

Select Committee on Capital Financing and Investments Discussion of Spending Policies

September 14, 2016



Key Questions:

1.

- What long-term expected return is desired for the Permanent Mineral Trust Fund (“PMTF”)?

2.

- What constraints are appropriate for the program? Should the 55% equity cap be removed or reinterpreted?

3.

- Should the current spending policy framework be amended for PMTF?

PMTF & Intergenerational Equity

Maintaining intergenerational equity or attaining the “Full Objective” is defined as:

1. Maintaining economic value after inflation
2. Achieving 1% annual real growth to account for increasing resource demands (e.g. population growth)

Probability of Attaining Full Objective

Funds should strive to reach and maintain a 50% probability of attaining the Full Objective in order to provide equitable opportunities across all generations.

Probability	Interpretation
0% - 49%	Generations of tomorrow will likely have fewer benefits available relative to generations of today
50%	Generations of tomorrow will likely have equal benefits available relative to generations of today
51%-100%	Generations of tomorrow will likely have greater benefits available relative to generations of today

Full Objective for Permanent Mineral Trust Fund (“PMTF”)

For PMTF, attaining the Full Objective would mean growing Fund assets from \$7.3 billion today to approximately \$12.0 Billion in Year 50.

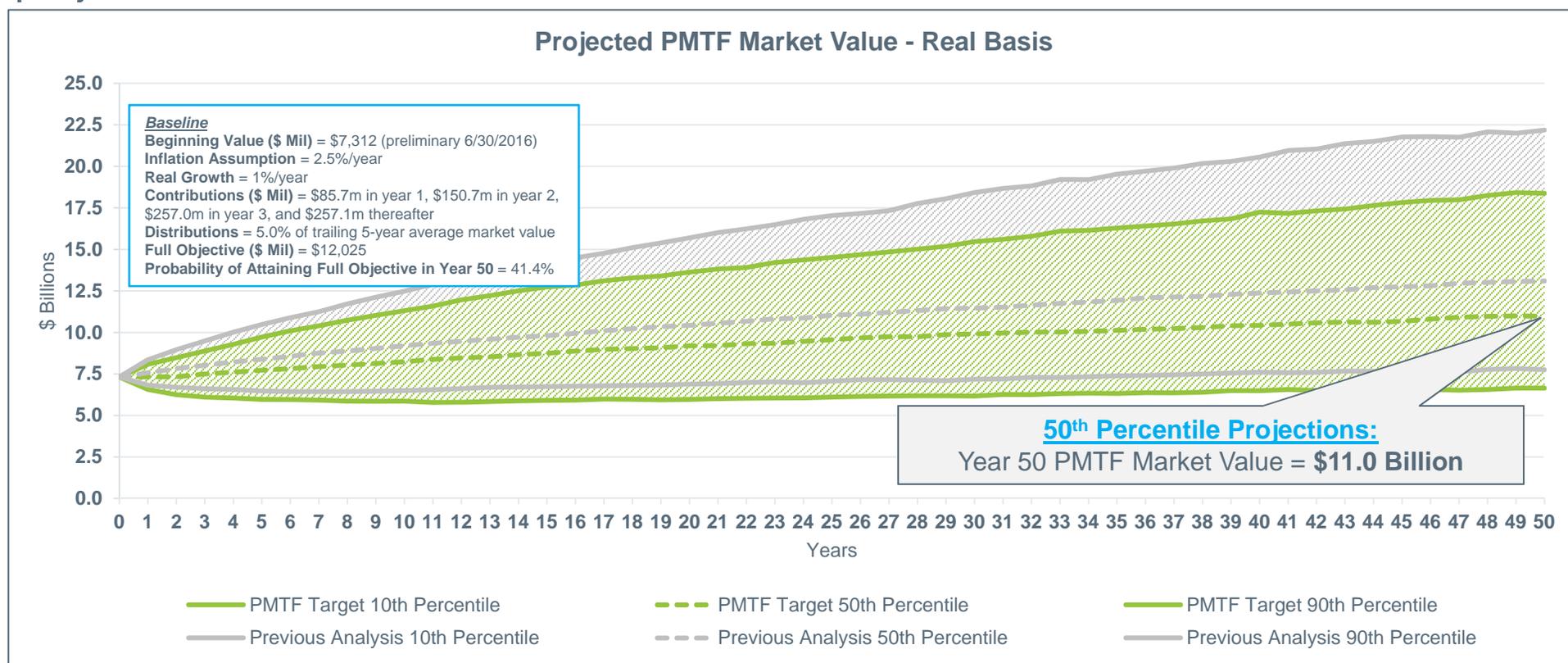
Since the Full Objective is to achieve real growth, all subsequent data shown throughout this presentation is in real terms (after inflation).

Spending Policy Analysis

Current Interpretation of 55% Equity Cap

As CREG contribution forecasts have decreased relative to the previous analysis, PMTF's median probability of attaining the Full Objective (1% real growth per annum) in Year 50 is now **41.1%**, with a projected market value of **\$11.0 Billion**.

Under the previous (last year) modeling inputs, the probability was **58.4%**, with a projected market value of **\$13.1 Billion** in Year 50.



All data shown in real terms (after 2.50% annual inflation). Monte Carlo simulations assume PMTF is invested at the Target Allocation. Model assumes investment earning always meet or exceed annual spending policy amount. Contribution assumptions provided by the Consensus Revenue Estimating Group as of January 2016. Previous Analysis Contributions: \$301.0m in Y1, \$308.4m in Y2, \$312.6m in Y3, \$316.6m thereafter.

Spending Policy Analysis

Current Interpretation of 55% Equity Cap

Year-over-year annual spending is projected to be relatively consistent, staying within +8.2% and -6.4% of the prior year's spending amount.

% Change YoY Annual Spending
5th and 95th Percentiles



Spending data is shown in real terms (after 2.50% annual inflation). The annual spending policy amount for PMTF during FY 2015 was \$284 million.

Spending Policy Analysis

Current Interpretation of 55% Equity Cap

The median percentage change in year-over-year annual spending is **+1.40%** under the current spending policy framework and PMTF Target. If spending is \$300 million in any given year, the following year's spending is projected to fall within \$322.1 million and \$283.0 million.

% YoY Annual Spending

	PMTF Target
Median (% YoY)	+1.40%
Standard Deviation (% YoY)	4.21%
<i>If Annual Spending in Year 1 is \$300 Million...</i>	
95 th Percentile Spending for Year 2 (\$M)	\$322.1M (+22.1)
Median Spending for Year 2 (\$M)	\$304.2M (+4.2)
5 th Percentile Spending for Year 2 (\$M)	\$283.0M (-17.0)

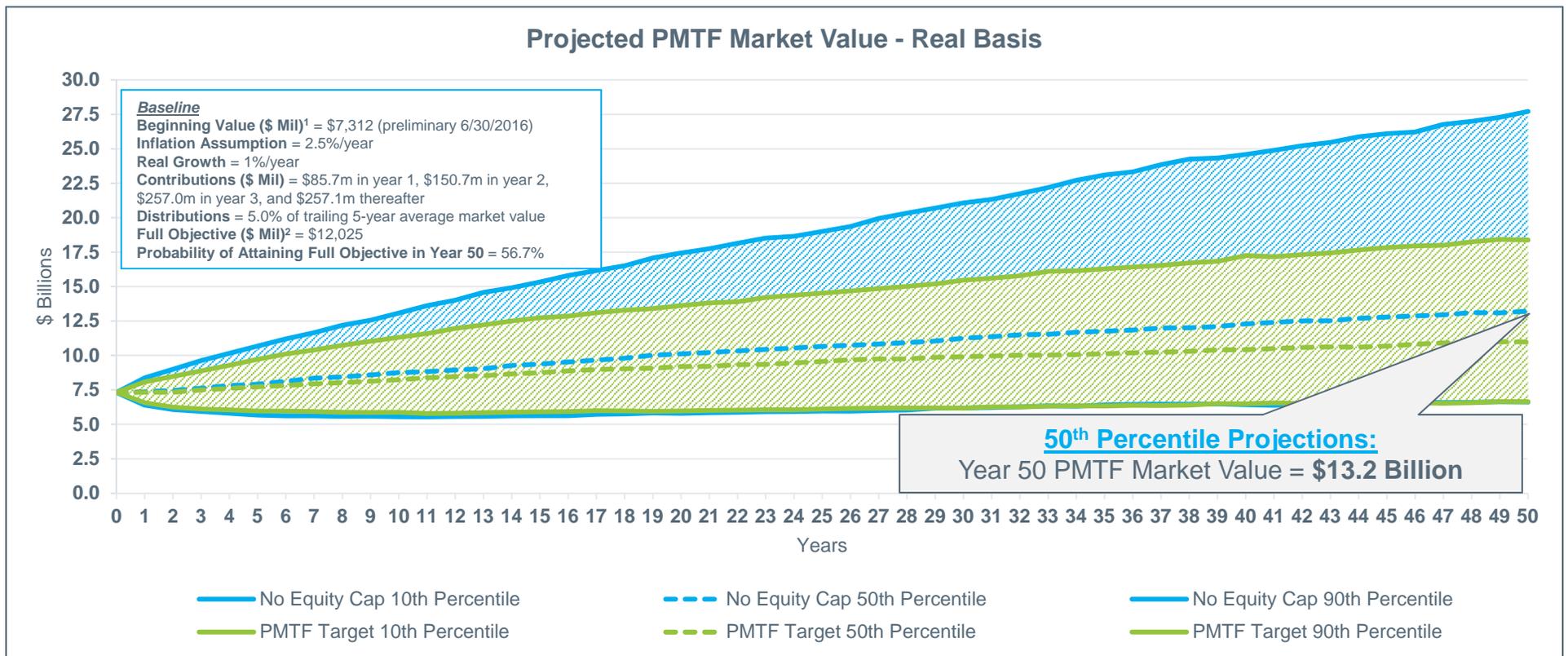
Spending data is shown in real terms (after 2.50% annual inflation). The annual spending policy amount for PMTF during FY 2015 was \$284 million.

