institution;

23. The maximum term of any Repurchase Agreement will be 30 days;

24. Acceptable forms of collateral under Repurchase Agreements will consist of U.S. Treasury Securities which will be required to be maintained at a market value of 102% of the value of the Repurchase Agreement;

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;

26. A maximum of 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;

27. A maximum of 15% of the STIP Units Value shall be held in permitted SEC registered 2a-7 Institutional Money Market Funds;

28. A maximum of 5% of the STIP Units Value shall be held in any single SEC registered 2a-7 Institutional Money Market Funds;

29. Any permitted investments with floating rate coupons shall have the floating rate tied to LIBOR, Fed Funds, Treasury Bills, or Commercial Paper indices;

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);

31. A Variable Rate security shall have a maximum maturity of 2 years;

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 397 days;

33. A maximum of 3% 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
34. A minimum of 10% of the STIP Units Value shall qualify as “daily liquid assets.” 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;

35. A minimum of 15% of the STIP Units Value shall qualify as “weekly liquid assets.” 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; and

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.
Schedule I-B:

Investment Objectives and Guidelines Short Term
Investment Pool (STIP) Reserve

Effective Date of Schedule: February 14, 2017

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

1. Statement of Purpose:

The purpose of these objectives and guidelines is to:

1) Establish the investment objectives and performance standards for the STIP Reserve
2) Provide exposure to low risk Cash Equivalent and Short-Term Fixed Income Investments in a prudent and cost-effective manner.

2. Investment Objective:

Strategic:
The objective of the Reserve is to attain the highest available 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 the Reserve to a U.S. Treasury Constant Maturity 1 Month 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.

3. Investment Guidelines:

The Montana Board Investment Staff will have full discretion to manage the STIP Reserve 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; U.S. Agency obligations or qualifying government money market funds are prohibited.

1) U.S. Treasury Securities
2) U.S. Government Agency securities issued at a discount
3) 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

4. Other Restrictions

1) The maximum final maturity of any Permitted Investment shall not exceed 183 days
2) A minimum of 50% of the Reserve shall qualify as “daily liquid assets.” 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;

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.
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.
TRUST FUNDS INVESTMENT POOL
INVESTMENT POLICY

Proposed April 3, 2018
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1. **Introduction:**

The Trust Funds Investment Pool (TFIP) was created by the Board on October 1, 1995. The pool is designed to provide participants exposure to a portfolio of income-producing assets. The use of a commingled pool allows for simplified investing and accounting, broader diversification and thus less risk than would otherwise be available for individual participants. The Trust Funds Investment Pool invests directly in the underlying Asset Classes. Each Asset Class has an underlying set of investment objectives and investment guidelines. Each account participating in the Trust Funds Investment Pool 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.*

2. **Purpose:**

The purpose of this policy statement is to provide a broad strategic framework for the Trust Funds Investment Pool 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, 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, as the investment fiduciary, is responsible for establishing the investment parameters for the Trust Funds Investment Pool.

4. **Strategic Investment Objectives**

The Board’s primary objective is to provide investment income to participants. The Board’s secondary objective is to achieve the highest level of investment performance. Both objectives must be compatible with the Board’s risk tolerance and prudent investment practices. The Board seeks to maintain a long-term perspective in formulating and implementing investment policies and evaluating 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 the objectives.

6. **Performance Measurement**

Success in achieving these objectives will be measured by comparing the risk and return of the account to the Bloomberg/Barclays U.S. Aggregate Bond Index (the “Benchmark”). Performance results will be monitored and evaluated quarterly. However, success in achieving the objective will be measured on a three-year, five-year, and ten-year annualized basis.

7. **Roles and Responsibilities**

   a) **Board of Investments** – The Board is responsible for approving the Investment Policy Statement for the Trust Funds Investment Pool and has the authority to manage the Trust Funds Investment Pool 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.

   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 is responsible for the oversight of the Trust Funds Investment Pool and the establishment of the financial reporting procedures and the collection and reporting of all income.

   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 shall provide assistance to Staff as requested in conjunction with the management of all separate accounts.

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 current asset allocation ranges for the Trust Funds Investment Pool 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.

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 separate accounts. Rebalancing to remain within the Board-approved allocation ranges is delegated to staff in consultation with the Chief Investment Officer (CIO) and the Executive Director. Any necessary rebalancing will be made in a timely manner and will take into consideration associated costs and current market conditions.

10. **Risk Management**

   a) **Evaluation of Investment Managers**

       The Investment Manager Evaluation Policy is a distinct policy that is regularly reviewed and updated separate from the Trust Funds Investment Pool Investment Policy because staff utilizes the Investment Manager Evaluation Policy to oversee and manage other assets in addition to the Trust Funds Investment Pool assets.

   b) **Liquidity**

       Many participants in the Trust Funds Investment Pool spend the income generated from their holdings. However, the total liquidity needs for the Trust Funds Investment Pool 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 pool participants.

       A significant percentage of the investment in Core Real Estate is considered illiquid. Due to the limited liquidity of these assets, it will typically be impractical to fund participant cash needs or correct deviations from policy ranges through the purchase or sale of these assets.
The investments held in Investment Grade and High Yield Fixed Income are categorized as publicly traded securities. In “normal market” conditions many of the underlying assets can be liquidated in a relatively short period to accommodate both expected and unexpected withdrawals as well as any repositioning of the asset allocation to stay within approved ranges.

c) 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 Trust Funds Investment Pool to confirm these items are known and adhere to all Investment Policy requirements and expectations.

d) 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.

e) Cash Investments
Cash investments held within the Trust Funds Investment Pool 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. 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 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 account activity, market conditions and the agent agreement.
12. Exercise of Shareholder Rights

a) Proxy Voting
Per the Montana Constitution, Article VIII, Section 13 “no public funds shall be invested in private corporate capital stock” with the exception of public retirement system and state compensation insurance fund assets. Therefore, the Trust Funds Investment Pool does not participate in 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.

13. 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: Trust Funds Investment Pool Allocation Ranges

Permitted Ranges:

Proposed April 3, 2018

<table>
<thead>
<tr>
<th>Asset Class</th>
<th>Range Low</th>
<th>Range High</th>
</tr>
</thead>
<tbody>
<tr>
<td>Real Estate</td>
<td>0</td>
<td>8</td>
</tr>
<tr>
<td>High Yield Fixed Income</td>
<td>0</td>
<td>10</td>
</tr>
<tr>
<td>Investment Grade Fixed Income &amp; Cash</td>
<td>82</td>
<td>100</td>
</tr>
</tbody>
</table>
Schedule II-A:  
Investment Objectives and Guidelines  
Real Estate Asset Class  

Proposed Date of Schedule:  April 3, 2018  

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

Statement of Purpose:  

The purpose of these objectives and guidelines is to:  

1. Establish the investment objectives and performance standards of the Real Estate Asset Class; and  
2. Provide diversified exposure to Real Estate in a prudent and cost-effective manner.  

Investment Objective:  

Strategic:  
The objective of the Real Estate Asset Class 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 the Real Estate Asset Class to the MSCI US REIT 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.  

Investment Guidelines:  

Staff will have full discretion to manage the Real Estate Asset Class 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.  

Most of the Real Estate Asset Class investments will be managed by external investment managers.  

Permitted Investments:  

The Real Estate Asset Class may invest only in the following:  

1. Separate Accounts, Open-Ended Funds, Closed-Ended Funds, Exchange-Traded Funds (ETFs), Real Estate Investment Trusts (REITs), or Master Limited Partnerships (MLPs) managing publicly traded Real Estate, where the investments are approved by the Chief Investment Officer and purchased and monitored by Staff;
2. 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.

3. The Real Estate Asset Class 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 are also permitted to be held in the Real Estate Asset Class; and

5. Cash – either an investment in the Short-Term Investment Pool (STIP), a vehicle available through the Custodian, or an SEC registered money market fund that is considered a “US Treasury” or “US Government” money market fund per the SEC regulations.

Other Restrictions

1. No less than 85% of the aggregate of the Real Estate Asset Class net asset value plus capital shall be invested in “Core” Real Estate. Real Estate is classified as “Core” if it is an investment in operating, substantially leased, and positively cash flowing institutional quality real estate across property types, geographies and markets;

2. No more than 35% of the aggregate of the Real Estate Asset Class net asset value plus uncalled committed capital should be in a single Fund, Partnership, or Separate Account;

3. Individual public securities received as distributions will be liquidated over a reasonable time period dependent on market conditions;

4. Cash held at the Real Estate Asset Class level (not including cash held in the underlying partnership interests, funds, or accounts) is limited to 5% of the Real Estate Asset class market value.

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 50.0 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 Real Estate Asset Class leverage shall not exceed 50%.

<table>
<thead>
<tr>
<th>Strategy</th>
<th>Leverage Policy Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Core Real Estate Investments</td>
<td>0% - 50%</td>
</tr>
</tbody>
</table>

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 considering 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 Real Estate Asset Class allocations were outside of the limits and either inform the Board of the actions that were taken to return the Real Estate Asset Class 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 the Real Estate Asset Class shall remain diversified across these factors. These and other factors shall be monitored and reported to the Board at least annually.
Schedule II-B:  
Investment Objectives and Guidelines  
High Yield Asset Class

Proposed Date of Schedule: April 3, 2018

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

Statement of Purpose:
The purpose of these objectives and guidelines is to:

1. Establish the investment objectives and performance standards of the High Yield Asset Class; and
2. Provide diversified exposure to the High Yield markets in a prudent and cost-effective manner.

