Asset Allocation and Governance Review
Idaho Board of Land Commissioners

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EXECUTIVE SUMMARY

I. Introduction and Background

Callan was retained by the Idaho Board of Land Commissioners (Land Board) in May 2014 to review the findings and recommendations of the Subcommittee on Endowment Governance and identify shortcomings and make recommendations for improvement; review the internal policies and procedures of the Idaho Department of Lands (IDL) regarding valuation and forecasting methodologies; and conduct an asset allocation study incorporating the IDL-managed land assets with the financial assets overseen by the Endowment Fund Investment Board (EFIB).

II. Governance Summary and Conclusions

In order to gain a better understanding of the issues and the opinions of those close to the process, Callan reviewed relevant current and historical documents and interviewed members of the Land Board, Land Board staff, the IDL director and staff and the Manager of Investments for the EFIB. As a result of our review, a number of issues were identified as weaknesses in the governance structure based on current best practices. Our recommended improvements to the governance structure are designed to mitigate the concerns as well as address the weaknesses. We prioritized the recommended governance improvements as follows:

Priority 1: Clearly Established Objectives

The mission statement as expressed in the Idaho Constitution is to manage the endowment lands "in such manner as will secure the maximum long term financial return to the institution to which granted"; however, there is little context around this objective. The Land Board must operate within the framework of Constitutional and statutory conditions which impact the current stated objective. Callan notes that these constitutional conditions may temper the objective of maximizing financial returns. The Land Board needs to determine what position, over the long-term, that endowment lands play in the portfolio, whether that is consistent with current legal constraints and authority.

A comprehensive Investment Policy Statement should be developed for the combined Trust that identifies the investment objectives, risk management processes, risk tolerance (including connecting the risk taken in the asset allocation with that expressed in the distribution policy), the adopted asset allocation and rebalancing ranges, decision-making and the roles of each party involved in the investment process, how performance will be monitored and measured for each asset type, and the establishment of appropriate metrics and peer groups where relevant for both the land and financial assets. Elements of this policy have been set forth in various documents already including in the State Trusts Lands Asset Management Plan and the EFIB Investment Policy Statement.

The Investment Policy Statement should be a separate document distinct from the State Trust Lands Asset Management Plan. The Asset Management Plan should be re-oriented to be a strategic plan which covers the combined Trust and focuses on the long-term implementation of the Policy. This strategic plan should be supplemented by an annual plan.

Priority 2 - Align Expertise, Authority and Responsibility

The role of the Land Board should be one of strategic planning and policy setting. To fulfill its duty as a fiduciary, the Board should retain outside expertise to assist in the setting of policy and strategy as well as provide review of transactions. Additionally, the Land Board should re-examine current delegation of decisions to IDL to ensure they align with their expertise. An expert should be utilized to assist the Land

Board in areas where it lacks expertise. All recommendations provided by this expert should be reviewed independently for adherence to institutional processes and procedures.

Priority 3 – Independent Verification

Checks and balances exist in the management of the financial assets with the use of an independent board (EFIB) and use of outside expertise (consultant). Outside expertise and independent verification is lacking in some of the work that IDL conducts. IDL has been identified as an operational expert for timberland, rangeland, and agriculture. Under the trust but verify principle, IDL's operational recommendations and procedures should be reviewed and verified by an independent expert, who reports to the Land Board and not IDL. The addition of an outside expert advisor with knowledge of those issues faced by the Land Board, including review, reporting and monitoring of IDL investment activities, would help to create a fiduciary structure similar to that in place for the financial assets. The addition of an outside expert advisor with knowledge of those issues faced by the Land Board, including review, reporting and monitoring of IDL investment activities, would help to create a fiduciary structure similar to that in place for the financial assets.

A comprehensive independent outside financial audit is not conducted on the land asset portfolio as is done for the financial assets. An independent audit is an important check and safeguard on an expert's internal financial controls and accounting procedures. Currently, the independent auditor of the financial assets performs a limited review and testing of IDL accounting procedures annually, but does not express an opinion on endowment land financials as a whole. The Legislative Auditor also performs an examination every three years, but their emphasis is on compliance and not disclosure.

Priority 4 - Transparency

Further developing the supporting documentation and infrastructure consistent with modern institutional investment practice for land-related investments will improve transparency. Policies should be reviewed to ensure they clearly document the process by which investment decisions are made and be codified in an Investment Policy Statement. The policies should be logical, defensible and clear to stakeholders and other interested parties and lay out a road map for achieving long term objectives. The policies should define the roles of all parties and the criteria used to make decisions.

Priority 5 - Accountability

Institute a process for IDL to fairly measure progress towards the achievement of goals and objectives established by the Land Board. After further clarifying the role of Idaho commercial real estate[1] in the portfolio, a revised and approved strategic plan should clearly describe appropriate measurement methodologies and reasonable performance objectives by asset class. The current Asset Management Plan lays out expected peer returns on assets by land asset class but there is no comparable information for the financial assets in the Investment Policy Statement for the fund. Periodic reporting to the Land Board should measure current performance and progress towards achieving long-term objectives as stated in the Investment Policy and consistent with the Asset Management/Strategic Plan.

The Land Board and the IDL should expand their view of the appropriate peer set for governance and operations. The peer set goes beyond regulatory requirements and other state land trusts and includes institutional investors such as endowments and state pension plans. This would provide a way to measure whether IDL is achieving its stated vision of being a "premier organization for trust management".

[1] Commercial real estate here refers to ownership of offices, retail properties, operating business etc.

Review of Sub-Committee Proposed Governance Structures

A number of recommendations were proposed by the Sub-Committee on Endowment Investment Governance in regard to governance issues including the modification of the level of decision making authority on timber sales contracts, land investment decisions deemed to be routine and special land investment decisions. There were also recommendations for cash flow which included a proposed 90%/10% rule for splitting proceeds from land disposal between the Permanent Fund and the Land Bank. Callan's conclusions on the Endowment Investment Governance Sub-Committee's recommendations include:

> **Conclusion:** Callan supports the delegation of authority to make decisions to IDL and the Director where appropriate. We defer to the Sub-Committee and Land Board on what the applicable levels for each should be.
>
> **Conclusion:** Callan believes the 90%/10% rule of splitting proceeds from land disposals is too rigid and premature. The Land Board needs to determine whether maintaining and/or growing the land base is a priority given the objective of maximizing returns of the total trust at an appropriate level of risk. There may be strategic considerations that are difficult to quantify in a formula. Land Bank monies could be allocated periodically consistent with the long term strategic and annual plans, as they are developed, rather than according to prescribed rule.

III. Revenue Forecasting Conclusions

The revenue forecasting methodology could be improved for all asset types except forestland and residential cabin sites. In particular, the revenue forecast for land types that are subject to leases should be based on the amounts that will be generated under the terms of the lease in the forecast years. The documentation of the process and verification of the forecasts could be augmented and improved across the board.

IV. Land Asset Valuation Policy Conclusions

The current practice of having an appraiser complete mass land appraisals using a sales comparable approach for forestland, rangeland, and agriculture should be discontinued. This valuation method does not provide an independent valuation of the entire asset (e.g. land and resource growing on the land) nor does it contain information that could be used by the IDL for performance measurement, or to improve its management or valuation practices, and it does not consider the particular constraints on the sale of land. It is also inconsistent with best practices.

Independent values will need to be established for the commercial portfolio by an expert as there are no recent independent, third party opinions of value. Callan believes external valuations are important to develop a baseline until the direction of the portfolio is more fully developed and for performance measurement purposes. Additionally, if a specialist real estate investment manager/consultant is hired to provide assistance on the portfolio, they will need current values to give appropriate advice on the properties.

The Land Board will need to determine a valuation approach for forestland and rangeland. The report identifies various options that could be taken by the Land Board for forestland and rangeland. Callan supports a policy that incorporates an independent expert opinion and a discounted cash flow/income approach. There is little benefit to be gained from valuing smaller components of the portfolio such as agriculture for ongoing performance measurement given the de minimis holdings.

The valuation policy should be updated if the Land Board makes any changes to the current methodology.

V. Performance Reporting Conclusions

Callan proposes a summary report similar to that currently produced for the Endowment Fund Investment Board that would include the addition of market values for the IDL portfolio to reflect the asset allocation of the total endowment fund. We would rely on IDL to provide the monthly cash flows for their portfolio. A return would be calculated quarterly which would reflect cashflows in/out of the portfolio but hold the market value constant. Once a year a new valuation for the IDL portfolio could be calculated based on the valuation policy and methodology approved by the Land Board.

VI. Asset Allocation Results

The asset allocation study did not include an assessment of the impact of differing asset allocations on the current distribution policy. Dollar distributions to beneficiaries are calculated as a percent of the rolling three year average of the individual endowment permanent funds. The earnings reserves are set by evaluating the volatility of the returns of the financial assets and land revenues. If an asset allocation mix is selected that deviates from the risk and return in the current mix, the Land Board will need to assess the impact on the distribution policy and make changes as necessary.

Four sets of potential allocations were constructed:

1. Allocations with only the existing investment types (stocks, bonds and Idaho lands) assuming that Idaho timberland and grazing land could be bought and sold to reach the desired allocations;
2. Allocations with only the existing investment types assuming that timberland and grazing land would be maintained at their current allocations;
3. The same assumptions as set 1 but with possible allocations to US real estate and private equity; and
4. The same assumptions as set 2 but with possible allocations to US real estate and private equity

Sets 1 and 3 assume that any lands acquired would have investment characteristics similar to existing lands and an expected return of at least that of the existing assets.

The study developed a value for grazing land at $61 billion and timberland of $1.17 billion. The total portfolio, IDL lands and financial assets, has a value of approximately $3 billion. The expected long-term compound return of the existing combined portfolio is projected to be 6.7% nominal, or 4.45% real after adjusting for a projected inflation of 2.25%.

The study reached several important conclusions:

- The current total endowment allocation is reasonable and efficient.
- Timberland is a desirable investment across the range of asset mixes reviewed. Timberland has an attractive forecast return for the anticipated level of risk and diversifies other asset classes well. Consequently, the computer model unconstrained specified an allocation to timberland at or above its current level for all asset mixes evaluated. The model suggests that timberland investment could be expanded if the acquired properties are expected to perform at least as well as the existing timberland.
- Grazing land was included by the computer model in more conservative asset mixes. The return for grazing land provides reasonable compensation for its risk and diversifies bonds well. However both a lower return and less attractive equity diversification relative to timberland reduce its allocation to zero in higher return and risk mixes. If the asset mix chosen calls for reducing or eliminating the allocation to grazing land then IDL should opportunistically dispose of the grazing land. Potential sales or exchanges should be prioritized according to their expected contributions to returns with transactions executed as limitations permit. It would be counterproductive to dispose of grazing land

quickly at a discount for the sole purpose of bringing the actual allocation in line with the target allocation.

- The model shows investments in US diversified, institutional real estate to be modestly attractive and private equity to be only marginally attractive. As a general rule, an allocation below 5% to an asset class does not contribute enough return to make it a worthwhile investment. This is especially true for investments such as real estate and private equity which are more complex investments than stocks and bonds. The computer model allocated less than 5% to private equity in all asset mixes evaluated. US real estate could be an attractive investment for mixes with rates of return at or above those currently forecast for the EFIB portfolio.
- The model finds that the combination of Idaho timberland and grazing land with the EFIB investments at their current levels has a similar expected return but a volatility that is anticipated to be materially lower than that of the existing allocation containing financial assets alone. While there is no compelling reason to adjust the current EFIB asset allocation, other allocations could be considered. Increasing the public equity allocation as a percentage of public assets from the current 70% to 85% would boost the return by almost 0.4% annually at the expense of increasing the expected risk from 9.41% to 10.77%. Conversely, decreasing the public equity component to just under 60% would reduce the return by the approximately the same 0.4% annually while decreasing the risk to 8.12%.