Spending Policy Analysis

Removal of 55% Equity Cap

Under the No Equity Cap portfolio, the median probability of achieving the Full Objective in Year 50 increases from 41.1% to **56.7%**.

The projected market value at Year 50 increases from \$11.0 Billion to **\$13.2 Billion**.



All data shown in real terms (after 2.50% annual inflation). Model assumes investment earning always meet or exceed annual spending policy amount. Contribution assumptions provided by the Consensus Revenue Estimating Group.

Spending Policy Analysis

Removal of 55% Equity Cap

Although the No Equity Cap portfolio increases the probability of achieving the Full Objective, the volatility of annual spending from one year to the next is also projected to increase to +10.6% to -8.4% of the prior year's spending amount.

% Change YoY Annual Spending
5th and 95th Percentiles



Spending data is shown in real terms (after 2.50% annual inflation). The annual spending policy amount for PMTF during FY 2015 was \$284 million.

Spending Policy Analysis

Removal of 55% Equity Cap

Although the “No Equity Cap” portfolio increases the probability of achieving the Full Objective, the volatility of annual spending from one year to the next is also projected to increase.

% YoY Annual Spending

	PMTF Target	No Equity Cap
Median (% YoY)	+1.40%	+1.94%
Standard Deviation (% YoY)	4.21%	5.55%
<i>For example, if annual spending in Year 1 is \$300 Million...</i>		
95 th Percentile Spending for Year 2 (\$M)	\$322.1M (+22.1)	\$329.7M (+29.7)
Median Spending for Year 2 (\$M)	\$304.2M (+4.2)	\$305.8M (+5.8)
5 th Percentile Spending for Year 2 (\$M)	\$283.0M (-17.0)	\$277.9M (-22.1)

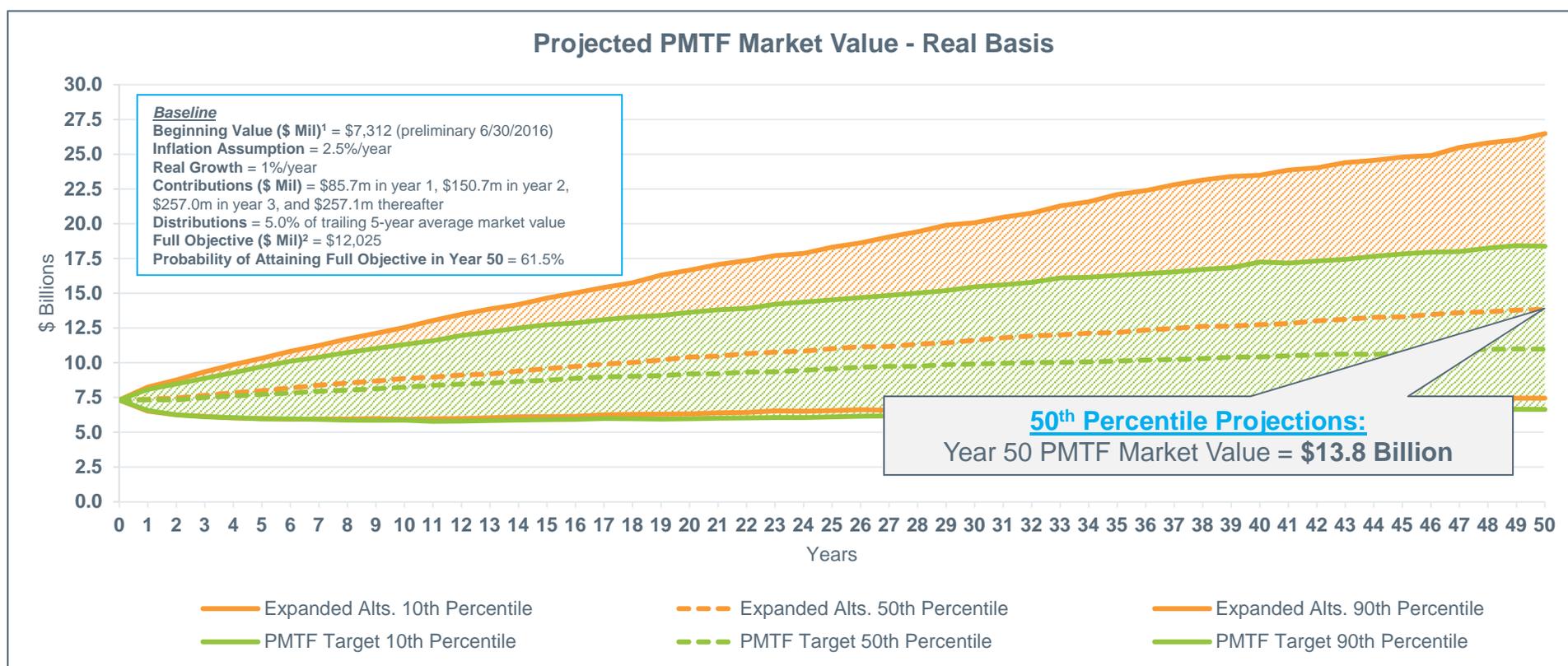
Spending data is shown in real terms (after 2.50% annual inflation). The annual spending policy amount for PMTF during FY 2015 was \$284 million.

Spending Policy Analysis

Removal of 55% Equity Cap + Expanded Alternatives

Under the Expanded Alternatives portfolio, the median probability of achieving the Full Objective in Year 50 increases from 41.1% to **61.5%**.

The projected market value at Year 50 increases from \$11.0 Billion to **\$13.8 Billion**.



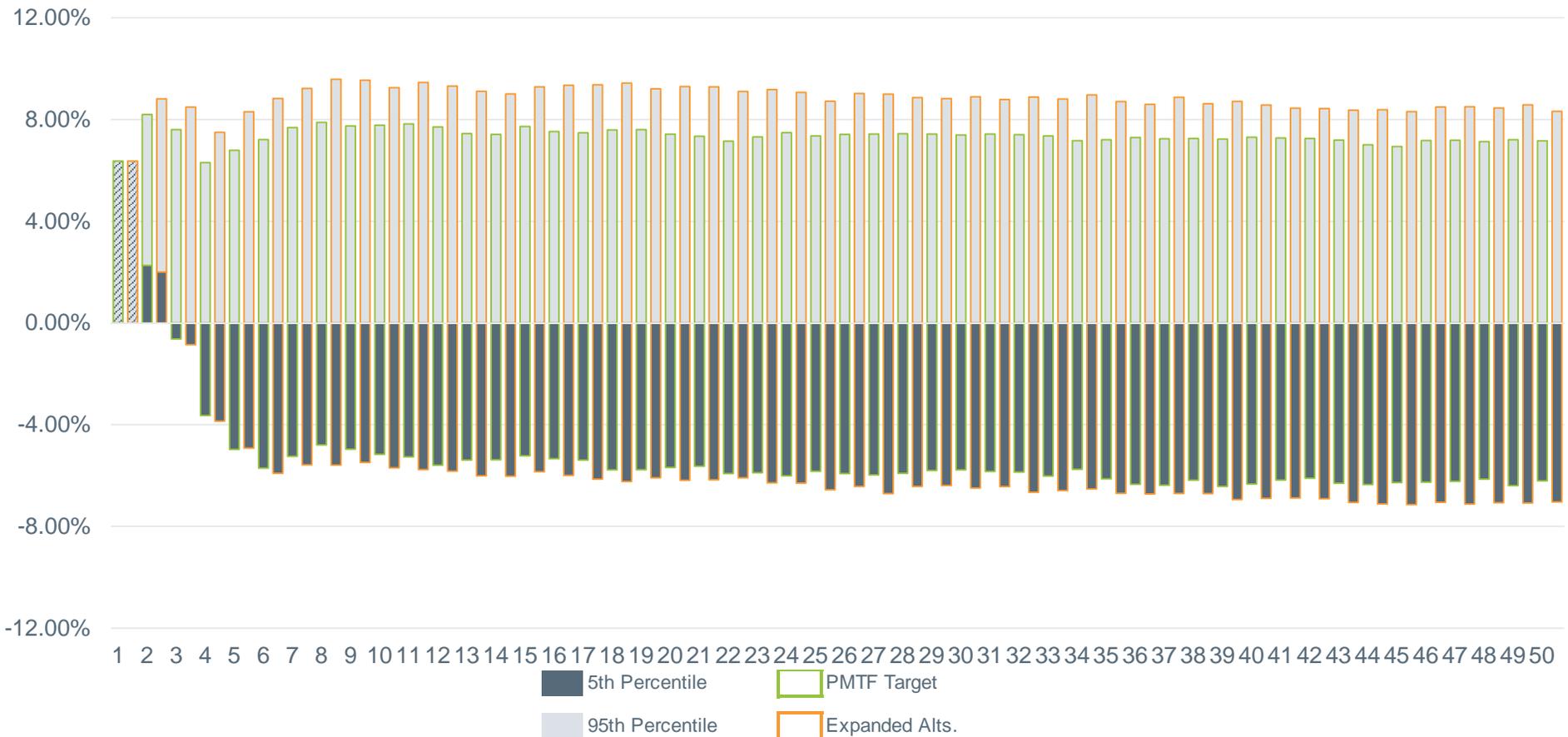
All data shown in real terms (after 2.50% annual inflation). Model assumes investment earning always meet or exceed annual spending policy amount. Contribution assumptions provided by the Consensus Revenue Estimating Group.