Investment Objective:

Strategic:
The objective of the High Yield Asset Class 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 the High Yield Asset Class to the Bloomberg Barclays US High Yield - 2% Issuer Cap 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:

Staff will have full discretion to manage the High Yield Asset Class 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:

The High Yield Asset Class 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; and
2. Individual fixed income securities 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), a vehicle available through the Custodian, or an SEC registered money market fund that is considered a “US Treasury” or “US Government” money market fund per the SEC regulations.

Other Restrictions

1. A maximum of 5% of the market value of the High Yield Asset Class shall be held in Non-U.S. securities if they are denominated in a foreign currency;
2. The average duration of the High Yield Asset Class will be maintained in a range of + or – 25% of the index duration;
3. A maximum of 5% of the market value of the High Yield Asset Class shall be invested in dedicated Emerging Market Debt mandates;
4. A maximum of 5% of the market value of the High Yield Asset Class shall be invested in Cash held at the Asset Class level (not including cash held by internal or external managers in separate accounts or commingled funds); and
5. The High Yield Asset Class market value invested in any single mandate/portfolio using an active investment strategy, other than internally managed mandates, shall be no greater than 5% of the Trust Fund Investment Pool Assets

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 considering 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 High Yield Asset Class allocations were outside of the limits and either inform the Board of the actions that were taken to return the High Yield Asset Class back within guidelines or a plan to do so.
Schedule II-C:  
Investment Objectives and Guidelines 
Investment Grade Fixed Income Asset Class 

Proposed Date of Schedule:  April 3, 2018 

This Schedule is effective upon adoption by the Board of Investments and supersedes all previous Investment Objectives and Guidelines for Investment Grade Fixed Income Asset Class. 

Statement of Purpose:  
The purpose of these objectives and guidelines is to:  

1. Establish the investment objectives and performance standards of the Investment Grade Fixed Income Asset Class; and
2. Provide diversified exposure to the Investment Grade Fixed Income markets in a prudent and cost-effective manner. 

Investment Objective:  

Strategic: 
The objective of the Investment Grade Fixed Income Asset Class 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 Investment Grade Fixed Income Asset Class to the Bloomberg 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:  

Staff will have full discretion to manage the Investment Grade Fixed Income Asset Class 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:  

The Investment Grade Fixed Income Asset Class may invest only in the following:  

1. Fixed income 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 fixed income securities 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), a vehicle available through the Custodian, or an SEC registered money market fund that is considered a “US Treasury” or “US Government” money market fund per the SEC regulations.

Other Restrictions

1. At the time of purchase, corporate securities must be rated investment-grade (Baa3/BBB-/BBB- or higher) by Moody’s, S&P, or Fitch. (in the case of split rated securities, the lowest rating will apply);
2. Securities that drop below investment-grade as defined above may be held to maturity, however the Investment Grade Fixed Income Asset Class may not hold more than 5% of its market value in securities rated below investment-grade;
3. A maximum of 10% of the market value of the Investment Grade Fixed Income Asset Class shall be held in Non-U.S. securities in a foreign currency;
4. The average duration of the Investment Grade Fixed Income Asset Class will be maintained in a range of + or – 20% of the Benchmark duration;
5. The maximum maturity for individual securities held in the Investment Grade Fixed Income Asset Class will be 35 years;
6. A maximum of 5% of the market value of the Investment Grade Fixed Income Asset Class shall be invested in Cash held at the Asset Class level (not including cash held by internal or external managers in separate accounts or commingled funds); and
7. The Investment Grade Fixed Income Asset Class market value invested in any single mandate/portfolio using an active investment strategy, other than internally managed mandates, shall be no greater than 5% of the Total Trust Funds Investment Pool Assets.

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 considering 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 Investment Grade Fixed Income Asset Class allocations were outside of the limits and either inform the Board of the actions that were taken to return the Investment Grade Fixed Income Asset Class back within guidelines or a plan to do so.
INTRODUCTION

The purpose of this policy statement is to provide a broad strategic framework for investments within the Trust Funds Investment Pool (TFIP). The pool’s participants consist primarily of the state’s trust funds. The pool is designed to provide the participants exposure to a portfolio of diversified income-producing assets. The pool’s assets include an investment grade fixed income portfolio managed internally by MBOI staff, one or more core real estate funds, and one or more high yield fixed income funds. Allocation across these asset classes is limited to the following ranges. The use of high yield fixed income and core real estate investments are justified in order to diversify the sources of income provided by the pool, however are constrained to prudent levels of maximum exposure given their unique and somewhat more volatile return patterns.

<table>
<thead>
<tr>
<th>Asset Class</th>
<th>Minimum</th>
<th>Maximum</th>
</tr>
</thead>
<tbody>
<tr>
<td>Investment grade fixed income</td>
<td>0%</td>
<td>100%</td>
</tr>
<tr>
<td>High yield fixed income</td>
<td>0%</td>
<td>10%</td>
</tr>
<tr>
<td>Core real estate</td>
<td>0%</td>
<td>8%</td>
</tr>
</tbody>
</table>

The primary component of the pool consists of the investment grade fixed income portfolio. The investment guidelines governing the management of that portfolio are contained herein. The other asset categories represented in the pool are advised by external managers. Specific portfolio guidelines that prohibit or constrain certain types of securities or real estate investments will be addressed in the managers’ specific investment guidelines. A brief description of these other asset classes follows.

High Yield Fixed Income: This sector consists of predominantly U.S. corporate credits, whether in the form of bonds or loans that are rated below investment grade. These assets carry a higher risk of default than investment grade securities and accordingly provide a higher level of income or yield commensurate with that risk.

Core Real Estate: Equity investment in operating and substantially-leased institutional quality real estate in the traditional property types (apartment, office, retail, industrial and hotel). Net long-term returns historically have been in the 4.0 percent to 6.0 percent range (inflation-adjusted and net of fees) and are typically comprised of greater levels of income (i.e., two-thirds of long-term total returns) with appreciation matching or exceeding inflation.

OBJECTIVES: Investment Grade Fixed Income Portfolio

Strategic: Attaining a competitive stream of income in the fixed income markets while diversifying investment risk. The primary objective of the Trust Fund Bond Pool portfolio is to provide diversified exposure to the various sectors of the investment grade bond market for the benefit of fund participants in a prudent and cost effective manner. In this sense the portfolio investment strategy is core-like and is to be benchmarked against the Barclays Capital Aggregate Bond Index. The portfolio will also provide primary liquidity to fund participants and to facilitate allocation between the other asset classes held in the pool.

Performance: The objective of the TFBP is to achieve a moderate yield advantage to the Barclays Capital Aggregate bond index. Ideally, the annualized time weighted total return will exceed that of the Barclays Capital Aggregate Bond Index over a three year rolling period.
PERMITTED INVESTMENTS: Investment Grade Fixed Income Portfolio

- Debt obligations of the U.S. Government, including its agencies and instrumentalities. These include Treasuries, Treasury Inflation Protected Securities (TIPS) and fixed and floating rate agency obligations.
- Dollar denominated debt obligations of developed country foreign governments.
- Dollar denominated debt obligations of index-eligible supranational agencies.
- Dollar denominated debt obligations of domestic and foreign corporations (Yankee bonds) up to 2% of portfolio assets per issuer. These may include Trust Preferred securities and be fixed or floating rate coupon structures.
- Securitized assets, including U.S. Agency mortgage pass-through securities (MBS), non-agency MBS (limited to 3% of portfolio market value in total), collateralized mortgage obligations (CMO’s), commercial mortgage backed securities (CMBS), hybrid ARMS and asset backed securities (ABS).
- When issued securities.
- Rule 144a securities.
- Medium term notes.
- Short term investment pool (STIP).
- Loans for the Montana CRP Program.

PROHIBITED INVESTMENTS: Investment Grade Fixed Income Portfolio

- Over the counter derivatives, including interest rate swaps and credit default swaps.
- Short sales and securities margin loans.
- Bank loans.
- Interest only (IO) and principal only (PO) mortgage strips.
- Companion/residual/equity tranches of CMO’s or other structured securities.
- Capital securities (convertible from fixed to floating).
- Inverse floaters.
- Convertible bonds.

CONSTRAINTS: Investment Grade Fixed Income Portfolio

**Credit quality:** Securities must be rated investment grade, or no lower than triple-B minus, by two nationally recognized securities rating organizations (NRSRO) at time of purchase, with the exception of non-rated securities issued or guaranteed by agencies or instrumentalities of the U.S. Government. Securities downgraded below investment grade may be held at the portfolio manager's discretion. Non-rated securities will be assigned an internal “equivalent” rating.

**Duration:** The weighted average effective duration of the portfolio, including cash, must be within 20% of the duration of the Barclays Capital Aggregate Bond index.
MONTANA BOARD OF INVESTMENTS
TRUST FUNDS INVESTMENT POOL (MU41) (FUND 07112)
INVESTMENT POLICY STATEMENT

Sector: The portfolio sector exposure will be maintained within the ranges shown in the table below.