The decision to maintain the existing mix or move to one of the alternatives should be based on a comprehensive review of the spending policies for the endowments.

VII. Idaho Commercial Real Estate Portfolio

Callan has been asked to specifically address the role of Idaho Commercial Real Estate in the portfolio Most of the stakeholders with whom we spoke were hesitant, for a variety of reasons, to grow the current Idaho commercial property portfolio, unless there was a compelling investment reason to do so. In Callan's opinion, there is not. The asset allocation work implies an allocation to a broadly diversified portfolio of US real estate could, at best, play only a modest role in improving the diversification of the portfolio and there is no investment reason for an allocation to consist primarily of a concentrated position in Idaho properties. Further, Callan does not recommend ownership of single properties for the endowment. Two conditions must be met before single property ownership is considered (1) there must be a real estate allocation of at least $500 million which is the baseline to assemble a diversified U.S. portfolio and (2) there must be qualified resources (typically a combination of staff and an external manager(s)) to analyze and manage the properties. Neither of these conditions is satisfied in the case of the current portfolio.

Currently, the decision-making and oversight is not in place for the ongoing management, analysis, or prudent divestiture of the existing Idaho commercial portfolio. Our report details recommendations designed to put in place a framework for these decisions to be made, including the hiring of a specialist real estate manager/consultant, reporting to the board, to provide the analysis and management expertise on the retention, disposition and management of commercial properties.

The decision-making and management framework to properly oversee the current commercial portfolio will also prove useful as a model for the evaluation and management of other non-routine land investment decisions. For example, consideration of whether to execute a ground lease with a tenant on a vacant parcel of land or purchasing more timberland or farmland.

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I. Governance

A. Introduction

The mission of the Endowment is to prudently manage Idaho's endowment assets to maximize the long-term financial returns to the beneficiary institutions.

Callan was retained by the Idaho Board of Land Commissioners (Land Board) in May 2014 to review the findings and recommendations of the Subcommittee on Endowment Governance and identify shortcomings and make recommendations for improvement; review the internal policies and procedures of the Idaho Department of Lands (IDL) regarding valuation and forecasting methodologies; and conduct an asset allocation study incorporating the IDL-managed land assets with the financial assets.

B. Governance Environment

Management of the endowment trust lands is entrusted to the State Board of Land Commissioners who serves as the sole fiduciary of both the land and financial assets. Per the Idaho Constitution, the Land Board is charged with managing the Endowment in such a manner as will secure the maximum long-term financial return to the beneficiary institutions. The Board must invest trust assets in compliance with the Idaho Prudent Investor Act which requires decisions to be made in the sole interest of trust beneficiaries and "manage trust assets as a prudent investor would, by considering the purposes, terms, distribution requirements and other circumstances of the trust."[1] The duty of prudence requires Trustees to bring the appropriate level of expertise to the administration of the Trust. An implied duty of Trustees is also to preserve and protect the assets with a long-term perspective satisfying the needs of both current and future beneficiaries.

The Endowment Fund Investment Board (EFIB) was formed to provide expertise and professional oversight to the investment of the revenues from lands. The IDL administers the management of the land assets.

C. Governance Structure

Governance is a framework of policies and procedures by which an organization ensures fairness, accountability and transparency. The framework consists of an understanding of expectations between the organization and its stakeholders; processes that minimize conflicts of interest; procedures that provide supervision and serve as checks and balances; and continuous monitoring.

Priorities of a good governance structure include:

- Clearly established mission with supporting reasonable objectives
- Alignment of expertise, authority and responsibility – clear assignment of responsibility
- Independent verification
- Transparency
- Accountability – Monitoring process including metrics for assessing achievement or progress towards agreed upon objectives

D. Information Gathering

In order to gain a better understanding of the thoughts and opinions of those involved, Callan interviewed members of the Land Board, their respective staffs, the Manager of Investments for the EFIB, and the

[1] Idaho Statutes, Title 68, Chapter 5, Section 68-502

Director of the Department of Lands during July and August. Some common themes emerged from our conversations:

- Monies currently in the Land Bank, as well as those to be received from the sale of cabin sites, should be deployed quickly given the current low level of return in the Treasurer's pool.
- IDL and the EFIB have been operating in separate silos.
- Interviewees generally agreed that if commercial real estate is determined to be an appropriate asset class for investment, it is best implemented in a national or globally-diversified manner through the EFIB.
- Many felt that the Land Board should have a policy level decision-making role and should not be approving every individual transaction proposed by IDL.
- There was consensus that the IDL is not an expert in commercial real estate. The lack of expertise was noted both for acquisition analysis and asset management including establishing a longer term plan, renovation, change of use, deciding when to sell, and executing dispositions.
- All expressed their satisfaction with the governance structure surrounding the management and monitoring of the financial assets – professional staff, independent board, use of outside expertise (consultant) and performance reporting and monitoring.
- There is a general sense of dissatisfaction with the current State Trust Lands Asset Management Plan especially in regards to commercial real estate and an immediate need to address the ongoing issue of deployment of proceeds generated by the sale of cabin sites.
- Looking at recent press, there appears to be a general misunderstanding of the performance objectives of IDL compared to the financial assets as well as a generally negative view of the Endowment owning operating businesses that compete with the private sector and remove property from tax rolls.

E. Weaknesses in the Current Governance Structure

Callan has identified the following weaknesses in the current governance structure:

- There not enough context around the constitutionally defined Land Board objective of maximizing return.
- The current State Trust Lands Asset Management Plan is a combination of investment policy and strategic plan.
- There are meaningful differences in the structure of decision making, performance expectation setting, use of outside experts and reporting for the financial assets compared to the land assets.
  - In the management of the financial assets, both internal (EFIB staff) and external (consultant) expertise is used. Checks and balances exist in the form of oversight by a multi-member professional board and external as well as internal preparation and review of performance.
  - IDL is making some investment decisions with implications to the Trust without any independent verification. The Land Board often relies on the recommendation and analysis of IDL without the use of outside sources of information or expertise.
- An elected Board may be influenced by politics, have short-term motives and incentives, and lack expertise, all of which may present conflicts to its fiduciary duty to act in the sole interest of the beneficiaries of the Trust. The addition of additional expertise and policies and procedures to provide checks and balances will help to mitigate any potential conflicts of interest.
- The Land Board should be focused on the setting of policy and strategy. Much of the Land Board's time is spent reviewing individual transactions.
- IDL performance measurement and reporting could be improved.

F. Recommended Improvements to Governance Structure

Priority #1 – Clearly Established Objectives

- The mission statement as expressed in the Idaho Constitution is to manage the endowment lands "in such manner as will secure the maximum long term financial return to the institution to which granted". As noted previously, there is little context around this objective. The Land Board must operate within a framework of Constitutional and statutory considerations which impact the current stated objective:
  - Requirement that asset sales are conducted exclusively through an oral auction process with a minimum price set at appraised value.
  - Condition specifying maximum sales of 320 acres per person over their lifetime

  Callan notes that these constitutional conditions may temper the objective of maximizing financial returns. The Land Board needs to determine the role, over the long-term, that endowment lands play in the portfolio, and whether that is consistent with current legal constraints and authority. Colorado refined its goal to include stewardship of the land[2] as well as incorporating concepts of risk management through a constitutional amendment.

- A comprehensive Investment Policy Statement should be developed for the combined Trust that identifies the following:
  - Investment objectives – clearly state investment objectives in the context of the desired distribution policy.
  - Risk tolerance – connecting the risk taken in the asset allocation with that expressed in the distribution policy.
  - Appropriate asset classes – real estate, agriculture, other?
  - Target mix and rebalancing ranges where appropriate
  - How investment decisions will be made (including decisions about how revenues from lands are reinvested).
  - How performance will be monitored, establishing appropriate metrics and peer groups where relevant – land and financial assets.
  - Elements of this policy have already been set forth in various documents including in the State Trusts Lands Asset Management Plan and the EFIB Investment Policy Statement.

- The Investment Policy Statement should be a separate document distinct from the State Trust Lands Asset Management Plan. The Asset Management Plan should be re-oriented to be a strategic plan which covers the combined Trust and focuses on the long-term implementation of the Policy. This strategic plan should be supplemented by an annual plan.

Priority #2 - Align Expertise, Authority and Responsibility

The role of the Land Board should be one of strategic planning and policy setting. To fulfill its duty as a fiduciary, the Board should retain outside expertise to assist in the setting of policy and strategy as well as provide review of transactions. A re-examination and determination should be made by the Land Board regarding the appropriate delegation of decisions to IDL that aligns with their expertise.

An expert should be utilized to assist the Land Board in areas where it lacks expertise. All recommendations provided by this expert should be reviewed independently for adherence to institutional processes and procedures. Retaining a specialist real estate manager/consultant for the commercial

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[2] In 1996, Colorado altered the terms of the state's trust mandate to emphasize long-term stewardship in addition to revenue generation. Source: State Trust Lands in the West, Policy Focus Report, Lincoln Institute of Land Policy, Copyright 2006.

properties will solve a number of concerns identified elsewhere in this report including appraisal, management, maximizing value, producing what if scenarios, and revenue forecasting. IDL is the recognized operational expert for timberland, rangeland, and agriculture and a different set of decision-making delegations will apply to ensure the Land Board retains policy-setting responsibilities.

Priority #3 – Independent Verification

Checks and balances exist in the management of the financial assets with the use of an independent board (EFIB) and use of outside expertise (consultant). Outside expertise and independent verification is lacking in some of the work that IDL conducts. IDL has been identified as an operational expert for timberland, rangeland, and agriculture, and has established comprehensive internal review processes for many routine investments (e.g. road construction and reforestation) and employs outside expertise in many of those activities. Under the trust but verify principle, IDL's operational recommendations and procedures should be reviewed and verified by an independent expert who ultimately reports to the Land Board and not IDL. This is not a new idea. "An investment mentality would require an independent review of the in-house management and a separate and independent performance and monitoring system to assure the Land Board that is has hired an "expert" when it has hired itself as the manager."[3] The addition of an outside expert advisor with knowledge of those issues faced by the Land Board, including review, reporting and monitoring of IDL investment activities, would help to create a fiduciary structure similar to that in place for the financial assets.

Unlike the financial asset portfolio, a comprehensive independent outside financial audit is not conducted on the land portfolio. An independent audit is an important check and safeguard on an expert's internal financial controls and accounting procedures. Currently, the independent auditor of the financial assets performs a limited review and testing of IDL accounting procedures, but does not express an opinion on endowment land financials as a whole. The Legislative Auditor also performs an examination every three years, but their emphasis is on compliance and not disclosure.

Priority #4 - Transparency

Develop the supporting documentation and infrastructure consistent with modern institutional investment practice for land-related investments. Policies should be established that document the process by which investment decisions are made and be codified in an Investment Policy Statement. The policies should be logical, defensible and clear to stakeholders and other interested parties and lay out a road map for achieving long term objectives. The policies should define the roles of all parties and the criteria used to make decisions.

An example of a decision making process that is transparent is the current EFIB Distribution Policy. The policy was established by the Land Board recognizing the need to balance the needs of current and future beneficiaries of the Trust. Those affected by the policy may not always agree with the results but the process is transparent and defensible.

Priority #5 - Accountability

Institute a process for IDL to fairly measure progress towards the achievement of goals and objectives established by the Land Board.