Spending Policy Analysis

Removal of 55% Equity Cap + Expanded Alternatives

Relative to the No Equity Cap portfolio, the volatility of annual spending from one year to the next modestly decreases for the Expanded Alternatives portfolio (+9.6% to -7.1% of the prior year's spending amount). However, both are still higher than the current PMTF Target (+8.2% to -6.4%).

% Change YoY Annual Spending
5th and 95th Percentiles



Spending data is shown in real terms (after 2.50% annual inflation). The annual spending policy amount for PMTF during FY 2015 was \$284 million.

Spending Policy Analysis

Removal of 55% Equity Cap + Expanded Alternatives

Relative to the “No Equity Cap” portfolio, the volatility of annual spending from one year to the next modestly decreases for the Expanded Alternatives portfolio. However, both are still higher than the current PMTF Target.

% YoY Annual Spending

	PMTF Target	Expanded Alts.
Median (% YoY)	+1.40%	+1.96%
Standard Deviation (% YoY)	4.21%	4.84%
<i>If Annual Spending in Year 1 is \$300 Million...</i>		
95 th Percentile Spending for Year 2 (\$M)	\$322.1M (+22.1)	\$326.5M (+26.5)
Median Spending for Year 2 (\$M)	\$304.2M (+4.2)	\$305.9M (+5.9)
5 th Percentile Spending for Year 2 (\$M)	\$283.0M (-17.0)	\$281.3M (-18.7)

Spending data is shown in real terms (after 2.50% annual inflation). The annual spending policy amount for PMTF during FY 2015 was \$284 million.

Alternative Spending Policy Models & Sensitivity Analysis



Reserve Account

Purpose:

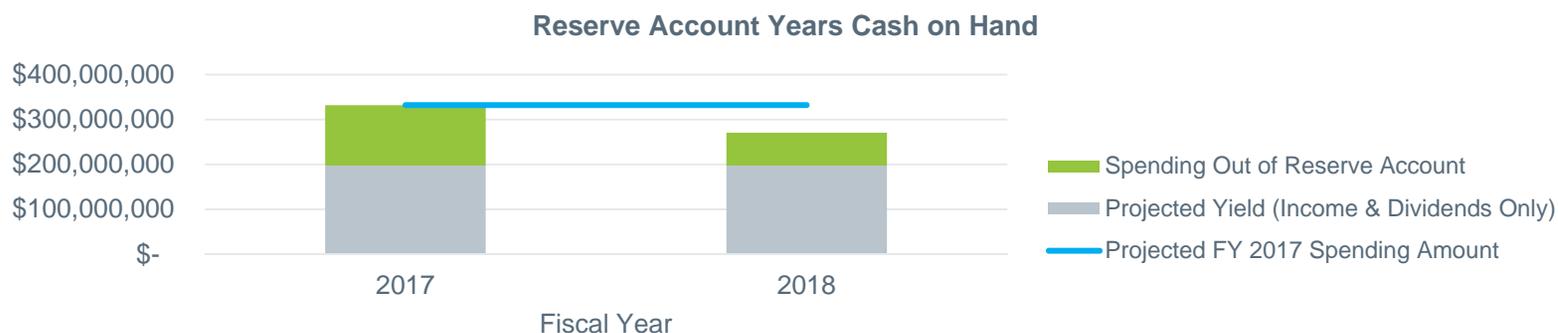
To set aside residual income and realized capital gains in excess of 5% so that the funds may be used to supplement future spending in the event that income and realized capital gains fall short of the annual spending amount.

Size:

At the end of Fiscal Year 2015, the Reserve Account balance was \$207 million, representing approximately 3.5% of the PMTF corpus. Sizing is limited to 90% of the annual spending policy amount.

Years Cash on Hand:

If PMTF only received interest/dividends (without realized capital gains or severance tax income), the Reserve Account would only be able to sustain the projected FY 2017 spending level of \$331.7 million per year for **1.5 years**.



Contribution assumptions provided by the Consensus Revenue Estimating Group.
The calculated annual spending amount for fiscal year 2017 is \$331.7 million.

Alternative Spending Policy Models

No spending rule can **simultaneously** achieve **all three** goals of sovereign wealth funds: Asset Preservation, Budgetary Stability, and Intergenerational Equity.

One primary tradeoff of any spending rule is that reductions in the sensitivity to market volatility (Budgetary Stability) can increase the likelihood of spending that is inconsistent with large market peaks and drops in a given year (Intergenerational Equity).

Comparison of Spending Policies from 1995–2009

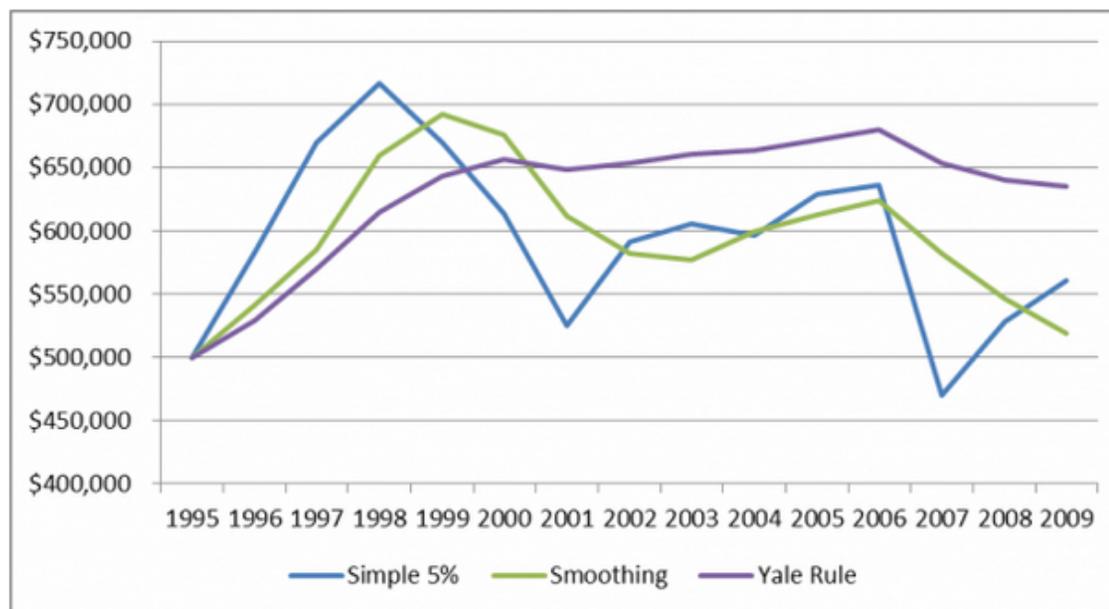


Chart Source: Buckingham. Chart assumes assets are invested in 60% S&P 500 Index / 40% B Int./Gov't Crdt Bond Index, with an initial portfolio value of \$10 million. Yale Rule used is 80% previous year + inflation (set at 3%) and 20% of 5% market value.

Alternative Spending Policy Models

	PMTF Target (Current Policy)	No Equity Cap (Change from Current Policy)	Expanded Alts. (Change from Current Policy)
Current Framework: 5% of trailing 5-year average market value			
Cumulative 50 Year Distributions (\$B)	\$23.1	\$25.9 (+2.8)	\$26.6 (+3.5)
Volatility of Annual Spending Changes (% YoY St. Dev.)	4.2%	5.6% (+1.4%)	4.8% (+0.6%)
Projected 50 Year Market Value (\$B)	\$11.0	\$13.2 (+2.2)	\$13.8 (+2.8)
Probability of Achieving Full Objective	41.4%	56.7% (+15.3%)	61.5% (+20.1%)
Yale Model / Hybrid Approach: 80% previous year spending (adjusted for inflation) + 20% of 5% of trailing 5-year average market value			
Cumulative 50 Year Distributions (\$B)	\$23.1 (-0.0)	\$25.8 (+2.7)	\$26.6 (+3.5)
Volatility of Annual Spending Changes (% YoY St. Dev.)	2.7% (-1.5%)	3.6% (-0.6%)	3.2% (-1.0%)
Projected 50 Year Market Value (\$B)	\$11.4 (+0.4)	\$14.0 (+3.0)	\$14.9 (+3.9)
Probability of Achieving Full Objective	45.6% (+4.2%)	59.3% (+17.9%)	64.6% (+23.2%)

All data shown in real terms (after 2.50% annual inflation). Model assumes investment earning always meet or exceed annual spending policy amount. Contribution assumptions provided by the Consensus Revenue Estimating Group.

Sensitivity Analysis

The sensitivity analysis demonstrates that changes to any—or even just one—of the components impacting the long-term fiscal health of the Permanent Funds can have a substantial influence on the ability to provide and maintain intergenerational equity.

	Inflation	Contributions	Distributions
Baseline (Probability of Attaining Full Objective in Year 50)	2.5%/year (41.4%)	\$85.7m in Y1, \$150.7m in Y2, \$257.0m in Y3, \$257.1m thereafter (41.4%)	5% of trailing 5-year average market value (41.4%)
Impact of UP move to assumption	3.5%/year (16.1%)	\$85.7m in Y1, \$150.7m in Y2, \$257.0m in Y3, \$257.1m in Y4, growing at 1%/year (63.9%)	6% of trailing 5-year average market value (16.0%)
Impact of DOWN move to assumption	1.5%/year (69.0%)	\$85.7m in Y1, \$150.7m in Y2, \$257.0m in Y3, \$257.1m in Y4, decreasing at 1%/year (25.2%)	4% of trailing 5-year average market value (69.3%)

If inflation is 1.5% over the next five years and then reverts back to 2.5%, the Probability of Attaining Full Objective in Year 50 is **42.8%**.

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Conclusion

1.

- What long-term expected return is desired for the Permanent Mineral Trust Fund (“PMTF”)?