ASSET ALLOCATION SECTORS & RANGES
(At market)

<table>
<thead>
<tr>
<th>Sectors</th>
<th>Policy Ranges</th>
</tr>
</thead>
<tbody>
<tr>
<td>U.S. Treasury</td>
<td>15-45</td>
</tr>
<tr>
<td>Government Related</td>
<td>2-10</td>
</tr>
<tr>
<td>Total Government</td>
<td>20-60</td>
</tr>
<tr>
<td>MBS</td>
<td>20-40</td>
</tr>
<tr>
<td>Asset Backed Securities</td>
<td>0-7</td>
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<tr>
<td>CMBS</td>
<td>0-12</td>
</tr>
<tr>
<td>Total Structured</td>
<td>20-59</td>
</tr>
<tr>
<td>Corporate Credit</td>
<td>15-40</td>
</tr>
<tr>
<td>Total</td>
<td>100%</td>
</tr>
</tbody>
</table>

LIQUIDITY: Investment Grade Fixed Income Portfolio

Liquidity needs for the fixed income program are low, as participant capital allocated to the pool is not expected to change dramatically on short notice. Nevertheless, the underlying assets held are predominantly publicly traded securities which can normally be liquidated in a relatively short period to accommodate asset allocation changes between the internally managed fixed income portfolio and other asset categories held by the Trust Funds pool. Assets considered to be generally illiquid will be limited to 10% of the portfolio’s market value.

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 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.

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.
Schedule I-F
Investment Objectives and Guidelines
Clark Fork Site Response Action Fund

Proposed Effective Date of Schedule: April 3, 2018

This schedule is effective upon adoption by the Board of Investments and supersedes all previous Investment Objectives and Guidelines for this specific portfolio.

Introduction:
The purpose of this policy statement is to provide a framework for the Clark Fork Site Response Action Fund investments under the guidance of the Board.

The Clark Fork Site Response Action Fund originated in 2008, a Consent Decree was entered between the State of Montana, the United States and Atlantic Richfield Company (ARCO), in order to settle certain litigation and to provide for the funding of the remedial action at the Clark Fork River (CFR) Operable Unit. The settlement involves, among other things, payment by ARCO plus accrued interest. Those funds and the earnings from the investment of those funds are to be used by the State with oversight, input and approval from the United States EPA for the purpose of remediating the CFR over an estimated ten to twelve year period. Any funds left over after clean-up will be transferred, with EPA approval, to the Clark Fork State Restoration Account (established under the same Consent Decree). The fund balance at that time is expected to be mostly Trust Funds Investment Pool units (TFIP).

Statement of Purpose:
The purpose of these objectives and guidelines is to:

1. Establish the investment objectives and performance standards of the Clark Fork Site Response Action Fund account; and
2. Provide diversified investment exposure within the guidelines in a prudent and cost effective manner.

Investment Objective:

Strategic:
The objective of the Clark Fork Site Response Action Fund portfolio is to attain above benchmark total return within the parameters of the Investment Guidelines set forth below with an emphasis on investment income and preservation of principal.

Performance:
Success in achieving this objective will be measured by comparing the risk and return of the account to the Trust Funds Investment Pool benchmark and the Short-Term Investment Pool benchmark and the Bloomberg/Barclays 1-5 Year Treasury Index, each weighted proportionately to the portfolio’s holdings, over a five-year moving average.
Time Horizon:
The Clark Fork Site Response Action Fund is an expendable fund. Major expenditures are expected to continue through 2019, and projections though 2024 on a smaller scale. The Board expects to meet or exceed all 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.

Investment Guidelines:

The Montana Board of Investments will have full discretion to manage the Clark Fork Site Response Action Fund portfolio 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:

The Clark Fork Site Response Action Fund may only invest in the following:

1. U.S. Treasury Bonds
2. U.S. Agency Bonds
3. Trust Funds Investment Pool (TFIP)
4. Short-Term Investment Pool (STIP)

Other Restrictions:

1. A maximum of 20% of the market value of the portfolio will be invested in U.S. Treasury and Agency Bonds
2. A maximum of 95% of the market value of the portfolio will be invested in the Trust Funds Investment Pool (TFIP)

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 considering 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 allocations were outside the limits and either inform the Board of the actions that were taken to return the portfolio back within guidelines or a plan to do so.
Schedule I-H
Investment Objectives and Guidelines
Streamside Tailing Operable Settlement Fund

Proposed Effective Date of Schedule: April 3, 2018

This schedule is effective upon adoption by the Board of Investments and supersedes all previous Investment Objectives and Guidelines for this specific portfolio.

Introduction:
The purpose of this policy statement is to provide a framework for the Streamside Tailing Operable Settlement Fund investments under the guidance of the Board.

The Streamside Tailing Operable Settlement Fund originated in 1998, when a Consent Decree between the State of Montana, the United States, the Atlantic Richfield Company (ARCO), and others was created in order to settle certain litigation, and to provide funding for the implementation of the remedy for the Streamside Tailings Operable Unit of the Silver Bow Creek/Butte Area (original portion) NPL Site. Funds paid by ARCO and the earnings from the investment of those funds are to be used by the State and EPA for the purpose of remediating the mine waste contamination at the Streamside Tailings Operable Unit. Any funds, including earnings, which are not ultimately required for the remediation of the Streamside Tailings Operable Unit are to be used by the State for natural resource damage restoration purposes, and will be transferred to the Upper Clark Fork Restoration Fund. The fund balance at that time is expected to be mostly Trust Funds Investment Pool units (TFIP).

Statement of Purpose:
The purpose of these objectives and guidelines is to:

1. Establish the investment objectives and performance standards of the Streamside Tailing Operable Settlement Fund account; and
2. Provide diversified investment exposure within the guidelines in a prudent and cost-effective manner.

Investment Objective:

Strategic:
The objective of the Streamside Tailing Operable Settlement Fund portfolio is to attain above benchmark total return within the parameters of the Investment Guidelines set forth below with an emphasis on investment income and preservation of principal.

Performance:
Success in achieving this objective will be measured by comparing the risk and return of the account to the Trust Funds Investment Pool benchmark and the Short-Term Investment Pool benchmark and the Bloomberg/Barclays 1-5 Year Treasury Index, each weighted proportionately to the portfolio’s holdings, over a five-year moving average.
Time Horizon:
The Streamside Tailing Operable Settlement Fund is an expendable fund. Major expenditures are expected to continue through 2018, and projections though 2020 on a smaller scale. The Board expects to meet or exceed all 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.

Investment Guidelines:
The Montana Board of Investments will have full discretion to manage the Streamside Tailing Operable Settlement Fund portfolio 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:
The Streamside Tailing Operable Settlement Fund may only invest in the following:

1. U.S. Treasury Bonds
2. U.S. Agency Bonds
3. Trust Funds Investment Pool (TFIP)
4. Short-Term Investment Pool (STIP)

Other Restrictions:

1. A maximum of 60% of the market value of the portfolio will be invested in U.S. Treasury and Agency Bonds
2. A maximum of 90% of the market value of the portfolio will be invested in the Trust Funds Investment Pool (TFIP)

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 considering 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 allocations were outside the limits and either inform the Board of the actions that were taken to return the portfolio back within guidelines or a plan to do so.
Schedule I-I
Investment Objectives and Guidelines
Upper Blackfoot Response Action and Restoration Fund

Proposed Effective Date of Schedule: April 3, 2018

This schedule is effective upon adoption by the Board of Investments and supersedes all previous Investment Objectives and Guidelines for this specific portfolio.

Introduction:
The purpose of this policy statement is to provide a framework for the Upper Blackfoot Response Action and Restoration Fund investments under the guidance of the Board.

The Upper Blackfoot Response Action and Restoration Fund originated in 2008, when a Settlement Agreement was entered between the State of Montana, the United States, Asarco, LLC (Asarco) and the Atlantic Richfield Company (ARCO), in order to settle certain bankruptcy and other claims and to provide for the funding of response and restoration actions at the Upper Blackfoot Mining Complex (UBMC). All funds paid by Asarco and ARCO and the earnings from the investment of these funds are to be used by the State, as Lead Agency, in consultation with the United States Forest Service, for the purpose of conducting response and restoration activities within the UBMC Site. These actions include the removal of the Mike Horse Impoundment as provided in the USFS Action Memorandum dated July 23, 2007, and any amendments thereto. In addition, the State would perform additional remedial and restoration work outside the scope of the Action Memorandum, including the cleanup of tailings along the Upper Blackfoot River, Beartrap Creek, and Mike Horse Creek and restoration of those streams with the intention of restoring westslope cutthroat and bull trout to the area.

Statement of Purpose:
The purpose of these objectives and guidelines is to:

1. Establish the investment objectives and performance standards of the Upper Blackfoot Response Action and Restoration Fund account; and
2. Provide diversified investment exposure within the guidelines in a prudent and cost effective manner.

Investment Objective:

Strategic:
The objective of the Upper Blackfoot Response Action and Restoration Fund portfolio is to attain above benchmark total return within the parameters of the Investment Guidelines set forth below with an emphasis on investment income and preservation of principal.

