Investment of Public School Fund Report

February 2023

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Executive Summary

Colorado State Treasurer Dave Young convened a Working Group of experts with backgrounds in Colorado education policy and finance to consider issues identified by the legislature in House Bill 22-1146 regarding state school trust lands and the public school fund.

The working group met during January and February, 2023, and agreed to two recommendations by consensus. Those recommendations are:

#1: Greater Flexibility Related to the Permanent Fund

The legislature should consider constitutional and statutory changes to allow for greater flexibility related to the current policies of the Permanent Fund including:

1. the requirement that the General Assembly must make up for the loss of principal in the fund;
2. the inability to invest in private companies and real estate; and
3. the current provision requiring $21 million going to the School Finance Act.

The Working Group looked carefully at issues related to the permanent fund, including the asset allocation of the fund and the distribution policy, as required by statute. The Working Group recommends eliminating current provisions that restrict the flexibility of the fund.

Benefits of this recommendation could include higher investment returns; preserving the value of permanent fund distributions over time; and access to investment assets that could provide more opportunities for impact investing. Risks of the recommendation were also discussed and documented.

#2: Impact Investing

The legislature should consider allowing for opportunities to pursue impact investing related to the Land Board and permanent fund.

1. The Land Board and the Public School Fund Investment Board (PSFIB) should create mission statements that encourage investments to be made for the intergenerational benefit of the public education of school children;
2. The Land Board and the PSFIB should explore education impact investment opportunities within the State School Lands Trust and the Public School Fund.

The Working Group discussed a range of strategies for increasing the benefit of Land Board assets and the permanent fund to Colorado schoolchildren. Impact investing is one strategy that, subject to an evaluation of investment risk and return, could expand the meaning of investments for intergenerational benefit and deliver an overall positive impact. Risks of this recommendation were also discussed and documented.

The group held extensive discussions concerning the Building Excellent Schools Today (or BEST) program and the State Land Board but did not reach full consensus on potential recommendations from those conversations.

Members of the Working Group

Members of the Working Group

Amie Baca-Oehlert, President, CEA

Kathy Gebhardt, Board Member, Boulder Valley School District

Bruce Hoyt, iiiQ, former Board Member Denver Public Schools

Evie Hudak, PTA, former State Senator

Mike Johnson, retired, former Partner, Kutak Rock, former Board Member, Denver Public Schools

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Introduction

At the direction of House Bill 22-1146, Colorado State Treasurer Dave Young convened a Working Group of experts with backgrounds in Colorado education policy and finance.

The Working Group considered issues set forth in that enabling legislation:

- Distribution of revenue from state school trust lands;
- Investment opportunities to increase growth and income earned on money in the public school fund;
- Distribution of interest and income and ways to create a more sustainable, long-term distribution policy;
- Policies to increase the principal of the public school fund;
- Impact of Colorado constitutional and statutory provisions on the investment of money in the fund, including provisions relating to certificate of participation agreements; and
- Other issues as determined by the State Treasurer.

The Working Group met five times virtually in January and February of 2023. The first and last of those meetings were to broadly consider the issues as identified by the enabling legislation and the State Treasurer. The intermediate three meetings examined topics in depth with relevance for the broader discussions, including finance and investments topics, education topics and legal topics.

By the conclusion of the final convening, the group had considered each of the issues identified by the enabling legislation and the State Treasurer. As a result of the discussions and written feedback provided by working group members, consensus was reached on two recommendations for the legislature to consider:

- The legislature should consider constitutional and statutory changes to allow for greater flexibility related to the current policies of the Permanent Fund including: the requirement that the General Assembly must make up for the loss of principal in the fund; the inability to invest in private companies and real estate; and the current provision requiring $21 million going to the School Finance Act.
- The legislature and the PSFIB should consider opportunities to pursue impact investing related to the Land Board and Permanent Fund.

While the group held extensive discussions regarding additional potential recommendations, no consensus was reached. Key concepts from those discussions are reported below.

It should be noted that, throughout the Working Group sessions, individuals discussed the Public School Fund, monies held in investments and revenue earned and distributed. Frequently, these concepts were grouped together and referred to as permanent fund investments. Where possible, this report uses the term “Public School Fund” but the public school permanent fund, the Public School Fund and the permanent fund are used on occasion to reflect these conversations and should be interpreted to mean the same thing.

Similarly, the terms revenue from state school trust lands and Colorado State Land Board revenue are used on occasion and should be interpreted to mean the same thing.

Consensus Recommendations to the General Assembly

Consensus recommendation #1: Greater Flexibility Related to the Permanent Fund

The Working Group identified current limitations on the flexibility of permanent fund investing as a place of consensus and agreed to a recommendation to the legislature:

The legislature should consider constitutional and statutory changes to allow for greater flexibility related to the current policies of the Permanent Fund including:

1. the requirement that the General Assembly must make up for the loss of principal in the fund;
2. the inability to invest in private companies and real estate; and
3. the current provision requiring $21 million going to the School Finance Act.

The Working Group looked carefully at issues related to the permanent fund, including the asset allocation of the fund and the distribution policy, as required by statute. The consensus recommendation of the group is that the legislature should take steps that could enhance the growth of assets over time, allowing the value of the fund to keep pace with the rate of inflation and population growth. This could also improve the likelihood that the value of the fund and subsequent distributions could increase in value over time. The Working Group recommends eliminating current provisions that restrict the flexibility of the fund, as discussed below.

Recommendation #1 Discussion

Currently, the Public School Fund consists of assets derived from State Land Board revenue. (A share of State Land Board revenue also directly funds a significant portion of the Building Excellent Schools Today, or BEST, program.) The investment of permanent fund assets is restricted by a number of provisions, both constitutional and statutory.

These restrictions include a constitutional requirement that the fund "forever remain inviolate and intact" (Colo. Const. Art. IX §3) and a statutory provision, known as a loss requirement or provision, that dictates an 18-month time limit at which point any loss of principal must be made whole (§22-41-104(2), CRS). The PSFIB directs the state treasurer on investing the permanent fund for its beneficiaries – public school children of Colorado.

As a result of these restrictions, the asset allocation of the fund is conservatively invested, largely in bonds and a short-duration investment portfolio. (The School Trust Asset Allocation and Distribution Study, commissioned by the Colorado State Treasurer, from January 30, 2023 discusses these restrictions in much greater detail in Appendix B of this report.)

As the School Trust Asset Allocation and Distribution Study shows, inflation-adjusted distributions from the Public School Fund are projected to fall over the coming years. Furthermore, as several Working Group members noted, state school trust lands may not hold their value over time "as the agricultural and mineral extraction uses of the lands are diminishing."

Removing some of the permanent fund restrictions, even just those that are statutory, would enhance the flexibility of the investment approach, allowing for greater growth potential of the fund.

Taken together, the constitutional fund inviolate provision and the statutory loss provision significantly restrict the asset allocation of the permanent fund because of the obligation it necessarily places on the legislature to make up for any investment losses in the fund over an 18-month period. Removing the limit on the length of the time the legislature has before it must make up any investment losses would, in the words of one Working Group member, "enable prudent risk taking to drive greater returns on the portfolio."

At the same time, the constitutional fund inviolate provision could remain. The Working Group discussed a recommendation to remove the constitutional requirement but noted significant concern that such a change could increase the risk that revenue from, or even the assets of, the Land Board or the permanent fund could be redirected for uses other than the benefit of public schools in Colorado.

As one Working Group member noted, "The inviolate language helps ensure future generations will benefit from the [permanent] fund." Another offered an opinion, "There is no way I would support removing the "inviolate" requirement! The other states that did this destroyed their Permanent Fund."

The prohibition on direct investment in corporations, private companies and real estate is another restriction on the asset allocation of the permanent fund. Statute (§22-41-104(1), CRS) prohibits direct investment in corporations (though mutual fund investments are allowed) while the state constitution prohibits investments where the state is a subscriber to, a joint owner of, or a shareholder in, any corporation (Colo. Const. Art. XI §2).

Multiple Working Group members noted that, while in totality, these restrictions impact the flexibility of the permanent fund, even loosening some, but not all, parameters could be beneficial. It was also noted that impact investment opportunities (discussed in consensus recommendation #2) could be limited by these restrictions.

One Working Group member explained that “there is case law supporting public private partnerships where there is a strong public purpose without having to amend the constitution.”

Current statute obligates the first $21 million in permanent fund income to the School Finance Act. The Working Group’s concerns regarding this required distribution were threefold:

- The funds, in legislative terms, “supplant” a responsibility to fund the School Finance Act, rather than supplementing revenue set aside for school finance, yet contribute an incredibly small fraction – less than one percent – of total Finance Act funding.
- Requiring a set dollar amount of income derived from the permanent fund for the School Finance Act reduces the flexibility of how assets can be invested, limiting the asset allocation of the fund.
- A set dollar amount of income derived from the permanent fund for the School Finance Act restricts the ability of the permanent fund to grow over time. While the impact of the $21 million is small compared to the overall School Finance Act, the restriction has a very significant limiting impact on the growth of the fund because a fixed amount of income is transferred out of the fund, regardless of the fund’s investment performance in a given year. Several Working Group members described how this mandated income transfer differs from how an endowment might be managed more flexibly. “It’s very constraining,” one explained. “We have to ensure that $21 million is there [to meet the obligation for the School Finance Act]. If you think of this as a large endowment or corpus, it doesn’t make any sense to have this [payment obligation] as the first thing we have to do.”

As one group member described it, the fixed $21 million obligation is “the worst of both worlds.” “It is not making a major impact and it is letting the legislature off the hook.” Another noted, “We want more money to give to education. This is an impediment.”

After the first $21 million is distributed to the School Finance Act, current statute directs the next $20 million to BEST and any interest or income beyond that is credited as specified by the legislature based on the recommendation of the PSFIB. The group did not recommend any change to this provision.

In the process of forming a consensus recommendation about enhancing flexibility of the permanent fund, the Working Group discussed both potential benefits and risks of the proposed changes.

Potential benefits of the recommendation could include:

- **Higher investment returns due to a more diversified asset allocation of the permanent fund.**
    - The combined impact of recommendations to increase the flexibility of the permanent fund asset allocation could result in the increased value of fund assets, similar to what many endowment funds see over time. This would lead to increased revenue to direct to Colorado's public schools.
    - As one Working Group member noted, "Decreased funding in down markets would be more than made up by increases over time." Another commented, "Allow the ability to invest in real estate funds, private equity funds, etc., similar to other large endowment investment policies."

- **Preserving the value of permanent fund distributions over time.**
    - Projections indicate that, under current policy, permanent fund distributions will not keep pace with inflation plus growth in population. Increased flexibility for fund investments could allow for growth (above inflation) in asset value and hold the value of distributions over time. Similarly, increased flexibility for permanent fund investments could balance the holdings of the State Land Trust.
    - "The lands are the largest component of [total] Trust value," one Working Group member explained. "Since the lands are projected to lose value over time, in real terms, modernizing the approach, strategies and goals of the land management to ensure they contribute to intergenerational equity over time seems important."
    - One Working Group member identified risks inherent to the types of assets held in state school trust lands. "There is a decreasing outcome from investing in 'mineral' resources (oil and gas) as public policy changes to fight climate change. Also, the agricultural uses are decreasing."
    - Another commented simply, "It is good policy to keep the Fund from becoming a 'wasting asset.'"