2.

- What constraints are appropriate for the program? Should the 55% equity cap be removed or reinterpreted?

3.

- Should the current spending policy framework be amended for PMTF?

If the equity cap is removed/reinterpreted, **adopting a spending policy with additional smoothing elements** may make sense.

Appendix

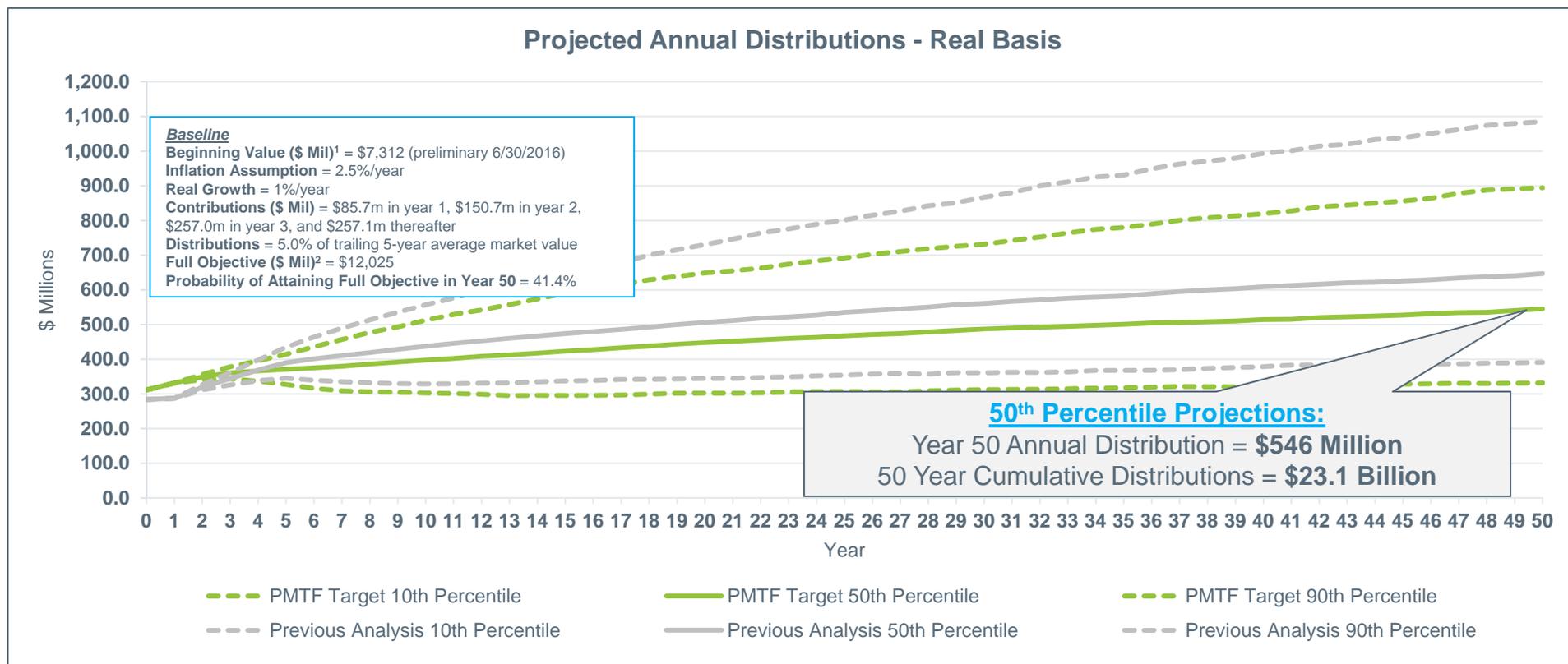


Spending Policy Analysis

Current Interpretation of 55% Equity Cap

The median projected annual distribution in Year 50 is **\$546 Million**, with cumulative distributions over the 50 Year period at **\$23.1 Billion**.

Under the previous modeling inputs, the projected annual distribution in Year 50 is **\$647 Million** with **\$26.3 Billion** in cumulative distributions.



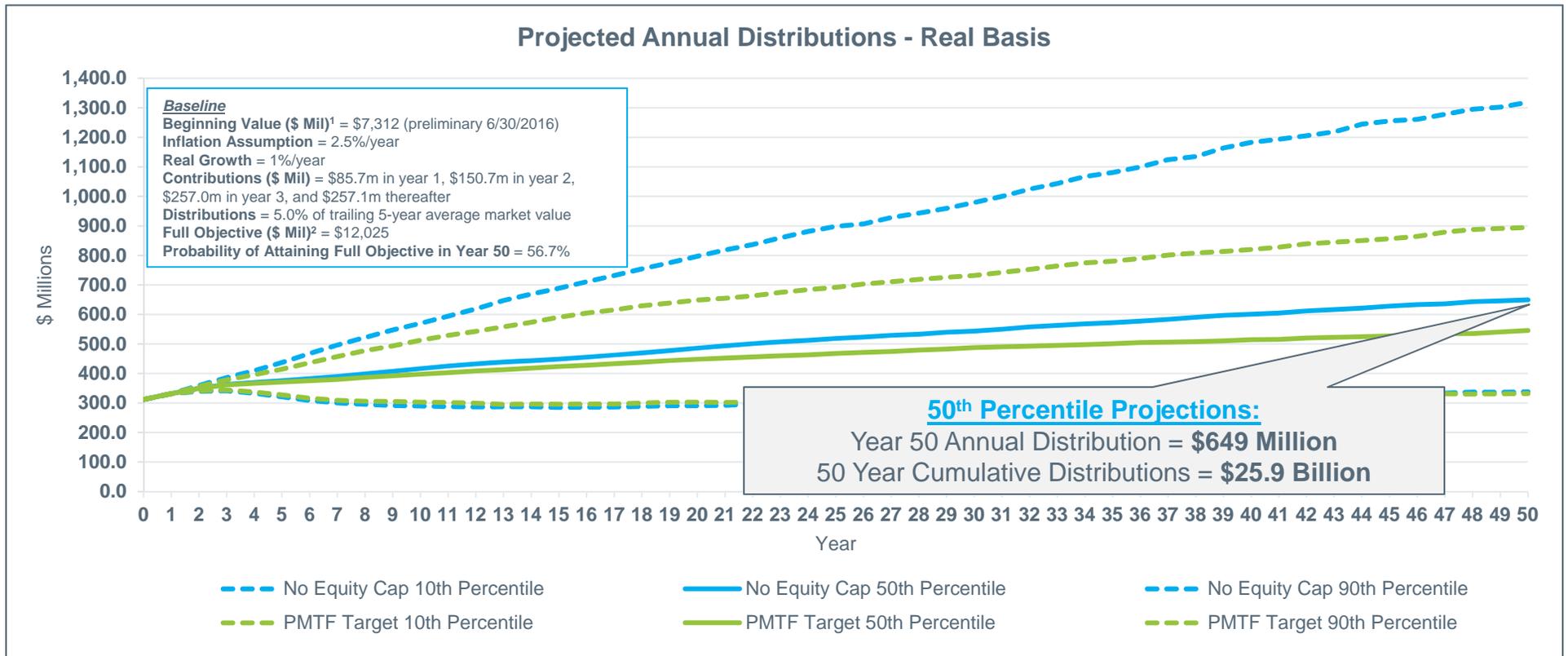
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Spending Policy Analysis

Removal of 55% Equity Cap

The median projected annual distribution in Year 50 is **\$649 Million**, with cumulative distributions over the 50 Year period at **\$25.9 Billion**.

Under the current PMTF Target, the projected annual distribution in Year 50 is **\$546 Million** with **\$23.3 Billion** in cumulative distributions.



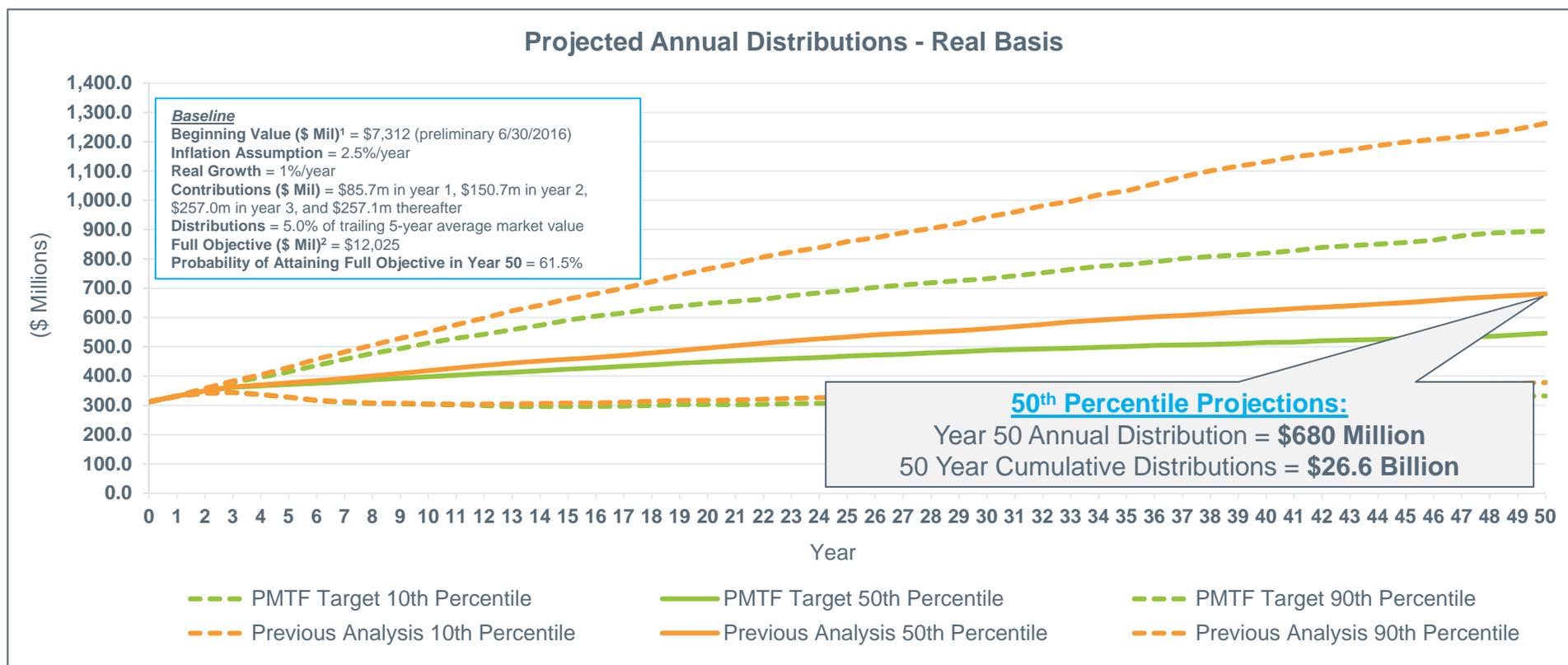
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Spending Policy Analysis

Removal of 55% Equity Cap + Expanded Alternatives

The median projected annual distribution in Year 50 is **\$680 Million**, with cumulative distributions over the 50 Year period at **\$26.6 Billion**.

