

Governor's Conference Room and Via Microsoft Teams

Join on your computer or mobile app

[Click here to join the meeting](#)

Or call in (audio only)

[+1 701-328-0950,,746622926#](#)

Phone Conference ID: **746 622 926#**

➤ = **Board Action Requested**

1. Approval of Meeting Minutes – Joseph Heringer

Consideration of Approval of Land Board Meeting Minutes by voice vote.

- A. [November 17, 2022](#) – minutes available via link

2. Investments – Joseph Heringer

- A. Investments Update – pg. 2
- B. 3rd Quarter Performance Report – RVK – pg. 5
- C. Hedge Fund Recommendations – RVK – pg. 33

3. Operations – Joseph Heringer

- A. Commissioner's Report – pg. 67

4. Division Reports – Joseph Heringer

- A. Surface – pg. 68
- B. Minerals – pg. 69
- C. Unclaimed Property – pg. 72
- D. Financials – pg. 73
- E. Executive Estimate of Assets – pg. 82

5. Special Projects - Chris Suelzle/Joseph Heringer

- A. Acreage Adjustment Report Part II – pg. 84
- B. Common Schools Trust Fund Flow Chart – pg. 86

6. Litigation – Joseph Heringer – pg. 87

7. Secretary of State Alvin A. Jaeger Resolution & Reception

Next Meeting Date – January 26, 2022

**RE: Investment Update
(No Action Requested)**

Portfolio Rebalancing Update

Millennium has called capital due on 12/30/2022 amounting to \$90M. No notices have been received yet for other capital calls to be funded by year- end. It is worth noting that capital calls for much of the commitments are dependent on transaction closings by the Fund or its underlying investments. A prime example is GCM Private Equity which has already committed \$91M to various investments, however, so far only \$22M has been called. The GCM Secondary Opportunities Fund has \$296M in pending deals with \$250M pending capital drawn for deals. Due to the rising interest rate environment, transactions have been harder to close which can be attributed to large valuation/pricing differences between buyer and seller.

Unfunded commitments after the distributions and calls will be at \$595.25M. These are:

1. Private Credit - \$164M
 - i. *ARES Pathfinder Fund, \$39M*
 - ii. *Owl Rock Diversified Lending, \$60M*
 - iii. *Angelo Gordon Direct Lending (AGDL) IV, \$15M*
 - iv. *AGDL-BUSL Fund, \$50M*
2. Private Equity - \$246.25M
 - i. *Grosvenor Capital Management (GCM) Private Equity, \$105.5M*
 - ii. *GCM Secondary Opportunities Fund, \$128M*
 - iii. *Morgan Stanley Ashbridge TS Fund II, \$12.75M*
3. Private Infrastructure - \$14.5M
 - i. *Hamilton Lane Infrastructure Opportunities Fund, \$14.5M*
4. Opportunistic Investments - 20.5M
 - i. *Varde Dislocation Fund, \$20.5M*
5. Absolute Return - \$150M
 - i. *Millennium USA LP (Hedge Fund), \$150M*

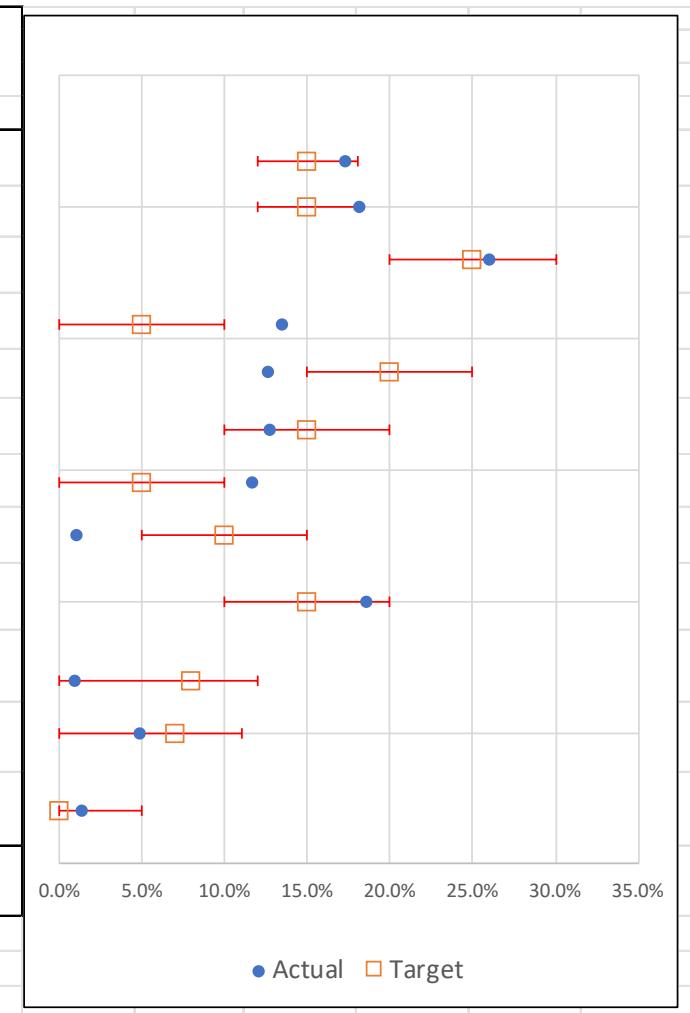
BOARD OF UNIVERSITY AND SCHOOL LANDS

December 19, 2022

Asset Allocation

The table below shows the status of the permanent trusts' asset allocation as of December 5, 2022. The figures provided are unaudited.

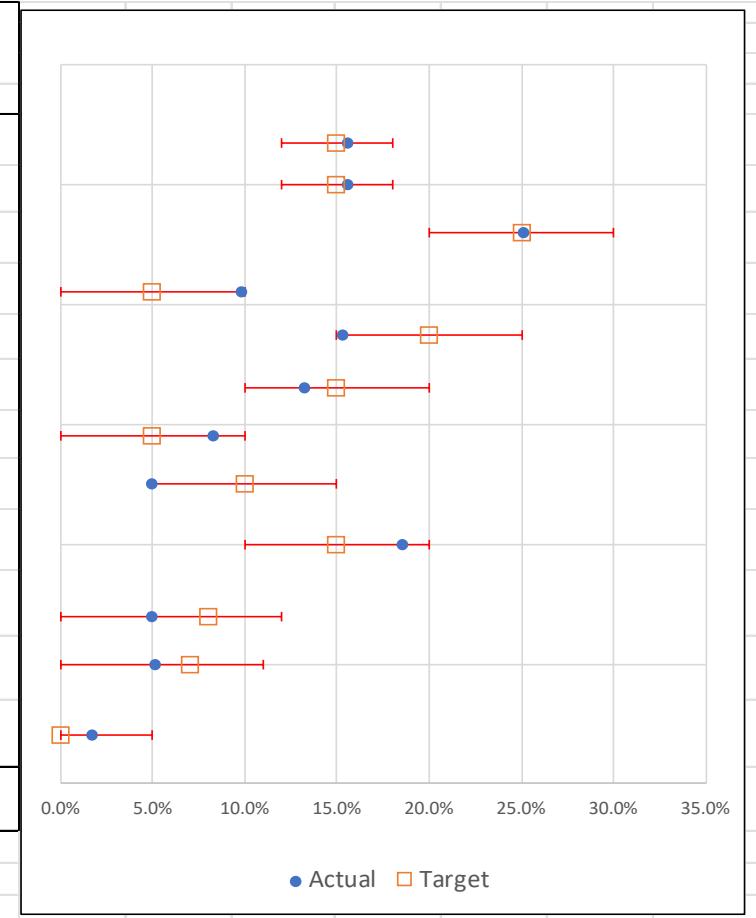
As of December 5, 2022	Market Value \$	Actual	Target	Lower Range	Upper Range
Broad US Equity	1,056,735,053	17.3%	15.0%	12.0%	18.0%
Broad Int'l Equity	1,108,928,558	18.2%	15.0%	12.0%	18.0%
Fixed Income	1,587,467,302	26.0%	25.0%	20.0%	30.0%
<i>Public Credit</i>	819,573,096	13.4%	5.0%	0.0%	10.0%
<i>Private Credit</i>	767,894,206	12.6%	20.0%	15.0%	25.0%
Absolute Return	775,502,966	12.7%	15.0%	10.0%	20.0%
<i>Global Tactical Asset Allocation</i>	711,203,363	11.7%	5.0%	0.0%	10.0%
<i>Multi-Strategy Hedge Fund</i>	64,299,603	1.1%	10.0%	5.0%	15.0%
Real Estate	1,134,452,944	18.6%	15.0%	10.0%	20.0%
Private Equity (Grosvenor, GCM Secondaries, MS-Ashbridge)	57,729,463	0.9%	8.0%	0.0%	12.0%
Private Infrastructure (JPM-Infra, FSI-GDIF, HL Infra)	297,508,074	4.9%	7.0%	0.0%	11.0%
Opportunistic Investments (Varde & Apollo)	83,235,611	1.4%	0.0%	0.0%	5.0%
Portfolio Total	6,101,559,971	100.0%			



Hypothetical Funding of All Unfunded Commitments:

Asset Allocation After Funding:

As of December 5, 2022	Market Value \$	Actual	Target	Lower	Upper
				Range	Range
Broad US Equity	951,235,053	15.6%	15.0%	12.0%	18.0%
Broad Int'l Equity	953,678,558	15.6%	15.0%	12.0%	18.0%
Fixed Income	1,533,735,013	25.1%	25.0%	20.0%	30.0%
<i>Public Credit</i>	601,840,807	9.9%	5.0%	0.0%	10.0%
<i>Private Credit</i>	931,894,206	15.3%	20.0%	15.0%	25.0%
Absolute Return	808,735,255	13.3%	15.0%	10.0%	20.0%
<i>Global Tactical Asset Allocation</i>	504,435,652	8.3%	5.0%	0.0%	10.0%
<i>Multi-Strategy Hedge Fund</i>	304,299,603	5.0%	10.0%	5.0%	15.0%
Real Estate	1,134,452,944	18.6%	15.0%	10.0%	20.0%
Private Equity (Grosvenor, GCM Secondaries, MS-Ashbridge)	303,979,463	5.0%	8.0%	0.0%	12.0%
Private Infrastructure (JPM-Infra, FSI-GDIF, HL Infra)	312,008,074	5.1%	7.0%	0.0%	11.0%
Opportunistic Investments (Varde & Apollo)	103,735,611	1.7%	0.0%	0.0%	5.0%
Portfolio Total	6,101,559,971	100.0%			



Assumptions:

- i. No other new cash is expected to fund calls.
- ii. No redemption proceeds or distributions were received.
- iii. All capital calls came in at the same time.



Investment Performance Analysis

North Dakota Board of University and School Lands

Period Ended: September 30, 2022

**North Dakota Board of University and School Lands
Comparative Performance**

As of October 31, 2022

	October	FYTD	CYTD	1 Year
Total Fund	2.12	-1.49	-10.29	-8.60
Target Allocation Index (Net)	2.37	-0.73	-11.92	-10.13
Difference	-0.25	-0.76	1.63	1.53
S&P 500 Index (Net)	8.06	2.66	-18.02	-15.01
MSCI EAFE Index (USD) (Net)	5.38	-4.48	-23.17	-23.00
MSCI Emg Mkts Index (USD) (Net)	-3.10	-14.32	-29.42	-31.03
Bloomberg US Agg Bond Index	-1.30	-5.99	-15.72	-15.68

Performance shown is net of fees. Performance is annualized for periods greater than one year.

I. Capital Markets Review

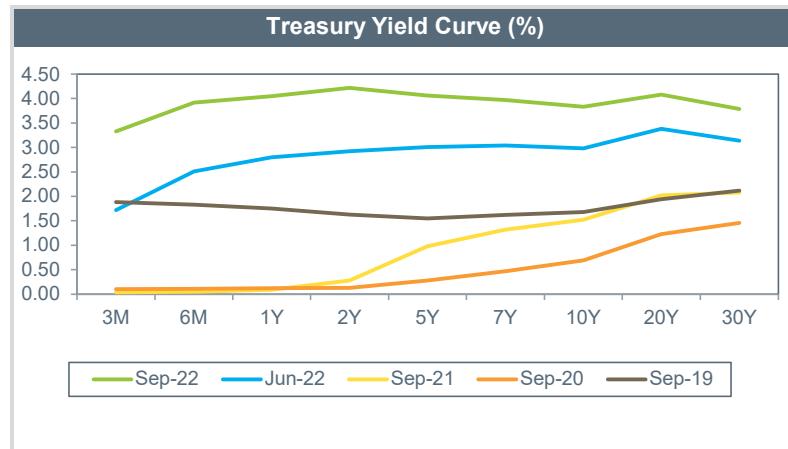


Third Quarter Economic Environment

Key Economic Indicators

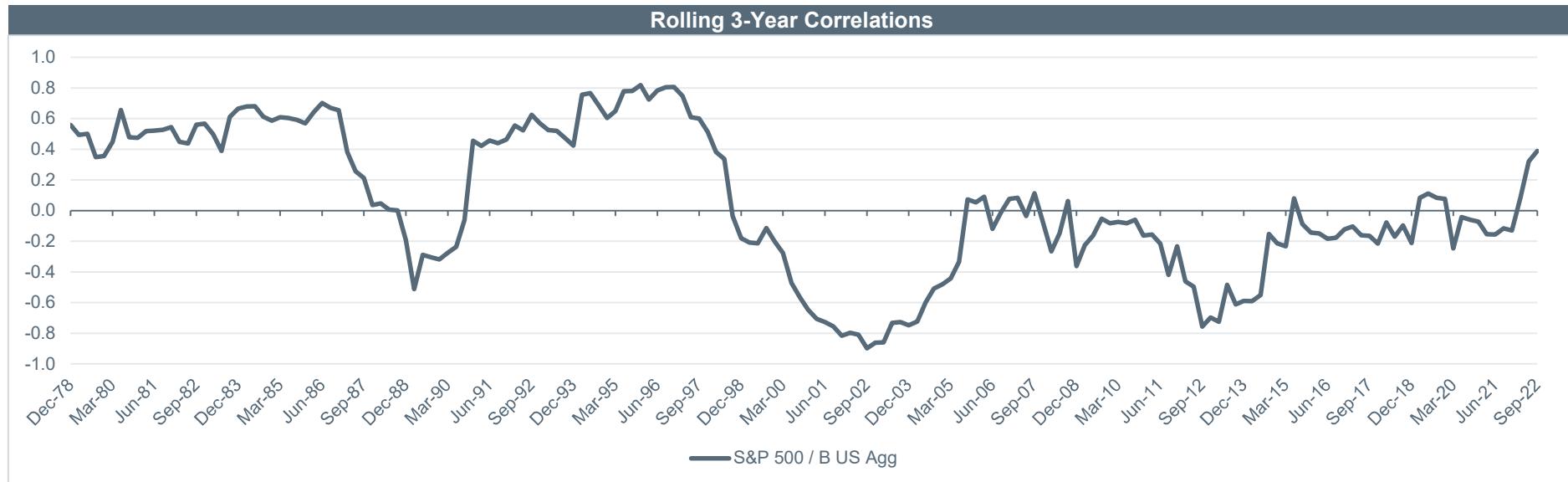
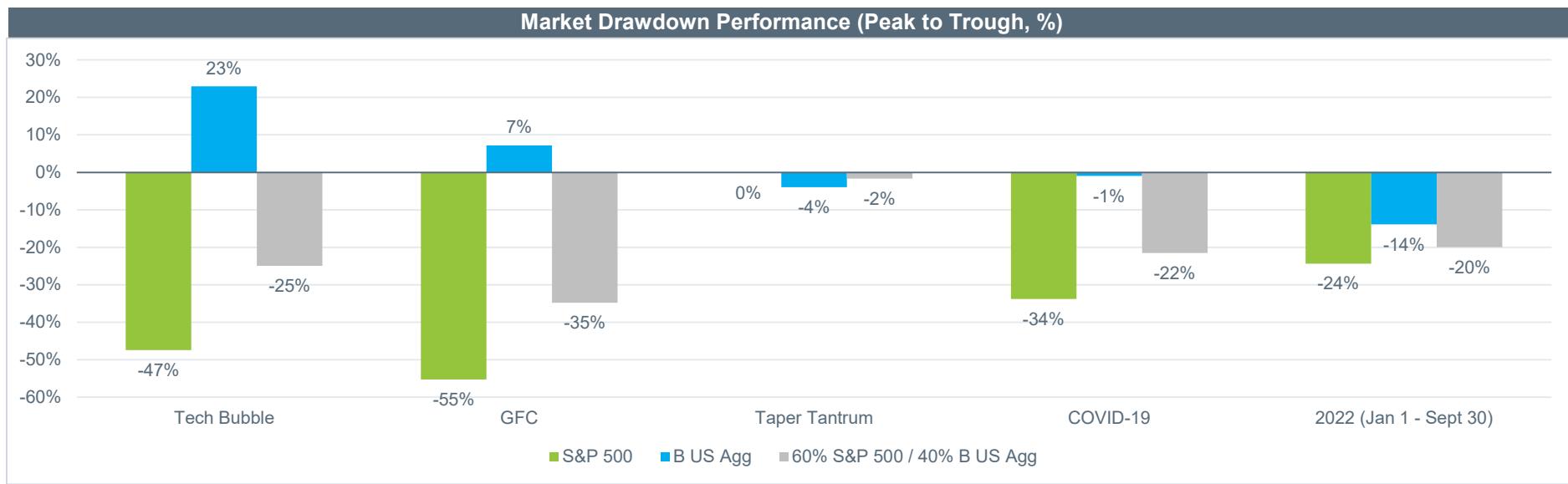
Investor sentiment and market movements continued to be driven by persistently high inflation levels and a corresponding tightening of monetary policy by most global central banks. Strong consumer demand, combined with supply chain disruptions and energy supply constraints caused by the war in Ukraine, exacerbated the difficulties for policymakers aiming to respond to inflation in an effective yet balanced manner. In its interim September 2022 economic outlook, OECD forecasted that headline inflation among G20 countries would finish 2022 above 8%—and only moderate to 6.6% in 2023. The OECD's inflation forecasts remain elevated compared to historical levels despite actions by global central banks, including the FOMC. In September, the FOMC increased the federal funds rate to a range of 3.00%-3.25%, which represented a third consecutive 0.75 percentage point hike. Global GDP growth forecasts continued to moderate during the quarter. The OECD forecasted real global GDP growth of 3.0% in 2022 and 2.2% in 2023, representing sharp declines from its December 2021 forecasts of 4.5% and 3.2%, respectively. Overall, economic and inflation forecasts are being impacted by multiple factors. In particular, the ongoing war in Ukraine could lead to sudden shifts in conditions, as global economic impacts could follow modifications to sanctions regimes, changes to external military support, pending NATO membership applications, or extreme energy supply shortages in Europe.