- **Access to investment that could provide more opportunities for impact investing.**
    - Removing constitutional or statutory restrictions around types of investments available could allow for a broader range of impact investments that provide benefit for Colorado's public schools.
    - "Some prudent allocation to private investments and impact investments should generate higher returns," a Working Group member suggested.

Potential risks of the recommendation could include:

- **Weakening protections of State School Trust and permanent fund assets that preserve them for the benefit of Colorado's public schools.**
  - Several Working Group members noted in both written comments and in discussions that the inviolate provision in Colorado's constitution protects these assets so that they have and would continue to provide benefit to public schools.
  - "The inviolate language helps ensure future generations will benefit from the fund," one Working Group member explained.
  - "We shouldn't let short-term needs and desires to get in the way of the mission, vision and purpose of the [School Land] Trust," another explained.

- **Uncertain outcomes of a political process to enact statutory changes or seek voter approval of constitutional changes.**
  - While the Working Group sought to avoid making political calculations during its discussions, members are aware that any political process could lead to unanticipated outcomes. They also understand that constitutional changes requiring voter approval could necessitate public campaigns and efforts to inform voters about complex fiscal policies. The Working Group sought to isolate both constitutional and statutory provisions where changes might have beneficial outcomes.
  - One Working Group member shared a concern about a constitutional measure, particularly if it were to address the inviolate provision. "If the legislature were to send a referred measure to Colorado voters altering the inviolate requirement, it would need to have alternative safeguards in place to protect the fund from poor investments. The inviolate language helps ensure future generations will benefit from the fund."

- **Market uncertainty and the risk of loss of principal in the permanent fund.**
  - Proposals to increase the flexibility of the permanent fund could also lead to increased market exposure and risk of loss in the value of the fund.
  - As a Working Group member cautioned, "A prudent investment policy should limit the amount of [investments in private companies and real estate] and include provisions to prohibit conflicts of interest."

- **Decreased income for current beneficiaries of the permanent fund.**
    - Even if the corpus of the permanent fund were to grow in value over time, the BEST program as well as schools and districts could see temporary or fluctuating reductions in that regular funding as a result of investment losses or the elimination of the $21 million School Finance Act contribution. Though it did not rise to the level of a consensus recommendation, the Working Group considered the possibility of adding a provision to hold BEST funding at current or higher levels, either through State Land Board revenue, permanent fund income or both.

Consensus recommendation #2: Impact Investing

The Working Group identified impact investing as a place of consensus and agreed to a recommendation to the legislature.

The legislature should consider allowing for opportunities to pursue impact investing related to the Land Board and permanent fund.

1. The Land Board and the Public School Fund Investment Board (PSFIB) should create mission statements that encourage investments to be made for the intergenerational benefit of the public education of school children;
2. The Land Board and the PSFIB should explore education impact investment opportunities within the State School Lands Trust and the Public School Fund.

Recommendation #2 Discussion

The Working Group discussed a range of strategies for increasing the benefit of Land Board assets and the permanent fund to Colorado schoolchildren. Impact investing is one such strategy that could be an alternative, or in addition to, benefits derived from the asset earnings.

The Working Group discussed impact investing as "investments that provide benefits themselves," and described a range of investment policies, from a "negative screen" that would restrict investments that could cause harm to children to a number of direct investment vehicles, such as workforce- and affordable-housing financing, purchasing of school district or BEST bonds, direct school district loans or similar investment opportunities.

"Investments that benefit teachers and other school employees educating our students also benefit the students," one Working Group member explained.

Current statute (§22-41-102.5(3), C.R.S.) directs the state treasurer to "securely invest money deposited in the public school fund for the intergenerational benefit of public schools" as directed by the PSFIB. The Working Group recommends that the Colorado State Treasurer and the PSFIB develop an additive mission statement that expands the meaning of "investments for intergenerational benefit." Such a mission statement would encourage investments that themselves ultimately benefit public school children, subject to an evaluation of investment risk and return and overall impact, or benefit.

One Working Group member explained it this way: "A mission statement for the permanent fund's investment strategy should include impact investment provisions that acknowledge the opportunity to help address major social issues impacting Colorado while also seeking financial returns. The treasurer and the [PSFIB] should build out an impact investment strategy in order to identify impact goals, performance goals, identify metrics to measure the impact of the fund's investments, risk management, etc."

Guardrails around the total investment portfolio could provide balance between higher risk investments, which may or may not be impact investments, and lower risk investments. But the overall impact or benefit of the investments themselves should be considered, instead of or in addition to investment earnings.

Changes to limitations on the overall investment portfolio of the permanent fund could be necessary in conjunction with a successful impact investment strategy in order to allow for future growth of the fund corpus and a balanced investment approach. Without such changes, the permanent fund could decrease in value over time, creating a declining revenue stream for existing beneficiaries, such as the BEST program. (The BEST program is discussed later in this report.)

One working group member further explained that an intentional effort to grow the corpus of the permanent fund would allow for a balanced investment approach that incorporates impact investments as part of a diversified investment portfolio with room for both higher risk and lower return investments. "[We] need to really grow the corpus if certain investments are higher risk or lower return."

In coming to consensus on a recommendation for impact investing, the Working Group discussed both potential benefits and risks of such a change.

Potential benefits of the recommendation could include:

- **Expanding the intergenerational benefit of the State School Lands Trust and the permanent fund.**
  - In written remarks, one Working Group member noted that impact investing "serves the stated intent of the [Public School Funds] and is equitable. Unsustainable distributions create less impact over time and cause volatility in school district budgets."
  - Another Working Group member noted that many foundations with endowments are "moving in this direction," while someone else explained that a well-executed impact investment strategy would increase "current benefit while building the corpus for future allocations."
  - One Working Group member called for investments with tangible positive results. "Impact investment opportunities within the fund should be explored that result in positive outcomes for social issues impacting Coloradans and that generate a financial return. An investment strategy that simply seeks to avoid harm by not investing in certain industries does not provide a level of impact Coloradans deserve from this fund."
  - One Working Group member explained further, "Investing the fund in ways that positively impact Coloradans dramatically amplifies the benefit the 'Trust' is providing. Instead of focusing on the 4% of the fund value that might be distributed each year, focusing instead on the 96% of the fund that is invested could be a game changer for Colorado kids. In addition, since investments are not expenditures, this value could be reinvested indefinitely over time thereby achieving the intergenerational goal. In addition, there do not appear to be substantial legal [or] constitutional barriers to undertaking such an approach immediately."

- **Capitalizing on the power of State School Trust assets, in addition to revenue and earnings allocated to the permanent fund.**
  - State School Trust assets, as managed by the State Land Board, are less liquid than those of the permanent fund. Examples of such assets include land, real estate and mineral rights. But the Land Board could explore impact investment opportunities through leases or funds derived from non-simultaneous exchange of land as well as expanding or streamlining certificate of participation authority beyond commercial property. Such opportunities might not require statutory or constitutional changes.
  - One Working Group member said simply, "If the State Land Board could engage in impact investment opportunities, it should."

Potential risks of the recommendation could include:

- **A reduction in value of, or revenue from, Land Board assets or the permanent fund – and a permanent reduction in revenue for future generations.**
  - Any shift in overall investment strategy could impact the growth of the investment corpus or revenue earned from investments. This in turn could result in reduced funding, namely revenue for the School Finance Act and the BEST program. But it could also result in a permanent reduction in the overall value of assets held and, consequently, a loss of revenue for all future generations of public school students in Colorado.

- **Creating conflicts in mission between the State Land Board's oversight of the State School Lands Trust and the permanent fund.**
  - The State Land Board, which manages the State School Lands Trust assets, is guided by a dual mission to produce reasonable and consistent income over time and to provide sound stewardship of the state school trust land assets. Misalignment in mission between the State Land Board, the PSFIB and the State Treasurer could inhibit the success of impact investing, could impact the independent missions of each entity, or both.

- **Inherent challenges resulting from proposed constitutional or statutory changes.**
  - Currently, both constitutional and statutory restrictions limit how assets of the permanent fund can be invested, such as prohibitions against investments in corporations (Colo. Const. Art. XI, §2 and §22-41-104 (1), CRS). As noted above, successful impact investment strategies could require changes to these restrictions. The implications of such proposals are discussed elsewhere in this report, but were raised in Working Group discussions regarding impact investing.

Critical Issues Addressed by the Working Group

The Working Group also held discussions on important issues that did not result in consensus recommendations but were considered critical by the group. Highlights of those discussions are noted below.

<u>BEST Program</u>

The BEST program is Colorado's sole capital construction program for K-12 education. Funds provided through a competitive grant process can be used for the construction of new schools as well as general construction and renovation of existing school facilities by school districts, charter schools, institute charter schools, boards of cooperative educational services and the Colorado School for the Deaf and the Blind.

Currently, State Land Board income is divided between the BEST program and the permanent fund, with some funds coming directly to BEST from State Land Board revenue and other funds coming to BEST from permanent fund investment income. This is the initial source of revenue of the permanent fund. (A visual depiction of this revenue structure is available on page 15 of the School Trust Asset Allocation and Distribution Study.)

BEST funds are directed, in part, to meet annual debt service obligations for certificates of participation (COPs) issued to finance program construction and renovation of school buildings.

The Working Group considered a recommendation that would change the flow of how State Land Board income is allocated by directing all net revenues to the permanent fund first and then distributing revenue to beneficiaries, including BEST. Current statute directs 50% of Land Board revenues (or $40 million, whichever is greater) to BEST first. Though permanent fund revenues could still be directed to BEST as a beneficiary of the fund, many Working Group members were opposed to the recommendation because of potential impacts to BEST financing.

Additionally, state COPs, including COPs issued for the BEST program, are marketed as tax-exempt securities. Based on current understanding of IRS guidance to maintain the tax-exempt status of the COPs, income and interest earned by, and distributed from, the permanent fund earnings cannot be used for the BEST debt service purposes.

The BEST program had widespread support from the group throughout the meetings. There were differences in opinion about the level of funding that should be set aside and about the amount of risk to short- term funding levels that would be acceptable as a trade-off to greater levels of funding years into the future. Several members spoke to the overall benefit of the BEST program, from incorporating local matching funds into its total expenditures to providing intergenerational benefit for many students who would have access to improved school facilities.

One working group member addressed the benefits that can be provided beyond the value of interest income. "Widen that aperture. If we're talking about intergenerational benefit, the benefit of the Trust is a lot larger than the interest income that is earned from the permanent fund. Try to measure overall benefit to school kids."

<u>State Land Board</u>

In addition to consensus recommendation #2 that the Land Board and PSFIB should, in part, create mission statements that encourage impact investing, some Working Group members raised concerns that the Land Board is heavily invested in mineral rights and that a large majority of State Land Board revenue comes from the oil and gas industry. Along with being a finite source of revenue, such investments could also be harmful to current and future public school children, as opposed to providing intergenerational benefit.