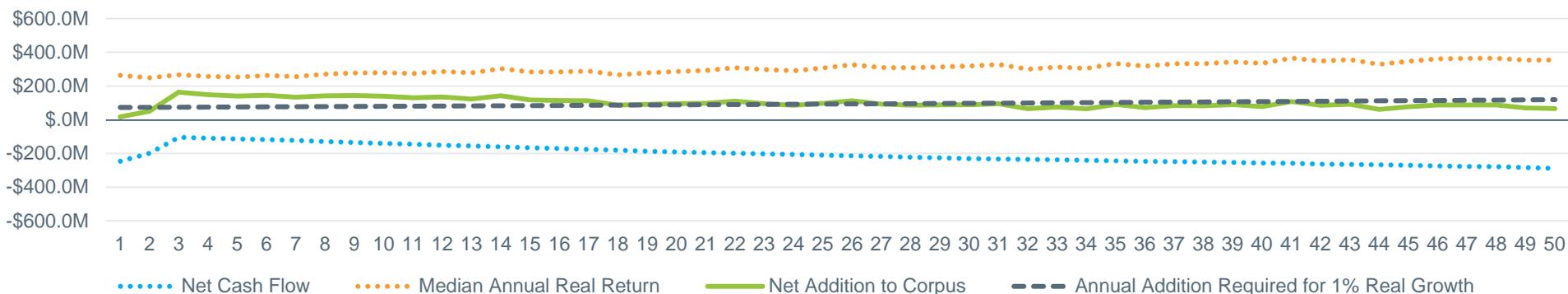
Under the current PMTF Target, the projected annual distribution in Year 50 is **\$546 Million** with **\$23.3 Billion** in cumulative distributions.



All data shown in real terms (after 2.50% annual inflation). Model assumes investment earning always meet or exceed annual spending policy amount. Contribution assumptions provided by the Consensus Revenue Estimating Group.

PMTF Target – Annual Cash Flows

Projected Net Additions to PMTF Corpus

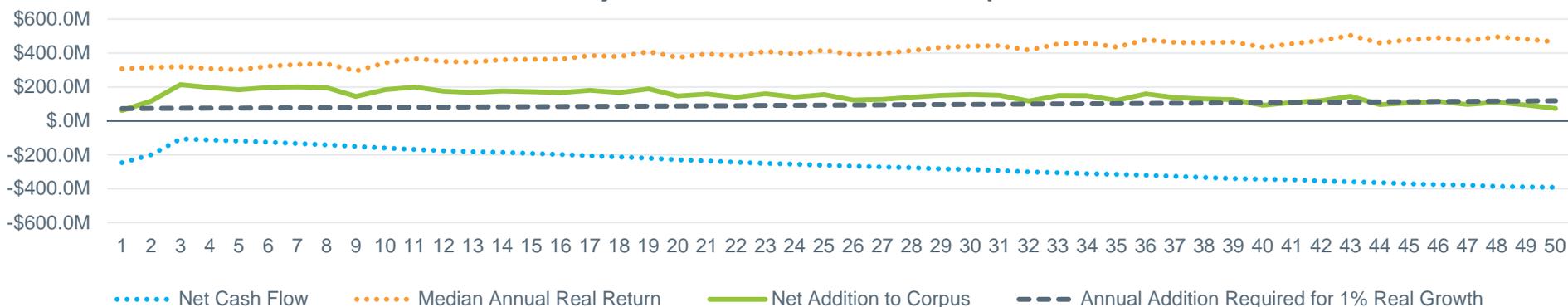


	Contribution Assumption	Median Distribution	Net Cash Flow	Median Annual Real Return	Net Addition to Corpus
Year 1	\$85,740,000	-\$331,712,338	-\$245,972,338	\$263,106,750	\$17,134,412
Year 2	\$150,720,000	-\$349,045,694	-\$198,325,694	\$248,876,250	\$50,550,556
Year 3	\$257,000,000	-\$361,160,725	-\$104,160,725	\$266,936,468	\$162,775,743
Year 4	\$257,100,000	-\$366,311,241	-\$109,211,241	\$257,141,656	\$147,930,415
Year 5	\$257,100,000	-\$371,032,789	-\$113,932,789	\$253,373,849	\$139,441,061
Year 6	\$257,100,000	-\$375,070,774	-\$117,970,774	\$262,679,443	\$144,708,669
Year 7	\$257,100,000	-\$379,569,486	-\$122,469,486	\$255,643,260	\$133,173,774
Year 8	\$257,100,000	-\$386,653,235	-\$129,553,235	\$270,500,441	\$140,947,206
Year 9	\$257,100,000	-\$392,079,907	-\$134,979,907	\$277,583,641	\$142,603,734
Year 10	\$257,100,000	-\$397,672,795	-\$140,572,795	\$279,303,313	\$138,730,518
Year 11	\$257,100,000	-\$402,294,844	-\$145,194,844	\$274,703,705	\$129,508,862
Year 12	\$257,100,000	-\$408,621,180	-\$151,521,180	\$285,838,782	\$134,317,602
Year 13	\$257,100,000	-\$412,510,704	-\$155,410,704	\$278,371,265	\$122,960,561
Year 14	\$257,100,000	-\$417,860,769	-\$160,760,769	\$303,056,645	\$142,295,877
Year 15	\$257,100,000	-\$423,425,090	-\$166,325,090	\$283,480,775	\$117,155,685
Year 16	\$257,100,000	-\$427,652,666	-\$170,552,666	\$283,706,283	\$113,153,617
Year 17	\$257,100,000	-\$433,073,840	-\$175,973,840	\$288,054,626	\$112,080,786
Year 18	\$257,100,000	-\$437,753,636	-\$180,653,636	\$266,936,423	\$86,282,787
Year 19	\$257,100,000	-\$443,971,710	-\$186,871,710	\$277,909,411	\$91,037,700
Year 20	\$257,100,000	-\$448,321,055	-\$191,221,055	\$285,950,856	\$94,729,801
Year 21	\$257,100,000	-\$451,911,295	-\$194,811,295	\$291,882,115	\$97,070,820
Year 22	\$257,100,000	-\$455,815,106	-\$198,715,106	\$308,538,571	\$109,823,465
Year 23	\$257,100,000	-\$459,870,573	-\$202,770,573	\$297,681,969	\$94,911,396
Year 24	\$257,100,000	-\$462,891,858	-\$205,791,858	\$290,707,571	\$84,915,713
Year 25	\$257,100,000	-\$467,620,694	-\$210,520,694	\$307,150,733	\$96,630,039

	Contribution Assumption	Median Distribution	Net Cash Flow	Median Annual Real Return	Net Addition to Corpus
Year 26	\$257,100,000	-\$471,323,723	-\$214,223,723	\$326,718,792	\$112,495,069
Year 27	\$257,100,000	-\$474,121,098	-\$217,021,098	\$309,333,252	\$92,312,153
Year 28	\$257,100,000	-\$478,911,924	-\$221,811,924	\$308,242,773	\$86,430,848
Year 29	\$257,100,000	-\$482,709,818	-\$225,609,818	\$313,249,965	\$87,640,146
Year 30	\$257,100,000	-\$487,485,158	-\$230,385,158	\$318,953,866	\$88,568,708
Year 31	\$257,100,000	-\$490,252,994	-\$233,152,994	\$328,053,186	\$94,900,192
Year 32	\$257,100,000	-\$492,464,160	-\$235,364,160	\$300,239,576	\$64,875,416
Year 33	\$257,100,000	-\$494,922,166	-\$237,822,166	\$312,714,831	\$74,892,664
Year 34	\$257,100,000	-\$497,674,711	-\$240,574,711	\$305,064,920	\$64,490,209
Year 35	\$257,100,000	-\$500,596,269	-\$243,496,269	\$333,860,264	\$90,363,994
Year 36	\$257,100,000	-\$504,392,795	-\$247,292,795	\$318,201,855	\$70,909,060
Year 37	\$257,100,000	-\$505,720,266	-\$248,620,266	\$332,655,988	\$84,035,722
Year 38	\$257,100,000	-\$507,884,452	-\$250,784,452	\$332,584,043	\$81,799,591
Year 39	\$257,100,000	-\$510,359,166	-\$253,259,166	\$342,809,103	\$89,549,937
Year 40	\$257,100,000	-\$514,282,767	-\$257,182,767	\$334,800,976	\$77,618,209
Year 41	\$257,100,000	-\$515,125,933	-\$258,025,933	\$365,809,653	\$107,783,720
Year 42	\$257,100,000	-\$520,212,137	-\$263,112,137	\$348,507,961	\$85,395,824
Year 43	\$257,100,000	-\$522,286,325	-\$265,186,325	\$357,031,968	\$91,845,643
Year 44	\$257,100,000	-\$524,606,618	-\$267,506,618	\$328,460,202	\$60,953,584
Year 45	\$257,100,000	-\$527,102,531	-\$270,002,531	\$346,458,635	\$76,456,104
Year 46	\$257,100,000	-\$531,305,259	-\$274,205,259	\$361,138,266	\$86,933,007
Year 47	\$257,100,000	-\$534,433,639	-\$277,333,639	\$364,008,024	\$86,674,384
Year 48	\$257,100,000	-\$534,977,857	-\$277,877,857	\$364,493,222	\$86,615,365
Year 49	\$257,100,000	-\$540,770,478	-\$283,670,478	\$353,596,322	\$69,925,844
Year 50	\$257,100,000	-\$545,614,749	-\$288,514,749	\$354,347,296	\$65,832,547