Performance:
Success in achieving this objective will be measured by comparing the risk and return of the account to the Trust Funds Investment Pool benchmark and the Short-Term Investment Pool benchmark and the Bloomberg/Barclays 1-5 Year Treasury Index, each weighted proportionately to the portfolio’s holdings, over a five-year moving average.
**Time Horizon:**
The Upper Blackfoot Response Action and Restoration Fund is an expendable fund. The Board expects to meet or exceed all 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.

**Investment Guidelines:**

The Montana Board of Investments will have full discretion to manage the Upper Blackfoot Response Action and Restoration Fund portfolio 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:**

The Upper Blackfoot Response Action and Restoration Fund may only invest in the following:

1. U.S. Treasury Bonds
2. U.S. Agency Bonds
3. Trust Funds Investment Pool (TFIP)
4. Short-Term Investment Pool (STIP)

**Other Restrictions:**

1. A maximum of 80% of the market value of the portfolio will be invested in U.S. Treasury and Agency Bonds
2. A maximum of 30% of the market value of the portfolio will be invested in the Trust Funds Investment Pool (TFIP)
3. A minimum of 10% of the market value of the portfolio will be invested in the Short Term Investment Pool (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 considering 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 allocations were outside the limits and either inform the Board of the actions that were taken to return the portfolio back within guidelines or a plan to do so.
Schedule I-Y
Investment Objectives and Guidelines
Public School Trust

Proposed Effective Date of Schedule: April 3, 2018

This schedule is effective upon adoption by the Board of Investments and supersedes all previous Investment Objectives and Guidelines for this specific portfolio.

Introduction:
The purpose of this policy statement is to provide a framework for the Public School Trust investments (formerly referred to as the Trust and Legacy Fund) under the guidance of the Board.

The Public School Trust was established in 1973 by Article X, Section 2 of the Montana Constitution. The trust consists primarily of land granted to the State of Montana by the United States or other entities. The Public School Trust is administered by the Montana Department of Natural Resources.

Per Article X, Section 5 of the Montana Constitution, ninety-five percent of all interest received on fund investments and ninety-five percent of all income received from fund owned land shall be equitably apportioned to public school districts. Five percent of all interest received on fund investments and five percent of all income received from fund owned land shall be added to the Public School Trust.

Statement of Purpose:
The purpose of these objectives and guidelines is to:

1. Establish the investment objectives and performance standards of the Public School Trust account; and
2. Provide diversified investment exposure within the guidelines in a prudent and cost effective manner.

Investment Objective:

Strategic:
The objective of the Public School Trust portfolio is to attain above benchmark total return within the parameters of the Investment Guidelines set forth below with an emphasis on investment income and preservation of principal.

Performance:
Success in achieving this objective will be measured by comparing the risk and return of the account to the Trust Funds Investment Pool benchmark and the Short-Term Investment Pool benchmark, each weighted proportionately to the portfolio’s holdings, over a five-year moving average.

Time Horizon:
Public School Trust is a permanent account. The Board expects to meet or exceed all 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.
**Investment Guidelines:**

The Montana Board of Investments will have full discretion to manage the Public School Trust portfolio 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:**

Public School Trust may only invest in the following:

1. Trust Funds Investment Pool (TFIP)
2. Short-Term Investment Pool (STIP)

**Other Restrictions:**

1. A minimum of 95% of the market value of the portfolio will be invested in the Trust Funds Investment Pool (TFIP)

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 considering 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 allocations were outside the limits and either inform the Board of the actions that were taken to return the portfolio back within guidelines or a plan to do so.
This schedule is effective upon adoption by the Board of Investments and supersedes all previous Investment Objectives and Guidelines for this specific portfolio.

Introduction:
The purpose of this policy statement is to provide a framework for the Resource Indemnity Trust Fund investments under the guidance of the Board.

The Resource Indemnity Trust Fund is a trust that was established in 1973 by Article IX Section 2 of the Montana Constitution in the amount of $100 million. The principal of the trust “shall forever remain inviolate”. Earnings from the fund are to be used to “improve the total environment and rectify damage to the environment” per MCA 15-38-203. The trust is administered by the Department of Revenue.

Statement of Purpose:
The purpose of these objectives and guidelines is to:

1. Establish the investment objectives and performance standards of the Resource Indemnity Trust Fund account; and
2. Provide diversified investment exposure within the guidelines in a prudent and cost-effective manner.

Investment Objective:

Strategic:
The objective of the Resource Indemnity Trust Fund portfolio is to attain above benchmark total return within the parameters of the Investment Guidelines set forth below with an emphasis on investment income and preservation of principal.

Performance:
Success in achieving this objective will be measured by comparing the risk and return of the account to the Trust Funds Investment Pool benchmark and the Short-Term Investment Pool benchmark, each weighted proportionately to the portfolio’s holdings, over a five-year moving average.

Time Horizon:
Resource Indemnity Trust Fund is a permanent account. The Board expects to meet or exceed all 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.
Investment Guidelines:

The Montana Board of Investments will have full discretion to manage the Resource Indemnity Trust Fund portfolio 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:

Resource Indemnity Trust Fund may only invest in the following:

1. Trust Funds Investment Pool (TFIP)
2. Short-Term Investment Pool (STIP)

Other Restrictions:

1. A minimum of 95% of the market value of the portfolio will be invested in the Trust Funds Investment Pool (TFIP)

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 considering 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 allocations were outside the limits and either inform the Board of the actions that were taken to return the portfolio back within guidelines or a plan to do so.
INTRODUCTION

The purpose of an investment policy statement is to give the investment manager guidance in developing an investment program to achieve the objectives agreed upon and enable the sponsor, Montana Arts Council, to monitor the progress of the plan.

OBJECTIVES

**Return Requirement**: To maximize the total rate of return through a broadly diversified portfolio of fixed income investments while exceeding the return posted on Salomon Broad Bond Index and/or Lehman Aggregate Index over a five-year moving average.

Current income is important since investment earnings are designated for cultural purposes.

**Risk Tolerance**: This is considered a permanent trust fund; therefore, it has an above average ability to assume risk. The ability to tolerate volatility in value of the portfolio is larger that the ability to tolerate volatility in total spendable return.

CONSTRAINTS

**Time Horizon**: The fund is considered a permanent, long-term fund that has a time horizon well beyond normal market cycles.

**Liquidity Needs**: Liquidity needs are low, except for investment purposes; however, the Legislature could spend the trust with a simple majority vote since it is not a constitutional trust.

**Tax Considerations**: This fund is tax-exempt; therefore, tax advantaged investments will not be used.

**Legal Considerations**: This fund is governed by state regulations, specifically, the "prudent expert principle" which requires the Board of Investments to: (a) discharge 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 manners exercises in the conduct of an enterprise of a like character 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.

The Montana Constitution does not allow equity type investments.

**Unique Circumstances**: None

**Client Preferences**: Maximize investment income.

**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.
History/Statutes:

The Coal Tax Park Acquisition Fund was established in fiscal year 1976 as a non-expendable trust fund by the Legislature to be funded by coal severance tax collections. The Legislature eliminated allocations to the fund for fiscal years 1987-89. One-third of income from this trust was appropriated for protection of works of art in the State Capitol and other cultural and aesthetic projects.

HB 1008 (1991)

The 52nd Legislature segregated this trust fund from the Coal Tax Park Fund established in Section 15-35-108 M.C.A. The legislation requires the single account be divided into two accounts. One-third of the balance as of June 30, 1991 shall be transferred to a new account called Cultural Trust. Beginning July 1, 1991, 1.667 percent of coal severance tax monies collected after allocation to Permanent Trust Fund and Highway reconstruction Trust will be allocated to this trust.

HB 5 (1997)

This bill appropriated $3,912,500 to the Historical Society for purchase of Virginia City and Nevada City properties.

We sold units totaling $3,500,000 from the Trust Funds Bond Pool on April 30, 1997 and placed the proceed in STIP. The purchase of these properties was made on May 16, 1997.

15-35-108 Disposal of Severance Taxes

Starting July 1, 1997, the amount of 0.87 percent was allocated to this trust fund for the purpose of protection of works of art in the state capitol and for other cultural and aesthetic projects.

Starting July 1, 1999, the amount of 0.63 percent was allocated to this trust fund.

For fiscal year 2003, the allocation was reduced to zero.

Beginning July 1, 2003, the allocation was restated at 0.63 percent.