The EFIB has established investment objectives for the management of the financial assets: maintain the purchasing power of the Fund, maximize total return over time at an acceptable level of risk and provide relatively smooth and predictable distributions to beneficiaries.[4] There is also a clearly established

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[3] Endowment Fund Reform Progress Report, Robert Maynard, December 6, 2013

[4] Endowment Fund Investment Board Investment Policy Statement, February 2014.

performance review process requiring monthly performance; evaluation of the sufficiency of earnings reserves; summary of significant actions taken by the EFIB; and any compliance issues or areas of concern.[5]

A revised (after further investment consideration of commercial real estate[6]) and approved strategic plan should clearly describe appropriate measurement methodologies and reasonable performance objectives by asset class. The current Asset Management Plan lays out expected peer returns on assets by land asset class but there is no comparable information for the financial assets. Periodic reporting to the Land Board should measure current performance and progress towards achieving long-term objectives as stated in the Investment Policy and consistent with the Asset Management or Strategic Plan.

The Land Board and the IDL should expand their view of the appropriate peer set for governance and operations. The peer set goes beyond regulatory requirements and other state land trusts and includes institutional investors such as endowments and state pension plans. This would provide a way to measure whether IDL is achieving its stated vision of being a "premier organization for trust management".

G. Sub-Committee Proposed Governance Structures

The recommendations of the Land Board Sub-Committee on Endowment Investment Governance Strategy were forwarded to Callan Associates on September 19.

- A number of recommendations were proposed in regards to governance issues: the modification of the level of decision making authority on timber sales contracts, land investment decisions deemed to be routine and special land investment decisions.

  Callan opinion: Callan supports the delegation of authority to make decisions to IDL and the Director where appropriate. We defer to the Sub-Committee and Land Board on what the applicable levels for each should be.

- A number of recommendations were proposed by the Sub-Committee in regards to cash flow:
  - Land Bank to only be used to facilitate consolidation of lands, acquire access or acquire land for Public Schools
  - 90% of the proceeds from land disposals go to the Permanent Fund managed by the EFIB, other 10% stays in the Land Bank for potential reinvestment in lands
  - Non-Public School land proceeds flow to the Permanent Fund managed by EFIB unless there is an identified need to acquire access
  - Land Board conducts biennial review of the Land Bank to determine if funds should be retained or transferred to the permanent Fund

  Callan opinion- We feel that the 90%/10% rule of splitting proceeds from land disposals is potentially too rigid and premature. The Land Board needs to determine whether increasing the land base is desirable from an investment perspective. If the Land Board were to engage an outside expert to assist in the development of a long term strategic as well as annual plan, land bank monies could be allocated on a periodic basis consistent with the plans.

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[5] Idaho State Board of Land Commissioners, State Trust Lands Asset Management Plan, December 20, 2011.

[6] Commercial real estate here refers to ownership of offices, retail properties, operating business etc.

II. Revenue Forecasting

Callan has reviewed IDL's revenue forecasts and processes. The current revenue forecasts are completed by the IDL and given to the EFIB for use in evaluating the appropriate distribution rates and levels of earnings reserves. The forecast is presented in a spreadsheet with very limited back up. The spreadsheet has forecast numbers for each class of land. It includes information on the process used to derive the forecast for the non-timber assets with some accompanying notes that are included as comments for certain cells in the Excel worksheet. The timber forecast is provided as "clean sheet" numbers with no comments or explanation; however, the IDL has background data and information supporting the forecast numbers. It has not historically been provided to the EFIB.

A. Revenue Forecasting Method

The revenue and expense forecasting methodology for commercial real estate, grazing land, agriculture, recreation, conservation, oil and gas, and minerals is as follows:

- Revenues are forecast using a rolling average of the prior five years adjusted for significant events
- Expenses are forecast using a rolling average of the prior three years adjusted for significant events

In the FY 2015 forecast, the only adjustments made to the rolling average calculations for revenue were for oil and gas revenue which was reduced 50% relative to FY 2014. Direct program expenses for grazing were adjusted by $150,000 (i.e. rolling three year average plus $150,000 for FY 2015).

Institutional best practice for properties and land that are encumbered by leases is to use software and accounting programs which allow input of lease terms (rent, rental escalations, landlord's expenses, expense recoveries from tenants, etc.). The software allows projections into future years for income and expenses that are based on the actual contractual lease terms, not a historical look back. These programs also interface with valuation software to produce pro forma projections and allow scenario modeling including re-leasing assumptions, the costs of re-tenanting, and ongoing capital improvements.

The IDL believes that using a historical average is a quicker and easier way to develop projections than pulling information from its Instrument Management System which has lease information but was not developed with a reporting or forecasting capability. According to IDL (email from Patrick Hodges on 9/19) "this system could be used to pull the information based on leases, but it is not a simple task and would not yield significantly better information than what has happened in the prior five-year period The amount of revenue and volatility compared with timber has been relatively small, and largely driven by one or two larger, one-time events (like a $1M bid to jump the Snake River Canyon or a large premium bid on a grazing lease). Other things can impact revenue like shorter term leases/permits and non-use on grazing leases, but in the grand scheme of things these do not greatly impact the total."

B. Residential Real Estate Revenue

Residential real estate revenue is based on the forecasts in the appraisal for the first year and in subsequent years, revenue is assumed to be 93% of the prior year. The revenue reduction takes into account the planned sales of cottage sites.

C. Timberland Revenue

The timberland program revenue and expense is based on the annual and 10 year sales plans. The basis for the annual and 10 year sales plan is established in the Forest Asset Management Plan (FAMP) which is a comprehensive and well documented strategy that is completed every five years. IDL uses forest planning modeling software to run scenario analysis and produce an optimized Net Present Value with an associated harvest schedule that achieves defined management objectives while considering

management constraints. In the past, a program named SPECTRUM was used but it is being replaced with Woodstock for the next FAMP update. The result of the analysis and the go forward sales and management plan, is set forth in the comprehensive FAMP. An external natural resource and timberland consultant, Mason, Bruce, and Girard, Inc., was used alongside the IDL when the April 2009 FAMP was approved by the Land Board. The IDL anticipates one or more outside consulting experts will be utilized in future FAMP work.

The timber revenue forecast includes sales currently under contract at actual sales prices which are allocated to each endowment over the contract period. The forecast also includes proposed sales from the 10 year sales plan and ten year average stumpage prices that are adjusted up or down depending on the IDL's assessment of future market conditions. For example, going into the downturn, the stumpage prices used in the forecast were adjusted downward by 30% for three years. The revenue forecast is updated every six months with timber sales contract information. The IDL indicated that the forecasts are reasonably accurate for three years because of the contracts in place but after three years, the forecast becomes more subjective as it involves more forecasting than contractual revenue. Pricing, timing of execution on the contracts, pests, and fire are all variables impacting the forecast.

Callan discussed the approach with large timberland investment management organizations (TIMOs) and verified that their process used for revenue forecasting is similar. In fact, many use the Woodstock modeling software. Revenue forecasting is done by the TIMOs at the acquisition of a property and then annually as part of an annual asset management plan. TIMOs also consider information from third party appraisals which include a pro forma revenue model that is reviewed alongside the internal forecasts generated by the TIMO.

D. Recommendations and Prioritizations

Recommendation 1: Callan does not recommend any changes to the revenue forecasting methodology for either forestland or residential cabin sites.

Recommendation 2: Develop an asset management plan for each commercial property and projected cash flow models. Use these cash flow models as the foundation for the revenue forecast. Complete in FY 2015. For all other land that is subject to leases, the forecasts should be based on the amounts that will be generated under the terms of the lease in the forecast years. Over time, develop the capabilities to forecast grazing and agricultural revenue using a forward-looking analysis based on leases.

Recommendation 3: The revenue forecast provided to EFIB should include a summary of the process used along with the major assumptions and data inputs. This is most important for forestland given it is the primary driver of the revenue forecast. The IDL should provide its existing documentation of methodology, inputs and assumptions to the EFIB to provide context for the timber revenue forecast. Complete for the FY 2015 forecast.

Recommendation 4: Callan believes the ability of a third party to verify the forecasts is particularly important and part of the "trust but verify" concept discussed earlier. The Land Board may want to consider having the forecasts reviewed periodically by a timberland consultant and in the interim, continue to have the EFIB verify the IDL's forecasts. Complete for the FY 2016 forecast.

Recommendation 5: The revenue forecasts should be accompanied by a reconciliation of the prior year's forecast versus actual results as a way to illustrate where the variances were, as a tool to understand the accuracy of the forecasting model, and to identify areas of improvement. Complete at the end of FY 2015.

III. Land Asset Valuation Policy

IDL's valuation policy is summarized in Table 1. The purpose of obtaining valuations is for performance measurement, to compare performance with peers (western states managing similar land trusts, private trusts or investment firms in similar market sectors), to optimize trust management performance, and as a tool to identify underperforming assets.[7]

Valuations are not used in the IDL Annual Report to present a total asset value for lands. The only asset value that is included in the IDL Annual Report is the commercial real estate value that is used to compute a return on asset.[8] Valuations are also done by an external third party at the time an asset is sold to establish the minimum price that can be accepted at auction.

Table 1 – Valuation Policy for Lands[9]

Type of Land	Valuation Method	Frequency
Commercial Real Estate	Independent or Internal Appraisal – Management Recommendation	Annual Index, 5 Year Mass Appraisal
Forestland	Stumpage price indices Independent or Internal Appraisal – Management Recommendation	Annual Index, 5 Year Mass Appraisal
Rangeland	Independent or Internal Appraisal	Annual Index, 5 Year Mass Appraisal
Agricultural Land	Independent or Internal Appraisal	Annual Index, 5 Year Mass Appraisal
Residential	Independent or Internal Appraisal – Management Recommendation	Annual Index, 5 Year Mass Appraisal
Minerals	Unproven Site – Bare Land Value Proven, Unopened Site – Bare Land Value only or NPV of future earnings less development cost Producing Sites – NPV of earnings Close/Abandoned Site – Reversion value, possible liability to reclaim	Dictated by changing stages of property characteristics and uses
Conservation	Western States Survey	Annual
Rights of Way	Western States Survey	Annual

A. Summary of Methods Used to Establish 2013 Valuations

Callan has reviewed the current valuations of timber and non-timber assets. Valuation information was provided by EFIB staff and IDL staff. The 2013 values were determined using a variety of methodologies and valuations were established by external third parties and IDL staff as summarized in Table 2.

[7] Idaho State Board of Land Commissioners, State Trust Lands Asset Management Plan, (December 20, 2011), 19-20.
[8] Idaho Department of Lands, 2013 Annual Report, 32.
[9] State Trust Lands Asset Management Plan, 19-20.

Table 2 - Valuation Methods Used in 2013

Type of Land	2013 Valuation Method
Commercial Real Estate	Internal IDL solicited a local brokerage firm to provide a Broker's Price Opinion ("BPO") in 2012. For 2013, IDL used publications from local real estate brokers to determine price changes and applied these changes to the 2012 BPO values to establish 2013 values.
Forestland	Third party appraisal of bare land using mass appraisal sales comparison approach plus Internal valuation by IDL of standing timber based on discounted cash flow Internal valuation by IDL also informed by recent timberland sales
Rangeland	Third party appraisal of bare land using mass appraisal sales comparison approach Only land value assessed
Agricultural Land	Third party appraisal bare land using mass appraisal sales comparison approach Only land value assessed
Residential	Third party appraisal for the purpose of establishing new rental rates
Other Commercial Right of Ways Conservation Minerals	No valuation in 2013 for any of these categories of land

Going forward, the valuation policy adopted by the Land Board will need to, at a minimum, continue to comply with legal and audit requirements. Additional factors influencing the adoption of the valuation policy will depend on the Land Board's consideration of the following: type of land, requirements or constraints surrounding the land ownership, best practices, cost, and use of the valuation (valuations are typically used for reporting investment performance, asset allocation, investment research, formulating investment and divestment strategies, performance measurement of staff or external adviser, and determining fees paid if using external advisers).