No Equity Cap – Annual Cash Flows

Projected Net Additions to PMTF Corpus

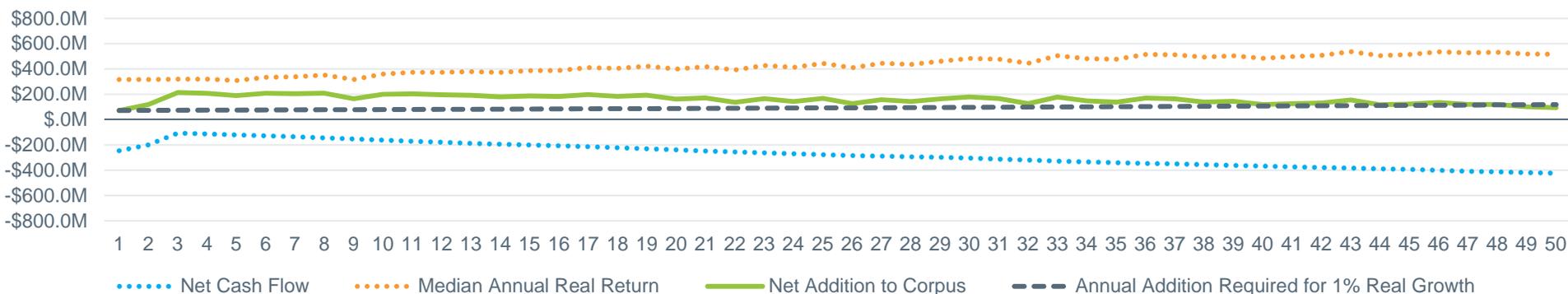


	Contribution Assumption	Median Distribution	Net Cash Flow	Median Annual Real Return	Net Addition to Corpus
Year 1	\$85,740,000	-\$331,712,338	-\$245,972,338	\$307,317,311	\$61,344,973
Year 2	\$150,720,000	-\$349,487,800	-\$198,767,800	\$315,843,145	\$117,075,345
Year 3	\$257,000,000	-\$362,883,606	-\$105,883,606	\$319,519,097	\$213,635,491
Year 4	\$257,100,000	-\$369,465,389	-\$112,365,389	\$308,921,572	\$196,556,183
Year 5	\$257,100,000	-\$375,842,339	-\$118,742,339	\$301,959,175	\$183,216,836
Year 6	\$257,100,000	-\$382,867,604	-\$125,767,604	\$322,716,501	\$196,948,897
Year 7	\$257,100,000	-\$390,056,865	-\$132,956,865	\$332,606,342	\$199,649,477
Year 8	\$257,100,000	-\$398,201,241	-\$141,101,241	\$336,782,683	\$195,681,441
Year 9	\$257,100,000	-\$407,503,408	-\$150,403,408	\$294,665,044	\$144,261,636
Year 10	\$257,100,000	-\$416,635,946	-\$159,535,946	\$343,340,833	\$183,804,887
Year 11	\$257,100,000	-\$425,482,646	-\$168,382,646	\$368,251,610	\$199,868,964
Year 12	\$257,100,000	-\$432,269,598	-\$175,169,598	\$349,897,442	\$174,727,844
Year 13	\$257,100,000	-\$438,402,405	-\$181,302,405	\$347,926,025	\$166,623,621
Year 14	\$257,100,000	-\$442,883,217	-\$185,783,217	\$361,051,510	\$175,268,292
Year 15	\$257,100,000	-\$448,685,820	-\$191,585,820	\$363,507,388	\$171,921,568
Year 16	\$257,100,000	-\$455,185,018	-\$198,085,018	\$364,436,278	\$166,351,260
Year 17	\$257,100,000	-\$462,661,385	-\$205,561,385	\$385,803,776	\$180,242,390
Year 18	\$257,100,000	-\$469,539,369	-\$212,439,369	\$379,391,155	\$166,951,785
Year 19	\$257,100,000	-\$477,237,565	-\$220,137,565	\$408,704,881	\$188,567,316
Year 20	\$257,100,000	-\$486,048,651	-\$228,948,651	\$375,407,080	\$146,458,429
Year 21	\$257,100,000	-\$493,514,290	-\$236,414,290	\$395,076,746	\$158,662,456
Year 22	\$257,100,000	-\$500,979,935	-\$243,879,935	\$382,558,778	\$138,678,843
Year 23	\$257,100,000	-\$507,393,993	-\$250,293,993	\$410,375,175	\$160,081,182
Year 24	\$257,100,000	-\$512,284,536	-\$255,184,536	\$395,380,834	\$140,196,298
Year 25	\$257,100,000	-\$518,630,569	-\$261,530,569	\$416,776,401	\$155,245,831

	Contribution Assumption	Median Distribution	Net Cash Flow	Median Annual Real Return	Net Addition to Corpus
Year 26	\$257,100,000	-\$523,307,208	-\$266,207,208	\$388,855,616	\$122,648,408
Year 27	\$257,100,000	-\$529,334,633	-\$272,234,633	\$398,923,425	\$126,688,791
Year 28	\$257,100,000	-\$532,882,511	-\$275,782,511	\$415,044,145	\$139,261,634
Year 29	\$257,100,000	-\$539,699,982	-\$282,599,982	\$433,419,343	\$150,819,361
Year 30	\$257,100,000	-\$543,314,816	-\$286,214,816	\$441,227,961	\$155,013,144
Year 31	\$257,100,000	-\$549,929,120	-\$292,829,120	\$443,439,970	\$150,610,850
Year 32	\$257,100,000	-\$557,917,700	-\$300,817,700	\$417,768,270	\$116,950,570
Year 33	\$257,100,000	-\$562,490,693	-\$305,390,693	\$454,541,137	\$149,150,443
Year 34	\$257,100,000	-\$567,964,176	-\$310,864,176	\$458,958,651	\$148,094,475
Year 35	\$257,100,000	-\$571,975,652	-\$314,875,652	\$435,654,077	\$120,778,424
Year 36	\$257,100,000	-\$577,221,888	-\$320,121,888	\$478,908,027	\$158,786,139
Year 37	\$257,100,000	-\$583,355,138	-\$326,255,138	\$463,250,833	\$136,995,695
Year 38	\$257,100,000	-\$590,588,526	-\$333,488,526	\$462,416,783	\$128,928,257
Year 39	\$257,100,000	-\$596,949,354	-\$339,849,354	\$464,864,641	\$125,015,287
Year 40	\$257,100,000	-\$600,452,947	-\$343,352,947	\$435,229,839	\$91,876,893
Year 41	\$257,100,000	-\$604,296,897	-\$347,196,897	\$455,306,869	\$108,109,973
Year 42	\$257,100,000	-\$612,108,592	-\$355,008,592	\$474,840,126	\$119,831,535
Year 43	\$257,100,000	-\$616,223,576	-\$359,123,576	\$504,336,752	\$145,213,176
Year 44	\$257,100,000	-\$621,338,203	-\$364,238,203	\$460,004,464	\$95,766,261
Year 45	\$257,100,000	-\$628,292,734	-\$371,192,734	\$478,370,237	\$107,177,504
Year 46	\$257,100,000	-\$632,950,694	-\$375,850,694	\$490,545,923	\$114,695,229
Year 47	\$257,100,000	-\$635,812,916	-\$378,712,916	\$475,596,673	\$96,883,757
Year 48	\$257,100,000	-\$643,166,189	-\$386,066,189	\$496,033,857	\$109,967,668
Year 49	\$257,100,000	-\$645,853,821	-\$388,753,821	\$482,574,758	\$93,820,937
Year 50	\$257,100,000	-\$649,365,576	-\$392,265,576	\$465,771,473	\$73,505,897