Income from this trust fund, excluding unrealized gains and losses, must be appropriated for protection of works of art in the state capital and for other cultural and aesthetic projects.
CULTURAL TRUST FUND (AE:09037)
INVESTMENT POLICY STATEMENT

CASH FLOW IN MILLIONS (1)

<table>
<thead>
<tr>
<th>Fiscal Year</th>
<th>Book Value</th>
<th>Market Value</th>
<th>Addition to Book Value</th>
<th>Total Inv. Income</th>
<th>Income Yield</th>
</tr>
</thead>
<tbody>
<tr>
<td>1994</td>
<td>12.500</td>
<td>12.300</td>
<td>0.000</td>
<td>0.988</td>
<td>0.08</td>
</tr>
<tr>
<td>1995</td>
<td>12.500</td>
<td>12.800</td>
<td>0.000</td>
<td>0.922</td>
<td>7.38</td>
</tr>
<tr>
<td>1996</td>
<td>13.000</td>
<td>13.000</td>
<td>0.500</td>
<td>1.033</td>
<td>8.10</td>
</tr>
<tr>
<td>1997</td>
<td>13.500</td>
<td>13.500</td>
<td>0.500</td>
<td>1.007</td>
<td>7.61</td>
</tr>
<tr>
<td>1998</td>
<td>14.100</td>
<td>14.800</td>
<td>0.600</td>
<td>1.066</td>
<td>7.73</td>
</tr>
<tr>
<td>1999</td>
<td>14.400</td>
<td>14.200</td>
<td>0.300</td>
<td>1.086</td>
<td>7.73</td>
</tr>
<tr>
<td>2000</td>
<td>14.600</td>
<td>13.900</td>
<td>0.200</td>
<td>1.051</td>
<td>7.25</td>
</tr>
<tr>
<td>2001</td>
<td>15.200</td>
<td>15.100</td>
<td>0.600</td>
<td>1.083</td>
<td>7.27</td>
</tr>
<tr>
<td>2002</td>
<td>16.000</td>
<td>16.100</td>
<td>0.800</td>
<td>1.106</td>
<td>7.09</td>
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<tr>
<td>2003</td>
<td>15.891</td>
<td>17.160</td>
<td>(0.109)</td>
<td>1.115</td>
<td>6.99</td>
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<tr>
<td>2004</td>
<td>16.189</td>
<td>16.561</td>
<td>0.298</td>
<td></td>
<td></td>
</tr>
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</table>

1 Source: BOI Annual Reports

Asset Allocation At Market

<table>
<thead>
<tr>
<th>FIXED INCOME</th>
<th>06/30/01</th>
<th>06/30/02</th>
<th>06/30/03</th>
<th>06/30/04</th>
<th>06/30/07</th>
</tr>
</thead>
<tbody>
<tr>
<td>Range</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Trust Funds Bond Pool (TFBP)</td>
<td>99.90%</td>
<td>98.10%</td>
<td>99.24%</td>
<td>98.00%</td>
<td>95.00% - 100.00%</td>
</tr>
<tr>
<td>Short-Term Investment Pool (STIP) (1)</td>
<td>0.10%</td>
<td>1.90%</td>
<td>0.76%</td>
<td>2.00%</td>
<td>0.00% - 5.00%</td>
</tr>
<tr>
<td>TOTAL FIXED INCOME</td>
<td><strong>100.00%</strong></td>
<td><strong>100.00%</strong></td>
<td><strong>100.00%</strong></td>
<td><strong>100.00%</strong></td>
<td><strong>100.00%</strong></td>
</tr>
</tbody>
</table>

(1) May Include Undistributed Income
INTRODUCTION

The purpose of this investment policy statement is to outline the account objectives, permissible investments, and constraints that will guide the management of the portfolio. The policy is designed to give the investment manager flexibility to achieve, in a prudent manner, the investment objectives of the client, the Department of Environmental Quality (DEQ), to implement the remedial action (“the Remedy”) on the Clark Fork Site in accordance with the Clark Fork Site Consent Decree and the Site Specific Memorandum of Agreement (SMOA) between the United States and the State of Montana.

BACKGROUND INFORMATION

In August 2008, a Consent Decree was entered between the State of Montana, the United States and Atlantic Richfield Company (ARCO), in order to settle certain litigation and to provide for the funding of the remedial action at the Clark Fork River (CFR) Operable Unit. The settlement involves, among other things, payment by ARCO of $83.3 million plus accrued interest from April 1, 2006. Those funds and the earnings from the investment of those funds are to be used by the State with oversight, input and approval from the United States EPA for the purpose of remediating the CFR over an estimated ten to twelve year period. Any funds left over after clean up will be transferred to the Clark Fork State Restoration Account (established under the same Consent Decree). In October of 2008 ARCO paid the entire Remedy settlement amount of $96.2 million to the State of Montana.

Major construction is projected to begin during calendar year 2009 and end during calendar year 2019. At that time, a small fund balance will be needed to fund Operations and Maintenance going forward and the remaining balance with EPA approval will be transferred to the Clark Fork State Restoration Account. The fund balance at that time is expected to be mostly Trust Funds Bond Pool (TFBP) units.

The project being financed through this fund is the remediation of environmental contamination at one operable unit of a federal Superfund site. The nature of construction/remediation work includes the potential for cost overruns and unexpected expenses. DEQ will use its best efforts to inform the Board of Investments of any expected overruns or changes in the cash draw schedule and will attempt to provide notice of such changes as much in advance as possible.

OBJECTIVES

Risk and Return:
Earnings alone will not be sufficient to fund expected expenditures nor will the principle provided by the settlement be sufficient. A combination of current income, total return, and use of principle will be necessary to fund the expected expenditures. It will require a return in excess of the assumed risk free rate to fund current projected expenditures, possible future cost over runs, and leave residual funds for future expenses such as operation and maintenance. This account has an average ability to assume interest rate risk. Some risk of loss of principal must be taken to provide a return sufficient to fund objectives. A large allocation to the TFBP will be made to obtain exposure to a diversified fixed income portfolio return while reducing idiosyncratic risk. An allocation to U.S. Treasuries, U.S. Agencies and Corporate securities may be made to provide a greater certainty of cash flows from maturities. Risk tolerance will decline if long-term investments have to be liquidated earlier than estimated to meet the cash draw down schedule.

The risk and return factors along with other considerations result in the expected asset allocation shown on the following page.
MONTANA BOARD OF INVESTMENTS
CLARK FORK SITE RESPONSE ACTION FUND (MU3A) (FUND 08212)
INVESTMENT POLICY STATEMENT

ASSET ALLOCATION

<table>
<thead>
<tr>
<th>FIXED INCOME</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>U.S. Treasury Bonds</td>
<td>0-10%</td>
</tr>
<tr>
<td>U.S. Agency Bonds</td>
<td>0-10%</td>
</tr>
<tr>
<td>Corporate Bonds</td>
<td>0-10%</td>
</tr>
<tr>
<td>Trust Funds Bond Pool (TFBP)</td>
<td>50-95%</td>
</tr>
<tr>
<td>Short-term Investment Pool (STIP)</td>
<td>0-25%</td>
</tr>
</tbody>
</table>

Total Fixed Income: 100.0%

OTHER CONSIDERATIONS

Liquidity Needs:
Material annual expenditures are projected in each year through 2024 in the initial cash draw down schedule provided by DEQ. The timing of expenditures within the calendar year will be somewhat uncertain, thus necessitating a significant cash balance be available to meet these needs without forcing an inordinate amount of TFBP sales in any one year. There will be significant seasonality in the pattern of expenditures. Liquidity needs will be met with a combination of cash on hand, earnings, maturities and sales of investments. The minimum Short Term Investment Pool (STIP) balance will be the expected next one year of expenditures less expected maturities of individual securities prior to any adjustment to reflect funding needs.

Maturity Horizon:
The maturity horizon of the investments utilized is designed to meet the liabilities of the client with income, maturities and a reasonable amount of sales of securities and TFBP units. The liabilities are the cash needs for remediation expenditures as provided by the DEQ at the outset of the account and as modifications are made in ensuring years. At this time expenditures are expected to occur commencing immediately and each year through 2024, with the majority occurring during years 2012 - 2019.

Investment Limits:
1. To reduce the risk of loss on individual corporate bonds, investment purchases in any one credit will be limited to 1% of the market value of the fund at the date of purchase or 2% of the lowest projected fund balance before the securities mature, which ever is lower.
2. Corporate bond sector (Industrial, Finance, and Utility) exposure shall be constrained to no more than a 4% exposure at the time of purchase, or 6% at any time over the future projected fund balance.
3. The quality rating of any corporate bond shall be in the top of the single-A rating classification or better at the time of purchase. (e.g., A1/A+ or higher), and have at least two ratings.
4. Exposure to the securities of any one U.S. Agency are limited to 5%, and in no event will an agency security be purchased if it carries a rating that is less than top-rated (AAA) at the time of purchase.

Legal Considerations:
This fund is governed by state regulations, specifically, the "prudent expert principle" which requires the Board of Investments to: (a) discharge the 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 a like character 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 solely 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.
The Montana Constitution does not allow equity type investments in non-retirement funds.

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 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.

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.
STREAMSIDE TAILINGS OPERABLE SETTLEMENT FUND (MU19) (FUND 02520)
INVESTMENT POLICY STATEMENT

INTRODUCTION
The purpose of this investment policy statement is to outline the account objectives, permissible investments, and constraints that will guide the management of the portfolio. The policy is designed to give the investment manager flexibility to achieve in a prudent manner the investment objectives of the client, the Department Environmental Quality (DEQ) to implement remedial actions to the area covered by the Streamside Tailings Operable Unit in accordance with the ARCO Settlement Consent Decree.

BACKGROUND INFORMATION

January 1999
In November 1998, a Consent Decree between the State, the United States, the Atlantic Richfield Company (ARCO), and others was entered into in order to settle certain litigation and to provide funding for the implementation of the remedy for the Streamside Tailings Operable Unit of the Silver Bow Creek/Butte Area (original portion) NPL Site. The settlement involves, among other things, payment by ARCO of $80 million, over a period of three years. Those funds and the earnings from the investment of those funds are to be used by the State and EPA for the purpose of remediating the mine waste contamination at the Streamside Tailings Operable Unit over an estimated twelve-year period, with any funds, including earnings, which are not ultimately required for the remediation of the Streamside Tailings Operable Unit to be used by the State for natural resource damage restoration purposes.