Economic Indicators	Sep-22	Jun-22	Sep-21	Sep-19	20 Yr	
Federal Funds Rate (%)	3.08	▲	1.58	0.06	1.90	1.27
10 Year US Treasury Yield	3.83	▲	2.98	1.52	1.68	2.92
30 Year US Treasury Yield	3.79	▲	3.14	2.08	2.12	N/A
Consumer Price Index YoY (Headline) (%)	8.20	▼	9.10	5.40	1.70	2.42
Unemployment Rate (%)	3.50	▼	3.60	4.70	3.50	6.04
Real Gross Domestic Product YoY (%)	1.80	—	1.80	5.00	2.30	2.03
PMI - Manufacturing	50.90	▼	53.00	60.50	48.10	53.68
US Dollar Total Weighted Index	127.64	▲	121.05	114.67	117.95	103.22
WTI Crude Oil per Barrel (\$)	79.49	▼	105.76	75.03	54.07	67.16



Market Performance (%)	QTD	CYTD	1 Yr	3 Yr	5 Yr	10 Yr	15 Yr	20 Yr
US Large Cap Equity	-9.21	-4.88	-23.87	-15.47	8.16	9.24	11.40	11.70
US Small Cap Equity	-9.58	-2.19	-25.10	-23.50	4.29	3.55	7.51	8.55
Developed International Equity	-9.35	-9.36	-27.09	-25.13	-1.83	-0.84	2.84	3.67
Developed International Small Cap Equity	-11.50	-9.83	-32.11	-32.06	-2.16	-1.79	3.25	5.28
Emerging Markets Equity	-11.72	-11.57	-27.16	-28.11	-2.07	-1.81	3.88	1.05
US Aggregate Bond	-4.32	-4.75	-14.61	-14.60	-3.26	-0.27	0.54	0.89
3 Month US Treasury Bill	0.25	0.46	0.61	0.62	0.59	1.15	0.95	0.68
US Real Estate	0.52	0.52	13.08	22.09	12.37	10.24	9.85	10.92
Real Estate Investment Trusts (REITs)	-12.18	-9.94	-28.13	-16.41	-2.05	2.93	4.86	6.26
Commodities	-8.11	-4.11	13.57	11.80	13.45	6.96	4.49	-2.14

Treasury data courtesy of the US Department of the Treasury. Economic data courtesy of Bloomberg Professional Service. Real Gross Domestic Product YoY (%) is available quarterly. Real estate is reported quarterly; QTD returns are shown as "0.00" on interim-quarter months and until available. Market performance is representative of broad asset class index returns. Please see the addendum for indices used for each asset class.



Source: FactSet

Drawdown performance shown is cumulative. 2022 drawdown returns use a start (peak) date of January 1, 2022 and will differ slightly from CYTD returns.
Correlation is calculated using quarterly periodicity.

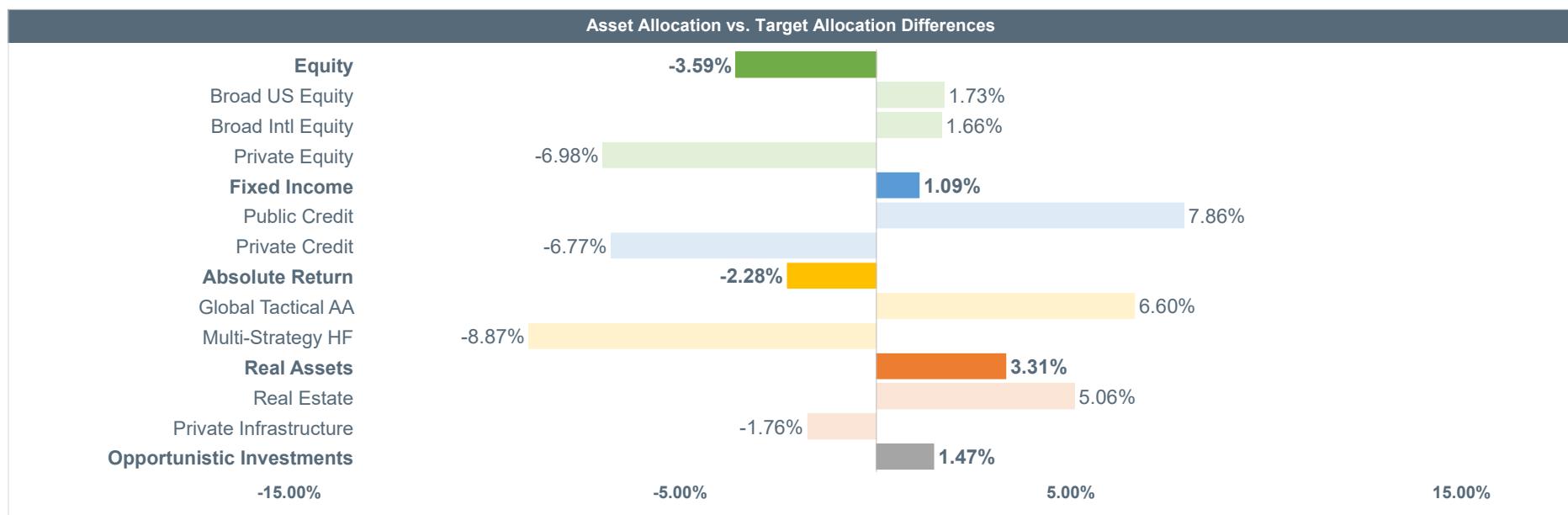
II. Total Fund

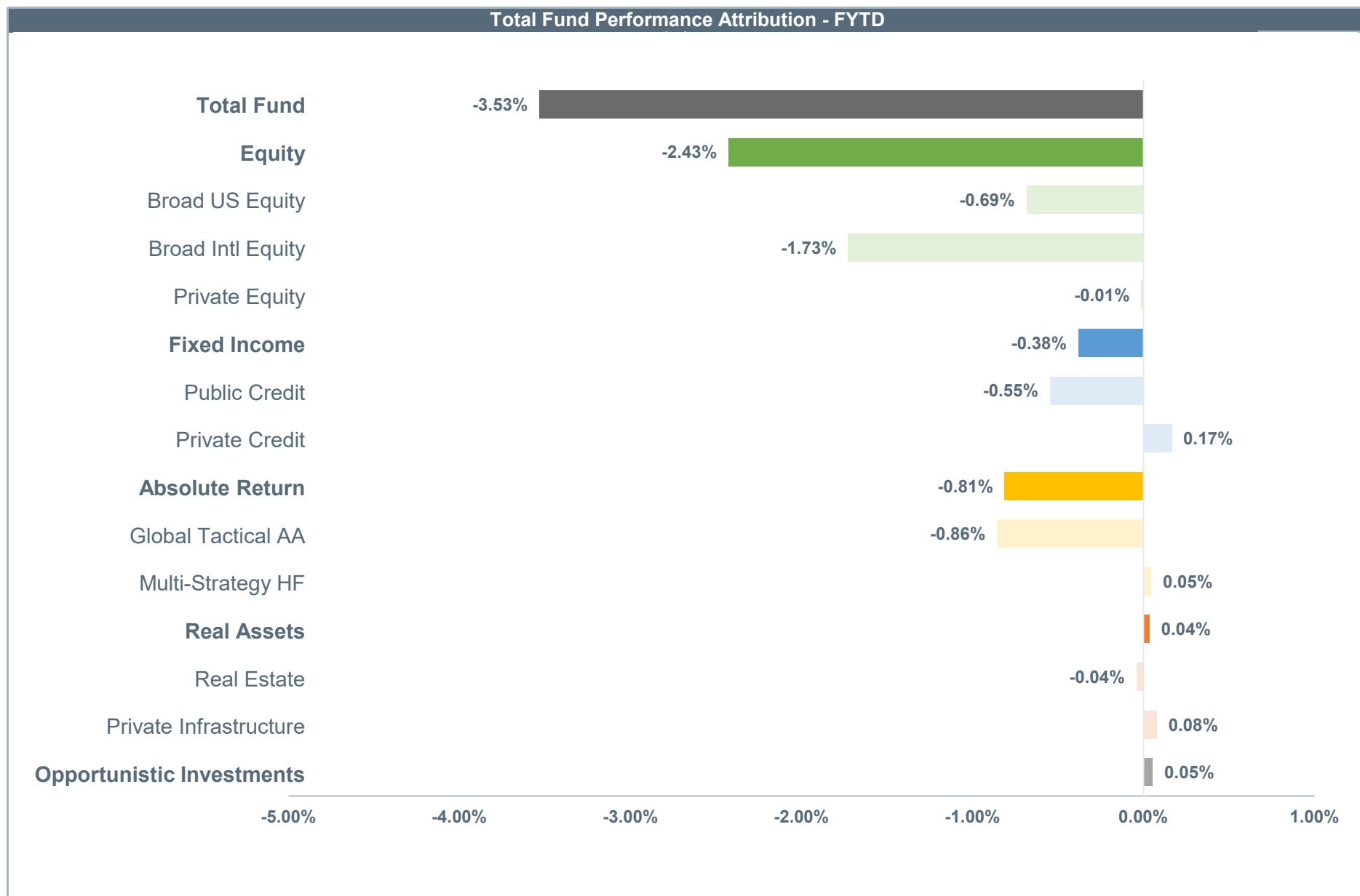


Total Endowments

Asset Allocation vs. Long-Term Target Allocation

Asset Allocation vs. Target Allocation Differences					
	Asset Allocation	Asset Allocation (%)	Target Allocation (%)	Minimum Allocation (%)	Maximum Allocation (%)
Equity	1,952,107,195	34.41%	38.00%	N/A	N/A
Broad US Equity	949,119,585	16.73%	15.00%	12.00%	18.00%
Broad International Equity	945,322,064	16.66%	15.00%	12.00%	18.00%
Private Equity	57,665,545	1.02%	8.00%	0.00%	12.00%
Fixed Income	1,480,078,137	26.09%	25.00%	20.00%	30.00%
Public Credit	729,586,159	12.86%	5.00%	N/A	N/A
Private Credit	750,491,978	13.23%	20.00%	N/A	N/A
Absolute Return	721,747,186	12.72%	15.00%	10.00%	20.00%
Global Tactical Asset Allocation	657,874,166	11.60%	5.00%	N/A	N/A
Multi-Strategy Hedge Fund	63,873,020	1.13%	10.00%	N/A	N/A
Real Assets	1,435,536,438	25.31%	22.00%	N/A	N/A
Real Estate	1,138,028,365	20.06%	15.00%	10.00%	20.00%
Private Infrastructure	297,508,074	5.24%	7.00%	0.00%	11.00%
Opportunistic Investments	83,235,567	1.47%	0.00%	0.00%	5.00%
Total Fund	5,672,704,523	100.00%	100.00%	-	-





Performance shown is net of fees. RVK began monitoring the assets of North Dakota Board of University and School Lands in Q3 2014. Allocations shown may not sum up to 100% exactly due to rounding.

**North Dakota Board of University and School Lands
Comparative Performance**

As of September 30, 2022

	QTD	FYTD	CYTD	1 Year	3 Years	5 Years	7 Years	10 Years	Since Incep.	Inception Date
Total Fund	-3.53	-3.53	-12.14	-9.09	3.13	3.26	5.04	4.84	6.14	08/01/1995
Target Allocation Index (Net)	-3.03	-3.03	-13.96	-10.24	4.21	4.39	5.92	5.81	N/A	
Difference	-0.50	-0.50	1.82	1.15	-1.08	-1.13	-0.88	-0.97	N/A	
Broad US Equity	-4.20	-4.20	-24.24	-18.27	7.48	8.42	10.86	10.94	12.43	07/01/2009
Russell 3000 Index	-4.46	-4.46	-24.62	-17.63	7.70	8.62	10.90	11.39	12.86	
Difference	0.26	0.26	0.38	-0.64	-0.22	-0.20	-0.04	-0.45	-0.43	
Broad International Equity	-9.75	-9.75	-26.55	-24.33	-0.51	-0.76	3.33	4.02	4.42	07/01/2009
MSCI ACW Ex US Index (USD) (Net)	-9.91	-9.91	-26.50	-25.17	-1.52	-0.81	3.29	3.01	4.39	
Difference	0.16	0.16	-0.05	0.84	1.01	0.05	0.04	1.01	0.03	
Private Equity	-2.25	-2.25	-3.73	5.04	3.77	2.25	N/A	N/A	8.79	04/01/2021
Cambridge US Prvt Eq Index	0.00	0.00	-3.41	2.47	19.75	17.05	15.90	15.32	14.62	
Difference	-2.25	-2.25	-0.32	2.57	-15.98	-14.80	N/A	N/A	-5.83	
Fixed Income	-1.57	-1.57	-6.29	-5.75	1.22	2.04	2.59	2.35	5.11	08/01/1995
Global Fixed Income Custom Index	-1.55	-1.55	-11.83	-11.83	-2.15	0.44	1.14	N/A	N/A	
Difference	-0.02	-0.02	5.54	6.08	3.37	1.60	1.45	N/A	N/A	
Public Credit	-4.27	-4.27	N/A	N/A	N/A	N/A	N/A	N/A	-4.27	07/01/2022
Bloomberg US Univ Bond Index	-4.45	-4.45	-14.90	-14.92	-3.11	-0.18	0.86	1.17	-4.45	
Difference	0.18	0.18	N/A	N/A	N/A	N/A	N/A	N/A	0.18	
Private Credit	1.23	1.23	N/A	N/A	N/A	N/A	N/A	N/A	1.23	07/01/2022
Credit Suisse Leveraged Loan Index+1.5%	1.57	1.57	-2.23	-1.16	3.65	4.55	5.22	5.25	1.57	
Difference	-0.34	-0.34	N/A	N/A	N/A	N/A	N/A	N/A	-0.34	
Absolute Return	-6.30	-6.30	-18.11	-18.11	-2.30	-0.68	1.97	N/A	0.34	07/01/2014
Absolute Return Custom Index	-8.33	-8.33	-23.40	-20.57	0.31	2.15	4.41	N/A	3.21	
Difference	2.03	2.03	5.29	2.46	-2.61	-2.83	-2.44	N/A	-2.87	
Global Tactical Asset Allocation	-7.13	-7.13	N/A	N/A	N/A	N/A	N/A	N/A	-7.13	07/01/2022
60% MSCI ACW (Net)/40% Bbrg Gbl Agg Idx	-6.82	-6.82	-23.27	-20.41	0.14	1.96	4.36	4.12	-6.82	
Difference	-0.31	-0.31	N/A	N/A	N/A	N/A	N/A	N/A	-0.31	
Multi-Strategy Hedge Funds	3.25	3.25	N/A	N/A	N/A	N/A	N/A	N/A	3.25	07/01/2022
HFRI RV Multi Strat Index	-0.01	-0.01	-1.04	-1.71	4.74	3.71	4.01	4.22	-0.01	
Difference	3.26	3.26	N/A	N/A	N/A	N/A	N/A	N/A	3.26	

Performance shown is net of fees. Composite inception dates are based on availability of data for each asset class. The Global Fixed Income Custom Index and Absolute Return Custom Index are calculated monthly using beginning of month weights applied to each corresponding primary benchmark return. Please see the Addendum for additional custom index definitions. RVK began monitoring the assets of North Dakota Board of University and School Lands in Q3 2014. Fiscal year ends 06/30. As of 09/30, the Cambridge US Prvt Eq Index is unavailable due to it reporting on a quarter lag basis.