As one member noted, "the State Land Board could use existing tools such as conservation easements or conservation leases to protect agricultural and grazing economies while also extracting some value from the property that could be invested for better returns."

Further, some members of the Working Group noted the sovereign nation tribes with historic ties to the state of Colorado who are the original inhabitants of the land and requested that the State Land Board work with these tribes and the Colorado Commission of Indian Affairs to examine the State Trust lands that were given to the state of Colorado by the federal government and the wealth built from those lands.

Appendix A:
Index of issues set forth in the enabling legislation and Working Group discussion

- Distribution of revenue from state school trust lands
  - Discussed under consensus recommendations #1 and #2

- Investment opportunities to increase growth and income earned on money in the public school fund;
  - Discussed under consensus recommendations #1 and #2

- Distribution of interest and income and ways to create a more sustainable, long-term distribution policy;
  - Discussed under consensus recommendation #1

- Policies to increase the principal of the public school fund;
  - Discussed under consensus recommendation #1

- Impact of Colorado constitutional and statutory provisions on the investment of money in the fund, including provisions relating to certificate of participation agreements;
  - Discussed under consensus recommendation #1 and BEST program discussion

- Other issues as determined by the State Treasurer
  - Discussed under consensus recommendation #2

Appendix B:
School Trust Asset Allocation and Distribution Study

Callan

January 30, 2023

School Trust Asset Allocation and Distribution Study

Janet Becker-Wold, CFA
Denver Consulting

Julia Moriarty, CFA
Capital Markets Research

Agenda

Executive Summary

- This study was commissioned by the Colorado Department of Treasury in an effort to aid the HB 22-1146 Working Group in the evaluation of alternative asset allocations and distribution policies of the School Trust
- Land Board Distribution Policy
  - Currently, Land Board revenues are split between flowing to the Permanent Fund and directly to BEST
  - Redirecting Land Board revenues, that would otherwise go directly to BEST, to the Permanent Fund results in higher nominal and real ending market values and ultimately higher distributions overall
  - Land revenues can be better leveraged by flowing only to the Permanent Fund for investment (not to BEST) before distribution
  - Callan recognizes that a potential impediment to redirecting all Land Board revenues to the Permanent Fund is the IRS treatment of the source of funding to pay interest on the COPs
- Asset Allocation
  - Most School Trust assets are in illiquid property, land and mineral holdings so are difficult to modify
  - The Permanent Fund asset allocation is conservatively invested in a majority market and short duration bond portfolios
  - Impediments to further diversification include: 1) current limitation on distributing only dividends/income; 2) State mandate to make up net realized losses (fund inviolate), and 3) constitutional limitation prohibiting investments directly in any corporation or company
- Permanent Fund Distribution Policy
  - The current fixed dollar distribution waterfall benefits current over future beneficiaries by not allowing distributions to grow at the rate of inflation plus student population growth in conflict with the intergenerational mission of the Trust
  - It also does not allow for the distributions to be responsive to fluctuations in the capital markets
  - The study purposely did not identify the beneficiaries of the Permanent Fund distributions in the “alternative structure”, this is left to policy makers

Purpose and Scope of the Study

Goal of the Study

Focus on the mission

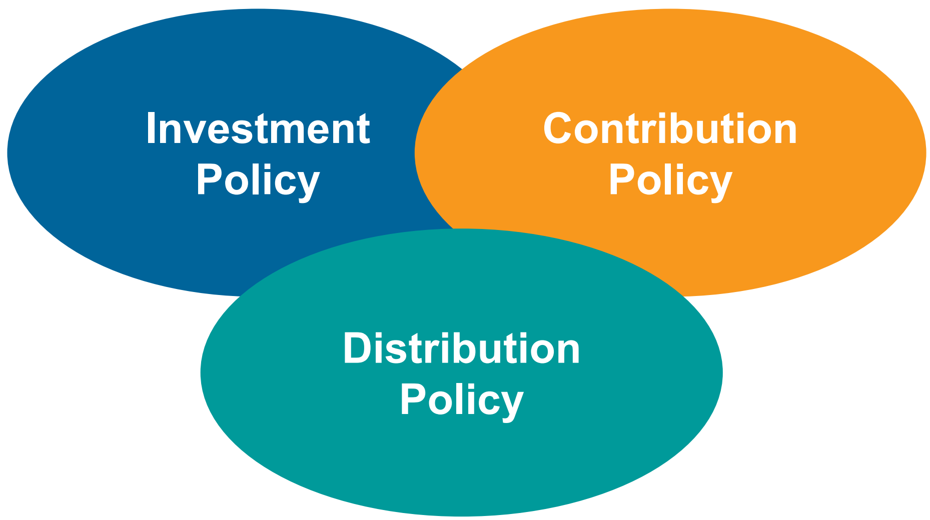
- The goal of this asset allocation and distribution study is to identify appropriate long-term distribution and investment policies for the School Trust to meet the intergenerational objectives of serving both current and future students in Colorado
- The distribution and investment policies are key components of the School Trust
- Well-engineered policies consider:
  - The School Trust's goals and investment objectives
  - Inclusion of all appropriate asset classes
  - Liquidity needs, asset class limitations, implementation challenges, administrative and legal burdens, size or capacity constraints, etc.
  - Rebalancing discipline and more
- The appropriate policies should strike a balance between preservation/growth in the corpus and sustainable, stable distributions that result in intergenerational equity for beneficiaries

Three Key Policies

The best investment and distribution policies are determined in the context of the interaction of the three key policies that govern a fund

Investment Policy

- How will the assets supporting the mission be invested?
- What risk and return objectives?
- How to manage cash flows?



Contribution Policy

- What is the source of contributions?
- What level of contributions can be expected?

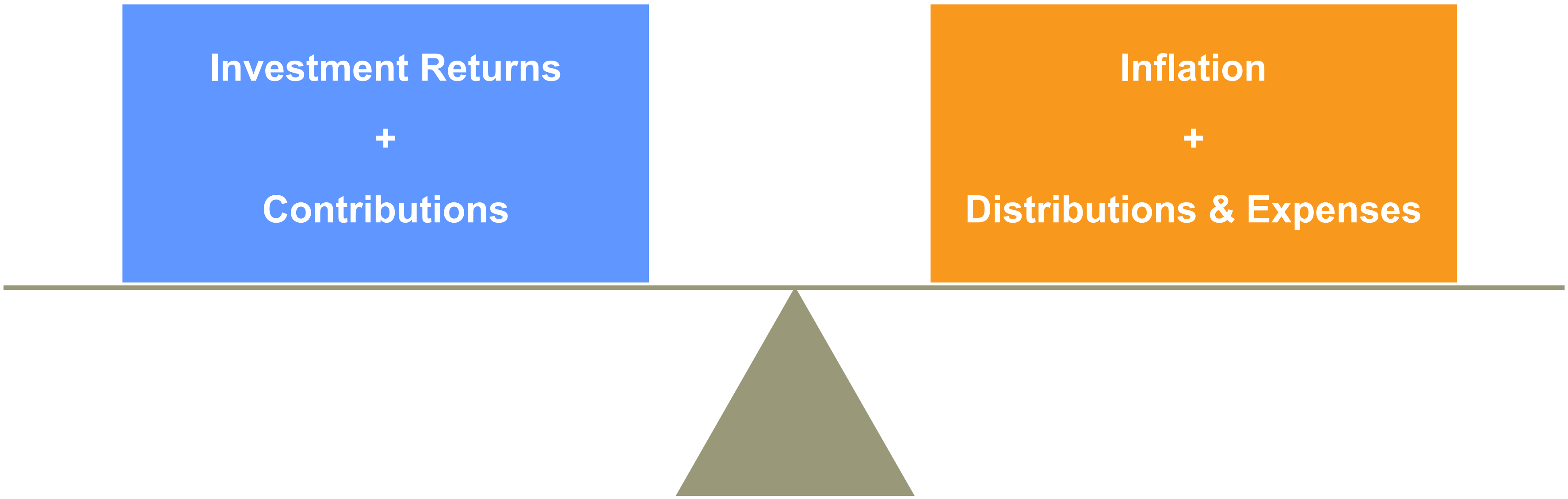
Distribution Policy

What type of distribution policy?

What level of distributions?

"Equation of Balance"

Required to ensure intergenerational equity and preserve the real distribution power of the corpus



- The primary objective that governs the management of most land trusts is the pursuit of intergenerational equity
  - Intergenerational equity ensures that current and future students benefit from the Trust to the same degree
    - *Over distributing today benefits current residents at the expense of future residents*
    - *Under distributing today benefits future residents at the expense of current residents*
- Investment returns and price inflation are based on Callan forecasts
- Contributions, distributions, and expenses are based on Department of Natural Resources data/forecasts while student population growth is derived from the Colorado Department of Local Affairs State Demography Office

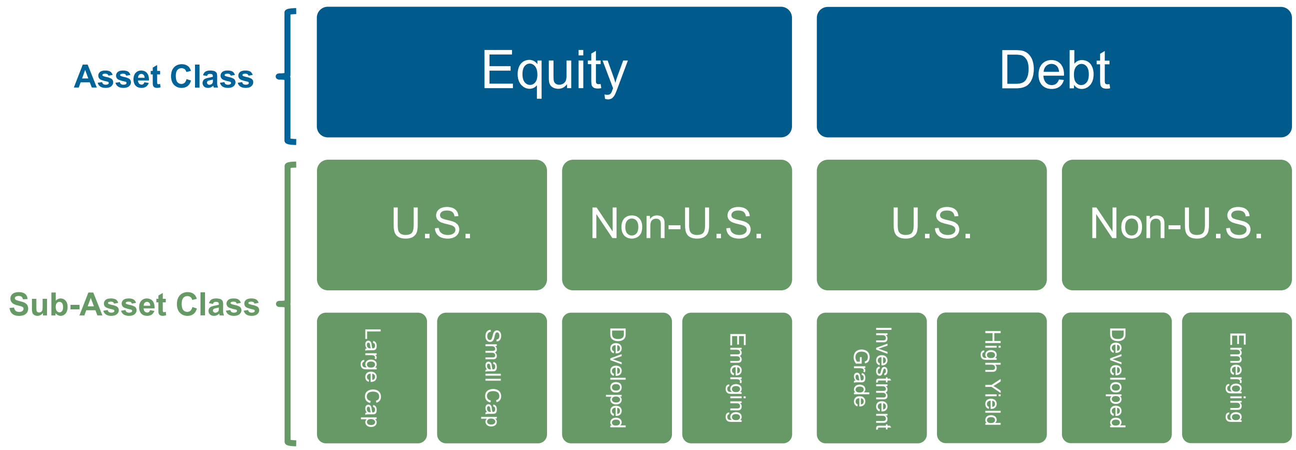
Capital Market Expectations

Callan Capital Market Process and Philosophy

- Underlying beliefs guide the development of the projections
  - An initial bias toward long-run averages
  - An awareness of risk premiums
  - A presumption that markets ultimately clear and are rational
- Reflect our belief that long-term equilibrium relationships between the capital markets and lasting trends in global economic growth are key drivers to setting capital market expectations
- Long-term compensated risk premiums represent “beta”—exposure to each broad market, whether traditional or “exotic,” with limited dependence on successful realization of alpha
- The projection process is built around several key building blocks
  - Advanced modeling at the individual asset class level (e.g., a detailed bond model, an equity model)
  - Pathways for both interest rates and inflation
  - A cohesive economic outlook
  - A framework that encompasses Callan’s beliefs about the long-term operation and efficiencies of the capital markets