Developing and using consistent valuation standards over time will help to ensure that changes in value over time reflect changes in the land being valued and changes in the markets and are not driven by changes in valuers or methodologies.[10]

There have been attempts to standardize reporting across state land trust entities and develop standard performance reporting and valuation methodology. In particular the Western States Land Commissioners Association (WSLCA) in July 2008 set forth a series of recommendations in "The Case for Uniform Land Asset Reporting." Representatives of IDL participated in developing these recommendations and the valuation policies in place are modeled based on these standards. The recommendations and initiatives started by the WSLCA for valuation have not been widely adopted by the WSLCA membership.

[10] Paraphrased from Hancock Timber Resource Group. Timberland Appraisal Policy, (Revised May 28, 2014), 3.

The entity that develops and sets reporting and valuation standards for institutional investors in real estate, timberland, and farmland is the National Council of Real Estate Investment Fiduciaries ("NCREIF"). NCREIF also produces benchmarks and operational data that are widely used by investors for performance measurement and benchmarking purposes. NCREIF does not collect data on the assets held within state land trusts unless they are invested and managed by a third party manager.

In the following paragraphs, Callan discusses the valuation of each type of land, both current and prospective, including a summary of practices used by institutional investors (non-state land trusts) and suggestions for changes to the current valuation policies and practices.

B. Commercial Real Estate

Current best practices for commercial real estate owned by institutions are annual valuations completed by a third party Member of Appraisal Institute ("MAI") appraiser or a combination of a third party and internal valuations by the owner or owner's advisor. In the latter case, there is an independent third party valuation every three years which is updated in the interim years by the owner, owner's advisor, original appraiser, or valuation consultant.

Comprehensive appraisals are conducted to provide an accurate estimate of fair market value of the subject property, and are supported by thorough documentation of assumptions, methodologies, and comparable sales. Appraisals conform to the Uniform Standards of Professional Appraisal Practice (USPAP) as defined by the Appraisal Standards Board of The Appraisal Foundation. Broker opinions of value are not used as a valuation approach or relied upon by institutional investors.

The major benchmarks for U.S. commercial real estate include properties and funds that are subject to annual and quarterly valuations. There is a trend to quarterly independent valuations and to full outsourcing of the appraisal contracting and update function to a valuation consultant for institutionally managed real estate portfolios in the U.S.

Recommendation 1: The Land Board should require annual valuations for the current portfolio of Idaho commercial properties. This would include an independent third party valuation completed by an external MAI appraiser not less frequently than every three years with annual updates.

If a Separate Account Advisor/Oversight Consultant is retained to manage the commercial portfolio, that advisor would complete the annual update valuations every year (as part of the asset management planning process which would include a hold versus sell analysis). Separate Account Advisors/Oversight Consultants complete an income based valuation alongside the third party MAI appraiser even in the years when the MAI appraiser is hired as a check and balance mechanism.

Although the asset value of the Idaho commercial portfolio is relatively small compared to other land types, Callan believes a valuation process consistent with institutional practices is preferable because there are no acreage restrictions on the sale of commercial property (unlike some of the other land assets), the information will provide input and benchmarking for portfolio management and hold/sell decisions, valuation is a part of sound asset planning, and will provide transparency. It will also help satisfy one of the concerns voiced by Land Board members regarding the lack of a plan or end game for the commercial properties as it can be used in decision-making in a hold/sell analysis.

The requirement for valuations should be addressed over time as the portfolio becomes an even smaller part of the land portfolio (and the total portfolio), but at this point in time, Callan believes external valuations are important to develop a baseline and until the direction of the portfolio is more fully developed.

C. Forestland

Institutional owners of forestland have similar valuation policies to commercial real estate. Comprehensive appraisals are conducted every three years by an external MAI appraiser. Appraisal

updates are conducted during the interim years or quarters between comprehensive appraisals. Updates may be conducted by the original appraisal firm or the timberland advisor on behalf of the owner. Valuation changes made in the update are typically driven by actual changes in annual growth, harvests and prices as well as assumptions. Valuations are used for reporting investment performance, asset allocation, investment research, formulating investment and divestment strategies, performance measuring/benchmarking of staff or external adviser, and determining fees paid if using an external adviser.

To be included in the NCREIF Timberland Property Index, the only benchmark for institutional timberland investment, properties must be valued quarterly. Valuations may be internal or external except that there must be an independent external appraisal performed in accordance with USPAP at least once a year.

Timberland appraisals are comprehensive and cover land and timber. A timberland appraisal may consider one or all three approaches to value (cost, sales comparison and income capitalization) depending on how buyers are pricing similar properties. The valuation approaches are summarized below and included in this document to provide context for the analysis used by the IDL.

- Cost Approach: the cost approach sums the value of the bare land plus the value of the existing merchantable timber plus the value of pre merchantable stock which is derived in various ways. The value of the land is segmented by type such that a per acre value is determined for each type of land that may exist in the subject property. The theory behind the approach is that an option for a purchaser of the property, instead of buying a piece of timberland with trees and land, would be to buy the components separately.
- Sales Comparison Approach: the sales comparison approach is based on prices paid for similar properties in an open market. The prices are adjusted based on differences between the subject and the comparables.
- Income Capitalization Approach: the income capitalization approach converts projected future cash flows of the subject into a present value.

The most recent valuation conducted by the external appraiser and the IDL most closely mirrors the cost approach in that the IDL takes the third party appraiser's bare land value and adds to it their estimate of the value of the standing timber. The recommended value provided by IDL was also based on a discounted cash flow and a limited number of sales comparables with high level information so it had elements of the income capitalization and sales comparison approach.

An institutional process would not have the appraiser only do a land value with the owner providing the timber value and elements of the other two approaches. The appraiser would do the entire cost approach and, most likely, a sales comparison and income approach to determine fair market value. Institutional timberland appraisals are completed by third party firms with specialized expertise in comprehensive timberland appraisal. Value Logic, who completed the most recent mass appraisal of the land value that is used as one component of the current timberland value, is not one of those firms.

Recommendation 2: The current practice of having an appraiser complete mass land appraisals is not useful because it does not provide an independent valuation of the entire asset (e.g. land and timber) nor does it contain any information that could be used by the IDL to improve its management or valuation practices for forestland. This valuation approach should be discontinued.

Valuation Options For Forestland

Primary considerations for the valuation approach adopted by the Land Board for the purpose of performance measurement and monitoring for forestland include the sales constraints which make it impossible to convert unrealized appreciation to realized gains, the cash flow orientation of the asset with cash flow as the primary driver of return, and the fact that timberland is the largest holding in the portfolio.

Alternative valuation approaches are presented in Table 3 below.

Table 3 Alternative Valuation Approaches

Valuation Approach	Strengths	Issues
Do not value forestland	No time or cost required Complies with GASB	No value conclusion Difficult to produce performance reporting or asset allocation without periodic values Not consistent with best institutional practices No external market information
Discounted cash flow completed by internal staff annually	Minimal cost	Lack of an independent opinion Valuation assumptions and facts would not be checked by an independent party Potential conflict of interest if the valuation impacts the person doing the value No external market information
Discounted cash flow completed by independent expert	Independent opinion Provides valuation information for performance reporting and asset allocation Tailored to Land Board's purposes and situation Depending on scope, could be a cross check on internal numbers	Moderate cost Market information would be more limited Limits ability to compare performance results to the NCREIF Timberland Index if this is a priority
External appraisals every three years; Internal staff or appraiser provides updates in the interim years	Independent opinion of value Provides valuation information for performance reporting and asset allocation Consistency with best practices of TIMOs and institutional owners Provides basis for comparison to other peer groups and a benchmark Cross check on internal numbers Source of external market information, including sales that could potentially be useful to the IDL and the Land Board	Most expensive option External appraisal value would assume the forestland could be sold and value conclusion would include values that cannot be realized by the Land Board

D. Rangeland

The valuation approach for rangeland is complicated considering (1) the absence of rangeland ownership by institutional owners beyond state land trusts; (2) the lack of institutional benchmarks and valuation standards, (3) the formulaic approach to setting rents used by the Land Board versus a free market approach for setting rents, and (4) the value drivers of rangeland beyond the pure economic value of the forage which have been well documented in prior studies for the Land Board and in the literature.[11] Stated another way by O'Laughlin and Cook, "Valuing the bare land component of rangelands involves accounting for ranch quality of life values beyond their value for livestock production." Doye and Brorsen point out a number of factors impacting value for rangeland including agricultural uses, recreational uses and residential uses. Because of the land sales constraints and the nature of the ownership, the other factors beyond the pure rental stream are of little value or cannot be captured at all by the Land Board.

The most recent appraisal used only a sales comparable approach to establish a bare land value. The purpose of the appraisal was to "estimate the market value of the subject land by the land classifications as identified by our client. This appraisal does not consider the value of the resource growing or improvements constructed on the subject parcels"[12]

Callan reviewed the rangeland appraisal and noticed that the comparables used for the rangeland had very few adjustments even though there was a significant range of land types and amenities. For example, some included significant improvements (homes and buildings), others had timberland that could be sold or water rights or access to water, and some had utilities and wells and differing access.

The appraisal also assumed that the Land Board could sell the properties being appraised. Finally, as noted previously, the values in those comparables inherently include a variety of non-financial factors, such as quality of life, that drive the land value.

Recommendation 3: The current practice of having an appraiser complete mass land appraisals is not useful for the reasons included in the paragraph above. This valuation approach should be discontinued.

Valuation Options For Rangeland

The valuation options available to the Land Board are similar to those outlined under forestland. Callan concludes that, should the Land Board decide that valuations are a priority, the most appropriate valuation approach is an income based approach modeled after that set forth in the O'Laughlin and Cook study on page 78. A value derived by using the income stream may be conservative in the sense that it will not capture the value of small parcels that may be sold opportunistically. But we believe this is far better than a sales comparison approach that does not consider the constraints. Should the sales constraints be lifted, the valuation approach could be modified. A third party appraisal that includes an income capitalization and sales comparison approach could be used as a decision-making tool for specific sales but not for the overall portfolio as a whole at this time.

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[11] Jay O'Laughlin and Philip S. Cook, "Endowment Fund Reform and Idaho's State Lands: Evaluating Financial Performance of Forest and Rangeland Assets", Idaho Forest, Wildlife and Range Policy Analysis Group, Report No. 21, (December 2001); Damona Doye and B. Wade Brorsen, "Pasture Land Values: A "Green Acres" Effect", in *Choices Magazine a publication of the Agricultural and Applied Economics Association*, (2nd Quarter 2011), www.choicesmagazine.com.

[12] Value Logic, "Idaho Department of Lands-Contract #13-104 Gross Land Appraisal Services, Summary Format, Appraisal of Zone 1 Thru 12 RANGE LAND, As of June 13, 2013", (December 13, 2013), 4.

Agriculture Land

Institutional owners of farmland use appraisers with a specialty in agricultural properties and have policies similar to timberland (i.e. three year externals with annual or more frequent updates). Farmland appraisals are comprehensive in that they come to a conclusion for the entire property which considers the crop growing on the land and the leases in place. This is in contrast to the land value only approach in the most recent appraisal.

Recommendation 4: Discontinue the current appraisal practice for agriculture.

Recommendation 5: There is little benefit to be gained from valuing this part of the portfolio in the future for ongoing performance measurement given the de minimis holdings.