ARCO payments:

<table>
<thead>
<tr>
<th>Date</th>
<th>Amount Description</th>
<th>Total Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>March 1999</td>
<td>$15 million</td>
<td></td>
</tr>
<tr>
<td>July 1999</td>
<td>$15 million principal plus $7 million interest ($22.0 million total)</td>
<td></td>
</tr>
<tr>
<td>July 2000</td>
<td>$25 million principal plus $3.886 million interest ($28.886 million total)</td>
<td></td>
</tr>
<tr>
<td>July 2001</td>
<td>$25 million principal plus $1.891 million interest ($26.891 million total)</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>$92.777 million</td>
<td></td>
</tr>
</tbody>
</table>

Interest was calculated using the income yield on the Trust Funds Bond Pool.

November 2007
Major construction is projected to end during Fiscal Year 2012. At that time, a small fund balance will be needed to fund operations and maintenance going forward and the remaining balance will be transferred to the Upper Clark Fork Restoration Fund (MU21). The fund balance at that time is expected to be mostly TFBP units.

March 2013
The timing of expenditures has been slower than expected. Major construction is projected to continue through 2018.

OBJECTIVES

Risk and Return:
The combination of current income, total return, and use of principle will be necessary to fund expected expenditures. It will require a return in excess of the assumed risk free rate to fund current projected expenditures, as well as possible future cost over runs. This account has an average ability to assume interest rate risk. Some risk of loss of principal must be taken to provide a return sufficient to fund objectives. An allocation to the Trust Funds Investments Pool (TFIP) will be made to obtain exposure to
STREAMSIDE TAILINGS OPERABLE SETTLEMENT FUND (MU19) (FUND 02520)
INVESTMENT POLICY STATEMENT

a diversified fixed income portfolio. An allocation to U.S. Treasuries, U.S. Agencies and Corporate securities may be made to provide a greater certainty of cash flows from maturities. Risk tolerance will decline if long-term investments have to be liquidated earlier than estimated to meet the cash draw down schedule.

**ASSET ALLOCATION**

*(at Market)*

<table>
<thead>
<tr>
<th>Fixed Income</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>U.S. Treasury Bonds</td>
<td>0-30%</td>
</tr>
<tr>
<td>U.S. Agency Bonds</td>
<td>0-30%</td>
</tr>
<tr>
<td>Corporate Bonds</td>
<td>0-10%</td>
</tr>
<tr>
<td>Trust Funds Investment Pool (TFIB)</td>
<td>50-90%</td>
</tr>
<tr>
<td>Short Term Investment Pool (STIP)</td>
<td>0-30%</td>
</tr>
<tr>
<td><strong>Total Fixed Income</strong></td>
<td><strong>100%</strong></td>
</tr>
</tbody>
</table>

**OTHER CONSIDERATIONS**

**Liquidity Needs:**
Material annual expenditures are projected in each year through 2018 in the initial cash draw down schedule provided by DOJ. The timing of expenditures within the calendar year will be somewhat uncertain, thus necessitating a significant cash balance be available to meet these needs without forcing an inordinate amount of TFIP sales in any one year. There will be significant seasonality in the pattern of expenditures. Liquidity needs will be met with a combination of cash on hand, earnings, maturities and sales of investments. The minimum (STIP) balance will be the expected next one year of expenditures less expected maturities of individual securities prior to any adjustment to reflect funding needs.

**Maturity Horizon:**
The maturity horizon of the investments utilized is designed to meet the liabilities of the client with income, maturities and a reasonable amount of sales of securities and TFIP units. The liabilities are the cash needs for restoration expenditures as provided and updated by the DOJ. Expenditures are projected to occur through 2020.

**Investment Limits:**
1. To reduce the risk of loss on individual corporate bonds, investment purchases in any one credit will be limited to 1% of the market value of the fund at the date of purchase or 2% of the lowest projected fund balance before the securities mature, whichever is lower.

2. Corporate bond sector (Industrial, Finance, and Utility) exposure shall be constrained to no more than a 4% exposure at the time of purchase, or 6% at any time over the future projected fund balance.

3. The quality rating of any corporate bond shall be in the top of the single-A rating classification or better at the time of purchase. (e.g., A1/A+ or higher), and have at least two ratings.
4. Exposure to the securities of any one U.S. Agency are limited to 5%, and in no event will an agency security be purchased if it carries a rating lower than that of the U. S. Government.

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.

Legal Considerations:
This fund is governed by state regulations, specifically, the "prudent expert principle" which requires the Board of Investments to: (a) discharge the 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 a like character 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 solely 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.

The Montana Constitution does not allow equity type investments in non-retirement funds.

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 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.
INTRODUCTION

The purpose of this investment policy statement is to outline the account objectives, permissible investments, and constraints that will guide the management of the portfolio. The policy is designed to give the investment manager flexibility to achieve in a prudent manner the investment objectives of the clients, the Departments of Environmental Quality (DEQ) and Justice (DOJ) to implement the response action (“the Response”) on the Upper Blackfoot Mining Complex in accordance with the Asarco Bankruptcy Settlement (“Settlement Agreement Regarding the Upper Blackfoot Mining Complex Site”) between the United States, Atlantic Richfield Company, Asarco LLC and the State of Montana; the “Watershed Restoration Agreement between the State of Montana and the US Department of Agriculture Forest Service, Northern Region, for the Cleanup of the National Forest System Portion of the Upper Blackfoot Mining Complex Site” and the “Memorandum of Agreement Between the Montana Department of Environmental Quality and the Montana Department of Justice Regarding the Upper Blackfoot Mining Complex Restoration and Remediation” between the DEQ and DOJ, both agencies of the State of Montana.

BACKGROUND INFORMATION

In April 2008, a Settlement Agreement was entered between the State of Montana, the United States, Asarco, LLC (Asarco) and the Atlantic Richfield Company (ARCO), in order to settle certain bankruptcy and other claims and to provide for the funding of response and restoration actions at the Upper Blackfoot Mining Complex. The settlement involved, among other things, the cash payment by Asarco and ARCO of $8 million dollars each shortly after the effective date of the Settlement Agreement. Pursuant to the Settlement Agreement, the State also received an allowed claim in the Bankruptcy of $19,771,554 dollars, which with accrued interest was paid on the Effective Date of ASARCO’s plan of reorganization, December 9, 2009, in the amount of $23,264,855. All these funds and the earnings from the investment of these funds are to be used by the State, as Lead Agency, in consultation with the United States Forest Service, for the purpose of conducting response and restoration activities within the UBMC Site. These actions include the removal of the Mike Horse Impoundment as provided in the USFS Action Memorandum dated July 23, 2007, and any amendments thereto. In addition, the State would perform additional remedial and restoration work outside the scope of the Action Memorandum, including the cleanup of tailings along the Upper Blackfoot River, Beartrap Creek, and Mike Horse Creek and restoration of those streams with the intention of restoring westslope cutthroat and bull trout to the area. The Work is expected to be performed over a period of at least seven years. Major construction is projected to begin in calendar year 2011 and end around calendar year 2016.

The project being financed through this fund is the removal and restoration of environmental contamination at the UBMC Site. The nature of construction/remediation work includes the potential for cost overruns and unexpected expenses. DEQ will use its best efforts to inform the Board of Investments of any expected overruns or changes in the cash draw schedule and will attempt to provide notice of such changes as much in advance as possible.

OBJECTIVES

Risk and Return:
Earnings alone will not be sufficient to fund expected expenditures nor will the principal provided by the settlement be sufficient. A combination of current income, total return, and use of principal will be necessary to fund the expected expenditures. It will require a return in excess of the assumed risk free rate to fund current projected expenditures, possible future cost overruns, and leave residual funds for future expenses such as operation and maintenance. This account has an average ability to assume interest rate risk. Some risk of loss of principal must be taken to provide a return sufficient to fund objectives. An allocation to the Trust Funds Investment Pool (TFIP) will be made to obtain exposure to a diversified fixed income portfolio return while reducing idiosyncratic risk. An
allocation to U.S. Treasuries, U.S. Agencies and Corporate securities may be made to provide a greater certainty of cash flows from maturities. Risk tolerance will decline if long-term investments have to be liquidated earlier than estimated to meet the cash draw down schedule.

The risk and return factors along with other considerations result in the expected asset allocation shown below.

**ASSET ALLOCATION**

<table>
<thead>
<tr>
<th>FIXED INCOME</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>U.S. Treasury Bonds</td>
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</tr>
<tr>
<td>Corporate Bonds</td>
<td>0-10%</td>
</tr>
<tr>
<td>Trust Funds Investment Pool</td>
<td>0-30%</td>
</tr>
<tr>
<td>Short-term Investment Pool</td>
<td>10-50%</td>
</tr>
</tbody>
</table>

Total Fixed Income 100%

**OTHER CONSIDERATIONS**

Liquidity Needs:
Material annual expenditures are projected in each year through 2016 in the initial cash draw down schedule provided by DEQ. The timing of expenditures within the calendar year will be somewhat uncertain, thus necessitating a significant cash balance be available to meet these needs without forcing an inordinate amount of TFIP sales in any one year. There will be significant seasonality in the pattern of expenditures. Liquidity needs will be met with a combination of cash on hand, earnings, maturities and sales of investments. The minimum Short Term Investment Pool (STIP) balance will be the expected next one year of expenditures less expected maturities of individual securities prior to any adjustment to reflect funding needs.