The Focus is on Broad Asset Classes

- Breakdowns between investment styles within asset classes (growth vs. value, large cap vs. small cap) are best addressed in a manager structure analysis
- Primary asset classes and important sub-asset classes include:
  - U.S. Stocks
  - U.S. Bonds
  - Non-U.S. Stocks
  - Non-U.S. Bonds
  - Real Assets
  - Private Equity/Debt
  - Hedge Funds
  - Cash



2023 Callan Capital Market Assumptions

Risk and return

Summary of Callan's Long-Term Capital Market Assumptions (2023 - 2032)

Asset Class	Index	10-Year Geometric Return*	Standard Deviation	Projected Yield
Equities				
Broad US Equity	Russell 3000	7.35%	18.05%	1.95%
Large Cap US Equity	S&P 500	7.25%	17.75%	2.00%
Small/Mid Cap US Equity	Russell 2500	7.45%	22.15%	1.75%
Global ex-US Equity	MSCI ACWI ex USA	7.45%	21.25%	3.70%
Developed ex-US Equity	MSCI World ex USA	7.25%	20.15%	3.75%
Emerging Market Equity	MSCI Emerging Markets	7.45%	25.70%	3.55%
Fixed Income				
Short Duration Gov't/Credit	Bloomberg Barclays 1-3 Yr G/C	3.80%	2.30%	3.45%
Core US Fixed	Bloomberg Barclays Aggregate	4.25%	4.10%	4.30%
Long Gov't/Credit	Bloomberg Barclays Long G/C	4.75%	11.35%	5.85%
TIPS	Bloomberg Barclays TIPS	4.00%	5.30%	3.95%
High Yield	Bloomberg Barclays High Yield	6.25%	11.75%	8.00%
Global ex-US Fixed	Bloomberg Barclays Glbl Agg xUSD	2.25%	9.80%	2.40%
EMD	EMBI Global Diversified	5.85%	10.65%	7.40%
Alternatives				
Core Real Estate	NCREIF ODCE	5.75%	14.20%	4.40%
Private Infrastructure	MSCI Glb Infra/FTSE Dev Core 50/50	6.15%	15.45%	4.60%
Private Equity	Cambridge Private Equity	8.50%	27.60%	0.00%
Private Credit	N/A	7.00%	15.50%	7.00%
Hedge Funds	Callan Hedge FoF Database	5.55%	8.45%	0.00%
Commodities	Bloomberg Commodity	3.50%	18.00%	2.25%
Cash Equivalents	90-Day T-Bill	2.75%	0.90%	2.75%
Inflation	CPI-U	2.50%	1.60%	

* Geometric returns are derived from arithmetic returns and the associated risk (standard deviation).

– Most capital market expectations represent passive exposure (beta only); however, return expectations for private market investments reflect active management premiums

– Return expectations are net of fees

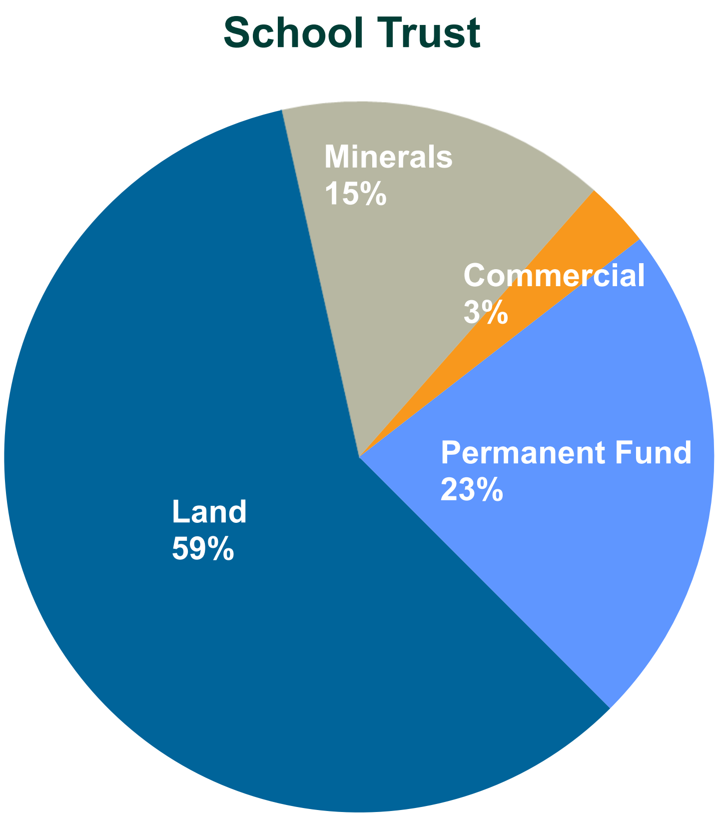
Colorado Land Return Expectations

- Land = 3.00% return
  - Based on historical revenues, the method for setting rents, and the composition of the portfolio
  - Analyzed Colorado NAAS data for rents and values, the Ranchland Sales Database for value trends, and the return series of Colorado properties in the NCREIF Farmland Index
- Minerals = 2.30% return
  - Based on Colorado’s production and revenue model, the S&P GSCI, and the S&P GSCI Energy Index
  - The S&P GSCI is a composite index of commodity sector returns which represents a broadly diversified, unleveraged, long-only position in 24 commodity futures spanning five sectors: energy, industrial metals, precious metals, agriculture and livestock
- Commercial = 5.00% return
  - Based on the return series of Colorado office properties in the NCREIF Property Index, Callan’s assumptions for a broadly diversified portfolio of real estate, and the composition of the Colorado Commercial Portfolio which includes office, ground leased properties, tower sites, and renewables

Current Situation

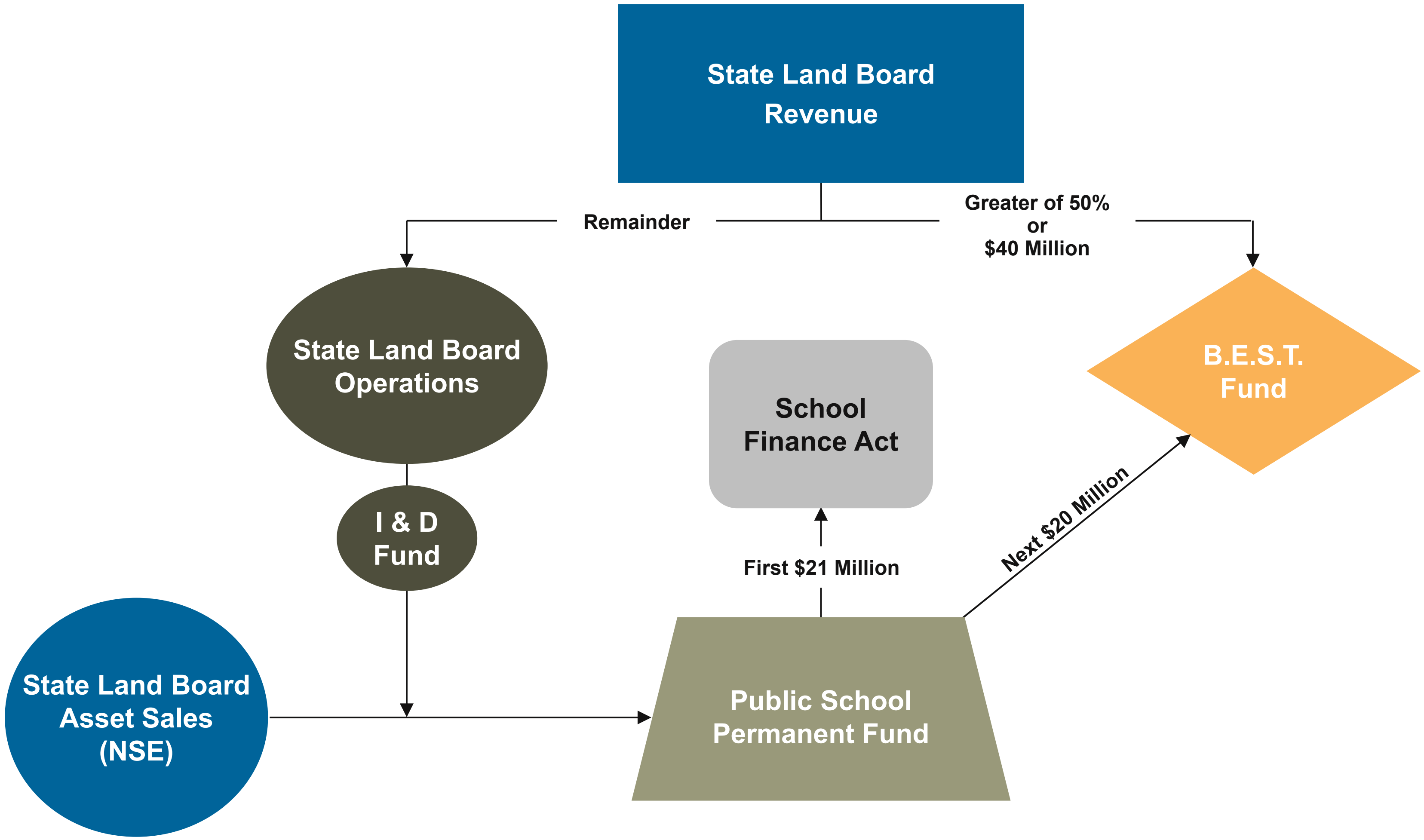
School Trust

- The School Trust was valued at almost $5.5 billion in 2022
- Land accounts for over half of the total portfolio value
- The Permanent Fund (PF) accounts for almost one quarter of the total value



School Trust

Current structure



Land Board Asset Sales, Revenues, Operations, and I & D Fund

- Land Board Asset Sales
  - Surface sales of $75 million in mid-2024 and $25 million in mid-2025
  - $25 million currently at the NSE (Non-Simultaneous Exchange) transfers to the PF in one year
- Land Board Revenues
  - Annual gross land revenues range from approximately $120 million to $190 million over the 20-year projection period
  - The greater of 50% or $40 million flows to B.E.S.T. with the remainder to the PF
  - Oil & Gas (O&G) royalties, which accounted for roughly four-fifths of total land revenues in FY21-22, are projected to decline by 5% per year
  - The remaining revenue sources (other mineral, surface, commercial) are projected to grow by 2% per year
- Land Board Operations
  - $7.4 million in FY21-22 and expected to grow by 4% per year thereafter
  - This expense is deducted from land revenues before being deposited into the PF
- Investment & Development (I&D) Fund
  - Up to $5 million annually can be to reinvested in land assets in a manner than maintains them or increases their value or ability to generate income
  - $3 million per year is assumed in the modeling
  - This expense is deducted from land revenues before being deposited into the PF

