

North Dakota Legacy Fund

RVK Analysis of the Investment Implications of
SB2330 Relative to HB1425

Section 1

Fixed Income Investments within the state – target allocation is reduced from ten percent to six percent.

***RVK Note:** A reduction of this requirement adds to expected long-term returns for the Legacy Fund, as it reduces the required allocation to lower returning investments. Over the long-term, this should increase the flow of returns to the state via the spending policy (discussed below)*

Infrastructure loans to political subdivisions, at a fixed target rate of 1.5 % - is removed.

***RVK Note:** Removal of this provision increases expected long-term returns to the Legacy Fund, as it (a) eliminates a required allocation to loans that would generate very low investment returns and (b) also removes a potential liquidity constraint related to the potential call on these funds allowing incrementally greater use of higher returning illiquid private investments.*

Section 2

Earnings – definition is changed from a net income approach to a percentage of market value approach.

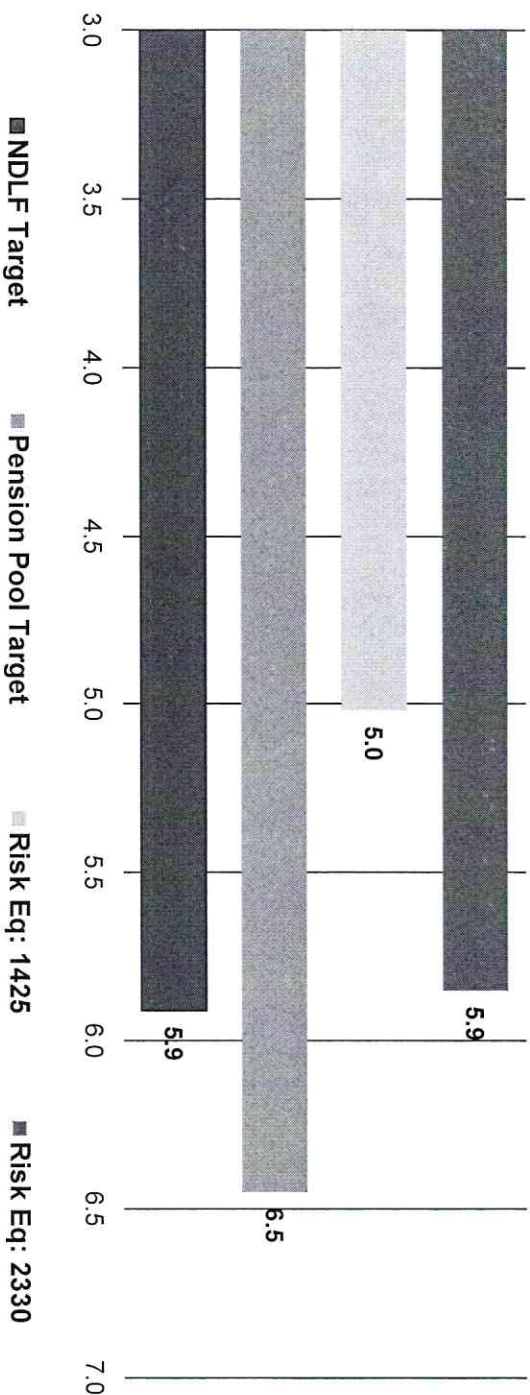
RVK Note: *We believe this is an important change to the structure of the Legacy Fund. This adjustment is beneficial to the investment strategy and operation of the investment portfolio and provides greater predictability of distribution amounts. By removing the net income approach to distributions, the strategic asset allocation decision can be focused on maximizing long-term wealth that the Legacy Fund represents for North Dakota by eliminating the need to make explicit trade offs between current income and future growth.*

Appendix

- Preliminary Asset Allocation Modeling and Estimated Impact on Future Wealth Values

Estimated Return Implications

Forecasted Long-Term Compound Returns (%)
Optimized Portfolios with Equivalent Risk



- Assets invested in the Legacy Fund are projected to annualize at a lower rate of long-term returns with **HB1425** implemented as currently written (Risk Eq: 1425).
 - Utilizing the assumptions described, a portfolio with 20% in-state investments (10% equity and 10% fixed income) could **reduce total Legacy Fund annualized long-term returns by approximately 0.9%** assuming a risk profile similar to the current policy.
- Assets invested in the Legacy Fund under the proposed **HB2330** (Risk Eq: 2330) are projected to have practically the same long-term annualized returns as the current target.

Efficient Frontier 2: Proposed HB2330 Allocations

	Min	Max	1	2	3	4	5	6	7	8	9	10	NDLF Target	Pension Pool Target	Risk Eq: 1425	Risk Eq: 2330	Diff from NDLF Target	
Broad US Equity	20	40	20	20	20	20	20	22	24	27	29	30	30	30	29	20	22	-8
Broad International Equity	10	30	10	11	14	18	20	22	24	27	29	30	20	20	19	14	21	1
Private Equity	0	10	0	0	0	0	2	3	3	3	3	10	1	2	8	0	2	1
In-State Private Equity	3	3	3	3	3	3	3	3	3	3	3	3	0	0	0	10	3	3
US Agg Fixed Income	10	40	40	37	36	35	31	26	21	16	11	10	29	17	17	36	32	3
High Yield Fixed Income	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Private Credit	6	6	1	7	8	8	8	8	8	8	8	1	3	3	0	0	4	1
BND CD Match	0	0	6	6	6	6	6	6	6	6	6	6	2	2	0	6	4	4
Infrastructure Loans	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0
TIPS	0	5	7	7	5	2	4	5	5	5	5	5	5	5	5	0	0	0
Private Core Infrastructure	0	8	5	5	5	5	5	5	5	5	5	5	5	5	5	7	5	0
Core Real Estate	0	8	8	4	3	3	1	0	0	0	0	0	5	5	12	0	5	5
Total			100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	0
Expected Arithmetic Return		5.4	5.6	5.8	6.0	6.2	6.4	6.6	6.6	6.9	7.1	7.3	6.3	7.0	7.0	5.4	6.3	
Expected Risk (Standard Deviation)		7.1	7.5	8.0	8.6	9.2	10.0	10.7	11.5	12.2	13.1	13.1	9.5	11.0	11.0	9.4	9.5	
Expected Compound Return		5.2	5.4	5.5	5.7	5.8	6.0	6.1	6.2	6.4	6.5	6.5	5.9	6.5	6.5	5.0	5.9	
Expected Return (Arithmetic)/Risk Ratio		0.8	0.8	0.7	0.7	0.7	0.7	0.6	0.6	0.6	0.6	0.6	0.7	0.6	0.6	0.6	0.7	
RVK Expected Eq Beta (LCUS Eq = 1)		0.4	0.5	0.5	0.5	0.6	0.6	0.6	0.7	0.7	0.7	0.8	0.6	0.6	0.6	0.5	0.6	
RVK Liquidity Metric (T-Bills = 100)		72	70	70	70	70	70	71	71	71	71	71	79	68	68	69	70	