**North Dakota Board of University and School Lands
Comparative Performance**

As of September 30, 2022

	QTD	FYTD	CYTD	1 Year	3 Years	5 Years	7 Years	10 Years	Since Incep.	Inception Date
Real Estate	-0.31	-0.31	11.02	20.88	11.66	9.89	9.64	N/A	9.81	07/01/2015
NCREIF ODCE Index (AWA) (Net)	0.31	0.31	12.36	20.96	11.38	9.26	8.87	9.91	9.06	
Difference	-0.62	-0.62	-1.34	-0.08	0.28	0.63	0.77	N/A	0.75	
Private Infrastructure	1.20	1.20	N/A	N/A	N/A	N/A	N/A	N/A	2.96	02/01/2022
MSCI World Infrastructure Index (Net)	-11.54	-11.54	-13.92	-10.63	-1.82	1.24	3.50	4.08	-13.26	
Difference	12.74	12.74	N/A	N/A	N/A	N/A	N/A	N/A	16.22	
Opportunistic Investments	4.01	4.01	-5.05	-3.76	N/A	N/A	N/A	N/A	15.88	07/01/2020

Real Estate composite and index performance is available on a quarterly basis.

Performance shown is net of fees. Composite inception dates are based on availability of data for each asset class. Please see the Addendum for custom index definitions. RVK began monitoring the assets of North Dakota Board of University and School Lands in Q3 2014. Fiscal year ends 06/30.

	Comparative Performance									
	QTD	FYTD	CYTD	1 Year	3 Years	5 Years	7 Years	10 Years	Since Incep.	Inception Date
Broad US Equity	-4.20	-4.20	-24.24	-18.27	7.48	8.42	10.86	10.94	12.43	07/01/2009
Russell 3000 Index	-4.46	-4.46	-24.62	-17.63	7.70	8.62	10.90	11.39	12.86	
Difference	0.26	0.26	0.38	-0.64	-0.22	-0.20	-0.04	-0.45	-0.43	
State Street Russell 1000 Index SL (CF)	-4.61	-4.61	-24.63	-17.27	7.90	8.96	N/A	N/A	9.42	06/01/2017
Russell 1000 Index	-4.61	-4.61	-24.59	-17.22	7.95	9.00	11.15	11.60	9.45	
Difference	0.00	0.00	-0.04	-0.05	-0.05	-0.04	N/A	N/A	-0.03	
State Street Russell Mid Cap Index (SA)	-3.41	-3.41	-24.19	-19.31	5.20	6.48	N/A	N/A	6.95	06/01/2017
Russell Mid Cap Index	-3.44	-3.44	-24.27	-19.39	5.19	6.48	8.79	10.30	6.94	
Difference	0.03	0.03	0.08	0.08	0.01	0.00	N/A	N/A	0.01	
NT Small Cap Core (SA)	-5.03	-5.03	-26.06	-25.15	5.55	5.69	9.18	9.27	6.32	07/01/2014
Russell 2000 Index	-2.19	-2.19	-25.10	-23.50	4.29	3.55	7.51	8.55	5.51	
Difference	-2.84	-2.84	-0.96	-1.65	1.26	2.14	1.67	0.72	0.81	



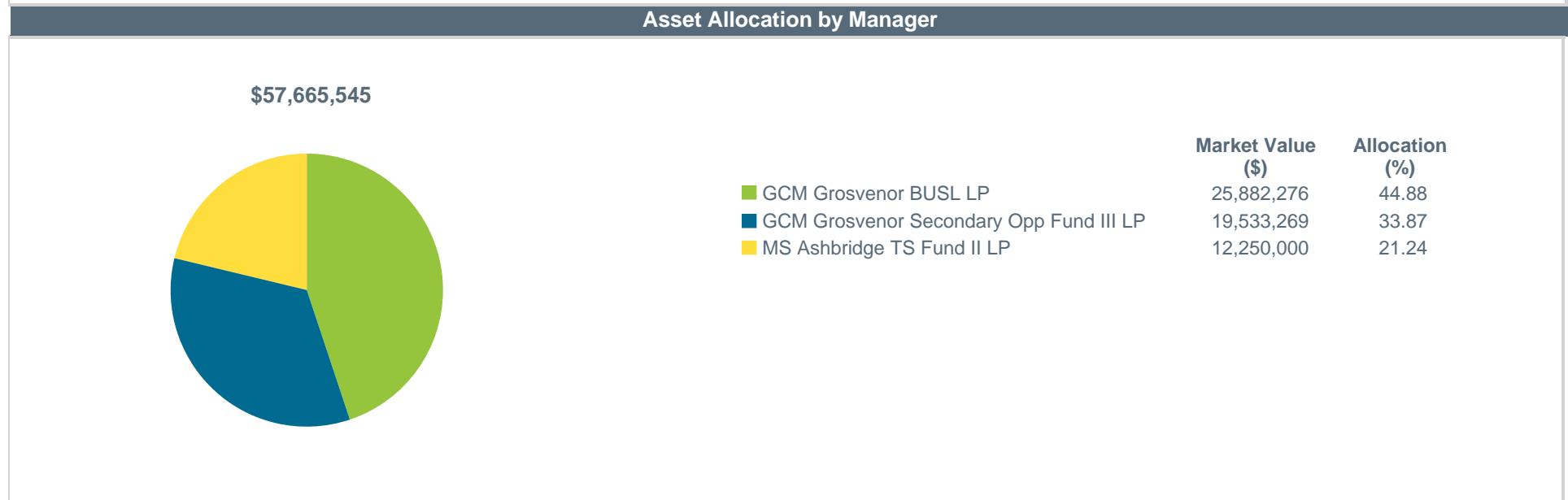
Performance shown is net of fees. RVK began monitoring the assets of North Dakota Board of University and School Lands in Q3 2014. Allocations shown may not sum up to 100% exactly due to rounding. Fiscal year ends 06/30.

	Comparative Performance									
	QTD	FYTD	CYTD	1 Year	3 Years	5 Years	7 Years	10 Years	Since Incep.	Inception Date
Broad International Equity	-9.75	-9.75	-26.55	-24.33	-0.51	-0.76	3.33	4.02	4.42	07/01/2009
MSCI ACW Ex US Index (USD) (Net)	-9.91	-9.91	-26.50	-25.17	-1.52	-0.81	3.29	3.01	4.39	
Difference	0.16	0.16	-0.05	0.84	1.01	0.05	0.04	1.01	0.03	
State Street World Ex US Index (CF)	-9.21	-9.21	-26.43	-24.13	-1.33	-0.50	3.11	N/A	0.58	07/01/2014
MSCI Wrld Ex US Index (USD) (Net)	-9.20	-9.20	-26.23	-23.91	-1.21	-0.39	3.21	3.62	0.67	
Difference	-0.01	-0.01	-0.20	-0.22	-0.12	-0.11	-0.10	N/A	-0.09	
Acadian International Small Cap	-8.80	-8.80	-29.71	N/A	N/A	N/A	N/A	N/A	-25.75	12/01/2021
MSCI EAFE Sm Cap Index (USD) (Net)	-9.83	-9.83	-32.11	-32.06	-2.16	-1.79	3.25	5.28	-29.15	
Difference	1.03	1.03	2.40	N/A	N/A	N/A	N/A	N/A	3.40	
State Street World Ex US Small Cap Index (CF)	-9.40	-9.40	N/A	N/A	N/A	N/A	N/A	N/A	-25.88	02/01/2022
MSCI Wrld Ex US Sm Cap Index (USD) (Net)	-9.46	-9.46	-31.07	-30.80	-1.27	-1.24	3.64	4.78	-26.01	
Difference	0.06	0.06	N/A	N/A	N/A	N/A	N/A	N/A	0.13	
Arrowstreet Emerging Markets	-12.30	-12.30	-26.55	N/A	N/A	N/A	N/A	N/A	-22.80	12/01/2021
MSCI Emg Mkts Index (USD) (Net)	-11.57	-11.57	-27.16	-28.11	-2.07	-1.81	3.88	1.05	-25.79	
Difference	-0.73	-0.73	0.61	N/A	N/A	N/A	N/A	N/A	2.99	
NT Emerging Markets Index Fund	-12.21	-12.21	N/A	N/A	N/A	N/A	N/A	N/A	-26.88	02/01/2022
MSCI Emg Mkts Index (USD) (Net)	-11.57	-11.57	-27.16	-28.11	-2.07	-1.81	3.88	1.05	-25.75	
Difference	-0.64	-0.64	N/A	N/A	N/A	N/A	N/A	N/A	-1.13	



Performance shown is net of fees. RVK began monitoring the assets of North Dakota Board of University and School Lands in Q3 2014. Allocations shown may not sum up to 100% exactly due to rounding. Fiscal year ends 06/30.

Comparative Performance										
	QTD	FYTD	CYTD	1 Year	3 Years	5 Years	7 Years	10 Years	Since Incep.	Inception Date
Private Equity	-2.25	-2.25	-3.73	5.04	3.77	2.25	N/A	N/A	8.79	04/01/2021
Cambridge US Prvt Eq Index	0.00	0.00	-3.41	2.47	19.75	17.05	15.90	15.32	14.62	
Difference	-2.25	-2.25	-0.32	2.57	-15.98	-14.80	N/A	N/A	-5.83	
GCM Grosvenor BUSL LP	-5.87	-5.87	-4.48	2.29	N/A	N/A	N/A	N/A	6.88	04/01/2021
Cambridge US Prvt Eq Index	0.00	0.00	-3.41	2.47	19.75	17.05	15.90	15.32	14.62	
Difference	-5.87	-5.87	-1.07	-0.18	N/A	N/A	N/A	N/A	-7.74	
GCM Grosvenor Secondary Opp Fund III LP	1.19	1.19	-3.67	N/A	N/A	N/A	N/A	N/A	-3.67	01/01/2022
Cambridge US Prvt Eq Index	0.00	0.00	-3.41	2.47	19.75	17.05	15.90	15.32	-3.41	
Difference	1.19	1.19	-0.26	N/A	N/A	N/A	N/A	N/A	-0.26	
MS Ashbridge TS Fund II LP	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.00	09/01/2022
Cambridge US Prvt Eq Index	0.00	0.00	-3.41	2.47	19.75	17.05	15.90	15.32	0.00	
Difference	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.00	

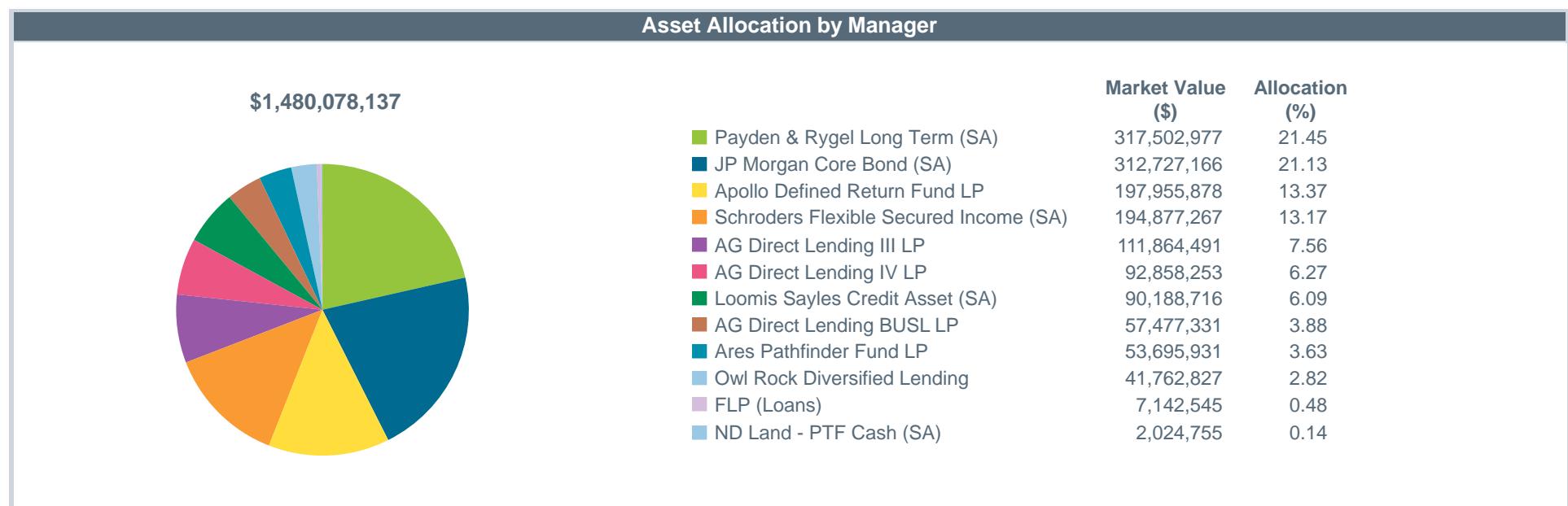


Performance shown is net of fees. RVK began monitoring the assets of North Dakota Board of University and School Lands in Q3 2014. Allocations shown may not sum up to 100% exactly due to rounding. Fiscal year ends 06/30. Market values for Private Equity is as of previous quarter end and adjusted for subsequent cash flows until the current quarter's valuations are available. As of 09/30, the Cambridge US Prvt Eq Index is unavailable due to it reporting on a quarter lag basis. In Q3, MS Ashbridge TS Fund II LP was funded.

	Comparative Performance									
	QTD	FYTD	CYTD	1 Year	3 Years	5 Years	7 Years	10 Years	Since Incep.	Inception Date
Fixed Income	-1.57	-1.57	-6.29	-5.75	1.22	2.04	2.59	2.35	5.11	08/01/1995
Global Fixed Income Custom Index	-1.55	-1.55	-11.83	-11.83	-2.15	0.44	1.14	N/A	N/A	N/A
Difference	-0.02	-0.02	5.54	6.08	3.37	1.60	1.45	N/A	N/A	N/A
Public Credit	-4.27	-4.27	N/A	N/A	N/A	N/A	N/A	N/A	-4.27	07/01/2022
Bloomberg US Univ Bond Index	-4.45	-4.45	-14.90	-14.92	-3.11	-0.18	0.86	1.17	-4.45	
Difference	0.18	0.18	N/A	N/A	N/A	N/A	N/A	N/A	0.18	
Payden & Rygel Long Term (SA)	-4.82	-4.82	-14.57	-14.45	-2.92	0.19	1.19	1.42	4.90	08/01/1995
Bloomberg US Agg Bond Index	-4.75	-4.75	-14.61	-14.60	-3.26	-0.27	0.54	0.89	4.31	
Difference	-0.07	-0.07	0.04	0.15	0.34	0.46	0.65	0.53	0.59	
JP Morgan Core Bond (SA)	-4.38	-4.38	-13.88	-13.88	-2.92	-0.31	0.34	0.75	0.80	08/01/2012
JP Morgan FI Custom Index	-4.75	-4.75	-14.61	-14.60	-3.17	-0.56	0.13	0.52	0.56	
Difference	0.37	0.37	0.73	0.72	0.25	0.25	0.21	0.23	0.24	
Loomis Sayles Credit Asset (SA)	-2.72	-2.72	-12.64	-12.65	N/A	N/A	N/A	N/A	-6.67	04/01/2021
Loomis Sayles CA Custom Index	-2.35	-2.35	-13.98	-13.57	-1.35	1.17	2.73	2.76	-7.25	
Difference	-0.37	-0.37	1.34	0.92	N/A	N/A	N/A	N/A	0.58	
FLP (Loans)	1.19	1.19	3.43	4.61	4.34	4.89	5.22	5.40	6.85	08/01/1995
ND Land - PTF Cash (SA)	0.51	0.51	0.64	0.64	0.50	1.10	N/A	N/A	1.13	07/01/2017
ICE BofAML 3 Mo US T-Bill Index	0.46	0.46	0.61	0.62	0.59	1.15	0.95	0.68	1.15	
Difference	0.05	0.05	0.03	0.02	-0.09	-0.05	N/A	N/A	-0.02	
Private Credit	1.23	1.23	N/A	N/A	N/A	N/A	N/A	N/A	1.23	07/01/2022
Credit Suisse Leveraged Loan Index+1.5%	1.57	1.57	-2.23	-1.16	3.65	4.55	5.22	5.25	1.57	
Difference	-0.34	-0.34	N/A	N/A	N/A	N/A	N/A	N/A	-0.34	
AG Direct Lending III LP	2.98	2.98	9.12	12.40	11.16	N/A	N/A	N/A	10.64	09/01/2018
CS Lvg'd Loan Index	1.19	1.19	-3.31	-2.62	2.12	3.00	3.67	3.70	2.49	
Difference	1.79	1.79	12.43	15.02	9.04	N/A	N/A	N/A	8.15	
AG Direct Lending IV LP	2.79	2.79	9.11	12.65	N/A	N/A	N/A	N/A	17.21	06/01/2021
CS Lvg'd Loan Index	1.19	1.19	-3.31	-2.62	2.12	3.00	3.67	3.70	-0.84	
Difference	1.60	1.60	12.42	15.27	N/A	N/A	N/A	N/A	18.05	

Performance shown is net of fees. The Global Fixed Income Custom Index currently consists of the Bloomberg US Univ Bond Index. RVK began monitoring the assets of North Dakota Board of University and School Lands in Q3 2014. Fiscal year ends 06/30. Market values for Direct Lending and Private Credit are as of previous quarter end and adjusted for subsequent cash flows until the current quarter's valuations are available.