Maturity Horizon:
The maturity horizon of the investments utilized is designed to meet the liabilities of the client with income, maturities and a reasonable amount of sales of securities and TFIP units. The liabilities are the cash needs for remediation expenditures as provided by the DEQ at the outset of the account and as modifications are made in ensuing years. At this time expenditures are expected to occur commencing immediately and each year through 2016, with substantial expenditures each year from 2011 through 2015. Expenditures after 2016 will be based on subsequent planning that will depend on available funding at that time.

Investment Limits:
1. To reduce the risk of loss on individual corporate bonds, investment purchases in any one credit will be limited to 1% of the market value of the fund at the date of purchase or 2% of the lowest projected fund balance before the securities mature, which ever is lower.
2. Corporate bond sector (Industrial, Finance, and Utility) exposure shall be constrained to no more than a 4% exposure at the time of purchase, or 6% at any time over the future projected fund balance.
3. The quality rating of any corporate bond shall be in the top of the single-A rating classification or better at the time of purchase. (e.g., A1/A+ or higher), and have at least two ratings.
4. Exposure to the securities of any one U.S. Agency are limited to 5%, and in no event will an agency security be purchased if it carries a rating that is less than top-rated (AAA) at the time of purchase.

Legal Considerations:
MONTANA BOARD OF INVESTMENTS
UPPER BLACKFOOT RESPONSE ACTION AND RESTORATION FUND (MU3P)
(FUND 08227)
INVESTMENT POLICY STATEMENT

This fund is governed by state regulations, specifically, the "prudent expert principle" which requires the Board of Investments to: (a) discharge the 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 a like character 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 solely 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.

The Montana Constitution does not allow equity type investments in non-retirement funds.

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 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.

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.
INTRODUCTION

The purpose of an investment policy statement is to give the investment manager guidance in developing an investment program to achieve the objectives agreed upon and enable the sponsor, Department of Natural Resources & Conservation, to monitor the progress of the plan.

OBJECTIVES

Return Requirement: To maximize the total rate of return through a broadly diversified portfolio of fixed income investments while exceeding the return posted on Lehman Aggregate Index over a five-year moving average.

Current income is important since 95 percent of investment earnings are appropriated and distributed to school districts quarterly.

Risk Tolerance: This is a permanent trust fund; therefore, it has an above average ability to assume risk. The ability to tolerate volatility in value of the portfolio is larger than the ability to tolerate volatility in total spendable return. The Montana Constitution requires safe and conservative investments of public school funds.

CONSTRAINTS

Liquidity Needs: As a long-term, permanent fund, liquidity needs are low. Except for distribution requirements and investment purposes, there is no need to maintain any sizable short-term holdings in the fund.

Time Horizon: The Montana Constitution requires this fund to forever remain inviolate; therefore, this fund has a long-term investment horizon and can tolerate market fluctuations.

Tax Considerations: This fund is tax-exempt; therefore tax-advantaged investments will not be used.

Legal Considerations: This fund is governed by state regulations, specifically, the "prudent expert principle" which requires the Board of Investments to: (a) discharge 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 manners exercises in the conduct of an enterprise of a like character 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.

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.”

The Montana Constitution does not allow equity type investments.

Client Preferences: None
Constitution of Montana (Art. X)

Section 2. Public School Fund. The public school fund of the state shall consist of:

(1) Proceeds from the school lands, which have been or may hereafter be granted by the United States;
(2) Lands granted in lieu thereof;
(3) Lands given or granted by any person or corporation under any law or grant of the United States;
(4) All other grants of land or money made from the United States for general educational purposes or without special purpose;
(5) All interests in estates that escheat to the state;
(6) All unclaimed shares and dividends of any corporation incorporated in the state; and
(7) All other grants, gifts, devises or bequests made to the state for general educational purposes.

Section 3. Public School Fund Inviolate. The public school fund shall forever remain inviolate, guaranteed by the state against loss or diversion.

Section 5. Public School Fund Revenue.

(1) Ninety-five percent of all the interest received on the public school fund and ninety-five percent of all rent received from the leasing of school lands and all other income from the public school fund shall be equitably apportioned annually to public elementary and secondary school districts as provided by law.
(2) The remaining five percent of all interest received on the public school fund, and the remaining five percent of all rent received from the leasing of school lands and all other income from the public school fund shall annually be added to the public school fund and become and forever remain an inseparable and inviolable part thereof.

Constitution of Montana (Art. VIII)

Section 13. Investment of Public Funds.

(2) The Public School Fund and the permanent funds of the Montana University System and all other state institutions of learning shall be safely and conservatively invested in:

(a) Public securities of the state, its subdivisions, local government units, and districts within the state, or;
(b) Bonds of the United States or other securities fully guaranteed as to principle and interest by the United States, or;
(c) Such other safe investments bearing a fixed rate of interest as may be provided by law.
ADDITIONAL INFORMATION

SB 495 (2001):

It allows the Trust & Legacy Fund to borrow up to $75 million from the Permanent Trust Fund. The loan would be backed with expected cash flow from mineral royalties. The maximum loan term is 30 years with no payment required until fiscal year 2004.

On July 1, 2001, $46,366,904 was borrowed from the Permanent Trust Fund by transferring 483,604 Trust Fund Bond Pool (TFBP) units with a cost of $95.877833 to this account. The loan will be paid back in TFBP units over 30 years but is interest only until June 30, 2004.

As of June 30, 2007, the loan balance has been paid down to 187,421 TFBP units or $17,969,519 at cost.
TRUST AND LEGACY FUND (FUND 09022)
INVESTMENT POLICY STATEMENT

CASH FLOW SUMMARY
(in millions)

<table>
<thead>
<tr>
<th>Fiscal Year</th>
<th>Addition to Fund</th>
<th>Addition as % Ending Book</th>
<th>Book</th>
<th>Market</th>
<th>Total Inv. Income</th>
<th>Income Return</th>
</tr>
</thead>
<tbody>
<tr>
<td>1998</td>
<td>$11.1</td>
<td>3.3%</td>
<td>$336.3</td>
<td>$358.7</td>
<td>$25.9</td>
<td>7.84%</td>
</tr>
<tr>
<td>1999</td>
<td>8.4</td>
<td>2.4</td>
<td>344.7</td>
<td>347.6</td>
<td>26.3</td>
<td>7.70</td>
</tr>
<tr>
<td>2000</td>
<td>9.8</td>
<td>2.8</td>
<td>354.5</td>
<td>343.0</td>
<td>25.5</td>
<td>7.29</td>
</tr>
<tr>
<td>2001</td>
<td>11.7</td>
<td>3.2</td>
<td>366.2</td>
<td>370.4</td>
<td>26.2</td>
<td>7.28</td>
</tr>
<tr>
<td>2002</td>
<td>48.7*</td>
<td>11.7</td>
<td>414.9</td>
<td>425.6</td>
<td>29.8</td>
<td>7.62</td>
</tr>
<tr>
<td>2003</td>
<td>(4.3)</td>
<td>(1.1)</td>
<td>410.6</td>
<td>450.9</td>
<td>29.2</td>
<td>7.07</td>
</tr>
<tr>
<td>2004</td>
<td>0.1</td>
<td>0.0</td>
<td>410.7</td>
<td>427.4</td>
<td>30.1</td>
<td>7.34</td>
</tr>
<tr>
<td>2005</td>
<td>0.0</td>
<td>0.0</td>
<td>410.7</td>
<td>433.0</td>
<td>28.4</td>
<td>6.91</td>
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<tr>
<td>2006</td>
<td>19.9</td>
<td>4.6</td>
<td>430.6</td>
<td>435.8</td>
<td>24.8</td>
<td>5.90</td>
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<tr>
<td>2007</td>
<td>(2.4)</td>
<td>(0.6)</td>
<td>428.2</td>
<td>429.6</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*483,604 TFBP units loan from Permanent Trust Fund on 7/1/01. Interest only payments made for the 1st two years. Balance outstanding on 6/30/07 is 187,421 units.

Source: BOI Annual Report

ASSET ALLOCATION
(at market)

<table>
<thead>
<tr>
<th>FIXED INCOME</th>
<th>6-05</th>
<th>6-06</th>
<th>6-07</th>
<th>Ranges</th>
<th>Proposed Ranges</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trust Funds Bond Pool (TFBP)</td>
<td>89.8%</td>
<td>91.8%</td>
<td>95.8%</td>
<td>87-92%</td>
<td>95-100%</td>
</tr>
<tr>
<td>Loan from Permanent Trust</td>
<td>10.2</td>
<td>8.2</td>
<td>4.2</td>
<td>7-12</td>
<td>0-5</td>
</tr>
<tr>
<td>Short-Term Investment Pool (STIP)</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0-5</td>
<td>0-5</td>
</tr>
</tbody>
</table>

Total Fixed Income | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% |
INTRODUCTION

The purpose of an investment policy statement is to give the investment manager guidance in developing an investment program to achieve the objectives agreed upon and enable the sponsor, Department of Revenue, to monitor the progress of the plan.