Summary of Valuation Priorities:

- Callan has developed timberland and rangeland values for purposes of the asset allocation study using a discounted cash flow approach.
- Current values will need to be established for the commercial portfolio. There are no recent independent, third party opinions of value for the commercial. If management is transferred from the IDL to a specialist real estate investment manager/consultant, current values will need to be established and updated periodically for performance measurement purposes.
- Determine a valuation approach for timberland and rangeland to be used for performance measurement purposes. Callan recommends an approach that incorporates an independent expert opinion and a discounted cash flow/income approach.
- Update the lands valuation policy in FY 2015. Information addressed in such policy would include frequency, methodology, guidelines, roles and responsibilities and program administration, valuer qualifications, interaction with valuer, conflicts of interest, and documentation.
- Contract for third party valuation work for FY 2016.
- The Governance Sub-Committee recommended that Callan evaluate the options for valuation and determine the best approach for measuring performance. The above recommendations are responsive to that request; however, there are performance metrics in addition to those derived from valuations that could be developed and measured.

IV. Performance Reporting

Callan would propose a summary report similar to that currently produced for the Endowment Fund Investment Board that would include the addition of market values for the IDL portfolio to reflect the asset allocation of the total endowment fund. We would rely on IDL to provide the monthly cash flows for their portfolio. A return would be calculated quarterly which would reflect cashflows in/out of the portfolio but hold the market value constant. Once a year a new valuation for the IDL portfolio could be calculated based on the valuation policy and methodology approved by the Land Board.

A total return is calculated by aggregating the market values and cashflows of the financial assets and IDL assets. Once there is a long enough history, statistics such as standard deviation could be added to the report.

V. Asset Allocation Study

A. Introduction

The purpose of the asset allocation study is to evaluate the current and potential asset allocation mixes incorporating the IDL lands portfolio with the EFIB financial assets. In order to accomplish this objective, values were established for the Idaho timber and grazing lands. In addition, risk, return and correlation assumptions were developed for the Idaho specific assets. Return expectations were formulated using existing and forecast data provided by IDL as well as supplemental data from outside sources. These were integrated with existing Callan forecasts for both publicly and privately-traded institutional asset classes. The asset allocation exercise was conducted to address the following issues:

- The appropriate levels of investment for Idaho timberland and grazing land
- Other asset classes not currently considered that should be added
- The process for liquidating assets, if appropriate, including timing and potential discounts to market value

The asset allocation study did not include an assessment of the impact of differing asset allocations on the current distribution policy. Dollar distributions to beneficiaries are calculated as a percent of the rolling three year average of the individual endowment permanent funds. The earnings reserves are set by evaluating the volatility of the returns of the financial assets and land revenues. If an asset allocation mix is selected that deviates from the risk and return in the current mix, the Land Board will need to assess the impact on the distribution policy and make changes as necessary.

B. Land Asset Valuations

Forecasting returns, risks and diversification potential (correlations) for timber and grazing lands is challenging. Although historical and projected net income streams are available for both asset classes, the returns these income streams generate are dependent on the value of the underlying land. Land valuation under any circumstances involves art as well as science but art plays a particularly large role for Idaho timberland and grazing land due to both the size of the holding and State constitutional considerations. Appraisals based on comparable sales do not account for a number of factors including location, accessibility, improvements and the tremendous increase in supply that would result from a significant land sale (assuming that there were no restrictions on sales).

For the purposes of our asset allocation analysis it is useful to value the lands by discounting expected future cash flows for a variety of reasons. First, cash flows for these lands have been projected and using them makes the value of the land consistent with these forecasts. Second, the duration and frequency of the projections allows better estimation of standard deviations and correlations than appraisals which are conducted several years apart. Finally, stocks and bonds are generally valued based on discounted cash flows so there is consistency in the forecasting methods across asset classes.

The approach we used to value both the timberlands and the grazing lands in this analysis is the land expectation value method (LEV). LEV is based on a forecast sustainable real cash flow that will exist into perpetuity. This cash flow is discounted by a constant discount rate. The formula for LEV is:

LEV = Constant Real Annual Cash Flow / Real Annual Discount Rate

It is important to recognize what the land expectation value represents. The LEV is not an appraisal of the fair market value for all or any portion of the land. It does not attempt value individual tracks of land based on their specific characteristics. It does not take into account the revenues that might be generated from other potential uses. Unlike an appraisal, it is not intended to facilitate a transaction.

The LEV is a general estimate of the overall land value. It is constructed from the expected revenues reflecting current operations. Its purpose is to provide a necessary input to forecast returns for use in the asset allocation analysis and to determine the percentage weight of the lands in the existing asset allocation.

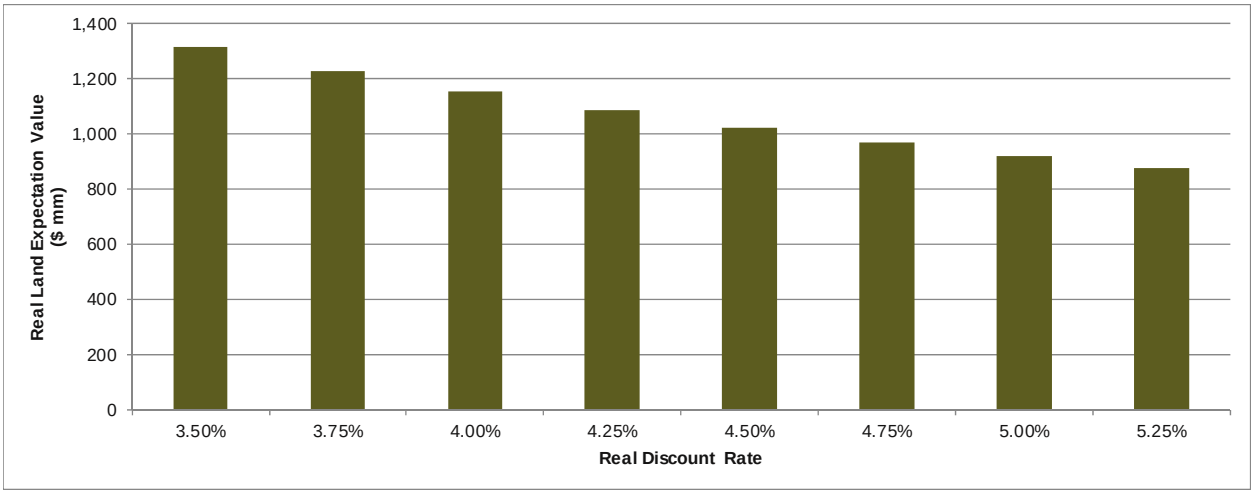
C. Timberland Forecast

For timberland, the forecast cash flow is based on the volume of timber harvested, the price paid for the timber and non-timber income. For our purposes, we assume that the long-term sustainable yield (LTSY) for timber is 240 mmbf on an annual basis. We assume the stumpage price is $240 per mbf. Historically, non-timber income has run about 9% of total income. Direct program expense and managerial overhead assumptions are taken from the Endowment Lands Income Statement. Combining these values provides the estimated real dollar value of the LTSY.

The selection of the discount rate is somewhat subjective. The figure below shows the impact of the real discount rate on the LEV given the cash flow assumptions described above.

Figure 1

Land Expectation Values for Timberland Based on a Range of Discount Rates



For our purposes, we have chosen to discount the cash flows at a rate consistent with the expected return on institutionally-managed timber funds. Currently, institutional managers are forecasting 4% to 6% real returns. IDL manages its timber on the conservative end of the institutional range so a 4% real discount rate is appropriate. The selection of this discount rate is also consistent with the dividend and earnings yields of timber REITs. Using a 4% real discount rate translates into a real LEV for $1.17 billion for the timber assets. Dividing timberland holdings of 980,764 acres by the $1.17 LEV results in an estimated value of $1,174 per acre.

The real return on assets (real ROA) is calculated by dividing the real net cash flow by the real LEV. The result for timberland is 4% which is the same as the real discount rate of 4%. The nominal return on assets is the real return on assets plus the assumed rate of appreciation in the cash flows. We assume the growth in timber revenues will be equal to inflation which Callan currently forecasts to be 2.25%. Summing the inflation expectation and the real ROA gives a nominal expected rate of return of 6.25%.

In addition to return, risk (as measured by standard deviation) and diversification with other asset classes (as measured by correlation) have to be estimated. Both of these parameters require frequent observations of returns. For publicly-traded asset classes we estimate risks and correlations using quarterly returns usually over 3 to 5-year timeframes. This can't be done using Idaho timberland directly because, while cash flows are available frequently, land values are not. Consequently we used proxies for measuring the risk and diversification.

The volatility of timber has both price and volume components. To evaluate the price component we chose the logging sector of the producer price index (PPI). For the volume component we used changes in the number of US housing starts. Due to autocorrelation in the pricing data, we applied a 40% weight to it and a 60% weight to housing starts. This combination has an average standard deviation of about 11% as shown in the following figure.

Figure 2

Historical Risk for the Timber Proxy

For the purposes of our forecasts we added an additional 1% to the standard deviation to account for the risks associated with fire, insects and disease for a total forecast standard deviation of 12%. Historically timber revenues have been less volatile than the EFIB portfolio of financial assets. Table 5 later in this analysis shows the EFIB allocation of 70% equity and 30% fixed income has a projected standard deviation of 13.4% so the timber forecast volatility relative to financial assets is consistent with history.

The forecast correlations are -0.01 for US stocks, -0.01 for non-US stocks, 0.02 for EFIB bonds (85% broad market bonds, 15% TIPS), 0.02 for real estate and 0.00 for private equity based on the historical values shown in the following figures.