	Comparative Performance									
	QTD	FYTD	CYTD	1 Year	3 Years	5 Years	7 Years	10 Years	Since Incep.	Inception Date
AG Direct Lending BUSL LP	2.01	2.01	N/A	N/A	N/A	N/A	N/A	N/A	3.55	06/01/2022
CS Lvg'd Loan Index	1.19	1.19	-3.31	-2.62	2.12	3.00	3.67	3.70	-0.89	
Difference	0.82	0.82	N/A	N/A	N/A	N/A	N/A	N/A	4.44	
Owl Rock Diversified Lending	1.66	1.66	4.56	N/A	N/A	N/A	N/A	N/A	4.86	11/01/2021
CS Lvg'd Loan Index	1.19	1.19	-3.31	-2.62	2.12	3.00	3.67	3.70	-2.85	
Difference	0.47	0.47	7.87	N/A	N/A	N/A	N/A	N/A	7.71	
Apollo Defined Return Fund LP	1.34	1.34	N/A	N/A	N/A	N/A	N/A	N/A	-1.02	04/01/2022
CS Lvg'd Loan Index+2%	1.69	1.69	-1.87	-0.68	4.16	5.06	5.74	5.77	-2.25	
Difference	-0.35	-0.35	N/A	N/A	N/A	N/A	N/A	N/A	1.23	
Ares Pathfinder Fund LP	0.84	0.84	7.04	8.23	N/A	N/A	N/A	N/A	55.95	03/01/2021
Schroders Flexible Secured Income (SA)	-0.81	-0.81	-2.84	-2.79	N/A	N/A	N/A	N/A	-2.41	09/01/2021
3 Month LIBOR Index (USD)+1.75%	0.82	0.82	1.68	2.15	2.48	3.09	2.92	2.65	2.13	
Difference	-1.63	-1.63	-4.52	-4.94	N/A	N/A	N/A	N/A	-4.54	

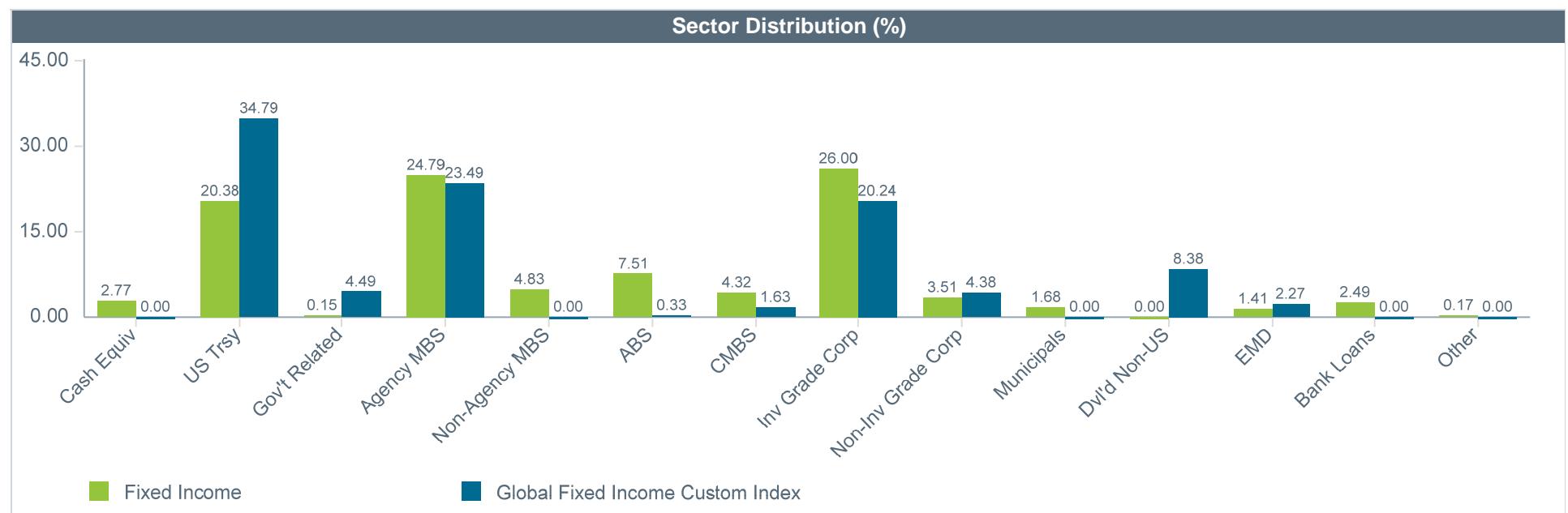


Performance shown is net of fees. The Global Fixed Income Custom Index currently consists of the Bloomberg US Univ Bond Index. RVK began monitoring the assets of North Dakota Board of University and School Lands in Q3 2014. Fiscal year ends 06/30. Market values for Direct Lending and Private Credit are as of previous quarter end and adjusted for subsequent cash flows until the current quarter's valuations are available.

North Dakota Board of University and School Lands
Fixed Income vs. Global Fixed Income Custom Index
Portfolio Characteristics

As of September 30, 2022

Portfolio Characteristics		
	Portfolio	Benchmark
Effective Duration	5.86	5.99
Avg. Maturity	8.08	8.33
Avg. Quality	A1	N/A
Coupon Rate (%)	3.29	2.87
Yield To Worst (%)	5.66	5.22
Current Yield (%)	3.86	N/A

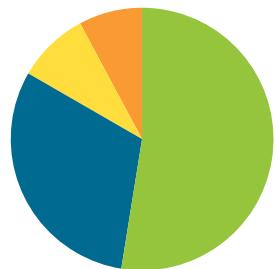


Fixed Income characteristics and sector distributions only include Payden & Rygel Long Term (SA), JP Morgan Core Bond (SA), and Loomis Sayles Credit Asset (SA). Allocation to "Other" consists of Convertibles.

	Comparative Performance									
	QTD	FYTD	CYTD	1 Year	3 Years	5 Years	7 Years	10 Years	Since Incep.	Inception Date
Absolute Return	-6.30	-6.30	-18.11	-18.11	-2.30	-0.68	1.97	N/A	0.34	07/01/2014
Absolute Return Custom Index	-8.33	-8.33	-23.40	-20.57	0.31	2.15	4.41	N/A	3.21	
Difference	2.03	2.03	5.29	2.46	-2.61	-2.83	-2.44	N/A	-2.87	
Global Tactical Asset Allocation	-7.13	-7.13	N/A	N/A	N/A	N/A	N/A	N/A	-7.13	07/01/2022
60% MSCI ACW (Net)/40% Bbrg Gbl Agg Idx	-6.82	-6.82	-23.27	-20.41	0.14	1.96	4.36	4.12	-6.82	
Difference	-0.31	-0.31	N/A	N/A	N/A	N/A	N/A	N/A	-0.31	
PIMCO:All Ast Ath;Inst (PAUIX)	-8.60	-8.60	-21.61	-19.12	-0.64	-0.47	2.67	N/A	-0.14	07/01/2014
All Asset Custom Index (EqI Wtd)	-3.04	-3.04	-13.71	-11.62	1.33	2.74	3.98	3.67	3.03	
Difference	-5.56	-5.56	-7.90	-7.50	-1.97	-3.21	-1.31	N/A	-3.17	
PineBridge Dyn AA;Inst (PDAIX)	-6.36	-6.36	-21.07	N/A	N/A	N/A	N/A	N/A	-21.07	01/01/2022
Consumer Price Index+5%	1.40	1.40	10.43	13.61	10.20	8.94	8.37	7.65	10.43	
Difference	-7.76	-7.76	-31.50	N/A	N/A	N/A	N/A	N/A	-31.50	
Multi-Strategy Hedge Funds	3.25	3.25	N/A	N/A	N/A	N/A	N/A	N/A	3.25	07/01/2022
HFRI RV Multi Strat Index	-0.01	-0.01	-1.04	-1.71	4.74	3.71	4.01	4.22	-0.01	
Difference	3.26	3.26	N/A	N/A	N/A	N/A	N/A	N/A	3.26	
Millennium USA LP	3.25	3.25	9.66	N/A	N/A	N/A	N/A	N/A	9.66	01/01/2022
HFRI RV Multi Strat Index	-0.01	-0.01	-1.04	-1.71	4.74	3.71	4.01	4.22	-1.04	
Difference	3.26	3.26	10.70	N/A	N/A	N/A	N/A	N/A	10.70	

Asset Allocation by Manager

\$721,747,186



	Market Value (\$)	Allocation (%)
PIMCO:All Ast Ath;Inst (PAUIX)	379,253,266	52.55
PineBridge Dyn AA;Inst (PDAIX)	222,130,528	30.78
Millennium USA LP	63,873,020	8.85
GMO:Bchmk-Fr All;IV (GBMBX)	56,490,372	7.83

Performance shown is net of fees. The Absolute Return Custom Index consists of 60% MSCI ACW IM Index (USD) (Net) and 40% Bloomberg US Agg Bond Index. RVK began monitoring the assets of North Dakota Board of University and School Lands in Q3 2014. Allocations shown may not sum up to 100% exactly due to rounding. Market value for GMO:Bchmk-Fr All'IV consist of uninvested cash.

	Comparative Performance									
	QTD	FYTD	CYTD	1 Year	3 Years	5 Years	7 Years	10 Years	Since Incep.	Inception Date
Real Estate	-0.31	-0.31	11.02	20.88	11.66	9.89	9.64	N/A	9.81	07/01/2015
NCREIF ODCE Index (AWA) (Net)	0.31	0.31	12.36	20.96	11.38	9.26	8.87	9.91	9.06	
Difference	-0.62	-0.62	-1.34	-0.08	0.28	0.63	0.77	N/A	0.75	
Morgan Stanley Prime Property (CF)	-0.06	-0.06	10.20	20.78	11.24	9.67	9.63	N/A	9.81	07/01/2015
NCREIF ODCE Index (AWA) (Net)	0.31	0.31	12.36	20.96	11.38	9.26	8.87	9.91	9.06	
Difference	-0.37	-0.37	-2.16	-0.18	-0.14	0.41	0.76	N/A	0.75	
UBS Trumbull Property LP (CF)	-0.17	-0.17	10.77	16.19	6.83	5.17	5.43	N/A	5.69	07/01/2015
NCREIF ODCE Index (AWA) (Net)	0.31	0.31	12.36	20.96	11.38	9.26	8.87	9.91	9.06	
Difference	-0.48	-0.48	-1.59	-4.77	-4.55	-4.09	-3.44	N/A	-3.37	
Jamestown Premier Property (CF)	-1.74	-1.74	0.63	1.67	-3.79	1.26	3.00	N/A	3.28	07/01/2015
NCREIF ODCE Index (AWA) (Net)	0.31	0.31	12.36	20.96	11.38	9.26	8.87	9.91	9.06	
Difference	-2.05	-2.05	-11.73	-19.29	-15.17	-8.00	-5.87	N/A	-5.78	
Prologis Targeted US Logistics LP (CF)	0.16	0.16	18.49	34.33	26.29	22.36	N/A	N/A	21.40	04/01/2016
NCREIF ODCE Index (AWA) (Net)	0.31	0.31	12.36	20.96	11.38	9.26	8.87	9.91	8.74	
Difference	-0.15	-0.15	6.13	13.37	14.91	13.10	N/A	N/A	12.66	
JP Morgan US RE Inc & Grth LP (CF)	-1.96	-1.96	9.58	20.75	10.49	7.92	N/A	N/A	7.94	07/01/2016
NCREIF ODCE Index (AWA) (Net)	0.31	0.31	12.36	20.96	11.38	9.26	8.87	9.91	8.78	
Difference	-2.27	-2.27	-2.78	-0.21	-0.89	-1.34	N/A	N/A	-0.84	
Harrison Street Core Property Fund	2.57	2.57	N/A	N/A	N/A	N/A	N/A	N/A	10.53	02/01/2022
NCREIF ODCE Index (AWA) (Net)	0.31	0.31	12.36	20.96	11.38	9.26	8.87	9.91	12.36	
Difference	2.26	2.26	N/A	N/A	N/A	N/A	N/A	N/A	-1.83	
State Street US REIT Index (CF)	-10.39	-10.39	N/A	N/A	N/A	N/A	N/A	N/A	-26.61	04/01/2022
NCREIF ODCE Index (AWA) (Net)	0.31	0.31	12.36	20.96	11.38	9.26	8.87	9.91	4.87	
Difference	-10.70	-10.70	N/A	N/A	N/A	N/A	N/A	N/A	-31.48	

Performance shown is net of fees. Real Estate manager and index performance is available on a quarterly basis. Interim period performance assumes a 0.00% return. RVK began monitoring the assets of North Dakota Board of University and School Lands in Q3 2014. Allocations shown may not sum up to 100% exactly due to rounding. Fiscal year ends 06/30. Jamestown Premier Property and UBS Trumbull Property LP are in queue for redemption.

Asset Allocation by Manager

\$1,138,028,365



- Morgan Stanley Prime Property (CF)
- Prologis Targeted US Logistics LP (CF)
- JP Morgan US RE Inc & Grth LP (CF)
- UBS Trumbull Property LP (CF)
- Harrison Street Core Property Fund
- Jamestown Premier Property (CF)
- State Street US REIT Index (CF)

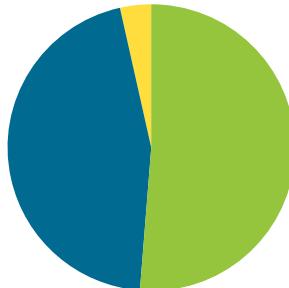
Market Value (\$)	Allocation (%)
293,090,937	25.75
264,562,608	23.25
179,169,167	15.74
177,641,021	15.61
139,738,645	12.28
65,157,820	5.73
18,668,168	1.64

Performance shown is net of fees. Real Estate manager and index performance is available on a quarterly basis. Interim period performance assumes a 0.00% return. RVK began monitoring the assets of North Dakota Board of University and School Lands in Q3 2014. Allocations shown may not sum up to 100% exactly due to rounding. Fiscal year ends 06/30. Jamestown Premier Property and UBS Trumbull Property LP are in queue for redemption.

Comparative Performance										
	QTD	FYTD	CYTD	1 Year	3 Years	5 Years	7 Years	10 Years	Since Incep.	Inception Date
Private Infrastructure	1.20	1.20	N/A	N/A	N/A	N/A	N/A	N/A	2.96	02/01/2022
MSCI Wrld Infrastructure Index	-11.54	-11.54	-13.92	-10.63	-1.82	1.24	3.50	4.08	-13.26	
Difference	12.74	12.74	N/A	N/A	N/A	N/A	N/A	N/A	16.22	
JP Morgan Infrastructure Investments	1.65	1.65	N/A	N/A	N/A	N/A	N/A	N/A	3.52	02/01/2022
MSCI Wrld Infrastructure Index	-11.54	-11.54	-13.92	-10.63	-1.82	1.24	3.50	4.08	-13.26	
Difference	13.19	13.19	N/A	N/A	N/A	N/A	N/A	N/A	16.78	
First Sentier GDIF US HFF	1.11	1.11	N/A	N/A	N/A	N/A	N/A	N/A	1.86	05/01/2022
MSCI Wrld Infrastructure Index	-11.54	-11.54	-13.92	-10.63	-1.82	1.24	3.50	4.08	-13.74	
Difference	12.65	12.65	N/A	N/A	N/A	N/A	N/A	N/A	15.60	
Hamilton Lane Infrastructure Opportunities Fund LP	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.00	08/01/2022
MSCI Wrld Infrastructure Index	-11.54	-11.54	-13.92	-10.63	-1.82	1.24	3.50	4.08	-13.97	
Difference	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	13.97	

Asset Allocation By Manager

\$297,508,074



	Market Value (\$)	Allocation (%)
First Sentier GDIF US HFF	152,518,133	51.27
JP Morgan Infrastructure Investments	134,570,073	45.23
Hamilton Lane Infrastructure Opportunities Fund LP	10,419,868	3.50

Performance shown is net of fees. RVK began monitoring the assets of North Dakota Board of University and School Lands in Q3 2014. Allocations shown may not sum up to 100% exactly due to rounding. Fiscal year ends 06/30. In Q3, Hamilton Lane Infrastructure Opportunities Fund LP was funded.