OBJECTIVES

Return Requirement: To maximize the total rate of return through a broadly diversified portfolio of fixed income investments while exceeding the return posted on Salomon Broad Bond Index and/or Lehman Aggregate Index over a five-year moving average.

Current income is important since all of the earnings are appropriated by the legislature.

Risk Tolerance: This is a permanent trust fund; therefore, it has an above average ability to assume risk. The ability to tolerate volatility in value of the portfolio is larger than the ability to tolerate volatility in total spendable return.

CONSTRAINTS

Liquidity Needs: As a long-term, constitutional trust fund, liquidity needs are low except for investment purposes. There is no need to maintain any sizable short-term holdings, except for book value balances above $100 million.

Time Horizon: The fund is a permanent, long-term fund that has a time horizon well beyond normal market cycles.

Tax Considerations: This fund is tax-exempt; therefore, tax advantaged investments will not be used.

Legal Considerations: This fund is governed by state regulations, specifically, the "prudent expert principle" which requires the Board of Investments to: (a) discharge 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 manners exercises in the conduct of an enterprise of a like character 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.

The Montana Constitution does not allow equity type investments.

Unique Circumstances: Constitutional fund with cap of $100 million.
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.

Client Preferences: None

RESOURCES INDEMNITY TRUST FUND

History/Statutes

This fund is a constitutional trust that was established in 1973. Funding is derived from a tax on mineral extraction. Earnings from the fund are to be used to "improve the total environment and rectify damage thereto." It is the intent of the Legislature that future appropriations from the Resource Indemnity Trust interest account not be made to fund general operating expenses of state agencies. (15-38-203 M.C.A.)

15-38-202 M.C.A. provides that once the trust fund reaches $10 million, all earnings on the trust can be appropriated. The trust reached $10 million in 1978. Once the trust reaches $100 million, both the interest and tax proceeds can be appropriated. All net earnings may be appropriated and expended and are allocated under this statute.

The fund balance reached $100 million during FY02 and this part of the account is fully invested in the TFBP. Any remaining balance will be invested in STIP since it may be appropriated.

15-38-102 M.C.A. Legislative Policy

It is the policy of the State of Montana to indemnify its citizens for the loss of long-term value resulting from the depletion of its mineral resource base and for environmental damage caused by mineral development. This policy of indemnification is achieved by establishing a permanent Resource Indemnity Trust from the proceeds of a tax levied on mineral extraction and by allocating spendable trust revenues:

1) To protect and restore the environment from damages resulting from mineral development; and

2) To support a variety of development programs that benefits the economy of the state and the lives of Montana citizens.

Constitution of Montana

Article IX Section 2

"The principal of the Resource Indemnity Trust shall forever remain inviolate in the amount of one hundred million dollars ($100,000,000.00) guaranteed by the state against loss or diversion."
## RESOURCE INDEMNITY TRUST FUND
### CASH FLOW SUMMARY

<table>
<thead>
<tr>
<th>Fiscal Year</th>
<th>Addition to Fund</th>
<th>Addition as %</th>
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<th>Market</th>
<th>Total Inv. Income</th>
<th>Income Return</th>
</tr>
</thead>
<tbody>
<tr>
<td>1994</td>
<td>$2.2</td>
<td>$2.5</td>
<td>$89.6</td>
<td>$88.2</td>
<td>$8.24</td>
<td>9.30%</td>
<td></td>
</tr>
<tr>
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Source: BOI Annual Report

## ASSET ALLOCATION
(at market)

### FIXED INCOME

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<td>Trust Funds Bond Pool (TFBP)</td>
<td>99.1%</td>
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<td>Short-Term Investment Pool (STIP)</td>
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### Total Fixed Income | 100.0% | 100.0% | 100.0% | 100.0% |

\(^1\) $1.8 million deposit error reversed 8/14/00
Schedule I-AA
Investment Objectives and Guidelines
Cultural Trust Fund

Proposed Effective Date of Schedule: April 3, 2018

This schedule is effective upon adoption by the Board of Investments and supersedes all previous Investment Objectives and Guidelines for this specific portfolio.

Introduction:
The purpose of this policy statement is to provide a framework for the Cultural Trust Fund investments under the guidance of the Board.

The Cultural Trust Fund was created from the Coal Tax Park Acquisition Fund, which is funded by coal severance tax collections. The Cultural Trust Fund is established in MCA 15-35-108. Income from this trust fund, excluding unrealized gains and losses, must be appropriated for protection of works of art in the state capital and for other cultural and aesthetic projects.

Statement of Purpose:
The purpose of these objectives and guidelines is to:

1. Establish the investment objectives and performance standards of the Cultural Trust Fund account; and
2. Provide diversified investment exposure within the guidelines in a prudent and cost effective manner.

Investment Objective:

Strategic:
The objective of the Cultural Trust Fund portfolio is to attain above benchmark total return within the parameters of the Investment Guidelines set forth below with an emphasis on investment income and preservation of principal.

Performance:
Success in achieving this objective will be measured by comparing the risk and return of the account to the Trust Funds Investment Pool benchmark and the Short-Term Investment Pool benchmark, each weighted proportionately to the portfolio’s holdings, over a five-year moving average.

Time Horizon:
The Cultural Trust Fund is a permanent account. The Board expects to meet or exceed all 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.
**Investment Guidelines:**

The Montana Board of Investments will have full discretion to manage the Cultural Trust Fund portfolio 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:**

The Cultural Trust Fund may only invest in the following:

1. Trust Funds Investment Pool (TFIP)
2. Short-Term Investment Pool (STIP)

**Other Restrictions:**

1. A minimum of 95% of the market value of the portfolio will be invested in the Trust Funds Investment Pool (TFIP)

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 considering 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 allocations were outside the limits and either inform the Board of the actions that were taken to return the portfolio back within guidelines or a plan to do so.
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Systematic Work and Education Plan 2018

Feb. 13-14  Quarterly Meeting
Quarterly Reports, Subcommittee Meetings
Annual Report and Financial Statements (Audit Committee)
Financial Audit (Audit Committee)
Ethics Policy
Domestic Equities Asset Class Review
STIP Review
Outreach Efforts – Loan and Municipal Programs

April 3  Non-Quarterly Meeting
All Policy Statements Review (Scrub and Revise)
Capital Market/Asset Allocation Overview - RVK
Board’s Website
Custodial Bank Relationship, Performance, Continuity
RVK Educational Presentation (TBD)

May 22-23  Quarterly Meeting
Quarterly Reports and Subcommittee Meetings
Accounting Review (Audit Committee)
Exempt Pay Compensation Review (Human Resource Committee)
Staffing Level Review (Human Resource Committee)
Trust Fund Investment Pool Review
International Equities Asset Class Review

August 21-22  Quarterly Meeting
Quarterly Reports (Fiscal Year Performance) and Subcommittee Meetings
CEM Benchmarking
MBOI Budget and Legislative Related Action/Decision
Real Estate Asset Class Review
High Yield Asset Class Review
Internal Controls (Audit Committee)

October 2  Non-Quarterly Meeting
Diversified Strategies Asset Class Review
Cash Management of State Monies
Proxy Voting Public Equities
RVK Educational Presentation (TBD)

Nov. 13-14  Quarterly Meeting
Quarterly Reports and Subcommittee Meetings
2019 Legislative Session
Annual Report and Financial Statements Submission for FY 2018 (Audit Committee)
Affirm or Reset Asset Allocation Ranges
Resolution 217
PERS/TRS Annual Update
Securities Litigation Status (Audit Committee)
Exempt Staff Annual Performance Review (Human Resource Committee)
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ACH ............................................................................................. Automated Clearing House
ADR ............................................................................................. American Depository Receipts
AOF ............................................................................................. All Other Funds
ARC ............................................................................................. Actuarially Required Contribution
BOI ............................................................................................. Board of Investments
CAPP ........................................................................................ Consolidated Asset Pension Pool
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
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
SOC1 ........................................................................................................ Service Organization Controls 1 (Audit)
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

**ASSET CLASS ACRONYMS**

DEPAC – Domestic Equity Pension Asset Class  
IEPAC – International Equity Pension Asset Class  
PEPAC – Private Equity Pension Asset Class  
NRPAC – National Resources Pension Asset Class  
REPAC – Real Estate Pension Asset Class  
TIPAC – TIPS Pension Asset Class  
BFPAC – Broad Fixed Income Pension Asset Class  
USPAC – UST/AGY Pension Asset Class  
IGPAC – Investment Grade Corp Pension Asset Class  
MBPAC – MBS Pension Asset Class  
HYPAC – High Yield Pension Asset Class  
DSPAC – Diversified Strategies Pension Asset Class  
CPAC – Cash Pension Asset Class
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 publicly 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, e.g., public equities)**
‘Cap’ is short for capitalization, as a reference to the market value of a publicly-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 bond’s 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 publicly 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 (publicly 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 publicly 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.