Figure 3

Correlation Between U.S. Equity and the Timber Proxy

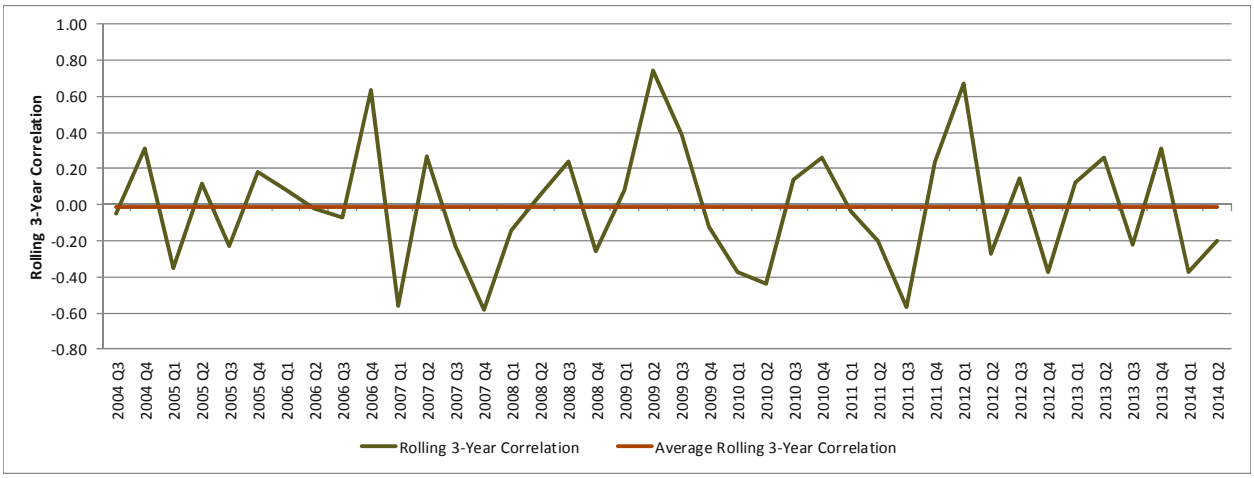


Figure 4

Correlation Between Non-U.S. Equity and the Timber Proxy

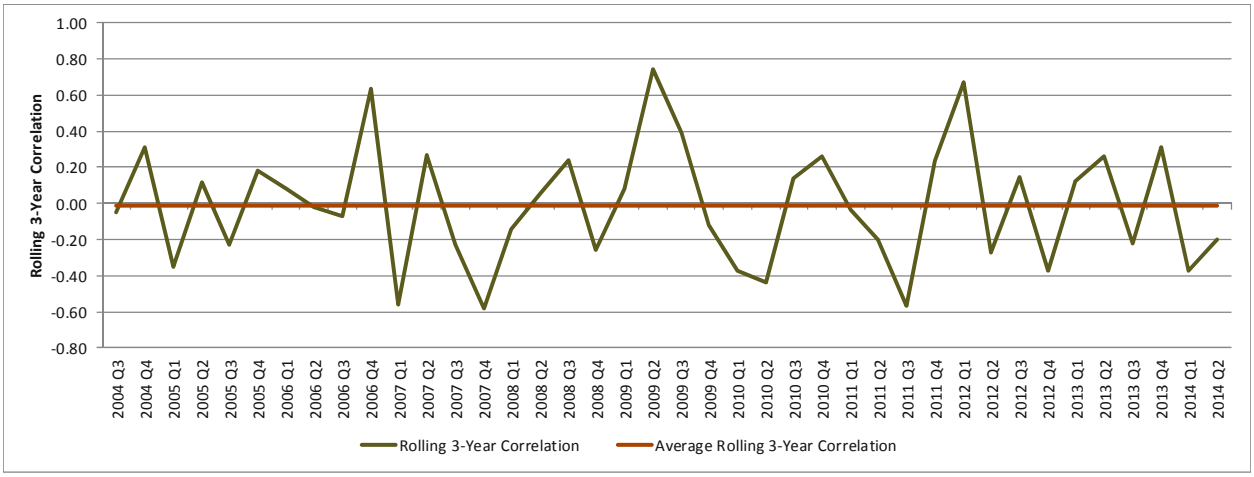


Figure 5

Correlation Between EFIB Bonds and the Timber Proxy

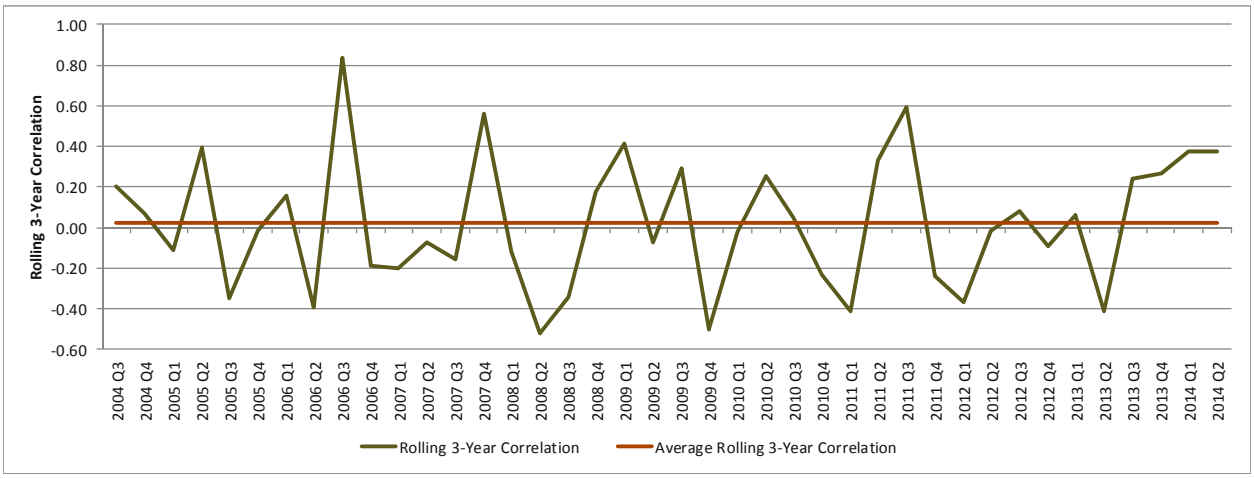


Figure 6

Correlation Between Real Estate and the Timber Proxy

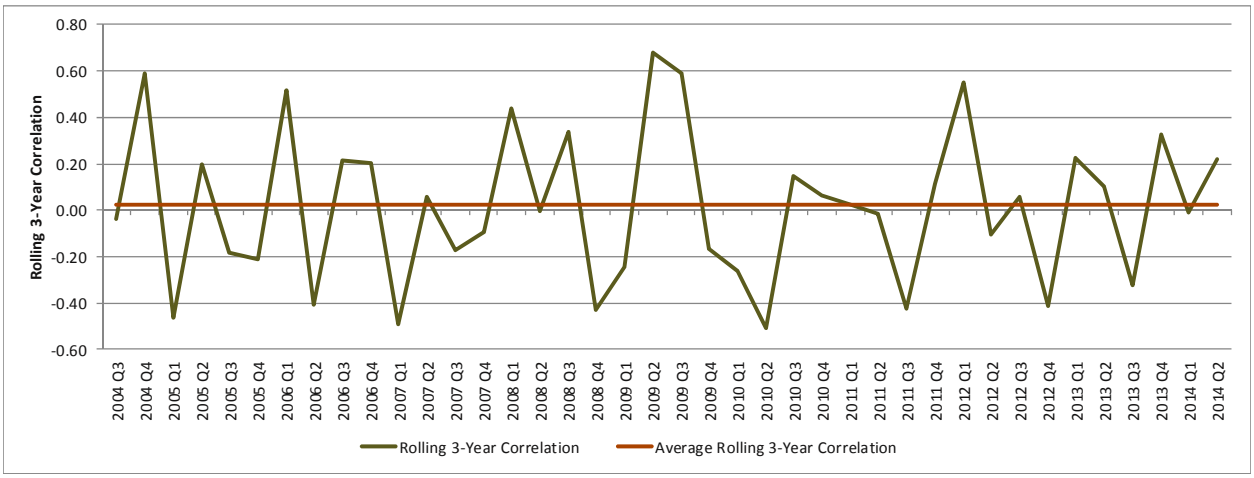
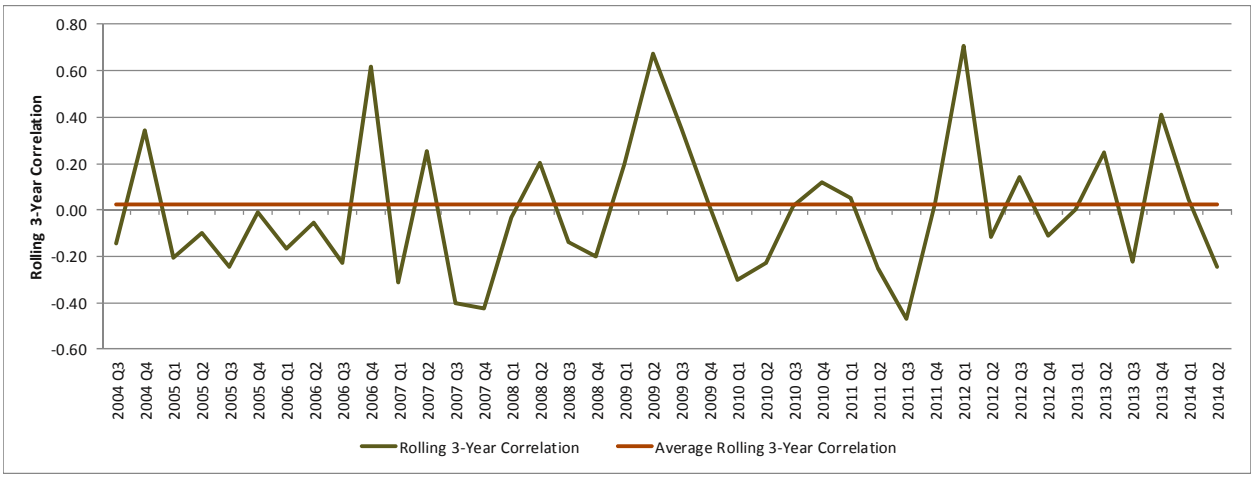


Figure 7

Correlation Between Private Equity and the Timber Proxy



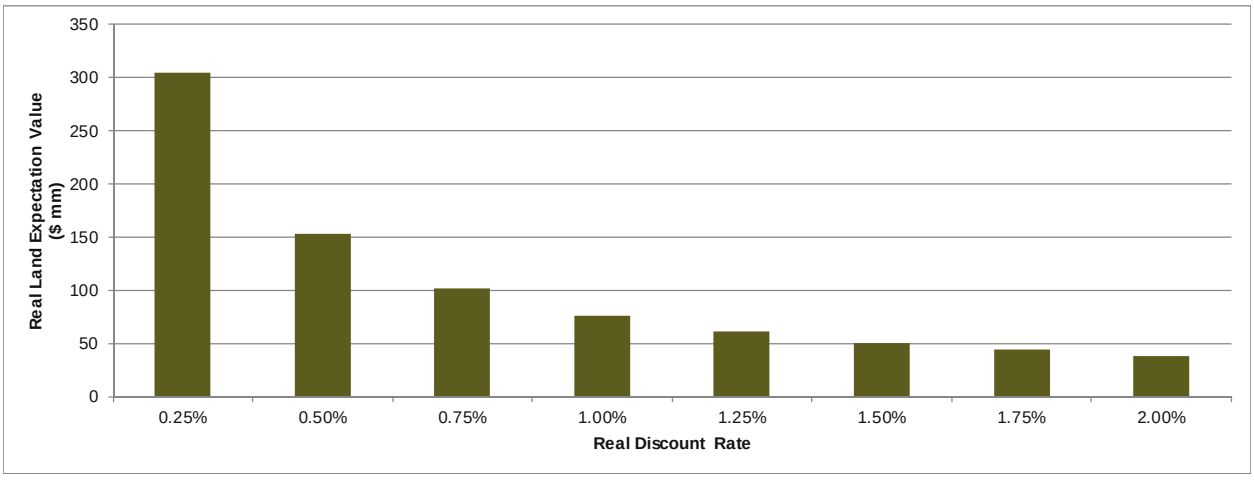
D. Grazing Land Forecasts

Grazing land cash flows are forecast based on anticipated values for Animal Unit Months (AUMs) and the AUM grazing rate. We used the estimate of 285,000 AUMs from the March 2014 State Grazing Rate Review and kept it constant throughout the forecast period. We used the $6.77 / AUM Grazing Lease Rate for Calendar Year 2015. As was the case in the timberland forecasts, direct program expense and managerial overhead assumptions are from the Endowment Lands Income Statement discounted for inflation so that they are consistent with the real revenue forecasts.

Once again the selection of the discount rate is somewhat subjective. Figure 8 below shows the impact of the real discount rate on the LEV given the cash flow assumptions described above.

Figure 8

Land Expectation Values for Grazing Land Based on a Range of Discount Rates



To estimate the discount rate we used the historical average of the 10-year bond equivalent yield for funding costs provided by the Farm Credit System Bank. The 10-year average for this rate is approximately 4% while the 5-year average is about 3%. We averaged these to get a nominal discount rate of 3.5%. Subtracting our inflation assumption of 2.25%, results in a forecast real discount rate of 1.25%. This real discount rate leads to a $61 million land expectation value for grazing land. This translates to $43/acre ($61 million value/1.4 million acres). The real return on assets (real ROA) for the combination of forage and land is the real cash flow divided by the real LEV. The result is the real discount rate of 1.25%. The nominal return on assets is the real return on assets plus the assumed rate of inflation so the nominal expected rate of return is 3.5%.