Comparative Performance										
	QTD	FYTD	CYTD	1 Year	3 Years	5 Years	7 Years	10 Years	Since Incep.	Inception Date
Opportunistic Investments	4.01	4.01	-5.05	-3.76	N/A	N/A	N/A	N/A	15.88	07/01/2020
Varde Dislocation Fund LP	4.01	4.01	-5.23	-5.05	N/A	N/A	N/A	N/A	14.92	07/01/2020
Asset Allocation by Manager										
\$83,235,567										
								Market Value (\$)		
								Allocation (%)		
								83,235,567		
								100.00		

III. Addendum



North Dakota Board of University and School Lands
Alternative Investment Private Credit Fund Performance Listing

As of September 30, 2022

Fund Name	Vintage	Asset Class	Commitment (\$)	Paid In Capital (\$)	Distributions (\$)	Valuation (\$)	Fund IRR (%)	Quartile	Index IRR (%)	Fund Multiple
AG Direct Lending Fund III, LP	2018	Private Credit - Direct Lending	150,000,000	138,000,000	76,126,321	111,864,491	11.08	N/A	-0.11	1.36
AG Direct Lending Fund IV, LP	2020	Private Credit - Direct Lending	100,000,000	85,648,632	5,638,094	92,858,253	16.02	N/A	-13.94	1.15
Ares Pathfinder Fund, LP	2020	Private Credit - Specialty Finance	100,000,000	45,687,447	2,237,682	53,695,931	23.02	N/A	-13.62	1.22
Owl Rock Diversified Lending 2020 Fund, LP	2020	Private Credit - Distressed/Special Situations	100,000,000	79,859,845	40,432,476	41,762,827	N/M	N/A	N/M	1.03
Varde Dislocation Fund, LP	2020	Private Credit - Distressed/Special Situations	100,000,000	79,500,000	100,849	83,235,567	3.75	N/A	-9.87	1.05
Schroders Flexible Secured Income LP	2021	Private Credit - Specialty Finance	200,000,000	200,614,581	0	196,473,858 *	-1.91	N/A	-14.27	0.98
AG Direct Lending BUSL LP	2022	Private Credit - Direct Lending	105,805,342	55,805,342	0	57,477,331	N/M	N/A	N/M	1.03
Apollo Defined Return Fund LP	2022	Private Credit - Opportunistic Credit	200,000,000	200,000,000	0	195,346,941 *	N/M	N/A	N/M	0.98
			1,055,805,342	885,115,848	124,535,422	832,715,199	7.00		-9.28	1.08

Certain valuations (marked with a ***) are preliminary estimates of valuation as of the date of reporting and reflect the estimated impact of subsequent net cash contributions/distributions. These figures may be used in calculations contained in this report. Index IRR represents the dollar-weighted returns calculated using the Barclays US Agg Bond Index assuming an index investment with the same cash flow timing. IRRs are shown only for investments with one year or more of cash flows and for which an accurate IRR could be calculated. Applicable IRRs are marked with 'N/M' for not material. Fund IRR is the annualized since-inception net internal rate for the indicated fund or composite. Fund Multiple is the since inception sum of distributions and valuation divided by paid in capital. Quartile data is based on information provided by Prequin.

North Dakota Board of University and School Lands
Alternative Investment Private Equity Fund Performance Listing

As of September 30, 2022

Fund Name	Vintage	Asset Class	Commitment (\$)	Paid In Capital (\$)	Distributions (\$)	Valuation (\$)	Fund IRR (%)	Quartile	Index IRR (%)	Fund Multiple
Ashbridge Transformational Secondaries Fund II LP	2021	Private Equity - Secondaries	25,000,000	12,250,000	0	12,250,000 *	N/M	N/A	N/M	1.00
Grosvenor - BUSL, LP	2021	Private Equity - Multi-Stage	130,000,000	26,260,091	1,730,142	27,432,865 *	11.15	N/A	-16.27	1.11
Grosvenor Secondary Opportunities Fund III, LP	2021	Private Equity - Fund of Funds	150,000,000	18,643,432	0	19,662,791 *	N/M	N/A	N/M	1.05
			305,000,000	57,153,522	1,730,142	59,345,656	8.79		-23.93	1.07

Certain valuations (marked with a **) are preliminary estimates of valuation as of the date of reporting and reflect the estimated impact of subsequent net cash contributions/distributions. These figures may be used in calculations contained in this report. Index IRR represents the dollar-weighted returns calculated using the Russell 3000 Index assuming an index investment with the same cash flow timing. IRRs are shown only for investments with one year or more of cash flows and for which an accurate IRR could be calculated. Applicable IRRs are marked with 'N/M' for not material. Fund IRR is the annualized since-inception net internal rate for the indicated fund or composite. Fund Multiple is the since inception sum of distributions and valuation divided by paid in capital. Quartile data is based on information provided by Preqin.

Performance Related Comments

- Manager inception dates shown represent the first full month following initial funding.
- RVK began monitoring the assets of North Dakota Board of University and School Lands in Q3 2014. Prior historical data was provided by North Dakota Board of University and School Lands.
- Real Estate composite, manager, and index performance are available on a quarterly basis. Market values are as of the most recent quarter-end and adjusted for subsequent cash flows. Interim period performance assumes a 0.00% return.
- Indices show N/A for since inception returns when the fund contains more history than the corresponding benchmark.
- As of 07/2014, composite and manager performance is provided and calculated by RVK.
- Net performance for FLP bank loans represent Fees Payable.
- During 03/2021 JPM FI Intermediate Bond transitioned from intermediate duration to full duration core mandate.
- During 08/2021 Schroders Securitized Credit transitioned into Schroders Flexible Secured Income.
- RVK cautions that the interpretation of time-weighted returns on non-marketable investments such as Private Equity, Private Real Estate, and Private Credit is imperfect at best, and can potentially be misleading.

Index Comments

- The Target Allocation Index (Net) is a static custom index that is calculated monthly and consists of:
 - From 07/2022 through present: 15% Russell 3000 Index, 15% MSCI ACWI Ex USA IMI, 5% Barclays US Universal Index, 20% CS Leveraged Loans Index +1.5%, 5% Global 60/40 (60% MSCI All Country World IMI, 40% Barclays US Aggregate Bond Index), 10% HFRI RV Multi-Strategy Index, 15% NCREIF ODCE Index, 8% Cambridge US Private Equity Index, and 7% MSCI World Infrastructure Index.
 - From 05/2020 through present: 19% Russell 3000 Index, 19% MSCI ACW Ex US Index (USD) (Net), 22% Global Fixed Income Custom Index, 15% NCREIF ODCE Index (AWA) (Net), 15% Absolute Return Index, 5% Cambridge US Private Equity Index, and 5% MSCI World Infrastructure Index.
 - From 07/2019 through 04/2020: 18.5% Russell 3000 Index, 18.5% MSCI ACW Ex US Index (USD) (Net), 23% Global Fixed Income Custom Index, 15% NCREIF ODCE Index (AWA) (Net), 15% Absolute Return Custom Index, and 10% DIS Custom Index.
 - From 02/2018 through 06/2019: 17% Russell 3000 Index, 17% MSCI ACW Ex US Index (USD) (Net), 21% Global Fixed Income Custom Index, 15% NCREIF ODCE Index (AWA) (Net), 20% Absolute Return Custom Index, and 10% DIS Custom Index.
 - From 07/2016 through 01/2018: 17% Russell 3000 Index, 15% MSCI ACW Ex US Index (USD) (Net), 23% Global Fixed Income Custom Index, 15% NCREIF ODCE Index (AWA) (Net), 20% Absolute Return Custom Index, and 10% DIS Custom Index.
 - From 04/2016 through 06/2016: 17.6% Russell 3000 Index, 15.5% MSCI ACW Ex US Index (USD) (Net), 23.8% Global Fixed Income Custom Index, 12% NCREIF ODCE Index (AWA) (Net), 20.7% Absolute Return Custom Index, and 10.4% DIS Custom Index.
 - From 01/2016 through 03/2016: 17.7% Russell 3000 Index, 15.6% MSCI ACW Ex US Index (USD) (Net), 25.3% Global Fixed Income Custom Index, 10% NCREIF ODCE Index (AWA) (Net), 21% Absolute Return Custom Index, and 10.4% DIS Custom Index.
 - From 10/2015 through 12/2015: 17.9% Russell 3000 Index, 15.9% MSCI ACW Ex US Index (USD) (Net), 25.5% Global Fixed Income Custom Index, 9% NCREIF ODCE Index (AWA) (Net), 21.1% Absolute Return Custom Index, and 10.6% DIS Custom Index.
 - From 07/2015 through 09/2015: 19.5% Russell 3000 Index, 17.4% MSCI ACW Ex US Index (USD) (Net), 26.2% Global Fixed Income Custom Index, 4.1% NCREIF ODCE Index (AWA) (Net), 22% Absolute Return Custom Index, and 10.8% DIS Custom Index.
 - From 07/2014 through 06/2015: The index was calculated monthly using beginning of month asset class weights applied to each corresponding primary benchmark return.
 - From 01/2013 through 06/2014: 18.7% Russell 1000 Index, 12.4% Russell 2500 Index, 7.5% FTSE EPRA/NAREIT US Index, 12.4% MSCI EAFE Index (USD) (Net), 33.3% Bloomberg US Agg Bond Index, 0.70% CS Lvg'd Loan Index, 10% Bloomberg US Corp Hi Yld Index, and 5% Bloomberg Gbl Agg Ex USD Index (Hedged).
 - From 07/2009 through 12/2012: 15% Russell 1000 Index, 10% Russell 2500 Index, 6% FTSE EPRA/NAREIT US Index, 10% MSCI EAFE Index (USD) (Net), 32.3% Bloomberg US Agg Bond Index, 1.70% CS Lvg'd Loan Index, 10% Bloomberg US Corp Hi Yld Index, 5% Bloomberg Gbl Agg Ex USD Index (Hedged), and 10% ICE BofAML Cnrvt Bonds Index (All Qual).
- The Global Fixed Income Custom Index is calculated monthly using beginning of month weights applied to each corresponding primary benchmark return. From 04/2019 through 06/2022, the index consisted of the Bloomberg US Unv Bond Index. Prior to 03/2019, the index consisted of 75% Bloomberg US Unv Bond Index and 25% Bloomberg Multi-Universe Index.

Cont.

- The Absolute Return Custom Index is calculated monthly using beginning of month weights applied to each corresponding primary benchmark return. Prior to 07/2022, the index consisted of 60% MSCI ACW IM Index (USD) (Net) and 40% Bloomberg US Agg Bond Index.

The All Asset Custom Index (Eq Wtd) is an equal-weighted hybrid created independently by RVK specifically for PIMCO's All Asset strategies, and it consists of the following benchmarks:

1. Short Term Strategies: ICE BofAML 1 Yr T-Bill Index
2. US Core and Long Maturity Bond Strategies: Bloomberg US Agg Bond Index
3. EM and Gbl Bond Strategies: PIMCO GLADI Index*
4. Crdt Strategies: ICE BofAML US Hi Yld Master II Index
5. Inflation Related Strategies: Bloomberg US Trsy US TIPS Index
6. US Equity Strategies: Russell 3000 Index
7. Global Equity Strategies: MSCI ACW Index (USD) (Net)
8. Alternative Strategies: ICE BofAML 3 Mo US T-Bill Index + 3%

*Performance for the PIMCO Gbl Advantage Bond Index (London Close) prior to 01/01/2004 consists of the JPM EMBI Gbl Dvfd Index (TR).

The asset class market performance is represented by the respective indices:

- US Large Cap Equity = S&P 500 Index (Cap weighted)
- US Small Cap Equity = Russell 2000 Index
- Developed International Equity = MSCI EAFE Index (USD) (Net)
- Developed International Small Cap Equity = MSCI EAFE Small Cap Index (USD) (Net)
- Emerging Markets Equity = MSCI Emerging Markets Index (USD) (Net)
- US Aggregate Bond = Bloomberg US Aggregate Bond Index
- 3 Month US Treasury Bill = ICE BofAML 3 Month US T-Bill Index
- US Real Estate = NCREIF ODCE Index (AWA) (Gross)
- Real Estate Investment Trust (REITs) = FTSE NAREIT Equity REITs Index (TR)
- Commodities = Bloomberg Commodities Index (TR)

PORTLAND

BOISE

CHICAGO

NEW YORK

Disclaimer of Warranties and Limitation of Liability - This document was prepared by RVK, Inc. (RVK) and may include information and data from some or all of the following sources: client staff; custodian banks; investment managers; specialty investment consultants; actuaries; plan administrators/record-keepers; index providers; as well as other third-party sources as directed by the client or as we believe necessary or appropriate. RVK has taken reasonable care to ensure the accuracy of the information or data, but makes no warranties and disclaims responsibility for the accuracy or completeness of information or data provided or methodologies employed by any external source. This document is provided for the client's internal use only and does not constitute a recommendation by RVK or an offer of, or a solicitation for, any particular security and it is not intended to convey any guarantees as to the future performance of the investment products, asset classes, or capital markets.

Schedule of Investable Assets																														
Periods Ending	Beginning Market Value (\$)	Net Cash Flow (\$)	Gain/Loss (\$)		Ending Market Value (\$)	% Return																								
MTD	620,727,109	-10,721	6,231		620,722,619	0.00																								
Asset Allocation & Performance																														
Market Value (\$)	Performance (%)					Inception Date																								
	MTD	QTD	FYTD	CYTD	1 Year	Since Incep.																								
NT Ultra Short Extended (SA)	620,722,619	0.00	0.00	-0.11	-2.47	-2.63	1.08	08/01/2015																						
NT Ultra Short Extended Custom Index		0.02	0.02	-0.49	-1.97	-2.08	0.86																							
Difference		-0.02	-0.02	0.38	-0.50	-0.55	0.22																							
Fund Objective																														
The objective of this fund is to provide capital preservation with returns which exceed that of its custom benchmark, 50% Bloomberg US Gov't Crdt 1-3 Yr Bond Index and 50% ICE BofAML 3 Mo US T-Bill Index.																														
Portfolio Characteristics																														
	Portfolio			Benchmark																										
	Effective Duration	0.91		0.91	1.07																									
Modified Duration		0.91			1.03																									
Spread Duration		0.83			1.08																									
Convexity		0.02			0.02																									
Avg. Maturity		0.95			1.11																									
Avg. Quality		Aa1			Aa1																									
Yield To Maturity (%)		4.14			3.86																									
Coupon Rate (%)		1.28			N/A																									
Current Yield (%)		1.31			N/A																									
Holdings Count		156			1,807																									
Sector Distribution (%)																														
<table border="1"> <thead> <tr> <th>Sector</th> <th>NT Ultra Short Extended (SA)</th> <th>NT Ultra Short Extended Custom Index</th> </tr> </thead> <tbody> <tr> <td>Cash Equiv</td> <td>31.77</td> <td>0.00</td> </tr> <tr> <td>US Trsy</td> <td>15.48</td> <td>83.61</td> </tr> <tr> <td>Gov't Related</td> <td>0.00</td> <td>4.99</td> </tr> <tr> <td>Agency MBS</td> <td>2.96</td> <td>0.00</td> </tr> <tr> <td>ABS</td> <td>8.07</td> <td>0.00</td> </tr> <tr> <td>Inv Grade Corp</td> <td>41.24</td> <td>11.41</td> </tr> <tr> <td>Municipals</td> <td>0.48</td> <td>0.00</td> </tr> </tbody> </table>							Sector	NT Ultra Short Extended (SA)	NT Ultra Short Extended Custom Index	Cash Equiv	31.77	0.00	US Trsy	15.48	83.61	Gov't Related	0.00	4.99	Agency MBS	2.96	0.00	ABS	8.07	0.00	Inv Grade Corp	41.24	11.41	Municipals	0.48	0.00
Sector	NT Ultra Short Extended (SA)	NT Ultra Short Extended Custom Index																												
Cash Equiv	31.77	0.00																												
US Trsy	15.48	83.61																												
Gov't Related	0.00	4.99																												
Agency MBS	2.96	0.00																												
ABS	8.07	0.00																												
Inv Grade Corp	41.24	11.41																												
Municipals	0.48	0.00																												
█ NT Ultra Short Extended (SA)			█ NT Ultra Short Extended Custom Index																											

Performance shown is net of fees. Net cash flow includes securities lending income and client directed flows. Gain/loss includes dividend and interest income and capital appreciation. Allocations shown may not sum up to 100% exactly due to rounding. The NT Ultra Short Extended Custom Index is calculated monthly and currently consists of 50% Bloomberg US Gov't Crdt 1-3 Yr Bond Index and 50% ICE BofAML 3 Mo US T-Bill Index. Fiscal year end 06/30.

MEMORANDUM TO THE BOARD OF UNIVERSITY AND SCHOOL LANDS
December 19, 2022

RE: Multi-Strategy Hedge Fund Manager

During its June 30, 2022, meeting the Board of University and School Lands (Board) approved the implementation of a new strategic asset allocation (SAA) for the Permanent Trust Funds (PTFs), which created a Multi-Strategy Hedge Fund subcategory within the Absolute Return strategies. Along with this was setting a target of 10% to this subcategory.

As a result, Staff and RVK commenced a search for new managers that would bring exposure to the target level, and at the same time, be a complement to the existing fund that is currently in the subcategory.

Staff and RVK recommend adding two new active managers, which should decrease portfolio risk while increasing returns. Staff and RVK began the manager search by compiling a list of the top performing managers within RVK's database. Staff and RVK reviewed the return performance and risk history of each manager, along with fees, investment staff, operations, and processes.

After conducting thorough due diligence and interviewing the top managers, it was determined that Staff and RVK would recommend the Board approve new mandates with Balyasny Asset Management and Two Sigma Investment Management.

Balyasny Asset Management (BAM) manages multi-strategy hedge funds with over \$16.4 billion in assets under management and has over 900 investment professionals around the globe managing assets in long/short equities, macro, commodities, equity arbitrage, credit, and growth equity. BAM has an outstanding performance record and manages assets with strong finance, data execution, technology, and operational capabilities. And like our current hedge fund, Millennium, BAM is also focused on risk management. Risk guidelines reflect the mandate and skill within each strategy and are consistently executed. Expected returns on risk, stress, and working capital are measured through risk lenses.

