Introduction
School & Institutional Trust Funds Office

The Board of Trustees consists of the State Treasurer (Chairperson) and four additional members who are appointed based on expertise in institutional investment experience.

The staff consists of three persons:
- Director, Chief Investment Officer
- Senior Investment Analyst
- Administrative Analyst

Advisory and consultant relationships underway:
- Investment consultant and advisors
- Custodian bank
- Research vendors
- Risk management
Background

1995 to present:
- Portfolio grew to $2bn
  - Primarily SITLA contributions
  - Important element of “growth tilt”

<table>
<thead>
<tr>
<th>Contributions from Land Assets:</th>
<th>$1,401M</th>
</tr>
</thead>
<tbody>
<tr>
<td>Contributions from Investment Activities:</td>
<td>$653M</td>
</tr>
<tr>
<td>Average Annual Distribution:</td>
<td>$17M</td>
</tr>
<tr>
<td>2015 Distribution:</td>
<td>$45M</td>
</tr>
</tbody>
</table>
Background - Contributions

Revenue by Type
2006 - 2015

- Oil & Gas: 63%
- Surface / Land: 23%
- Coal: 9%
- Minerals: 4%
- Sand & Gravel: 1.0%

Revenue by Type:

<table>
<thead>
<tr>
<th></th>
<th>20 Years ($)</th>
<th>20 Years (%)</th>
<th>2010 - 2015 ($)</th>
<th>2010 - 2015 (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Avg</td>
<td>$ 70</td>
<td>10%</td>
<td>$ 89</td>
<td>5%</td>
</tr>
<tr>
<td>Min</td>
<td>$ 9</td>
<td>4%</td>
<td>$ 72</td>
<td>4%</td>
</tr>
<tr>
<td>Max</td>
<td>$ 128</td>
<td>20%</td>
<td>$ 116</td>
<td>7%</td>
</tr>
</tbody>
</table>
Background - Price of Oil

<table>
<thead>
<tr>
<th>Historical Prices</th>
<th>Oil</th>
</tr>
</thead>
<tbody>
<tr>
<td>1946 – 2015</td>
<td>$23.52</td>
</tr>
<tr>
<td>1995-2015</td>
<td>$53.11</td>
</tr>
<tr>
<td>Max</td>
<td>$133.88</td>
</tr>
<tr>
<td>Min</td>
<td>$1.17</td>
</tr>
</tbody>
</table>
Background – Portfolio

School Fund
Asset Allocation

- Fixed Income 23%
- US Equity 47%
- Non-US Equity 20%
- Real Estate 10%
- Cash 0%

- “Growth tilt”
- Target return: 7+% (after inflation target of 4+%)
- Dividends and interest: 2.5% (current level)
Background – Portfolio Challenge

If target return 7+% (inflation adjusted 4+%) ...
Background – Portfolio Challenge

90%+ of the risk generated by equity (which has low expected returns)
Background – Distribution Challenge

1995 to present:
- Current distribution policy based on 19th century practices ("interest only", modified to include dividends)
- Conundrum of balancing "growth" and "income" is constraining

<table>
<thead>
<tr>
<th>Historical and Current Yields</th>
<th>Stocks</th>
<th>Bonds</th>
</tr>
</thead>
<tbody>
<tr>
<td>1890-1995</td>
<td>4.68%</td>
<td>4.73%</td>
</tr>
<tr>
<td>1995-2015</td>
<td>1.83%</td>
<td>4.15%</td>
</tr>
<tr>
<td>2011-2015</td>
<td>2.06%</td>
<td>2.13%</td>
</tr>
<tr>
<td>2015</td>
<td>2.11%</td>
<td>1.88%</td>
</tr>
</tbody>
</table>
Summary

1995 to present:
- Previous growth has been good
- Are the previous sources of growth sustainable?
- What are the new sources of growth?
- Distribution policy inefficient, inequitable
Forward Looking

2015 – Dedicated institutional effort initiated
- Proper governance
- Professional staff
- Dedicated resources

2016 – Improvement efforts underway
- Distribution policy changes
- Portfolio diversification
- World class advisory relationships
Appendix – Biographies

**Ryan Kulig - Administrative Analyst**
Ryan is an administrative analyst at the State of Utah’s School and Institutional Trust Fund Office (SITFO). Ryan manages the operations of the office and has oversight of portfolio administration, as well as contributing to the investment analysis. Prior to joining SITFO in 2016 he worked for Sax Angle Partners, a long/short equity hedge fund, where he specialized in fundamental and technical analysis of equity investment opportunities. His expertise focused on evaluating the merits of investment strategies across a diverse range of industries. His background stems from performing financial analysis of federal grant activity for non-profit and for profit organizations with the advisory practice at MRK Advisors, a boutique consulting firm. Prior to that, Mr. Kulig conducted technical research and analysis as an intern with the advisory practice at KPMG, LLP. Mr. Kulig earned his Bachelor of Business Administration in Global Business with an Emphasis in Finance and a Minor in Economics from the University of Portland.