For the purposes of calculating risk we assumed that the forecast AUMs are a constant 285,000,the same assumption made to forecast revenue. Consequently, volatility only comes from variations in grazing fees. The AUM rate is calculated by:

AUM Rate = $IDFVI_{t+2}/100 \times 1.70$

where $IDFVI_{t+2}$ is calculated as:

$IDFVI_{t+2} = -6.92 + (0.13 \times FVI_t) + (0.60 \times BCPI_t) - (0.33 \times PPI_t) + (0.74 \times IDFVI_t)$

The variables are defined as:

$IDFVI_{t+2}$ is the predicted value of the Idaho Forage Value Index two years in the future

FVI_t is the most recent published Forage Value Index for the 11 western states

$BCPI_t$ is the most recent published Beef Cattle Price Index for the 11 western states

PPI_t is the most recent published Prices Paid Index for the 11 western states

$IDFVI_t$ is the most recent published value for the Forage Value Index for Idaho

The coefficient for the AUM Rate and the first term in the formula for $IDFVI_{t+2}$ are both constant so contribute nothing to volatility. Further, both FVI_t and $IDFVI_t$ have not been historically very volatile. This is particularly true for $IDFVI_t$ since the 0.74 coefficient creates a high degree of autocorrelation. Consequently, the vast majority of volatility in the AUM rate comes from $BCPI_t$ and PPI_t. Unfortunately, these data are only available annually which is inconsistent with the quarterly data frequency that we use to measure risks and correlations for financial assets. As a result, we used historical proxies for these values. For the BCPI and PPI we used the Index of Prices Received for Livestock and Products and the Index of Prices Paid for Production Items, respectively, from the USDA National Agricultural Statistics Service. Both indices are national rather than specific to Idaho or western states and neither is specific to cattle grazing. Having said this, our goal is to get a sense of the degree and timing of the changes in the income and costs associated with raising livestock relative to the return patterns of other asset classes. These indices serve as good proxies as long as there are not substantial differences between the Idaho and national data sets. The historical risks and correlations are estimated with these factors weighted according to the coefficients in the IDFVI formula.

Figure 9

Historical Risk for the Grazing Lease Rate Proxy

This analysis results in an expected standard deviation of 6.75%.

The correlations using the same proxies are forecast to be 0.36 with U.S. equity, 0.32 with non-U.S. equity, -0.18 with EFIB fixed income, 0.19 with real estate, 0.34 with private equity and -0.20 with IDL timber.

Figure 10

Correlation Between US. Equity and the Grazing Lease Rate Proxy

Figure 11

Correlation Between Non-US Equity and the Grazing Lease Rate Proxy

Figure 12

Correlation Between EFIB Bonds and the Grazing Lease Rate Proxy

Figure 13

Correlation Between Real Estate and the Grazing Lease Rate Proxy

Figure 14

Correlation Between Private Equity and the Grazing Lease Rate Proxy

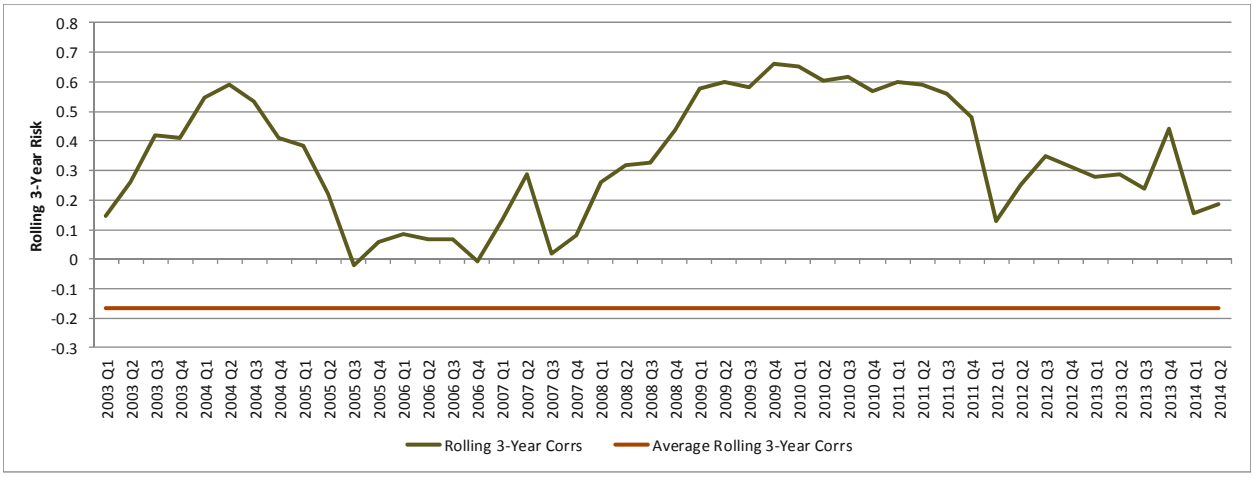
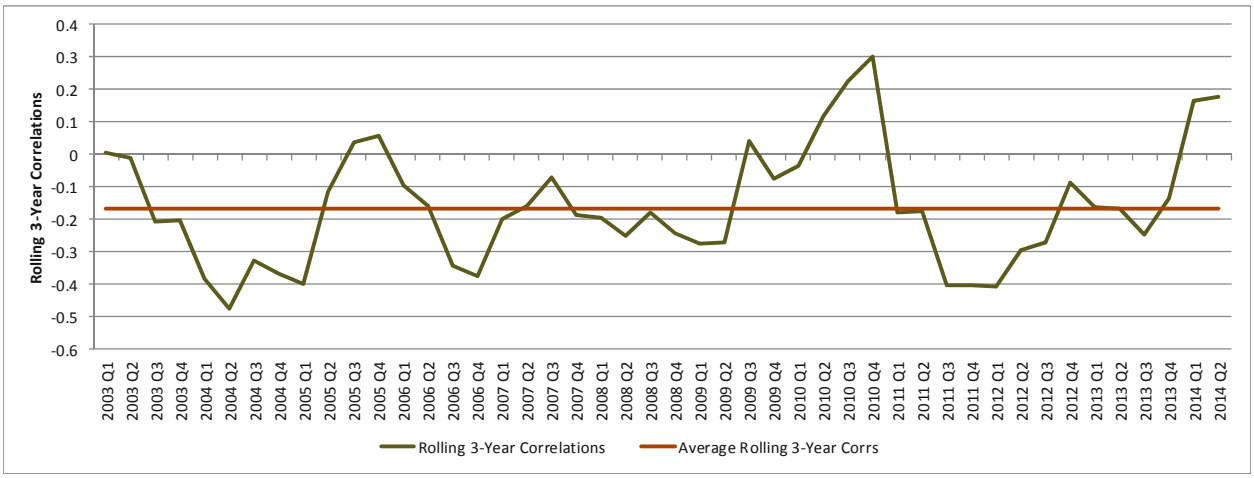


Figure 15

Correlation between IDL Timberland and the Grazing Lease Rate Proxy



E. Capital Market Projections

The projections for all asset classes are consolidated in the following tables. Uncompounded returns are the forecast return in any given year. Compound returns are measured over longer time periods (~10 years) and reflect the reduction in return that comes from variations around the average return ("volatility drag"). Risks are measured by standard deviations.

Table 1

Projected Returns and Risks

Asset Classes	Uncompounded Return	Compounded Return	Standard Deviation
Broad US	9.15	7.60	19.02
Global Ex-US	9.80	7.80	21.46
EFIB Bonds	3.06	3.00	3.71
Real Estate	7.35	6.20	16.50
Private Equity	13.55	8.50	33.05
IDL Timberland	6.25	5.70	12.00
IDL Grazing Land	3.50	3.30	6.75
Cash Equivalents	2.00	2.00	0.90
Inflation	2.25	2.25	1.50

Correlations measure the amount of diversification between two asset classes. A correlation of 1 indicates no diversification. A correlation of -1 indicates perfect diversification. Very few investments have correlations much less than zero.

Table 2

Projected Correlations

	Broad US	Global Ex-US	Domestic Fixed	TIPS	EFIB Bonds	Real Estate	Private Equity	IDL Timberland	IDL Grazing Land	Cash Equivalents	Inflation
Broad US	1.00	0.88	-0.11	-0.05	-0.10	0.74	0.94	-0.01	0.36	-0.04	0.00
Global Ex-US	0.88	1.00	-0.12	-0.05	-0.11	0.67	0.93	-0.01	0.32	-0.04	0.00
Domestic Fixed	-0.11	-0.12	1.00	0.58	0.98	-0.02	-0.18	0.02	-0.17	0.10	-0.35
TIPS	-0.05	-0.05	0.58	1.00	0.71	0.01	-0.09	0.02	-0.17	0.07	0.11
EFIB Bonds	-0.10	-0.11	0.98	0.71	1.00	-0.02	-0.17	0.02	-0.18	0.10	-0.28
Real Estate	0.74	0.67	-0.02	0.01	-0.02	1.00	0.72	0.02	0.19	-0.06	0.20
Private Equity	0.94	0.93	-0.18	-0.09	-0.17	0.72	1.00	0.00	0.34	0.00	0.19
IDL Timberland	-0.01	-0.01	0.02	0.02	0.02	0.02	0.00	1.00	-0.20	0.00	0.10
IDL Grazing Land	0.36	0.32	-0.17	-0.17	-0.18	0.19	0.34	-0.20	1.00	0.00	0.00
Cash Equivalents	-0.04	-0.04	0.10	0.07	0.10	-0.06	0.00	0.00	0.00	1.00	0.05
Inflation	0.00	0.00	-0.35	0.11	-0.28	0.20	0.19	0.10	0.00	0.05	1.00

Existing Asset Allocations

As of June 30, 2014, the EFIB had the following asset allocation (percentage allocations don't add to 100% due to rounding):

Table 3

EFIB Asset Allocation (Financial Assets Only)

6/30/2014

Asset Class	Allocation ($ mm)	Allocation (%)
Domestic Equity	820	47
International Equity	267	15
Global Equity	163	9
EFIB Fixed	469	27
Cash	17	1
Total	1,736	100

Given the timberland $1.17 billion LEV and the grazing land $61 million LEV, the total Endowment asset allocation is:

Table 4

Endowment Asset Allocation (Financial and IDL)

6/30/2014

Asset Class	Allocation ($ mm)	Allocation (%)
Domestic Equity	902	30
International Equity	349	12
EFIB Fixed	469	16
IDL Timberland	1,174	39
IDL Grazing Land	61	2
Cash	17	1
Total	2,971	100

F. Alternative Asset Allocations

We evaluated a number of alternative asset allocations given the asset class forecasts and current allocations. All of the asset allocations represent the minimum amount of risk for the targeted rate of return. The sets of asset allocations in the different tables shown below differ by the allocations to IDL lands and by whether or not diversified U.S. real estate and private equity asset classes are included.

The first set of asset allocations shown in Table 5 are unconstrained and use only the existing asset classes.