Expanded Alts. – Annual Cash Flows

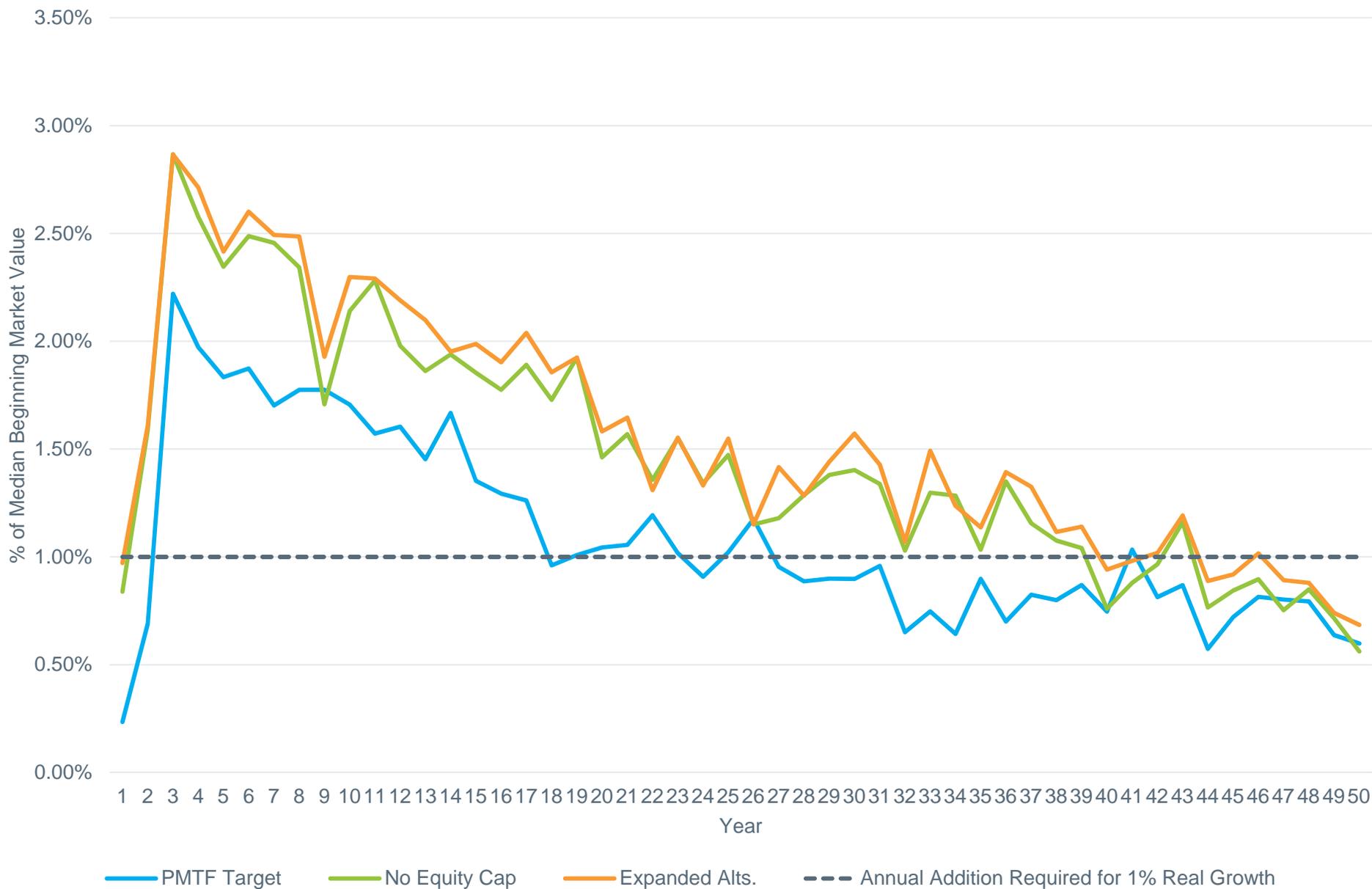
Projected Net Additions to PMTF Corpus



	Contribution Assumption	Median Distribution	Net Cash Flow	Median Annual Real Return	Net Addition to Corpus
Year 1	\$85,740,000	-\$331,712,338	-\$245,972,338	\$332,477,792	\$86,505,454
Year 2	\$150,720,000	-\$349,739,405	-\$199,019,405	\$333,215,670	\$134,196,265
Year 3	\$257,000,000	-\$363,588,579	-\$106,588,579	\$331,754,645	\$225,166,066
Year 4	\$257,100,000	-\$370,701,179	-\$113,601,179	\$337,636,332	\$224,035,154
Year 5	\$257,100,000	-\$378,148,690	-\$121,048,690	\$324,886,096	\$203,837,406
Year 6	\$257,100,000	-\$385,714,218	-\$128,614,218	\$350,639,240	\$222,025,022
Year 7	\$257,100,000	-\$394,486,056	-\$137,386,056	\$351,435,243	\$214,049,187
Year 8	\$257,100,000	-\$403,689,322	-\$146,589,322	\$368,164,708	\$221,575,385
Year 9	\$257,100,000	-\$412,447,619	-\$155,347,619	\$333,325,809	\$177,978,190
Year 10	\$257,100,000	-\$422,604,063	-\$165,504,063	\$382,753,815	\$217,249,752
Year 11	\$257,100,000	-\$433,272,751	-\$176,172,751	\$396,498,986	\$220,326,235
Year 12	\$257,100,000	-\$441,034,772	-\$183,934,772	\$386,994,337	\$203,059,565
Year 13	\$257,100,000	-\$449,818,114	-\$192,718,114	\$395,537,199	\$202,819,085
Year 14	\$257,100,000	-\$458,101,584	-\$201,001,584	\$387,323,846	\$186,322,262
Year 15	\$257,100,000	-\$464,595,917	-\$207,495,917	\$405,499,075	\$198,003,157
Year 16	\$257,100,000	-\$469,457,007	-\$212,357,007	\$415,758,432	\$203,401,425
Year 17	\$257,100,000	-\$478,197,695	-\$221,097,695	\$429,242,382	\$208,144,687
Year 18	\$257,100,000	-\$488,532,800	-\$231,432,800	\$423,134,788	\$191,701,988
Year 19	\$257,100,000	-\$496,975,004	-\$239,875,004	\$444,650,615	\$204,775,611
Year 20	\$257,100,000	-\$507,113,910	-\$250,013,910	\$417,817,020	\$167,803,110
Year 21	\$257,100,000	-\$516,187,778	-\$259,087,778	\$442,280,947	\$183,193,169
Year 22	\$257,100,000	-\$523,497,280	-\$266,397,280	\$416,745,254	\$150,347,974
Year 23	\$257,100,000	-\$531,070,599	-\$273,970,599	\$455,972,606	\$182,002,007
Year 24	\$257,100,000	-\$539,146,270	-\$282,046,270	\$439,106,777	\$157,060,507
Year 25	\$257,100,000	-\$547,224,945	-\$290,124,945	\$482,782,178	\$192,657,233

	Contribution Assumption	Median Distribution	Net Cash Flow	Median Annual Real Return	Net Addition to Corpus
Year 26	\$257,100,000	-\$554,274,896	-\$297,174,896	\$431,522,022	\$134,347,125
Year 27	\$257,100,000	-\$559,373,690	-\$302,273,690	\$467,848,602	\$165,209,912
Year 28	\$257,100,000	-\$563,852,408	-\$306,752,408	\$457,848,634	\$151,096,226
Year 29	\$257,100,000	-\$570,891,756	-\$313,791,756	\$484,565,372	\$170,773,616
Year 30	\$257,100,000	-\$578,353,102	-\$321,253,102	\$513,538,190	\$192,285,088
Year 31	\$257,100,000	-\$585,128,123	-\$328,028,123	\$505,508,886	\$177,480,763
Year 32	\$257,100,000	-\$593,223,667	-\$336,123,667	\$464,776,053	\$128,652,386
Year 33	\$257,100,000	-\$600,513,289	-\$343,413,289	\$535,561,683	\$192,148,394
Year 34	\$257,100,000	-\$608,276,909	-\$351,176,909	\$511,789,450	\$160,612,542
Year 35	\$257,100,000	-\$616,288,973	-\$359,188,973	\$512,012,526	\$152,823,553
Year 36	\$257,100,000	-\$623,873,274	-\$366,773,274	\$553,223,658	\$186,450,384
Year 37	\$257,100,000	-\$627,519,375	-\$370,419,375	\$540,204,420	\$169,785,045
Year 38	\$257,100,000	-\$633,277,741	-\$376,177,741	\$523,719,599	\$147,541,858
Year 39	\$257,100,000	-\$640,806,895	-\$383,706,895	\$535,332,682	\$151,625,787
Year 40	\$257,100,000	-\$647,849,496	-\$390,749,496	\$524,073,045	\$133,323,549
Year 41	\$257,100,000	-\$655,464,972	-\$398,364,972	\$526,248,149	\$127,883,178
Year 42	\$257,100,000	-\$657,414,873	-\$400,314,873	\$543,678,239	\$143,363,366
Year 43	\$257,100,000	-\$662,126,456	-\$405,026,456	\$574,606,297	\$169,579,840
Year 44	\$257,100,000	-\$668,566,569	-\$411,466,569	\$541,411,808	\$129,945,239
Year 45	\$257,100,000	-\$675,744,655	-\$418,644,655	\$543,623,894	\$124,979,240
Year 46	\$257,100,000	-\$682,432,217	-\$425,332,217	\$566,574,228	\$141,242,011
Year 47	\$257,100,000	-\$691,321,058	-\$434,221,058	\$560,981,520	\$126,760,462
Year 48	\$257,100,000	-\$696,724,577	-\$439,624,577	\$578,001,687	\$138,377,110
Year 49	\$257,100,000	-\$702,891,057	-\$445,791,057	\$552,003,851	\$106,212,794
Year 50	\$257,100,000	-\$707,429,872	-\$450,329,872	\$562,246,348	\$111,916,476

Net Additions to Corpus – Portfolio Comparison



New Spending Policy Changes

Permanent Mineral Trust Fund

(Effective July 1, 2016)

No changes to actual dollars spent, only changing where funds will be transferred

- 2.5% of earnings guaranteed to the General Fund
- Up to 1.25% of earnings in excess of the 2.5% will go to LSPA and SIPA each, for a maximum total of 2.5%.
- All residual earnings in excess of 5.0% will be transferred to the PMTF Reserve Account.