**Nathan Barnard, CFA - Senior Investment Analyst**
Nathan joined the Utah School and Institutional Trust Fund Office (SITFO) in 2016 as a senior investment analyst. His responsibilities include portfolio management and research. Prior to joining SITFO, he spent two years at Leader Capital as a fixed income portfolio analyst acting as back-up portfolio manager for their fixed income strategies. At Leader Capital, he conducted economic, fixed income market and individual credit research to develop executable investment ideas and themes. Prior to joining Leader Capital, he worked for RVK, Inc., an institutional investment consultant, for six years where he held analyst roles in portfolio analytics and later in manager research. As a Manager Research Analyst for RVK, his coverage universe included all fixed income managers across durations/maturities, qualities, sectors and regions. Nathan has a Bachelor of Science in Business Administration from the University of Colorado – Boulder where he majored in finance. He is a CFA charterholder and a member of the CFA Society of Portland.

**Peter Madsen - Director, Chief Investment Officer**
Peter Madsen joined in September 2015 as the new agency was just getting off the ground. Peter has been in the investment management industry since 1999. His career includes global investing on behalf of large institutional clients such pension funds, endowments, including permanent school fund experience from another state. Peter holds a Bachelor of Arts degree from the University of Utah in International Political Economy and Russian. He also holds a Master of Business Administration degree, with an emphasis on International Finance, from the Middlebury Institute of International Studies.
Appendix – Distribution Policy

Industry standards:
- Well diversified portfolio can sustain 4-5% distributions
- Inflation adjusted growth of the principal
- Intergenerational equity

<table>
<thead>
<tr>
<th>Category</th>
<th>Average Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall Average</td>
<td>4.80%</td>
</tr>
<tr>
<td>Private</td>
<td>6.32%</td>
</tr>
<tr>
<td>Human or Social</td>
<td>4.86%</td>
</tr>
<tr>
<td>Community</td>
<td>4.57%</td>
</tr>
<tr>
<td>Cultural or Arts</td>
<td>4.46%</td>
</tr>
<tr>
<td>Education (non-higher ed)</td>
<td>4.18%</td>
</tr>
<tr>
<td>College or University</td>
<td>4.08%</td>
</tr>
<tr>
<td>Faith-based</td>
<td>3.91%</td>
</tr>
<tr>
<td>Environmental</td>
<td>3.65%</td>
</tr>
</tbody>
</table>

*Must be able to avail oneself of broadest opportunity set and take moderate levels of risk
Appendix – Distribution Policy

Best practice:
- Reflection of the specific needs and the overall portfolio potential
  - Needs = Cost of pencils, # of pencils
  - Potential = Size and growth of portfolio
Appendix – Distribution Policy

Yale’s approach: Spending is calculated by taking a weighted average comprising 80% of the prior year spending and adjusting it for inflation, and 20% of the amount that results from applying the spending rate to the market value.

Stanford’s approach: The calculation is weighted 60% on the actual payout from the prior year and 40% on the spending rate.
Appendix – Distribution Policy

“Needs Based” Factor: Cost of pencils (inflation) + # of pencils (enrollment).

“Stability/Ability” Factor: 4% of 12 quarter average of portfolio market value

Subject: to a cap of 4% over a 12 quarter moving average

50% (1+“Needs Based Factor” x Previous Year Distribution)
+ 50% (4% x “Stability Factor”)

Subject to a cap of 4% against a 12Qtr Moving Average of Portfolio Value
Appendix – Distribution Policy

In practice:
- Estimations using “optimistic” and “pessimistic” scenarios
- The difference and the trigger effect

<table>
<thead>
<tr>
<th>Date</th>
<th>“Historical Policy”</th>
<th>“New Policy”</th>
</tr>
</thead>
<tbody>
<tr>
<td>2016</td>
<td>$46.97</td>
<td>$78.25</td>
</tr>
<tr>
<td>2017</td>
<td>$48.85</td>
<td>$84.33</td>
</tr>
<tr>
<td>2018</td>
<td>$50.80</td>
<td>$88.66</td>
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<tr>
<td>2017</td>
<td>$42.27</td>
<td>$80.94</td>
</tr>
<tr>
<td>2018</td>
<td>$38.05</td>
<td>$79.55 $78.16*</td>
</tr>
</tbody>
</table>

*4% cap triggered
Appendix – Distribution Policy

Our goal: Meet needs of current and future beneficiaries, by reflecting full portfolio potential

Current: 2.5%
Target: ~ 4%

How?
- Modify distribution policy
- Diversify portfolio