Table 5

Unconstrained Allocations with Existing Asset Classes

Asset Class	Endow-ment	EFIB	Min	Max	Mix 1	Mix 2	Mix 3	Mix 4	Mix 5
Broad US	30	49	0	100	19	21	23	24	25
Global Ex-US	12	21	0	100	13	14	15	16	17
EFIB Bonds	16	30	0	100	21	17	13	8	3
IDL Timberland	39	0	0	100	43	46	49	52	55
IDL Grazing Land	2	0	0	100	4	2	0	0	0
Cash Equivalents	1	0	0	100	0	0	0	0	0
Totals	100	100			100	100	100	100	100
Uncompounded Return	6.94	7.46			6.50	6.75	7.00	7.25	7.50
10-Year Compounded Return	6.69	6.76			6.34	6.55	6.76	6.97	7.17
Risk (Standard Deviation)	9.28	13.39			8.10	8.69	9.28	9.87	10.47
Public Equity	42	70			32	35	38	40	42
Public Equity % of Public Assets	72	70			60	67	75	83	93
IDL Lands	41	0			47	48	49	52	55
Alternatives	0	0			0	0	0	0	0

Unconstrained optimizations were run to assess the model's investment appetite for timber recognizing that given constitutional constraints, these mixes may not be implementable. Unconstrained optimizations with only existing asset classes contain more timber than the existing portfolio. There are also positive allocations to grazing land in more conservative asset mixes although they tend to be small. Mix 3 earns a 10-year compound rate of return equal to the forecast EFIB return but does so at a lower level of risk due to the large 49% allocation to timberland. Allocations to public equity as a whole and as a percentage of public assets are reasonably consistent with the existing Endowment allocation.

The second set of asset allocation mixes shown in Table 6 use the existing asset classes but limits allocations to timber land and grazing land to their existing levels recognizing the challenges associated with significantly increasing or decreasing the allocations.

Table 6

Constrained Allocations with Existing Asset Classes

Asset Class	Endow-ment	EFIB	Min	Max	Mix 1	Mix 2	Mix 3	Mix 4	Mix 5
Broad US	30	49	0	100	21	23	25	27	30
Global Ex-US	12	21	0	100	14	15	17	19	20
EFIB Bonds	16	30	0	100	24	21	17	13	9
IDL Timberland	39	0	39	39	39	39	39	39	39
IDL Grazing Land	2	0	2	2	2	2	2	2	2
Cash Equivalents	1	0	0	100	0	0	0	0	0
Totals	100	100			100	100	100	100	100
Uncompounded Return	6.94	7.46			6.50	6.75	7.00	7.25	7.50
10-Year Compounded Return	6.69	6.76			6.33	6.54	6.75	6.94	7.14
Risk (Standard Deviation)	9.28	13.39			8.12	8.75	9.41	10.08	10.77
Public Equity	42	70			35	38	42	46	50
Public Equity % of Public Assets	72	70			59	64	71	78	85
IDL Lands	41	0			41	41	41	41	41
Alternatives	0	0			0	0	0	0	0

Mix 3 looks like the existing overall Endowment allocation since it has 42% in equity and 17% in EFIB bonds. International equity makes up about 40% of total public equity in mix 3 compared with about 30% in the Endowment. The projected 10-year compound return is slightly higher as is the risk. The mix 5 fixed income allocation is reduced to only 9% indicating that a significant amount of diversification is sacrificed to earn a compound return in excess of 7%.

The next set of asset allocations expands the analysis to include diversified U.S. commercial real estate and private equity. Table 7 below shows the results when the allocations to timberland and grazing land are unconstrained.

Table 7

Unconstrained Allocations with New Asset Classes

Asset Class	Endow-ment	EFIB	Min	Max	Mix 1	Mix 2	Mix 3	Mix 4	Mix 5
Broad US	30	49	0	100	16	18	19	21	22
Global Ex-US	12	21	0	100	12	13	14	15	16
EFIB Bonds	16	30	0	100	20	16	12	8	2
Real Estate	0	0	0	100	3	3	4	4	4
Private Equity	0	0	0	100	1	1	1	1	1
IDL Timberland	39	0	0	100	43	46	49	51	55
IDL Grazing Land	2	0	0	100	5	3	1	0	0
Cash Equivalents	1	0	0	100	0	0	0	0	0
Totals	100	100			100	100	100	100	100
Uncompounded Return	6.94	7.46			6.50	6.75	7.00	7.25	7.50
10-Year Compounded Return	6.69	6.76			6.34	6.55	6.76	6.97	7.17
Risk (Standard Deviation)	9.28	13.39			8.09	8.68	9.27	9.86	10.46
Public Equity	42	70			28	31	33	36	38
Public Equity % of Public Assets	72	70			58	66	73	82	95
IDL Lands	41	0			48	49	50	51	55
Alternatives	0	0			4	4	5	5	5

The allocations to the IDL asset classes and fixed income are very similar to those without the new asset classes. This indicates that real estate and private equity are sourced primarily from public equity. The

allocations to real estate and private equity are less than 5%, a level that is often considered the minimum threshold allocation for having a meaningful impact on portfolio returns.

The final set of asset allocations evaluates the impact of adding alternative investments when the IDL asset classes are constrained to their current allocations. Table 8 shows that the lowest allocation to real estate is 4% in mix 1 while it is 5% or more in mixes 2 through 5. The largest private equity allocation is only 3%.

Table 8

Constrained Allocations with New Asset Classes

Asset Class	Endow-ment	EFIB	Min	Max	Mix 1	Mix 2	Mix 3	Mix 4	Mix 5
Broad US	30	49	0	100	17	19	21	22	23
Global Ex-US	12	21	0	100	13	14	15	17	18
EFIB Bonds	16	30	0	100	24	20	16	13	9
Real Estate	0	0	0	100	4	4	5	5	6
Private Equity	0	0	0	100	1	2	2	2	3
IDL Timberland	39	0	39	39	39	39	39	39	39
IDL Grazing Land	2	0	2	2	2	2	2	2	2
Cash Equivalents	1	0	0	100	0	0	0	0	0
Totals	100	100			100	100	100	100	100
Uncompounded Return	6.94	7.46			6.50	6.75	7.00	7.25	7.50
10-Year Compounded Return	6.69	6.76			6.34	6.55	6.75	6.95	7.14
Risk (Standard Deviation)	9.28	13.39			8.11	8.74	9.39	10.06	10.75
Public Equity	42	70			30	33	36	39	41
Public Equity % of Public Assets	72	70			56	62	69	75	82
IDL Lands	41	0			41	41	41	41	41
Alternatives	0	0			5	6	7	7	9

G. Summary of the Analysis and Recommended Actions

The results of the asset allocation study rely on the forecast of expected returns, risks and correlations of the underlying asset classes. For the IDL assets, the historical cash flow generated can be easily observed, the performance and therefore the attractiveness of these investments depend on the valuation of the underlying land. Given the large volume of land and the constitutional considerations involved in liquidating these lands, valuations were based on their current uses and therefore reflect the current and forecast cash flows.

The total values for timberland and grazing lands were determined by discounting their future cash flows. The modeled cash flows are consistent with historical values and reasonable assumptions for future values. The rates used to discount the future cash flows to arrive at property values are consistent with institutional rates of return or applicable financing rates. The projected rates of return reflect the cash flows, discount rates and their associated land values.

Given the illiquid nature of timberland and grazing land, proxies were necessary to estimate the risks of these asset classes as well as the diversification they provide. These proxies are consistent with the underlying revenues and costs associated with the lands. While the forecast volatility would be generally higher than that observed in practice, it is reflective of the risk of loss associated with these investments. The low correlations exhibited by the liquid proxies are consistent with the realized correlations for the associated illiquid investments.

In all asset mixes IDL timberland has an allocation at least as large as its existing allocation. Consequently, we would not recommend reducing the overall timber portfolio. Unconstrained, allocations to timberland are higher which suggesting the allocation could be expanded. It is important to recognize that this is only the case if new investments are expected to perform at least as well as the existing timberland. Expanding timberland for the sole purpose of meeting an unconstrained allocation is not recommended.

The case for grazing land is more ambiguous. In the unconstrained allocations (both with and without new asset classes), there are positive allocations to grazing land similar in magnitude to the existing allocation in the more conservative (lower return, lower risk) mixes but not the more aggressive (higher return, higher risk) mixes. Although the grazing land return is expected to compensate for its risk, more aggressive asset mixes require larger allocations to higher returning asset classes which are better diversified by publicly-traded fixed income (EFIB Bonds).

The absence of grazing lands in more aggressive allocations is based on the existing leasing formula. If leasing arrangements can be made more favorable to the Endowment, the attractiveness of grazing lands may increase to the point that there would be positive allocations in more aggressive mixes and larger allocations in more conservative mixes. Employing grazing land in a “higher and better use” is not evaluated here but could also improve returns although potentially at the expense of more risk.

We do not recommend selling grazing land at a discount for the sole purpose of realigning the target and actual asset allocations. Grazing land is only unattractive in more aggressive mixes because it has a relatively low return. In terms of a standalone investment, grazing land is forecast to provide a return consistent with the level of risk taken. The illiquidity of much of the land assets may require that the target asset mix to evolve over time. Possible reasons for the evolution of the target are changes in the land allocation due to potential land sales in the absence of other attractive land investments for the proceeds or the appreciation of the financial assets at a faster or slower rate than the appreciation of the land assets. Since the asset mix is independent of endowment size, there is no reason for smaller endowments to implement different asset mixes due to their sizes.

In the process of creating alternative asset allocations we have only considered asset classes that would be suitable for institutional investors. In the course of this analysis, we have not evaluated Idaho-specific investments in commercial real estate or agricultural land. It is our general belief that the expanded opportunity set (a greater number of potential investments to choose from) and diversification possibilities (more types of investments) available on a national or international level is consistent with prudence, cost-effectiveness and the scale required to have a meaningful impact on the portfolio return. There may be exceptions worthy of review on a case-by-case basis consistent with proper institutional investment governance.

VI. Idaho Commercial Real Estate Portfolio

Callan has been asked to specifically address the role of Idaho Commercial Real Estate in the portfolio. Most of the stakeholders with whom we spoke were hesitant, for a variety of reasons, to grow the current Idaho commercial property portfolio, unless there was a compelling investment reason to do so. In Callan's opinion, there is not. The asset allocation work implies an allocation to a broadly diversified portfolio of US real estate could, at best, play only a modest role in improving the diversification of the portfolio and there is no investment reason for an allocation to consist primarily of a concentrated position in Idaho properties. Further, Callan does not recommend ownership of single properties for the endowment. Callan believes at least two conditions must be met before single property ownership is considered: (1) there must be a real estate allocation of at least $500 million which is the baseline to assemble a diversified US portfolio and (2) there must be qualified resources (typically a combination of staff and an external manager(s)) to analyze and manage the properties. Neither of these conditions is satisfied in the case of the current real estate portfolio.

Currently, the decision-making and oversight is not in place for the ongoing management, analysis, or prudent divestiture of the existing Idaho commercial portfolio. This report details recommendations designed to put in place a framework for these decisions to be made, including the hiring of a specialist real estate manager/consultant, reporting to the board, to provide the analysis and management expertise on the retention, disposition and management of commercial properties.

The decision-making and management framework to properly oversee the current commercial portfolio will also prove useful as a model for the evaluation and management of other non-routine investment decisions. For example, consideration of whether to execute a ground lease with a tenant on a vacant parcel of land or purchasing more timberland or farmland. These types of decisions could be analyzed as follows:

- Is the investment consistent with the overall asset allocation and objectives of the total portfolio as set forth in the Investment Policy Statement?
- Does it make a difference and move the needle from an overall portfolio perspective?
- Completion of a full underwriting of the potential investment including upside, base case, and downside scenarios with identification of assumptions and risks alongside of the returns (both the return gross of fees and net of all fees and costs).
- Detailed outline of the business plan for the investment and the plan for execution including consideration of the internal and external resources required to execute the plan and associated costs.
- Comparison of the risk adjusted return and the net return relative to other choices (e.g. stocks, bonds, other land types). In other words, what are the other choices for investment?