Two Sigma Investment Management (Two Sigma) considers itself a technology company that utilizes this strength in the domain of finance. Two Sigma aims to consistently generate alpha in liquid global markets across a range of conditions using a disciplined, scientific approach. Two Sigma has \$63 billion in assets under management, \$45 billion of which is in its absolute return strategy. Two Sigma has over 1,900 employees worldwide, 1,000+ of which are in research and development, including 200+ PhDs working collaboratively on an integrated platform with computing power that would rank in the world's top 250 supercomputer sites, all aimed at creating alpha. As of Dec. 31, 2021, Two Sigma has created positive alpha every year since its inception.

Staff and RVK both agree that BAM and Two Sigma's strategies will supplement and complement that of Millennium, the existing hedge fund in the portfolio. With the slow take up of committed capital by Millennium, an investment in BAM will supplement expected returns as BAM has a similar strategy to Millennium and will call capital faster than Millennium. Two Sigma, however, will serve as a complement to both Millennium and BAM as it has a very different strategy in achieving risk adjusted return. Therefore, Staff and RVK recommend making investment commitments of \$300M to the Balyasny Atlas Enhanced Fund and \$150M to the Two Sigma Absolute Return Enhanced Fund. Once the full capital commitments to all three hedge funds are called, this will bring the allocation of the Multi-Strategy Hedge Fund subcategory to its target of 10%.

BOARD OF UNIVERSITY AND SCHOOL LANDS
December 19, 2022



Recommendation: The Board approve investments of \$300M in Balyasny Asset Management's Atlas Enhanced Fund and \$150M in Two Sigma Absolute Return Enhanced Fund, subject to final review and approval of all legal documents by the Office of the Attorney General.

Action Record	Motion	Second	Aye	Nay	Absent
Secretary Jaeger					
Superintendent Baesler					
Treasurer Beadle					
Attorney General Wrigley					
Governor Burgum					

Attachment 1: RVK Hedge Funds Recommendation Memo

Attachment 2: Balyasny Asset Management Multi-Strategy Presentation

Attachment 3: Two Sigma Absolute Return Presentation



Memorandum

To	North Dakota Board of University and School Lands
From	RVK, Inc.
Subject	Absolute Return Recommendation – Balyasny & Two Sigma
Date	December 19, 2022

Executive Summary

The Land Board approved an updated strategic asset allocation during its June 30, 2022 meeting that included increasing its multi-strategy hedge fund exposure from a 5% to 10% target weight. Staff and RVK initiated a search for multi-strategy managers that would bolster the Land Board's existing hedge fund exposure in an effort to build on the diversification benefits associated with the portfolio and bring it toward target weight. Managers that were considered included both those that benefit from market tailwinds by dynamically allocating capital toward the best special situations and event driven investment opportunities globally, as well as those that limit market sensitivity and downside capture by adhering to a stricter market neutral investment framework. Several portfolio mixes and combinations of managers were considered. Ultimately, the Land Board's portfolio outside of hedge funds already includes broad exposure to asset classes that benefit from market tailwinds. As such, RVK and Staff determined that continued focus on market neutral strategies would be the best fit for hedge funds within the Absolute Return portfolio going forward. Managers with such characteristics complement the Land Board's existing investments across both traditional liquid and private alternative asset classes. The three managers RVK and Staff chose to interview were Farallon Capital Management, Balyasny Asset Management, and Two Sigma, LLC.

Following the manager interviews, Balyasny Asset Management and Two Sigma were identified as the managers best positioned to enhance the Land Board's existing hedge fund exposure while maintaining diversification benefits with the broader portfolio.

Recommendation

Based on the manager search process and the due diligence performed, Staff and RVK recommend the Board fund the Balyasny Atlas Enhanced fund with a \$300 million commitment, and the Two Sigma Absolute Return Enhanced strategy with a \$150 million commitment. The blend of these two managers alongside the Land Board's existing exposure to Millennium creates a strong portfolio of managers that is well positioned to generate consistent diversifying returns on a forward-looking basis. Millennium remains a top-tier multi-portfolio manager hedge fund and is currently closed to new capital. Balyasny utilizes a multi-portfolio manager approach substantially similar to that of Millennium and will build on this existing exposure. RVK continues to view this style of hedge fund as having significant structural advantages relative to the rest of the industry for investors seeking consistent alpha production. Finally, Two Sigma will serve as a



complementary exposure, generating its returns primarily through a quantitative investment approach that differentiates it from groups like Millennium and Balyasny. Together, the three-manager portfolio should be well positioned to generate positive absolute returns with a volatility profile less than half that of global equities, while maintaining strong diversification benefits with traditional asset classes.

Manager Search Process

The RVK Investment Manager Research team maintains research coverage of many institutional-quality multi-strategy hedge fund managers. Leveraging this knowledge and experience, the hedge fund research team built an initial list of what RVK considers best in class asset managers that possess the qualities that would be complementary to the absolute return portfolio. The Land Board's Investment Staff proceeded to interview three of these candidates on October 3rd, October 4th, and October 12th. Participants from the asset manager's side included senior decision makers on the investment team. After the interviews, RVK and Staff discussed the strategies varying approaches, the pros and cons of each, and how various combinations of managers would best position the overall hedge fund portfolio for success going forward.

Manager Overview: Balyasny Asset Management

Balyasny Asset Management, L.P. ("BAM" or "Balyasny") is a diversified multi-strategy hedge fund firm, headquartered in Chicago, Illinois. The fund was founded by Dmitry Balyasny in December 2001 along with partners Taylor O'Malley and Scott Schroeder. Mr. Balyasny launched the firm following a successful early career managing assets for Schonfeld Securities, where he began trading in 1994. Balyasny formally launched fund structures and made its products available to outside investors in 2005. In addition to its Chicago headquarters, Balyasny has investment offices located in New York, London, Greenwich, Hong Kong, Miami, San Francisco, Austin, Singapore, Boston, Houston, Toronto, and Tokyo. As of September 30, 2022, the firm managed \$16.2 billion in assets across a diverse investor base, made up primarily of institutional clients. The firm employs 1,419 individuals, with 1,035 of those considered investment personnel. There are also currently 146 portfolio management teams running capital within the firm. Balyasny operates as a partnership, and today has 14 partners. Ten of these individuals were added to the partnership in 2021.

Investment Overview

Balyasny Atlas Enhanced Fund, Ltd. is a market neutral multi-strategy hedge fund that utilizes a multi-portfolio manager model. The fund seeks to generate high and consistent alpha regardless

of the directionality of markets and achieves this through allocating capital across 146 specialist portfolio management teams. Key to the firm's success are its sophisticated risk management infrastructure, as well as its ability to attract, develop, and retain talented investment personnel. The fund allocates across five core strategies. These include Equity Long/Short trading, Macro, Equities Arbitrage, Commodities, and Credit. The exhibit below provides a breakdown of the fund's risk allocation and its active portfolio managers across these core strategies.

Exhibit 1: Balyasny Atlas Enhanced Risk Allocation and PMs by Strategy
As of September 30, 2022



Risk taking across portfolio management teams is largely decentralized, though each PM works within strict risk and exposure guidelines set by the firm prior to live trading. The platform allows portfolio managers the autonomy to run capital in their specific strategies and areas of expertise, but ensures that no one position or theme has an outsized influence on returns for the fund in aggregate. Risk guidelines are tailored to each portfolio manager's specific strategy, but commonly include market exposure limits (+- 5%), factor exposure limits (80%+ idiosyncratic risk target), position size limits, constraints that ensure sufficient liquidity, and limits on available trading instruments such that portfolio managers cannot abruptly take risk outside their areas of expertise. In effect, these various risk and exposure guidelines are in place to ensure that returns generated by a given portfolio manager are dominated by uncorrelated alpha as opposed to market beta, and to keep PMs from taking on outsized risks.

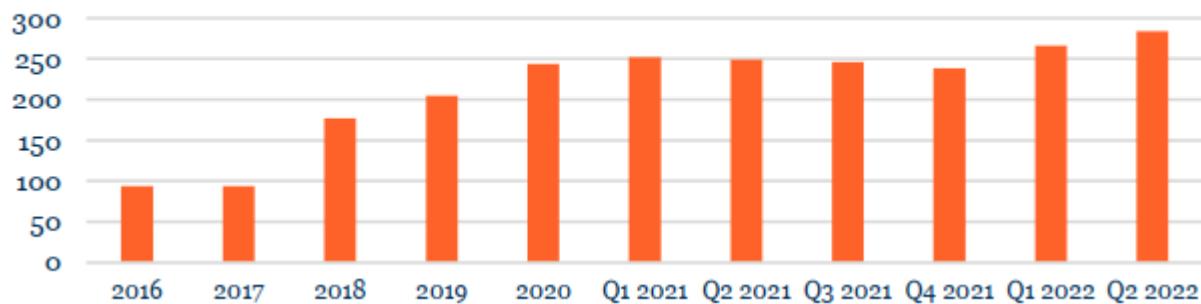
Portfolio managers also adhere to strict drawdown limits that serve to promote diversified and thoughtful risk taking across the platform. Within equities trading specifically, PMs that drawdown

more than 1.2 times their allocated dollar risk budget can expect to have their capital base cut in half, and those that drawdown by 1.6 times will be stopped out entirely. Drawdown limits are a powerful incentive for PMs to generate consistent attractive returns without making concentrated bets that could lead to large losses. Such limits also serve to naturally de-risk the portfolio during periods of heightened market volatility or underperformance, as traders are heavily incentivized to reduce their positions.

Balyasny made great strides in recent years to increase the diversification benefits across its platform after a period of relative underperformance for the manager from 2016 through 2018. The firm hired two ex-Citadel executives to help reinvigorate the business and bring more discipline to the risk management process. Those individuals were Alex Lurye, Balyasny's Chief Risk Officer, and Jeff Runnfeldt, its Head of Equities. Mr. Lurye was the CRO at Citadel prior to his departure, while Mr. Runnfeldt ran various equities trading businesses within the firm during his tenure, including the Surveyor Capital and Global Equities units. Following these hires, RVK observed significant changes to the compositions of Balyasny's portfolio that better positioned it for success. Among these were a change to the capital allocation process to focus on allocating capital in terms of risk as opposed to gross dollars, and changes to constraints for underlying PMs to promote less concentrated risk taking across portfolios. The result has been a significant uptake in what Balyasny calls "effective positions," which indicate the level of balance across alpha oriented trades in the portfolio.

Exhibit 2: Balyasny # of Effective Positions Within Equities Trading

Average Effective # of Positions¹



Capital allocation decisions are made by the Investment Committee, which consists of the firm's three founding partners, as well as the Chief Risk Officer, Head of Equities, Equities COO, Director of Equities Research, and the Global head of Macro. The committee meets weekly to



review outstanding portfolio manager requests for capital and reviews portfolio manager allocations formally on a quarterly basis. The size of an allocation given to a particular PM team is a function of each team's relative level of experience and tenure with the firm, the consistency of their track record, and the uniqueness of their individual strategy. Considerations are also made with respect to the opportunity set available to portfolio managers within their specific strategies.

In aggregate, each portfolio management team represents a differentiated source of alpha, that when taken together produces a return stream that is largely unexplained by traditional market factors. Even within the same strategy, portfolio managers produce significant diversification benefits to one another. Balyasny estimated the average correlation within its Equities, Macro, and Equities Arbitrage trading teams to be 0.04, 0.09 and 0.06, respectively, at year-end 2021. In order to generate the double digit returns Balyasny has produced since its inception, the fund uses a moderate degree of leverage to enhance returns.

Track Record

Balyasny's long term track record is very strong when measured against its multi-strategy relative value hedge fund peers. Since the Atlas Enhanced Fund's inception in January 2006, the fund has produced annualized returns of 13.2% with a standard deviation of just 7.9%, less than half the volatility profile of global equity markets as measured by the MSCI ACWI over the same period. This profile yields a Sharpe Ratio of 1.5, which compares favorably to hedge fund peers included in the HFR Relative Value Multi-Strategy Index, which produced a Sharpe Ratio of 0.6 over the same period. Balyasny's observed correlation to traditional equity and fixed income markets is low as well, speaking to the fund's market neutral investment style. Correlation to global equities since inception measures just 0.28, compared to 0.75 for the peer HFR RV Multi-Strategy index, while correlation to global fixed income markets has been just 0.05 as measured by the Bloomberg Barclays Global Aggregate Bond Index. Most notably, in the years following the financial crisis while many hedge fund firms have struggled, Balyasny has continued to generate returns meaningfully ahead of a global 60/40 stock-bond mix, and compares favorably against global equities as well following the drawdowns experienced through the third quarter of 2022.

A subset of the return analytics that were reviewed in making this recommendation are below, labeled exhibits **3, 4, and 5**. Returns are presented net of all fees and expenses.

Exhibit 3: Annualized Returns

Annualized Returns as of 9/30/2022	QTD	YTD	1 Year	3 Years	5 Years	7 Years	10 Years	15 Years
Balyasny Atlas Enhanced	2.0	8.2	10.2	17.3	11.0	8.4	10.3	10.7

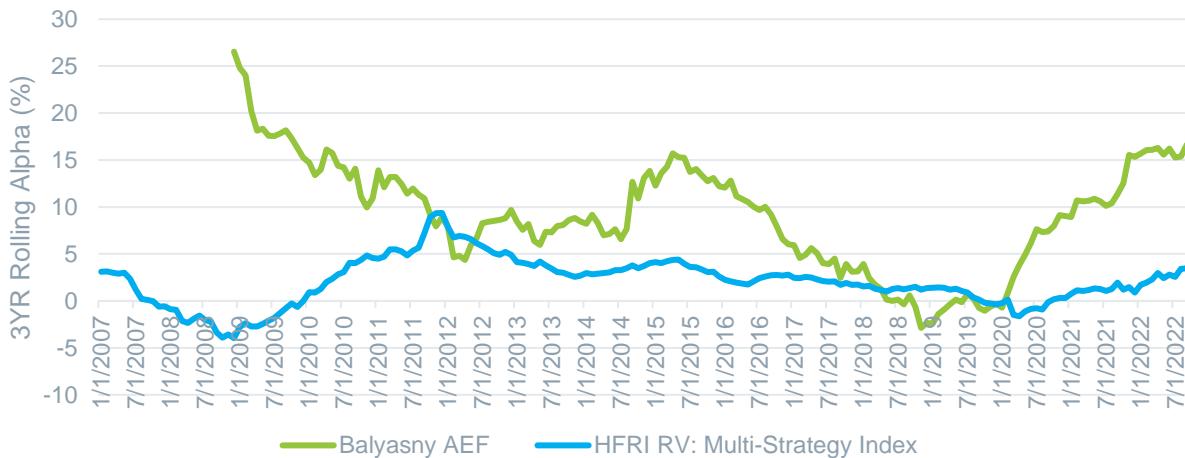


<i>HFRI RV: Multi-Strategy</i>	0.0	-1.0	-1.7	4.7	3.7	4.0	4.2	3.8
<i>MSCI ACWI</i>	-6.8	-25.6	-20.7	3.7	4.4	7.4	7.3	4.1
<i>Barclays Global Agg</i>	-6.9	-19.9	-20.4	-5.7	-2.3	-0.6	-0.9	1.4
<i>60% ACWI/40% BGbl AGG</i>	-6.8	-23.3	-20.4	0.1	2.0	4.4	4.1	3.3

Exhibit 4: 10-Year MPT Statistics

10-Year Statistics as of 9/30/2022	Return	StDev%	Sharpe Ratio	Max Drawdown	Alpha vs. ACWI	Beta vs ACWI	Up Market vs. ACWI	Down Market vs. ACWI
Balyasny Atlas Enhanced	10.3	6.5	1.5	-8.6	9.1	0.07	32.0	-15.7
<i>HFRI RV: Multi-Strategy</i>	4.2	3.5	1.0	-6.6	2.3	0.19	22.8	9.6
<i>MSCI ACWI</i>	7.3	14.0	0.5	-25.6	0.0	1.00	100.0	100.0
<i>Barclays Global Agg</i>	-0.9	5.3	-0.3	-23.7	-2.8	0.18	8.9	21.8
<i>60% ACWI/40% BGbl AGG</i>	4.1	9.6	0.4	-23.3	-1.0	0.67	61.8	69.2

Exhibit 5: 3-Year Rolling Alpha vs. MSCI ACWI



Team

Balyasny is led by its founder, Dmitry Balyasny, as well as a group of fourteen partners. The firm's investment process is led by Dmitry Balyasny, who continues to manage a small portion of capital for the firm. Day to day management of the firm's investment process largely falls to a group of



strategy heads and risk executives that together monitor risk taking across the firm's portfolio managers and work to enhance the firm's technological and risk infrastructure over time. Jeff Runnfeldt oversees the equities trading group, with help from Bill Wappler and Gustav Rydbeck. Each of these individuals, as well as Dmitry Balyasny, is involved with any hire or fire decisions across the firm's equities trading businesses. That includes both the specialist equity relative value trading teams, as well as Balyasny's equities arbitrage business. Steve Goldberg is the firm's Global Head of Macro. The macro team also has several regional heads across the firm's investment offices in North America, Asia, and Europe. Risk management at the firm is overseen by Alex Lurye, Balyasny's Chief Risk Officer. A snapshot of the team can be found in exhibit 6 below.