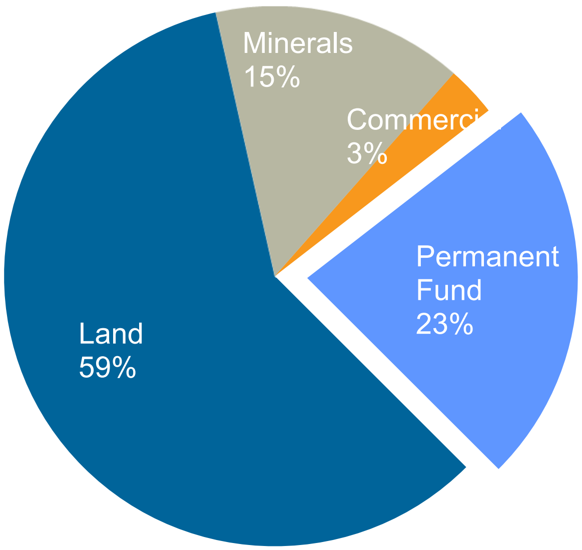
Permanent Fund Distributions

- Current policy allows for the distribution of interest and income only per the description below
  - First $21 million of income is credited to the School Finance Act (Finance Act), unless income is less than $21 million in which case $500,000 is set aside to cover PF investment and administrative expenses with the remainder being credited to the Finance Act
  - Next $500,000 is set aside to cover PF investment and administrative expenses
  - Any amount in excess of $21.5 million up to $41.5 million is credited to B.E.S.T.
  - Any additional income remains in the Permanent Fund*

*SB 16-035 established the waterfall and states that any amount over $41 million, plus the cost of services and reimbursements, is credited as specified by the General Assembly taking into consideration the recommendations of the Public School Fund Investment Board. The Boards has recommended that amounts over $41 million return to the Permanent Fund.

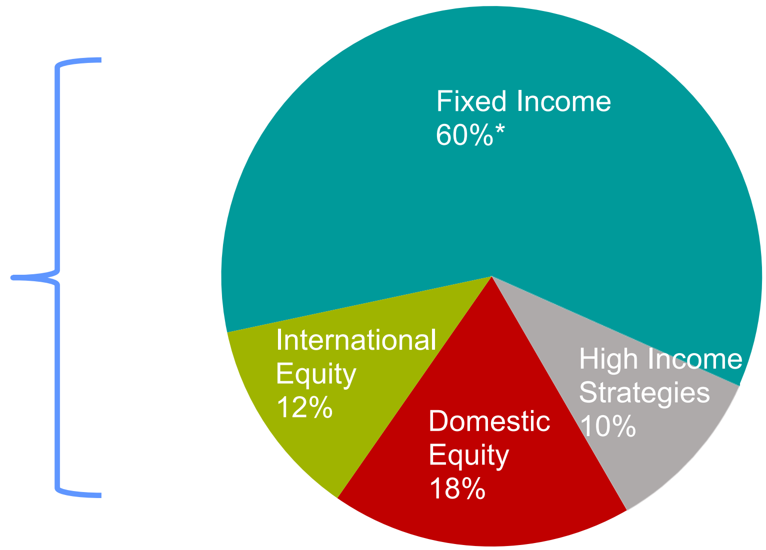
Asset Allocation

School Trust Asset Allocation



Return = 4.1%; Risk = 6.7%

PF Target Asset Allocation



Return = 5.8%; Risk = 6.9%

- The School Trust allocation (77% lands and 23% financial) has a 10-year expected return of 4.1% with a 6.7% standard deviation (assuming a constant asset allocation) versus a Permanent Fund return of 5.8% and a standard deviation of 6.9%
- Over time the School Trust's expected return is projected to grow as lands (land, minerals, and commercial) make up a smaller portion of the total Trust relative to today

*Fixed income is comprised of 87.5% market duration and 12.5% short duration bonds

Developing Risk Tolerance Framework

Range of uncertainty – stochastic projections

Interpreting stochastic results

5th percentile

- Exceeds 95% of all forecasts
- Optimistic outcome

25th percentile

- Exceeds 75% of all forecasts
- Good outcome

50th percentile

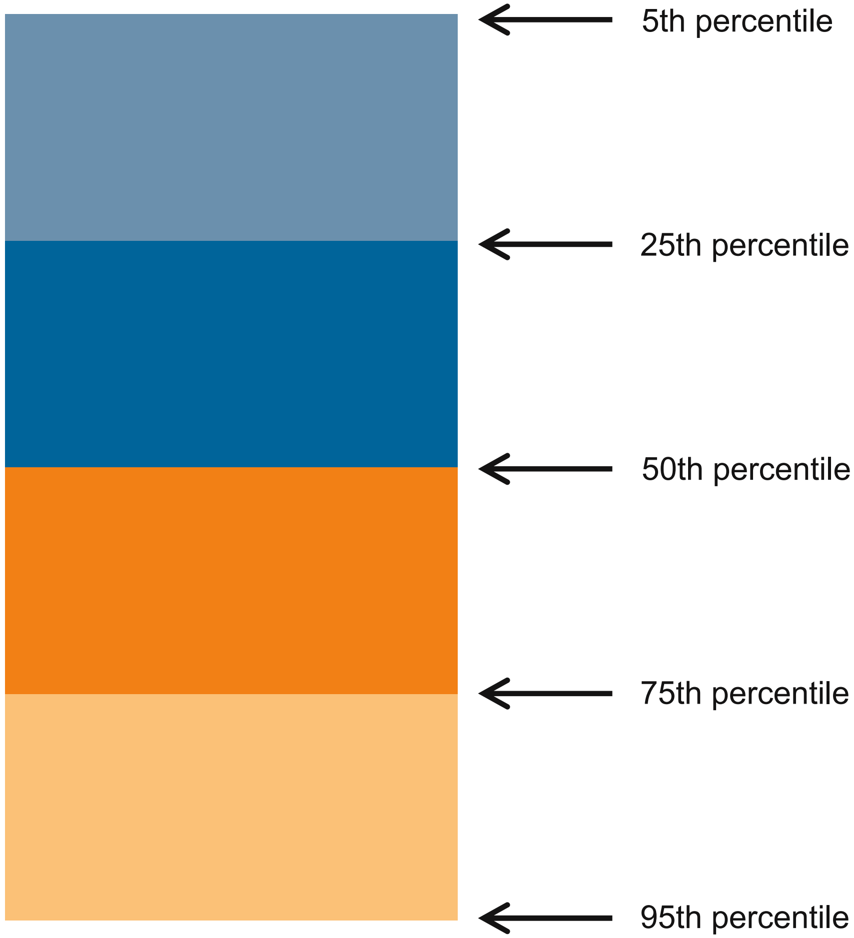
- Exceeds 50% of all forecasts
- Median outcome

75th percentile

- Exceeds 25% of all forecasts
- Pessimistic outcome

95th percentile

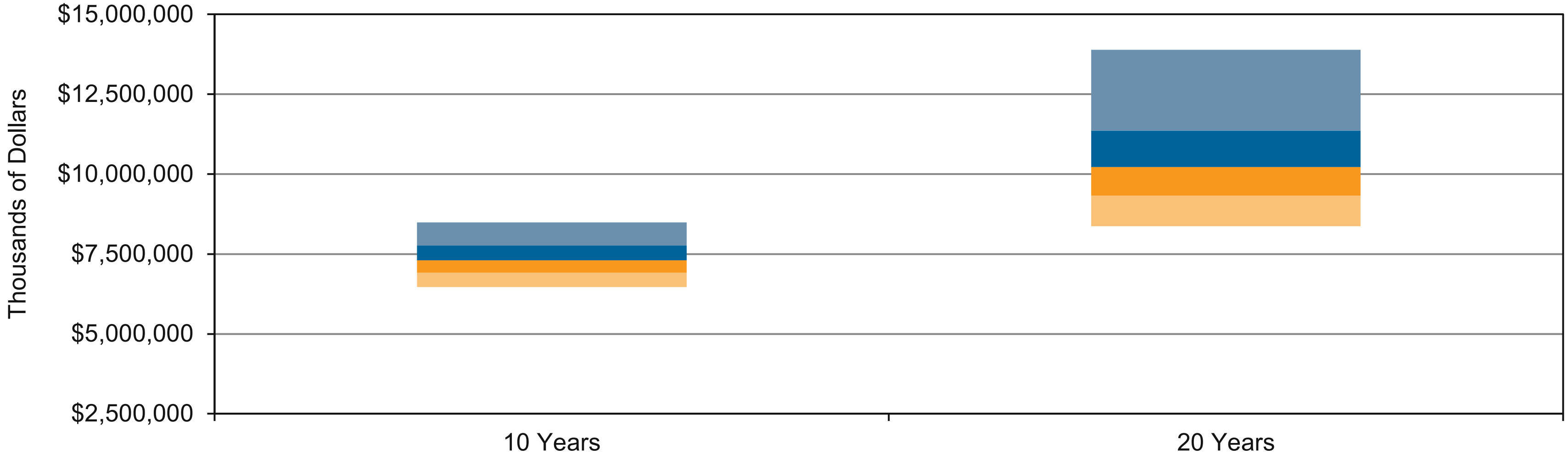
- Exceeds 5% of all forecasts
- Very pessimistic outcome



Nominal (before Inflation) School Trust Values

10 & 20 Year Projections

Ending School Trust Values



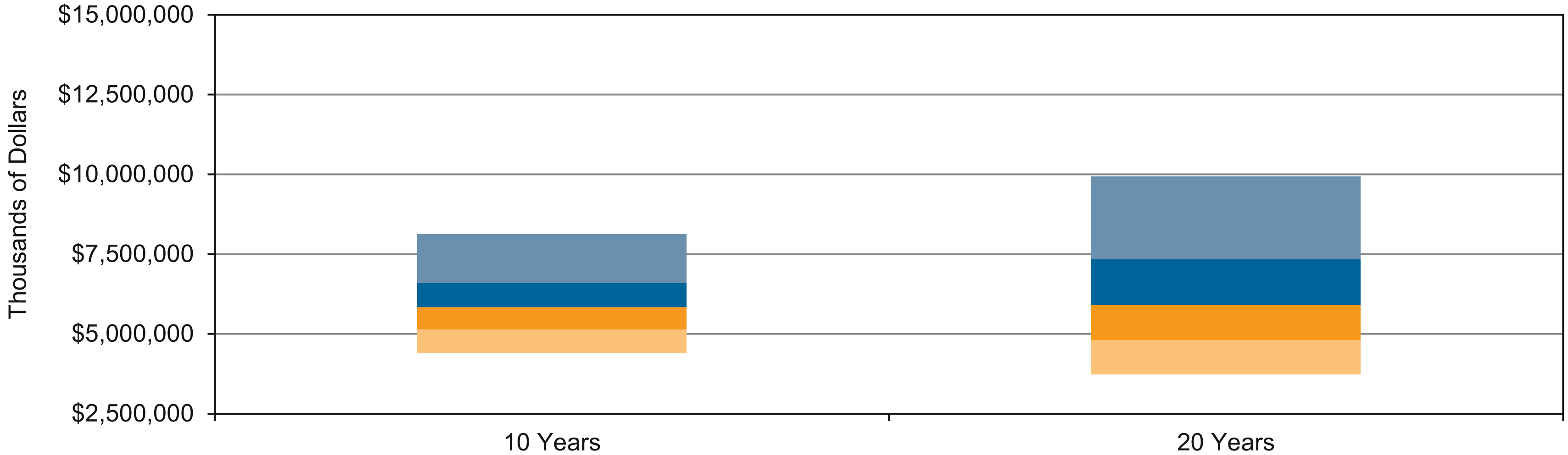
	10 Years	20 Years
5th Percentile	$8,492,494	$13,893,684
25th Percentile	$7,760,827	$11,365,347
50th Percentile	$7,304,501	$10,224,212
75th Percentile	$6,919,394	$9,323,353
95th Percentile	$6,465,627	$8,368,521