Common School Perm. Land Fund

(Effective July 1, 2015)

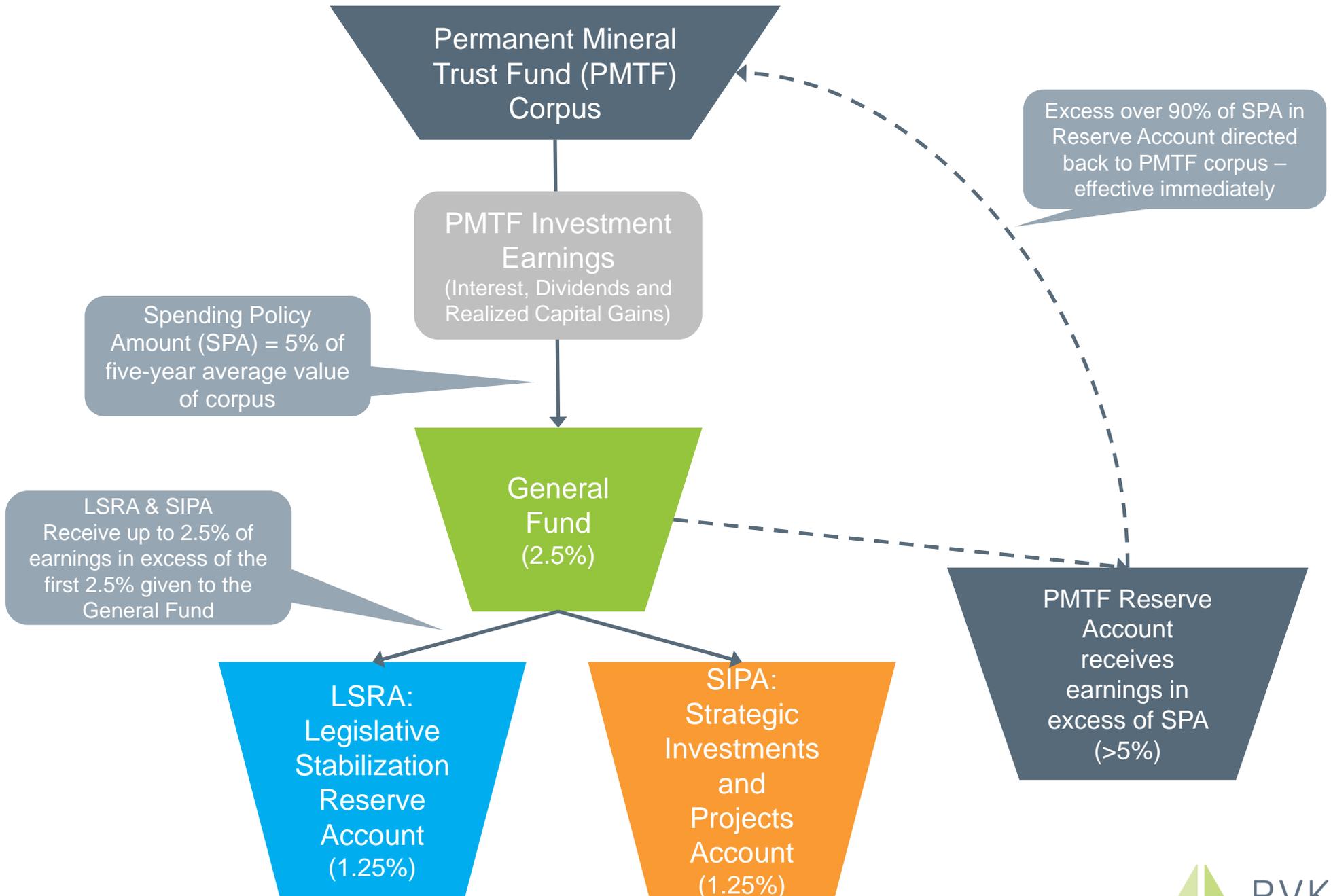
No changes to total dollars spent, only changing where funds will be transferred

- At least 2.5% of earnings and up to 3% guaranteed to the SFP
- SFP Reserve Account receives residual earnings in excess of 3%.

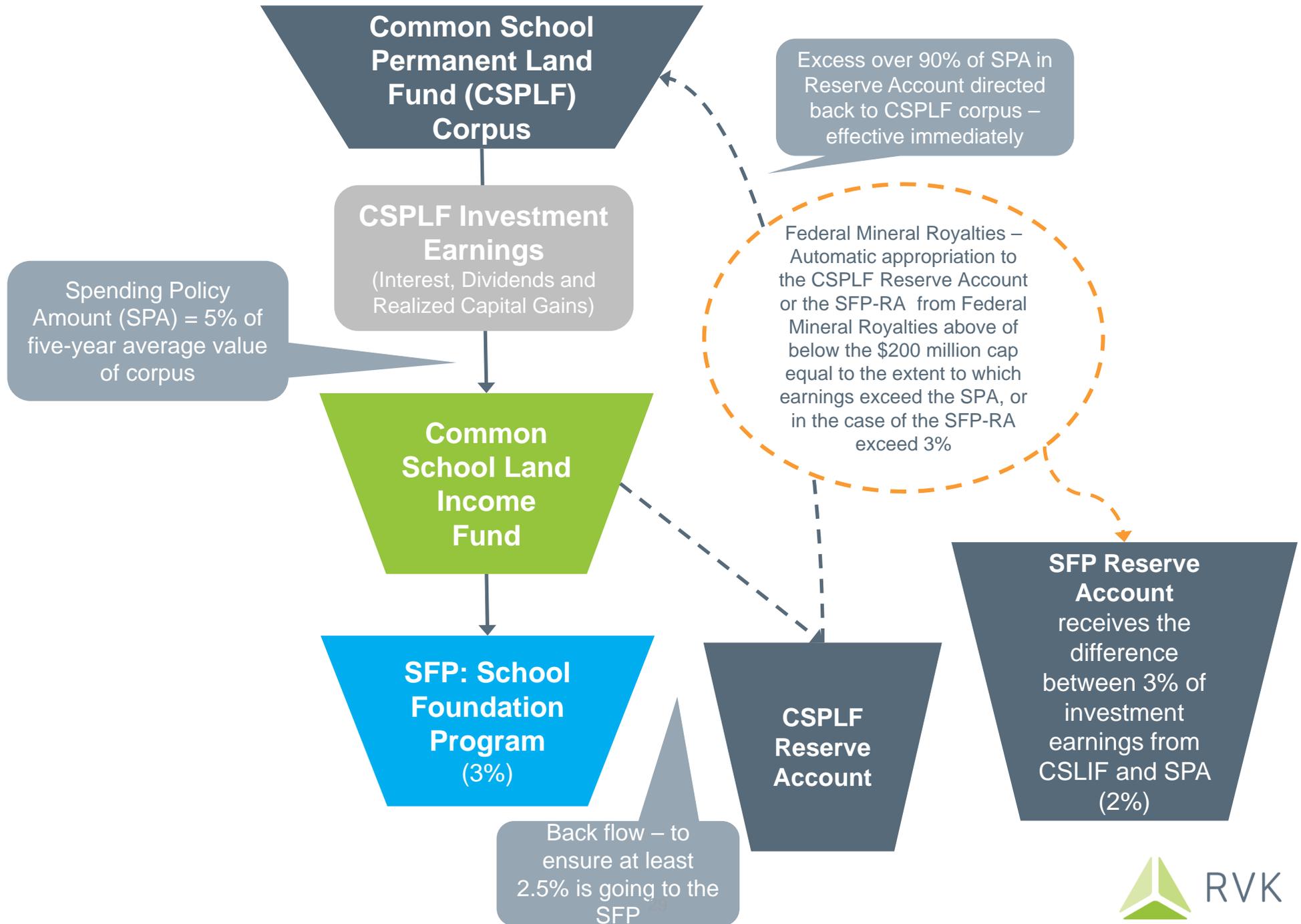
Federal Mineral Royalties – Automatic appropriation to the CSPLF-RA or SFP-RA from Federal Mineral Royalties above or below the \$200 million cap equal to the extent to which earnings exceed the spending policy amount, or in the case of the SFP RA exceed 3%.

Effective July 1, 2014, excess over 90% of spending policy amount held in the PMTF & CSPLF Reserve Accounts will be directed back to their respective corpus – effective immediately (previously, the excess over 75% was transferred).

PMTF Spending Policy, Effective FY17



CSPLF Spending Policy, Effective FY16



Spending Policy Terms

General Fund: Receives 2.5% of PMTF and CSPLF earnings of the previous five-year average market value of the corpus. Funding of the General Fund receives priority over the SIPA and LSRA within PMTF and SFP within CSPLF.

Strategic Investments and Projects Account (SIPA): Created by 2013 Wyoming Session Laws, Chapter 73, Section 4, Section 300 (e). Receives up to 1.25% of PMTF earnings in excess of the first 2.5% of the previous five-year average market value of the corpus. Funds within the account shall only be expended by legislative appropriation. The governor may include appropriation requests from funds available within the SIPA within his biennial budget requests for one-time expenditures as deemed necessary.

Legislative Stabilization Reserve Account (LSRA): Receives up to 1.25% of PMTF earnings in excess of the first 2.5% of the previous five-year average market value of the corpus. Created by 2005 Wyoming Session Laws, Chapter 191, Section 4, Section 301 (d). Funds within the account shall only be expended by legislative appropriation.

School Foundation Program (SFP): Receives at least 2.5% and up to 3% of CSPLF earnings in excess of the first 2% of the previous five-year average market value of the corpus. Created by 2014 Wyoming Session Laws, Chapter 26, Section 300 (g). Funds within the account shall only be expended by legislative appropriation. Funds within the account shall be invested by the state treasurer and all investment earnings from the account shall be credited to the general fund.

PORTLAND

CHICAGO

NEW YORK