Exhibit 6: Balyasny Team Overview

The Investment Committee		The Management Committee					
DMITRY BALYASNY* Managing Partner & CIO (CHAIR)		TAYLOR O'MALLEY Co-Founding Partner & President (CHAIR)					
TAYLOR O'MALLEY* Co-Founding Partner & President	SCOTT SCHROEDER* Co-Founding Partner	SCOTT SCHROEDER Co-Founding Partner	ANITA NASSAR Partner, Srn Managing Director, Client Relationship Group	JARED HADE Partner, CFO & Head of Strategy			
ALEX LURYE Partner, Chief Risk Officer	JEFF RUNNFIELDT Partner, Global Head of Equities	ANDREW FONG President, BAM Asia	RAHUL BAJAJ Global Head, Execution Services	JENNIFER BLAKE Partner, Managing Director, Head of Business Development			
GUSTAV RYDBECK Partner, Chief Operating Officer, Investments	BILL WAPPLER Partner, Director of Research	DAVE PREZIOSO Chief People Officer	CARSON BONECK Chief Data Officer	MATT SICLARI General Counsel, Chief Compliance Officer			
STEVE GOLDBERG Global Head of Macro	MIKE GRIMALDI Chief Information Officer						DREW TANNENBAUM Managing Director, Corporate Strategy & Finance
<small>*Founding Partners</small>							

Within the equities trading businesses, Messrs. Runnfeldt, Rydbeck, and Wappler, do not actually place trades. Rather, each is responsible for overseeing and enhancing the fund's investment process with respect to equities. Mr. Wappler acts as the head of research and spends much of his time working with individual PMs. He also oversees the firm's Anthem program, which serves as an internal training ground for portfolio managers as they develop the skills required to run a larger capital base. Mr. Rydbeck works less with individual PMs, but is instrumental in building Balyasny's technology infrastructure to help scale and optimize its alpha generation. He oversees the firm's Scaler and Alpha Capture systems within equities. Both programs attempt to leverage the firm's internal data to systematically enhance exposure to positive alpha generating ideas developed across Balyasny's equity portfolio managers.

Balyasny's macro business is setup a bit differently, as Steve Goldberg, the Head of Macro is responsible both for managing a capital sleeve for the firm, as well as overseeing the firm's macro



trading business. He is supported by regional heads in the US, Europe and Asia, as well as a dedicated macro risk team that monitors and stress tests the firm's portfolios in real time to ensure portfolio managers remain within their risk guidelines.

Finally, like other multi-PM hedge funds, Balyasny would not be able to execute its strategy and maintain its strict drawdown limits without a consistent pipeline of new talent to replace those who are stopped out or otherwise don't generate consistent profits. To that end, the firm has a "Business Development" team made up of 35 individuals that seeks to map out the available universe of analyst and portfolio manager candidates across banks, asset management firms, and competing hedge funds globally. The team is overseen by Jennifer Blake, one of Balyasny's 14 partners, and is tasked with conducting initial phases of due diligence on prospective analysts and portfolio managers prior to interviewing with the firm's strategy and risk heads. Ultimately, the strategy heads, alongside Dmitry Balyasny, are responsible for the hiring decisions within the investment side of the business.

Manager Overview: Two Sigma Absolute Return Enhanced

Two Sigma was founded in 2001 by John Overdeck and David Siegel after each had spent time earlier in their careers at other top tier hedge fund firms. Mr. Siegel worked at Tudor Investments, where he was the firm's CTO, and Mr. Overdeck began his career at quantitative hedge fund firm, DE Shaw. The two believed that an expansion in the availability of data and the rapid evolution of information technology in the late 90s and early 00s was going to create opportunities for those with a skill set based in scientific methods, mathematics, and statistics to make sense of, and ultimately create profitable trading strategies within financial markets. The firm views itself as a technology company first and foremost, applying its intellectual capital to the domain of finance. Today, Two Sigma manages upwards of \$64 billion in capital across a heavily institutional client base. The firm's businesses include both liquid and private investment products. Within the liquid side of the business, the vast majority of assets reside within the absolute return, alpha focused business, though Two Sigma also offers directional or "Beta One" products as well. Headquartered in New York, Two Sigma has additional offices in Houston, Stamford, Chicago, London, Hong Kong, Shanghai, Portland, and Tokyo. The firm employs roughly 2,000 individuals, over 1,000 of whom work in research and development. Within that group there are in excess of 200 PhDs working together on the platform in an effort to find and implement strategies capable of producing alpha for investors.

Investment Overview

Two Sigma Absolute Return Enhanced is a highly diversified market neutral multi-asset fund that utilizes a quantitative approach to investing across single name equities, multi-asset class futures,



and currency markets globally. The fund follows a process driven investment approach that combines world class technology and infrastructure with highly experienced and talented quantitative research personnel.

The strategy itself allocates to four underlying investment programs, one of which only recently began live trading. The three legacy systems include an equity market neutral portfolio, known as “ATV”, a directional systematic macro portfolio, known as “MTV,” and a relative value macro portfolio, known as “HTV”. The scientific discretionary macro component, known as “NTV” began live trading in August 2021, was included as an allocation in the fund as of October 2022, and currently represents just a 3% capital allocation. ATV is the largest capital weight in the fund at 75.5%, while MTV and HTV represent weights of 10.0% and 11.5%, respectively. The overall portfolio targets annualized volatility in the range of 10.0% to 12.0%.

Within each sub-strategy, Two Sigma leverages a library of existing alpha signals that each come up with independent price forecasts for a specific asset. Within ATV, the assets are single name stocks, while within the macro portfolios, the assets tend to be futures or forwards across fixed income, rates, equity indices, commodities, and currency markets. Signals are categorized broadly into four distinct areas, including Alpha Capture, Event Driven, Fundamental, and Technical. Alpha Capture signals leverage market views from sell-side research professionals that Two Sigma systematically collects on an ongoing basis. Such information can be used as an input to determine potential future price moves in stocks. Event Driven signals rely heavily on natural language processing and other statistical methods to scour for corporate announcements that may affect the outlook for a company going forward. Fundamental signals rely on both standard valuation and growth metrics that can be ascertained via a company’s quarterly financial statements, as well as more creative models that seek to forecast short term supply and demand imbalances or incorporate supply chain disruptions. Finally, technical models utilize price, volume, and volatility data to take advantage of market phenomenon like seasonality, short term mean reversion, and momentum.

The fund has a trading universe greater than 10,000 individual stocks and applies hundreds of models to build forecasts of the individual stock returns. Macro strategies have a universe of available markets in the hundreds, while MTV and HTV utilize greater than one hundred underlying models each. Two Sigma aggregates the alpha forecasts produced by these individual models up into a single price forecast for each stock or futures market in its trading universe. Models are weighted dynamically based on a combination of factors, the most important of which is whether the model has been a good predictor of an asset’s returns in the recent past. The adaptability of the system is an important factor in ensuring that the portfolio can change as market conditions evolve, regimes shift, and investment trends go in and out of favor. With the individual asset alpha forecasts in hand, Two Sigma then utilizes a daily optimization process that takes into



account the potential drag from trading costs, as well as the risks inherent in each position, in order to arrive at its desired final portfolio. The system's models and price forecasts are continuously updated as they incorporate new data, but the optimization process occurs only once per day. The resulting portfolio is designed to produce returns independent of traditional markets and typically takes relatively small positions in single name equities. The fund uses a moderate degree of leverage to enhance returns.

Track Record

While HFR does not provide a particularly strong peer group for quantitative market neutral multi-asset class funds, Two Sigma Absolute Return Enhanced does compare favorably to the HFR Relative Value Multi-Strategy peer index. In the 10 years ended September 30, 2022, the fund has produced net of fees returns of 10.1% with a standard deviation of just 8.1%. The fund's volatility profile is roughly half that of global equities as measured by the MSCI ACWI. This gives the fund a 10-year Sharpe ratio of 1.1. Two Sigma has achieved these results while maintaining exceptional diversification benefits when compared to traditional markets like global equities, exhibiting a 10-year correlation of just 0.03 to the MSCI ACWI.

The fund has experienced drawdowns in its track record that are worth noting, and its return consistency is not quite as high as the multi-PM platforms RVK tends to favor like Millennium and Balyasny. However, it must be emphasized that Two Sigma works exceptionally well within the recommended multi-strategy hedge fund composite alongside managers like Balyasny and Millennium. The fund's correlation to these two managers is just 0.04 and 0.20 over the trailing 10-years, respectively. The diversification benefits across the three managers together help enhance the return consistency of the overall hedge fund composite, while maintaining low expected correlation to traditional equities and fixed income markets.

A subset of the return analytics that were reviewed in making this recommendation are below, labeled exhibits **7, 8, and 9**. Returns are presented net of all fees and expenses.

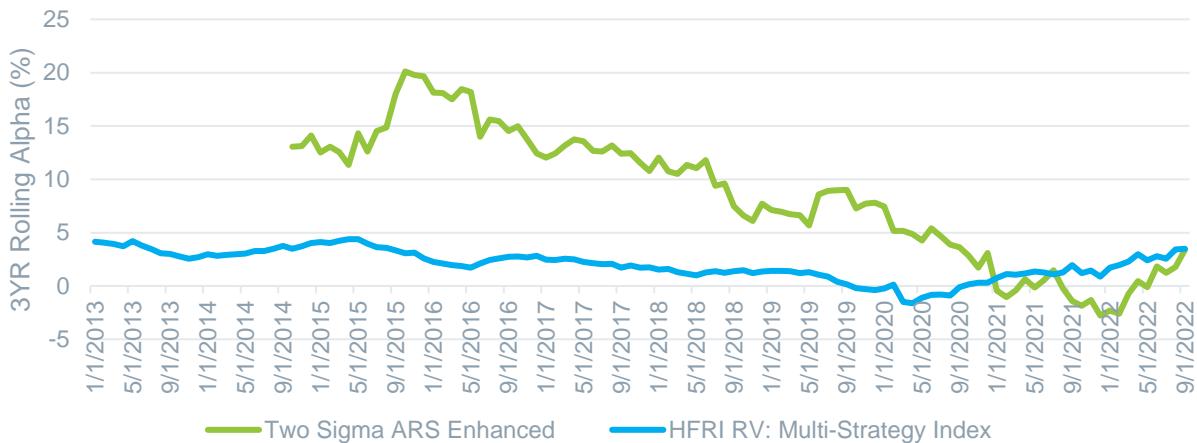
Exhibit 7: Annualized Returns

Annualized Returns as of 9/30/2022	QTD	YTD	1 Year	3 Years	5 Years	7 Years	10 Years	15 Years
Two Sigma ARS Enhanced	2.8	13.2	17.3	4.1	6.5	7.1	10.1	N/A
<i>HFRI RV: Multi-Strategy</i>	0.0	-1.0	-1.7	4.7	3.7	4.0	4.2	3.8
<i>MSCI ACWI</i>	-6.8	-25.6	-20.7	3.7	4.4	7.4	7.3	4.1
<i>Barclays Global Agg</i>	-6.9	-19.9	-20.4	-5.7	-2.3	-0.6	-0.9	1.4
<i>60% ACWI/40% BGbl AGG</i>	-6.8	-23.3	-20.4	0.1	2.0	4.4	4.1	3.3

Exhibit 8: 10-Year MPT Statistics

10-Year Statistics as of 9/30/2022	Return	StDev%	Sharpe Ratio	Max Drawdown	Alpha vs. ACWI	Beta vs ACWI	Up Market vs. ACWI	Down Market vs. ACWI
Two Sigma ARS Enhanced	10.1	8.2	1.1	-14.8	9.2	0.03	33.9	-10.9
HFRI RV: Multi-Strategy	4.2	3.5	1.0	-6.6	2.3	0.19	22.8	9.6
MSCI ACWI	7.3	14.0	0.5	-25.6	0.0	1.00	100.0	100.0
Barclays Global Agg	-0.9	5.3	-0.3	-23.7	-2.8	0.18	8.9	21.8
60% ACWI/40% BGbl AGG	4.1	9.6	0.4	-23.3	-1.0	0.67	61.8	69.2

Exhibit 9: 3-Year Rolling Alpha vs. MSCI ACWI



Team

Two Sigma Absolute Return Enhanced leverages the firm's broad research and development team, which includes in excess of 1,000 individuals and more than 200 PhDs. The portfolio management team consists of Marc Azer, who runs the equities trading portion of the strategy (ATV), Ben Yospe, who oversees the directional macro portfolio (MTV), Gabrielle Etienne, who runs the relative value macro piece of the portfolio (HTV), and Grace Gu, who heads up the newly launched scientific discretionary macro portfolio (NTV). Mr. Azer reports up into Alex Ginsburg, the Chief Investment Officer overseeing equities strategies at the firm. The other three individuals work underneath Geoff Duncombe, who oversees Two Sigma's macro investment activities.

Two Sigma has teams of researchers dedicated to different areas of the investment process,



including model generation, trading and execution, and portfolio construction. Researchers pre-register a hypothesis and gain access to a subset of available historical market data in order to test and train their models. If a statistical model shows promise, the researcher is given additional market data to re-test the hypothesis out of sample. Models that both produce positive alpha and are differentiated relative to Two Sigma's existing library of models can be selected for inclusion in the portfolio. The process of forcing researchers to pre-register a hypothesis and reserving a subset of the data to test out of sample before live trading is designed to avoid selection bias. Researchers are also responsible for evaluating how models that are already in production within the portfolio work in real time. If models go out of favor, a researcher will work the portfolio managers to determine if the model should be excluded from the portfolio going forward.

Conclusion

RVK recommends that North Dakota Board of University and School Lands invest \$300 million in the Balyasny Atlas Enhanced Fund and \$150 million in Two Sigma's Absolute Return Enhanced strategy. The managers together represent a strong combination that both builds on and complements the multi-strategy portfolio's existing exposure to Millennium.

Balyasny utilizes a model substantially similar to that of Millennium, and has similar strategic advantages, including the ability to attract and retain talent due to its partial pass-through fee structure. The firm's risk management systems and processes have improved substantially following the hires of Alex Lurye, the firm's Chief Risk Officer, and Jeff Runnfeldt, its Head of Equities, in the summer of 2018. RVK believes that these and other related investments in human capital are a significant factor contributing to Balyasny's more recent success. The firm has navigated highly volatile periods over the past several years exceptionally well. For example, in the first quarter of 2020 amid the Covid-crisis and subsequent bear market in equities, Balyasny produced returns of 4.9%. Through the third quarter of 2022, another negative period for equity markets, Balyasny Atlas Enhanced again produced positive results, returning 8.2% as global equities fell 25.6% over the same time period. RVK further appreciates Balyasny's investment in its Anthem program, a growing and thus far successful effort to cultivate PM talent internally, which may allow the firm to partially sidestep the high-cost arms race for external portfolio managers commonly seen across competitors that utilize a pass-through fee model.

Two Sigma Absolute Return Enhanced is a top tier quantitative hedge fund that utilizes a market neutral, multi-asset class investment approach. The firm has a robust research process and depth of expertise in quantitative investing matched by few other firms in its space. Importantly, the firm's culture promotes ongoing discovery and evolution of the investment program. Successful quantitative investing requires the ability to uncover new differentiated sources of return. As alpha signals are discovered, they tend to slowly decay over time as more market participants enter a



particular strategy. Two Sigma makes a consistent effort to build capacity in new markets and in new return forecasting models, utilizing computing power and vast data resources that give it an edge in the process of model discovery. The firm builds in further resiliency by allowing its models to systematically shift their weights over time, overweighting those that the system finds tend to produce better return forecasts across stocks and asset classes. RVK believes that Two Sigma represents one of just a few quantitative hedge funds with scale that also has the built-in ability to adapt its strategies as the prevailing market environment changes over time. The fund serves as an excellent complement to the more fundamental based investment approaches utilized by Millennium and Balyasny, and its inclusion has the potential to enhance the consistency of alpha generation for the broader multi-strategy portfolio.

Both managers are currently closed; however, RVK has worked with Balyasny, who indicated the firm can take all \$300 million during the first quarter 2023 for the North Dakota Board of University and School Lands. Two Sigma has indicated the firm will accept \$100 million for its February 1, 2023, subscription date and will work to take the additional \$50 million over the following six months, based on opportunities to recycle capacity.



Key Terms – Balyasny Atlas Enhanced

Management Fee	1.50% plus Pass-Through Expenses (PM Compensation)
Incentive Fee/ Allocation	<p>20.0% or Tiered*</p> <p>*Tiered Incentive Fee Schedule:</p> <p>10% if YTD net return is less than 8%</p> <p>15% if YTD net return is at least 8% but less than 12%</p> <p>20% if YTD net return is at least 12% but less than 20%</p> <p>30% if YTD return is at least 20%.</p> <p>The higher incentive fee applies to 100% of returns at each tier. At each level, if the higher incentive allocation were to reduce the YTD net return below the minimum threshold, the incentive allocation is reduced to ensure the minimum return is met.</p>
High Water Mark	The incentive allocation is subject to a standard “high water mark” provision, under which past losses must be recovered before an incentive allocation is applied.
Side Pockets	Balyasny offers a share class to investors that allows for participation in “Growth Equity” investments. The profits, losses, and liabilities from these investments are held in a special investment account and do not accrue to standard share class interests.
Minimum Initial Investment	Minimum initial investment is generally \$5 million.
Minimum Subsequent Investment	Add-on contributions to existing accounts must generally meet a minimum of \$1,000,000.
Withdrawal Frequency and Gating Provision	Investors have the right to withdraw quarterly, limited to 12.5% of each investor's capital per quarter (full exit achieved in 8 quarters). Written notice must be received at least 65 days before withdrawal date.
Lock-Up	No lock-up applies to new investments in Balyasny Atlas Enhanced Fund, though full exit takes two years under the fund's current gating provisions.