- School Trust assets are expected (median or 50th percentile) to grow from approximately $5.5 billion in 2022 to over $10 billon by 2042 (given current asset allocation and distribution policies and expected land revenues)
- In poor markets (95th percentile outcome), assets are still projected to grow by almost $3 billion over the next 20 years

Real (including Inflation) School Trust Values

Price inflation and student population growth

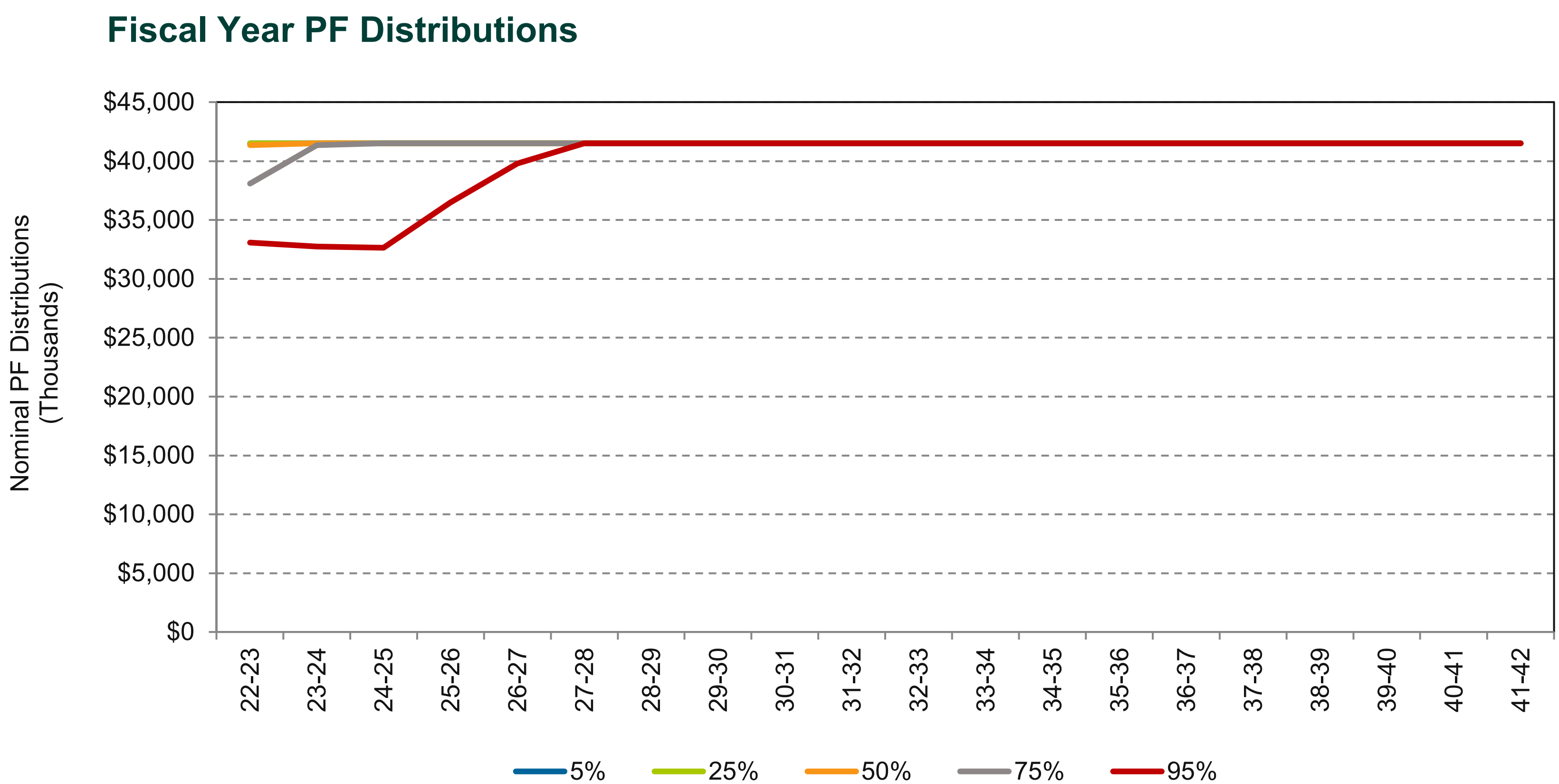
Real Ending School Trust Values



	10 Years	20 Years
5th Percentile	$8,120,727	$9,935,924
25th Percentile	$6,592,481	$7,339,750
50th Percentile	$5,836,377	$5,905,671
75th Percentile	$5,139,881	$4,798,880
95th Percentile	$4,387,461	$3,727,455

- The graph above discounts the values on previous page by price inflation (CPI-U) and student population growth
  - Median price inflation = 2.5% per year (Callan's 10-year assumption)
  - Student population falls by approximately -0.6% in FY22-23 before beginning to rise in FY28-29 and eventually reaching 1% annual growth near the end of the projection period
- The real purchasing power of the School Trust is expected (median-case outcome) to climb by over $400 million over the next 20 years

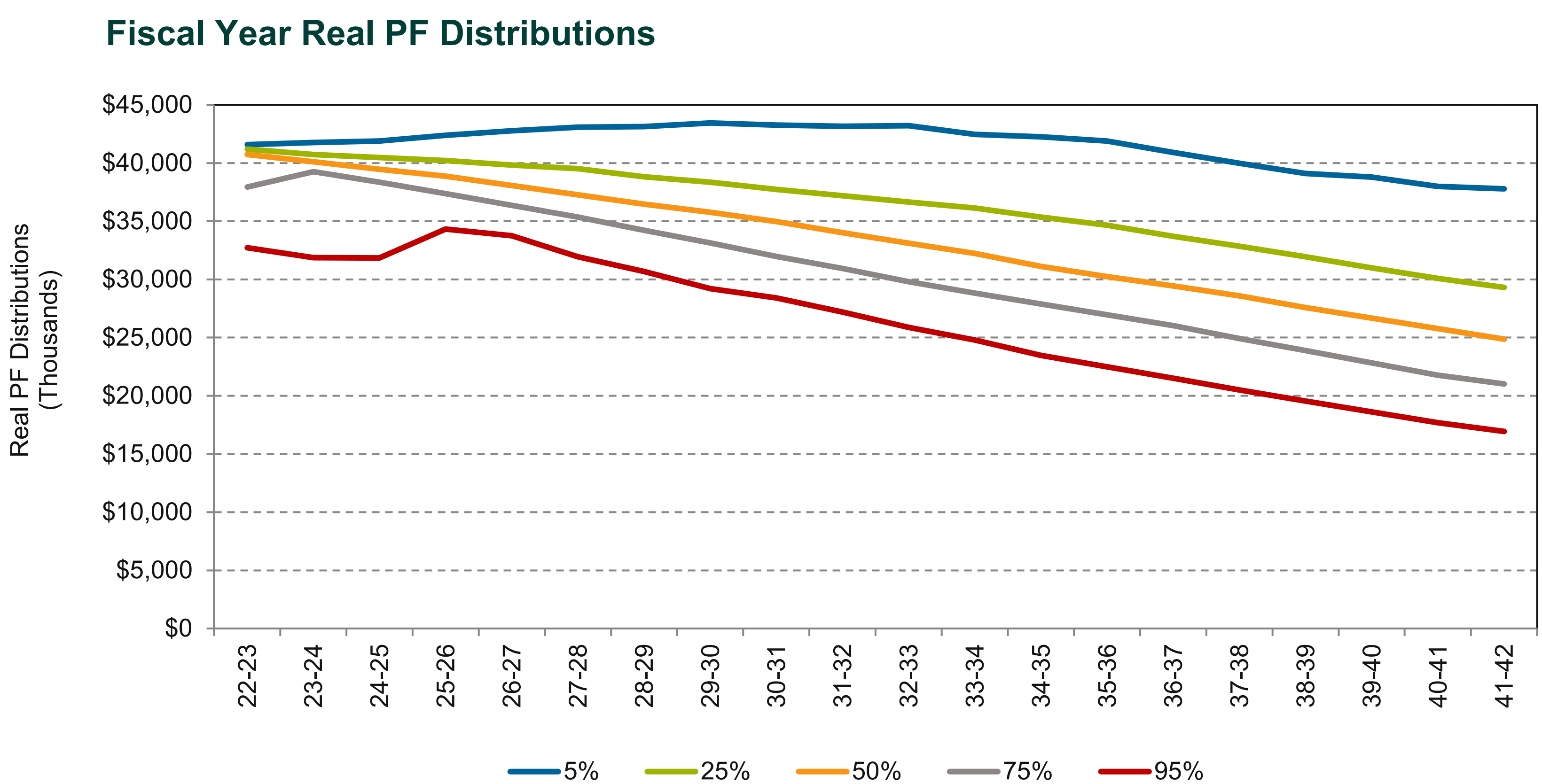
Nominal Permanent Fund Distributions



- Annual distributions are capped at $41.5 million under the current distribution policy
- Colored lines represent expected distributions at different return scenarios (5th to 95th percentile)
- Better case outcomes (5th and 25th percentiles) are at the maximum distribution amount over the entire projection period while the expected case outcome (median or 50th percentile) reaches the maximum in fiscal year 2023-24
  - The line chart exhibits projected distributions which may differ from actual results
- Poor investment outcomes (75th and 95th percentiles) reach the maximum distribution in fiscal years 2024-25 and 2027-28, respectively

Real Permanent Fund Distributions

Price inflation and student population growth



- The graph above discounts the values on previous page by inflation (CPI-U) and student population growth
- Annual real (inflation-adjusted) distributions, in a majority of outcomes, fall as a flat nominal distributions lose value in real terms year after year
- The modest rise in the real value of distributions over the first half of the projection in the 5th percentile outcome is a combination of strong investment results coupled with low price inflation and a forecast for a declining student population through 2027

Summary Observations

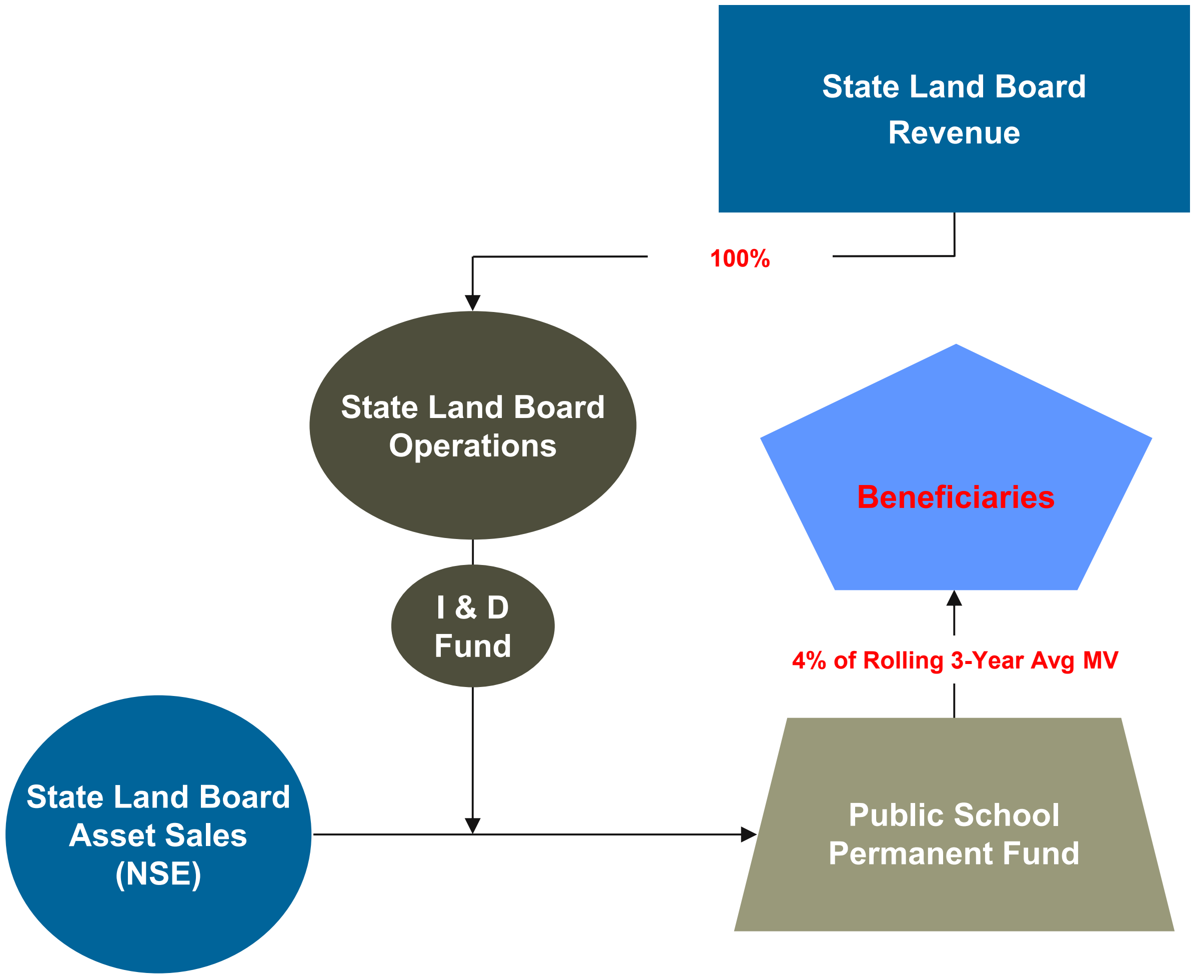
Current structure

- The real purchasing power of the School Trust is expected to rise over the next 20 years
  - The rise largely stems from a cap on PF distributions which decline as a percentage of the Trust over time
- The Permanent Fund's flat dollar distribution policy results in declining real distributions
- Declining real distributions places future school children at a disadvantage relative to today's student population
- Growing the Trust at least equal to the projected rate of inflation and student population growth maintains intergenerational equity

Current versus Alternative Structure

School Trust

Alternative structure

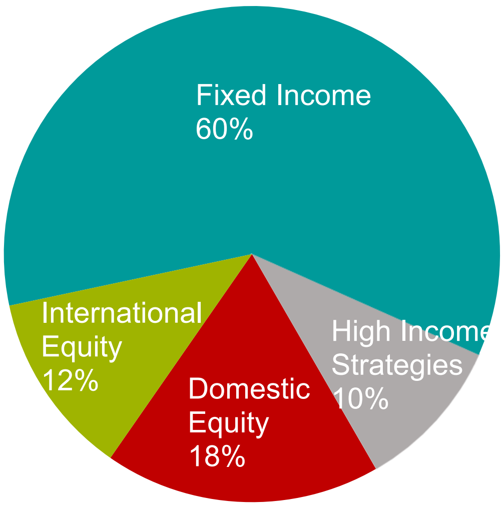


- Two of the three proposed changes are shown in red in the schematic to the left
- First, 100% of land revenues would flow to the Permanent Fund
- Second, PF distributions would now be a percentage of the moving average PF market value to reflect best practices

Permanent Fund

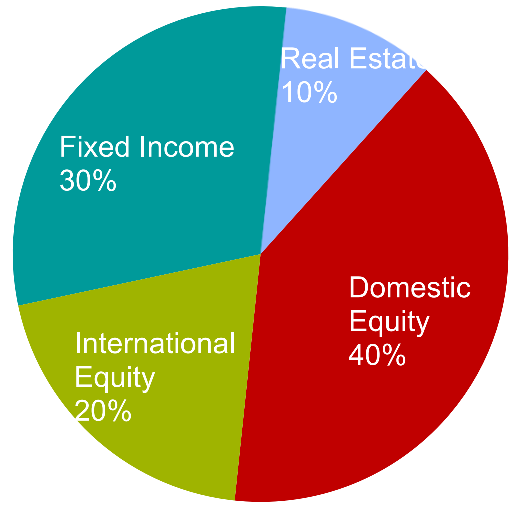
Alternative Permanent Fund Asset Allocation

Current PF Target Allocation



Return = 5.8%; Risk = 6.9%

Alternative PF Target Allocation



Return = 6.8%; Risk = 11.7%

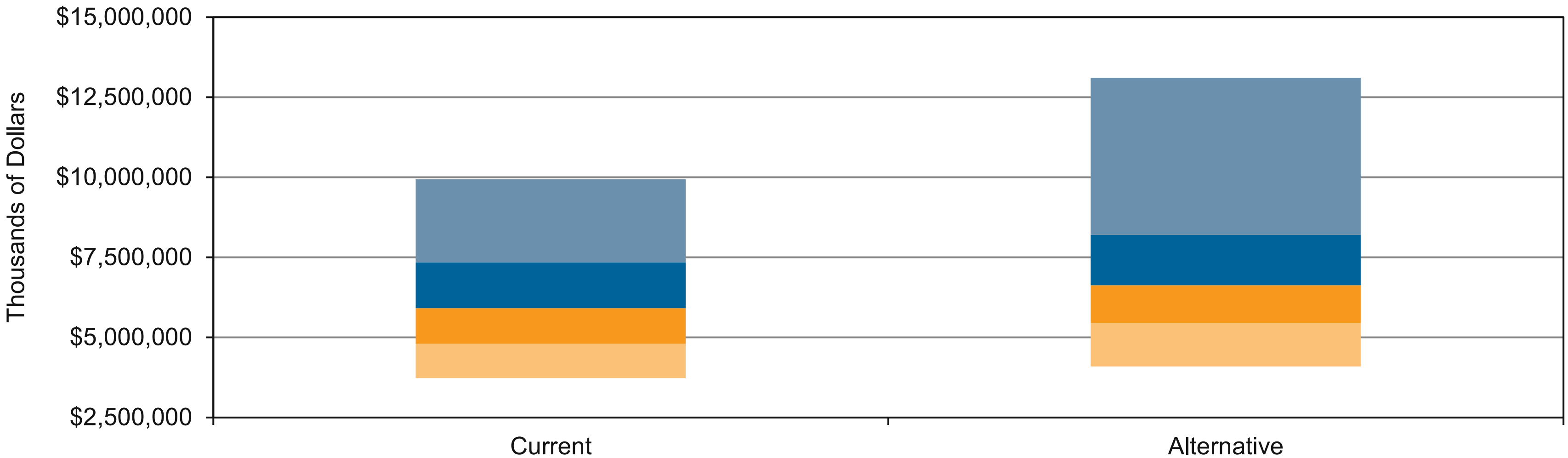
- The third suggested change is adopting a more diversified Permanent Fund asset allocation
- Return and risk is calculated over a 10-year period
- The alternative allocation is expected to generate an additional 100 basis points (or 1%) of return with an increased level of risk
  - The additional 1% return compounded over 10 years results in a projected additional market value of $217 million in the median case

Note: Fixed income in current mix is 87.5% Bloomberg Aggregate/12.5% Bloomberg 1-3 Gov/Cr; Fixed income in alternative mix is 100% Bloomberg Aggregate

Real (including Inflation) School Trust Values

Current and alternative structures (20 years)

Real Ending School Trust Values (20 Years)



	Current	Alternative
5th Percentile	$9,935,924	$13,104,820
25th Percentile	$7,339,750	$8,195,386
50th Percentile	$5,905,671	$6,621,620
75th Percentile	$4,798,880	$5,446,399
95th Percentile	$3,727,455	$4,088,927

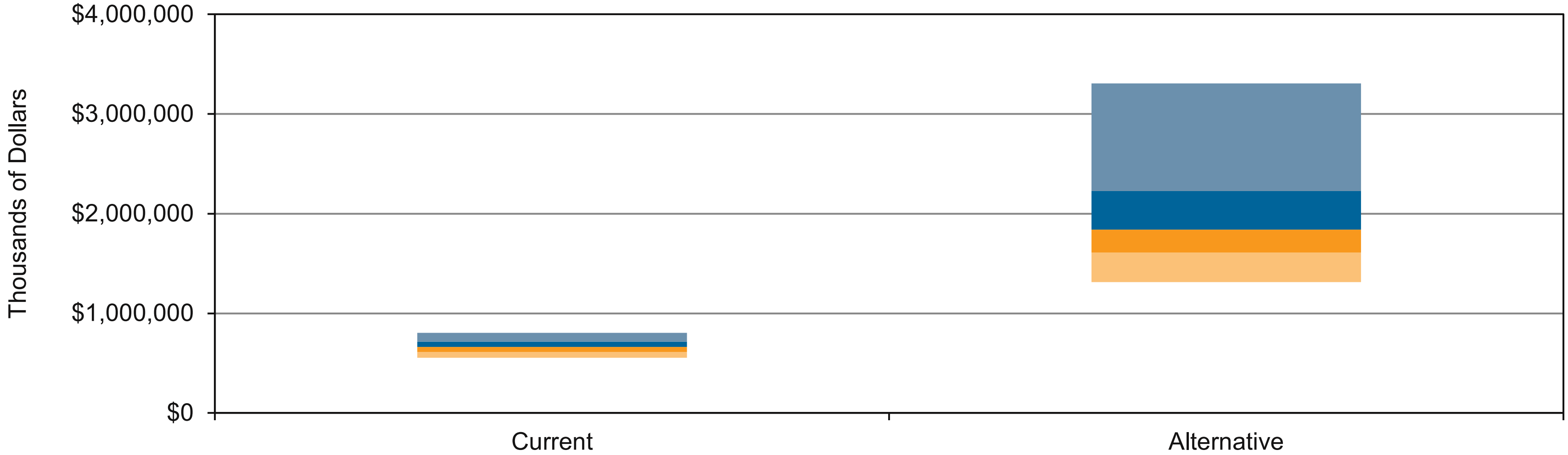
- Moving to the alternative structure* is expected to result in an additional $716 million in School Trust assets in 20 years (in today's dollars) in the median case
- The range of real School Trust asset values is expected to be approximately $0.4 billion (95th percentile) to $3.2 billion (5th percentile) higher under the alternative structure

* LB revenues all go to the PF, PF distribution is 4% of rolling 3-year market value, and PF asset allocation is as shown on previous page.

Cumulative Real (including Inflation) Permanent Fund Distributions

Current and alternative structures (20 years)

Cumulative Real PF Distributions (20 Years)



	Current	Alternative
5th Percentile	$805,494	$3,307,033
25th Percentile	$715,029	$2,226,940
50th Percentile	$662,618	$1,840,249
75th Percentile	$613,407	$1,610,915
95th Percentile	$553,009	$1,313,403

- Moving to the alternative structure is expected to result in an additional $1.2 billion in real (inflation adjusted) distributions from the PF over the next 20 years
- The range of cumulative real distributions is expected to be approximately $0.8 billion (95th percentile) to $2.5 billion (5th percentile) higher under the alternative structure

Isolating the Impact of Each Change to the Current Structure

Asset values and Permanent Fund distributions (20 years)

- Directing 100% of Land Board revenues to the Permanent Fund is expected to have the biggest impact on the value of the School Trust
  - Minimal impact on Permanent Fund distributions (distributions capped)
- Altering the Permanent Fund asset allocation has a significant positive impact on the value of the Trust while mostly detracting from distributions due to the income only distribution policy
- Altering the distribution policy alone hurts the value of the School Trust as distributions rise dramatically
- Real distributions rise primarily from changing the Permanent Fund distribution policy
- Assessing the impact on both assets and distributions (bottom table), shows that the combined changes are expected to add almost $2 billion in purchasing power to the School Trust

	Real Ending School Trust Values (20 Years)			
Gain/(Loss) Impact of Change ($000)	100% of Land Rev. to PF	More Aggr. PF Allocation	% of MV Distrib. Policy	Combined Changes
5th Percentile	$2,789,878	$3,342,495	($1,581,704)	$3,168,896
25th Percentile	$2,006,713	$576,166	($1,042,799)	$855,636
50th Percentile	$1,595,561	$412,378	($775,260)	$715,948
75th Percentile	$1,298,283	$340,965	($595,357)	$647,519
95th Percentile	$1,012,895	$17,156	($427,409)	$361,472

	Cumulative Real PF Distributions (20 Years)			
Gain/(Loss) Impact of Change ($000)	100% of Land Rev. to PF	More Aggr. PF Allocation	% of MV Distrib. Policy	Combined Changes
5th Percentile	$4,217	($37,034)	$1,068,510	$2,501,538
25th Percentile	$6,645	($23,597)	$780,375	$1,511,910
50th Percentile	$3,047	($9,723)	$647,544	$1,177,631
75th Percentile	$4,647	$4,047	$546,765	$997,508
95th Percentile	$1,804	$11,391	$441,579	$760,394

	Real Ending School Trust Values + Cumulative Real PF Distributions (20 Years)			
Gain/(Loss) Impact of Change ($000)	100% of Land Rev. to PF	More Aggr. PF Allocation	% of MV Distrib. Policy	Combined Changes
5th Percentile	$2,785,160	$3,541,745	($482,442)	$5,756,567
25th Percentile	$2,000,737	$779,254	($264,485)	$2,532,435
50th Percentile	$1,613,001	$465,246	($119,638)	$1,987,179
75th Percentile	$1,293,721	$233,255	($45,259)	$1,572,554
95th Percentile	$1,005,689	($108,062)	$15,387	$973,426

Summary Observations

Current versus alternative structure

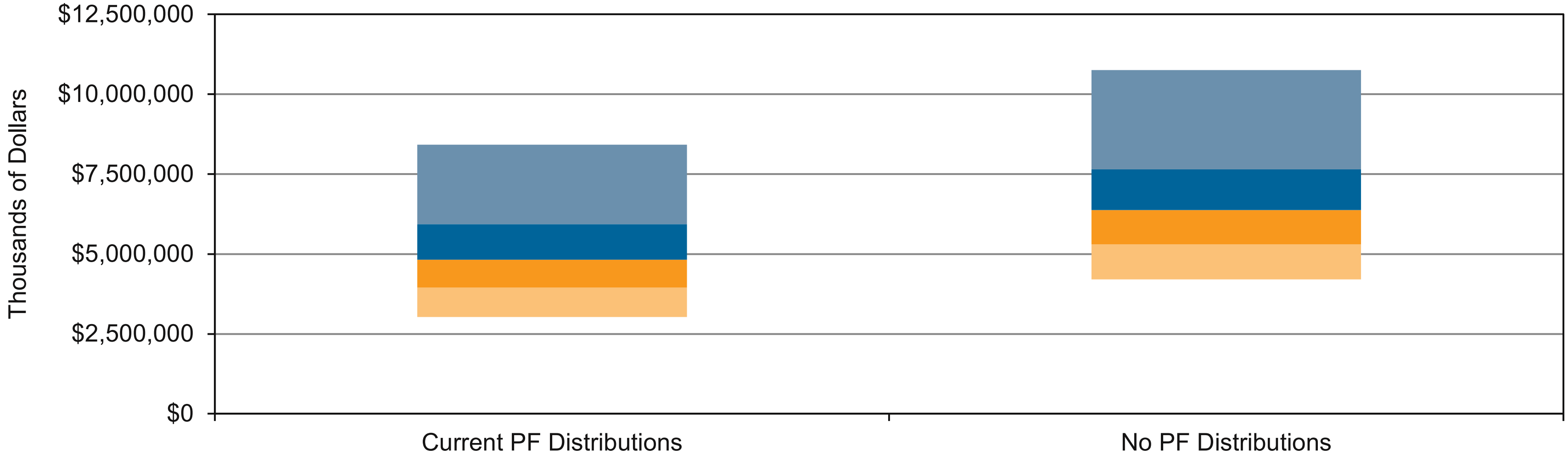
- The alternative structure fulfills the constitutional intergenerational mission of growing the corpus while generating reasonable and consistent income for current and future beneficiaries
- Moving to the alternative structure results in greater distributions and School Trust values as low returning lands that generate volatile revenues shrink in proportion to the financial asset portfolio
- Moving to the alternative structure would entail:
  - Allocating 100% of Land Board revenues to the Permanent Fund (net of DNR costs and other required set-asides)
  - Moving to a rolling average market value distribution policy in the Permanent Fund
    - *The ultimate distribution percentage should be examined in further detail to help ensure current and future generations enjoy the same level of benefits*
  - Adopting a more diversified asset allocation in the Permanent Fund

Appendix

Nominal (before Inflation) Permanent Fund Values

Current PF Distribution Policy versus No PF Distributions (20 Years)

Ending Permanent Fund Values



	Current PF Distributions	No PF Distributions
5th Percentile	$8,420,920	$10,754,411
25th Percentile	$5,935,599	$7,643,562
50th Percentile	$4,821,233	$6,375,209
75th Percentile	$3,946,398	$5,298,353
95th Percentile	$3,028,883	$4,204,852

- Curtailing distributions from the Permanent Fund results in an additional $1.5 billion in expected PF assets 20 years out

2023 Callan Capital Market Assumptions

Correlation

Summary of Callan's Long-Term Capital Market Assumptions (2023 - 2032)

	Correlation Matrix	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
1	Broad U.S. Equity	1.00																				
2	Large Cap U.S. Equity	1.00	1.00																			
3	Small/Mid Cap U.S. Equity	0.92	0.88	1.00																		
4	Global ex-US Equity	0.80	0.77	0.83	1.00																	
5	Developed ex-U.S. Equity	0.75	0.73	0.79	0.99	1.00																
6	Emerging Market Equity	0.82	0.79	0.83	0.95	0.89	1.00															
7	Short Duration G/C	0.04	0.05	0.01	0.02	0.04	-0.01	1.00														
8	Core U.S. Fixed	0.02	0.02	-0.02	-0.01	0.00	-0.04	0.80	1.00													
9	Long Government/Credit	0.25	0.26	0.22	0.23	0.23	0.22	0.72	0.89	1.00												
10	TIPS	-0.07	-0.07	-0.08	-0.10	-0.09	-0.11	0.56	0.70	0.56	1.00											
11	High Yield	0.76	0.75	0.74	0.76	0.73	0.75	0.10	0.09	0.28	0.02	1.00										
12	Global ex-U.S. Fixed	0.10	0.10	0.07	0.13	0.13	0.12	0.50	0.60	0.58	0.45	0.18	1.00									
13	EM Sovereign Debt	0.66	0.65	0.65	0.68	0.65	0.69	0.16	0.19	0.34	0.08	0.62	0.21	1.00								
14	Core Real Estate	0.44	0.44	0.42	0.42	0.42	0.41	0.16	0.14	0.21	0.09	0.31	0.16	0.29	1.00							
15	Private Infrastructure	0.49	0.48	0.47	0.47	0.46	0.46	0.14	0.15	0.25	0.08	0.34	0.18	0.32	0.76	1.00						
16	Private Equity	0.80	0.79	0.77	0.78	0.76	0.75	-0.01	-0.09	0.12	-0.11	0.61	0.08	0.51	0.55	0.60	1.00					
17	Private Credit	0.70	0.69	0.68	0.68	0.65	0.68	0.11	0.00	0.18	-0.12	0.63	0.12	0.50	0.25	0.27	0.67	1.00				
18	Hedge Funds	0.68	0.67	0.63	0.65	0.63	0.63	0.23	0.29	0.44	0.20	0.60	0.25	0.54	0.28	0.30	0.48	0.51	1.00			
19	Commodities	0.20	0.20	0.20	0.20	0.20	0.20	-0.05	-0.04	-0.02	0.00	0.20	0.10	0.15	0.18	0.15	0.20	0.17	0.23	1.00		
20	Cash Equivalents	-0.06	-0.06	-0.08	-0.10	-0.10	-0.10	0.30	0.15	0.06	0.12	-0.09	0.05	-0.06	0.00	-0.04	0.00	-0.04	-0.04	-0.02	1.00	
21	Inflation	-0.01	-0.02	0.02	0.01	0.00	0.03	-0.21	-0.23	-0.27	0.25	0.00	-0.15	-0.04	0.20	0.10	0.06	-0.05	0.05	0.35	0.05	0.05

- Relationships between asset classes are as important as standard deviation
- To determine portfolio mixes, Callan employs mean-variance optimization
- Return, standard deviation, and correlation determine the composition of efficient asset mixes

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