Key Terms – Two Sigma Absolute Return Enhanced

Management Fee	3.00%
Incentive Fee/ Allocation	20.0%
High Water Mark	Two Sigma utilizes a modified high-water mark. The manager earns a reduced incentive fee of just 10%, and may not earn a full 20% incentive fee until the fund recovers 150% of prior losses.
Minimum Initial Investment	Undefined. Two Sigma has agreed to take an investment with North Dakota
Minimum Subsequent Investment	Subject to available capacity
Withdrawal Frequency and Gating Provision	Monthly subject to 30 days' notice, no gating provision
Lock-Up	None

B.A:M:

Balyasny Asset Management

North Dakota Board of University and School Lands

December 2022

BAM | Firm Overview

Our mission is to consistently deliver uncorrelated returns in all market environments.

2001

First Year of Investing

\$17.2B

Assets Under Management¹

900+

Investment Professionals²

152

Portfolio Managers²

12.40%

Atlas Enhanced Annualized Return³

Founding Partners have worked together since inception



Dmitry Balyasny
Managing Partner Chief Investment Officer

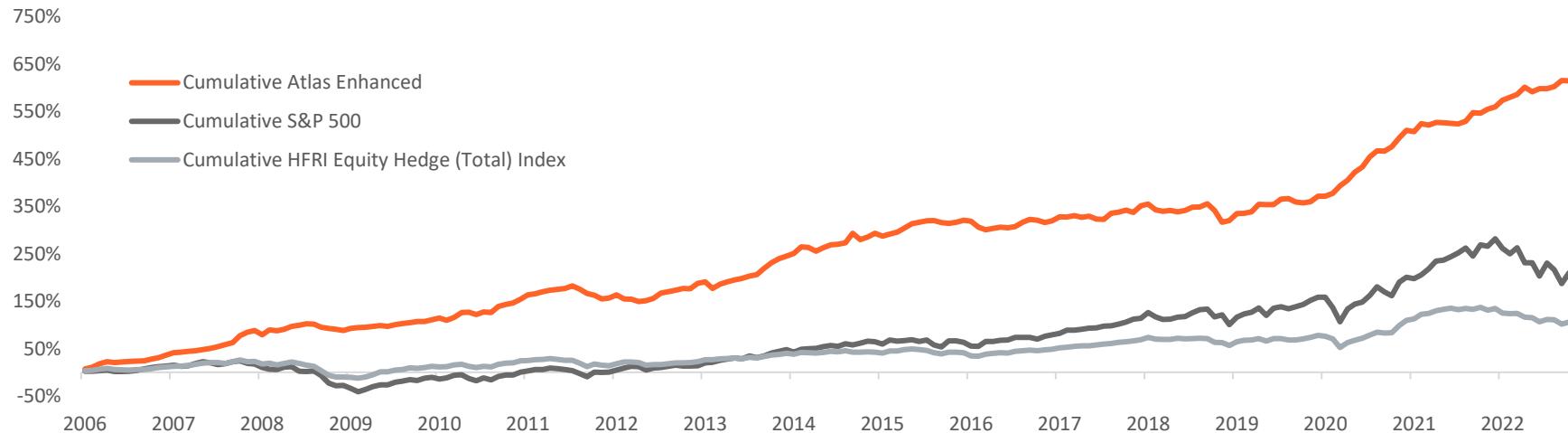


Taylor O'Malley
Co-Founding Partner President



Scott Schroeder
Co-Founding Partner

BAM | Atlas Enhanced Fund Historical Performance vs. Market Indices

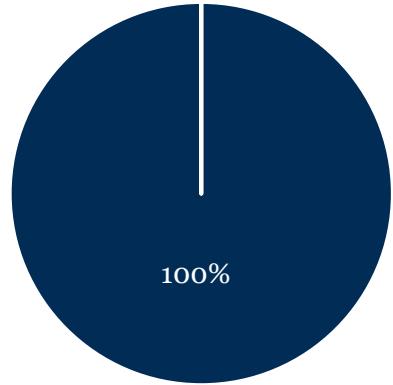


	AEF	S&P 500	HFRIEH (Total) Index
Cumulative Return	615.19%	210.18%	106.32%
Annualized Return	12.40%	6.96%	4.40%
Annualized Volatility	7.19%	15.50%	8.99%
Sharpe	1.57	0.38	0.37
Correlation to S&P 500	0.19	1.00	0.87

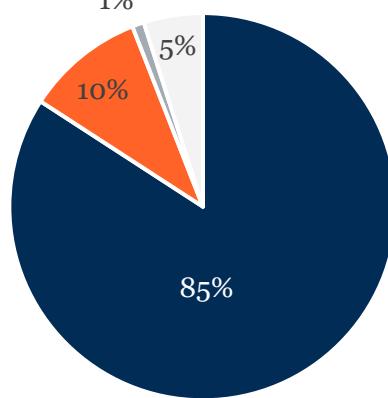
BAM | Evolution of Risk Allocation from Inception to Present

Diversified platform of investment strategies helps to generate attractive risk-adjusted returns in all market environments

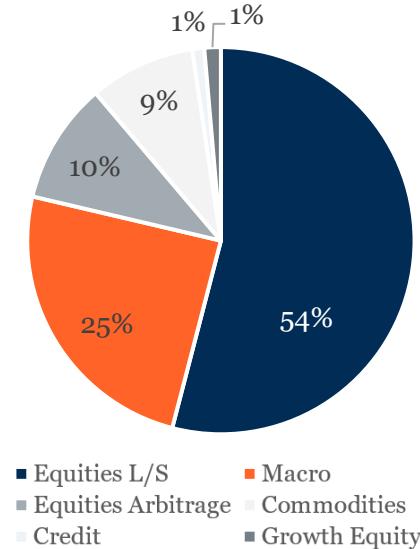
January 1, 2014



January 1, 2018



November 1, 2022¹

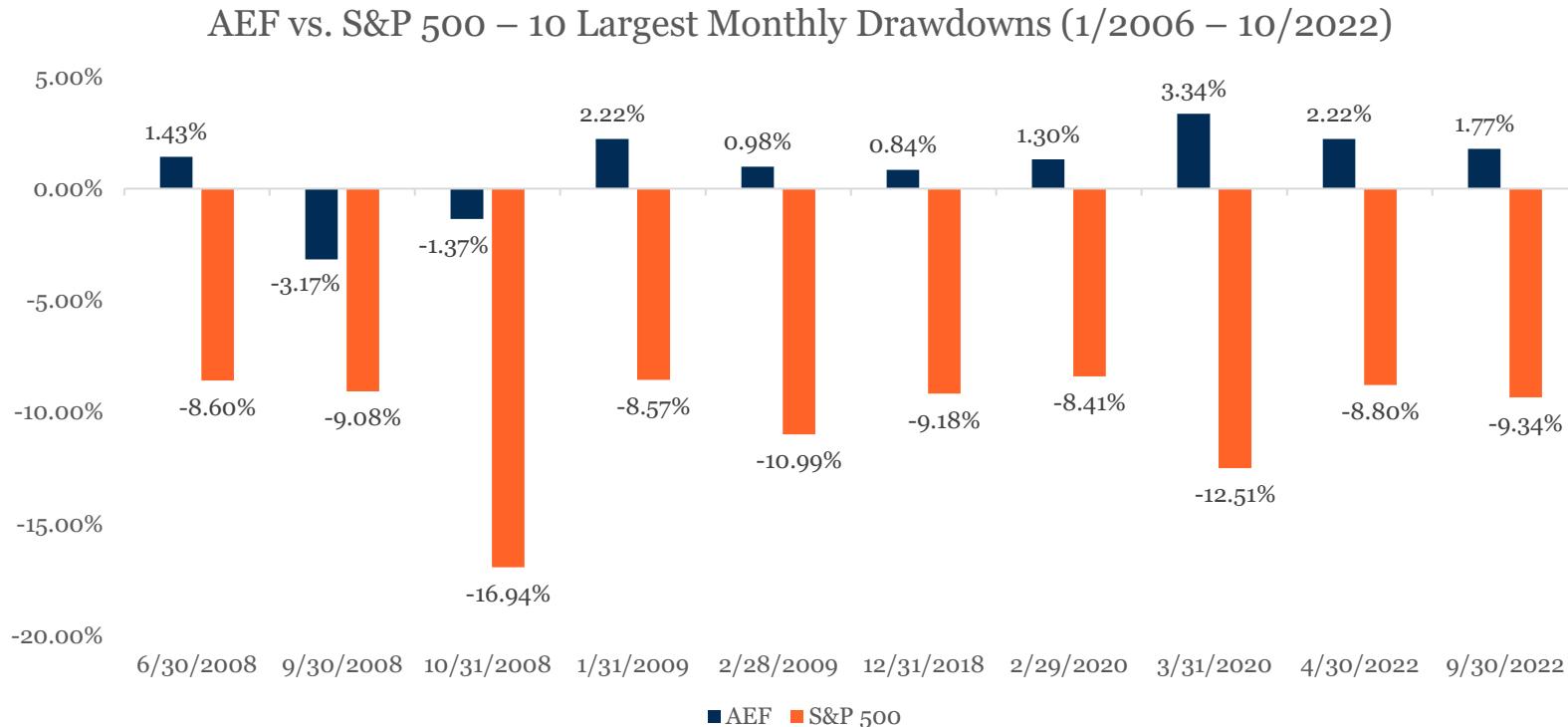


■ Equities L/S

■ Equities L/S ■ Macro
■ Event and Credit ■ Systematic

■ Equities L/S ■ Macro
■ Equities Arbitrage ■ Commodities
■ Credit ■ Growth Equity

BAM | Demonstrated Ability to Preserve Capital in Down Markets



BAM | Culture is Key

Partnership culture for our investors and our teams.

Partner with our investors to achieve their return objectives and investment goals.

20% of our Partners have entrusted us with their capital for 10+ years

Culture is key to attracting, developing, and retaining talent.



Disclosure

The information presented (the “Presentation”) is furnished on a confidential basis. You agree not to reproduce, redistribute or disclose this material, in whole or in part, to any other person or entity except to your tax advisors or as otherwise required by law. The Presentation reflects information, data and opinions as of the date presented or stated herein. The opinions and commentary are subject to change without prior notice or any notice whatsoever. The Presentation is not intended to be investment advice and should not be used as such. Any investment ideas and examples discussed may or may not have been profitable and are a general representation of some of the information utilized in making investment decisions. There is no guarantee that any of the Funds managed by BAM will continue to hold any of the ideas currently in the portfolio. Likewise, there is no guarantee that these ideas will be profitable. Any graphs, charts, illustrations and/or formulas are for illustrative purposes only and cannot be used for investment decision making purposes and are not being included to assist in these decisions. Any L/S data included is inclusive of equity options on a delta adjusted basis and the notional value of equity index futures, ETFs and equity swaps, but exclusive of global macro and credit positions. The “pass-through” fees include, but are not limited to, compensation, including performance-based compensation, of “Investment Team Members” including without limitation, PMs, Analysts, Traders, Programmers, Developers, Risk, Business Development and Portfolio Finance staff (collectively, the “Investment Team”), as well as expenses incurred by, or on behalf, of the Investment Teams. A more comprehensive (although not exhaustive) breakdown of Investment Team expenses can be found in the Fund’s PPM. It is intended that this information is accurate, and without error; however, BAM makes no warranty or representation that the content of the Presentation are accurate, complete or without error.

The returns from April 2011 to December 2020 are for the Atlas Enhanced Fund, Ltd. Class B.

The returns presented starting January 2021 are for Atlas Enhanced Fund, Ltd. Class U.

The returns of Atlas Enhanced Fund, Ltd. (“AEF”) Class B, previously known as Atlas Leveraged Fund, Ltd. (re-named AEF October 2013) are PRO-FORMA prior to March 2011 and, specifically, are hypothetical, estimated, unaudited, subject to adjustment and make material assumptions as described below that should be carefully considered (the “AEF Hypothetical Returns”). As a result, the 2011 year-to-date returns are also Pro Forma.

From January 2006 through March 2009, the AEF Hypothetical Returns exclude the profit and loss from trades placed by COMAC Capital LLP, a sub-adviser to Atlas Master Fund, Ltd. during this time period (the master fund in which AGI invests), but otherwise reflect the actual dollar profit and loss (the “AG Gross Profit and Loss”) of AGI, subject to model fees and leverage (discussed in greater detail below).

The AG Gross Profit and Loss has been obtained from the historical profit and loss data for the Class A shares of AGI (the “Class A Shares”) from January 2006 through March 2009 (the “AG Hypothetical Returns”). The AG Hypothetical Returns are calculated by applying a model fee schedule to the AG Gross Profit and Loss. The model fee consists of a 2% management fee, a 20% performance fee and a “model” investment team expense (similar to the investment team expense that AGI investors are subject to, the “Model ITE”). To calculate the Model ITE, BAM totaled the AGI investment team expense for a given year and divided that by AGI’s average net asset value (“NAV”) for that same year and again divided that by twelve to arrive at an asset based fee equal to an approximate relative percentage of monthly NAV for each year. The Model ITE for (i) 2006 was 3% of NAV and (ii) 2007 through March 31, 2009 was 1.5% of NAV. In addition to the Model ITE, BAM applied a “model” Portfolio Manager Pay-out Expense equal to a percentage of the AEF Hypothetical Returns to the order of (i) 20% for 2006 and 2007; (ii) 50% for 2008; and (iii) 20% for January 2009 through March 2009. The PM Pay-out Expense applied from April 2009 through February 2011 is the actual expense borne by Atlas Enhanced Fund, LP (“AEF LP”). The PM Pay-out Expense applied from March 2011 through December 2015 is the actual expense borne by AEF.

The AG Hypothetical Returns also apply a leverage multiple of 1.65 times the actual exposure of AGI. Specifically, the AG Hypothetical Returns were produced by increasing the AG Gross Profit and Loss by a leverage factor of 1.65 (the “Leverage Factor”). However, the AEF Hypothetical Returns do not apply the Leverage Factor to financing costs for positions entered into using margin or other financing means. The Leverage Factor utilized by the AG Hypothetical Returns is not the amount of exposure used by AGI. Further, the model fees are NOT the actual fees charged to the Class A Shares. Beginning April 2009 through January 2011, the Restricted/non-IPO eligible returns reflect the actual dollar profit and loss (the “AEF LP Gross Profit and Loss”) of a Restricted/non-IPO eligible investor paying 0% management and 0% performance fees in AEF LP.

Disclosure

In February 2011, the returns reflect the actual dollar profit and loss of a Restricted/non-IPO eligible investor paying 2% management and 20% performance fees in AEF LP. (Note: AEF LP did not participate in IPOs, therefore, the Unrestricted/IPO eligible returns are still pro forma as they include profit and loss from IPOs).

The AEF LP Gross Profit and Loss has been obtained from the profit and loss data for the initial investor (the "Initial Investor") in AEF LP beginning April 2009 (the "AEF LP Hypothetical Returns" and, together with the AG Hypothetical Returns, the "Combined Hypothetical Returns"). The Combined Hypothetical Returns include the reinvestment of earnings and dividends. However, the Combined Hypothetical Returns are calculated by applying a model fee schedule to the AEF LP Gross Profit and Loss. The model fee consists of a 2% management fee and a 20% performance fee. Both AEF LP and the Combined Hypothetical Returns include the pass-through of investment team expenses (the "Model Fee"). These fees are NOT the actual fees charged to the Initial Investor. The Initial Investor is not charged a management fee or a performance fee (but is charged the pass-through of investment team expenses, including the Portfolio Manager Pay-out Expense).

Beginning March 2011 the returns presented are estimates of the actual reported returns of the initial full Model Fee paying investor in AEF Ltd. The fees consist of a 2% management fee, and a 20% performance fee.

Therefore, AEF Ltd.'s unrestricted returns prior to April 2011 were created by allocating IPO profit and loss that it did not receive. In order to create the Unrestricted Returns, BAM used the amount of new issue profit and loss that was accretive to AGI. For example, if AGI Restricted profit and loss for a given month was 1.00% and AGI Unrestricted profit and loss for that same month was 1.20%, AEF's unrestricted profit and loss would reflect 2bps of new issue profit and loss as well. Prior to AEF receiving subscriptions from outside investors, AEF generally only received allocations of investments that were oversubscribed or were of "limited opportunity" if the total order was filled. If an order was not entirely filled, the allocation to AEF would be reduced to zero before any other fund's portion was reduced at all. Performance figures include the reinvestment of dividends and other earnings. Particular investors' returns will vary from the historical performance due to the Stub Period, the share class invested in, the timing of subscriptions, withdrawals, redemptions and other factors.

The use of pro forma hypothetical returns has limitations and may not be able to accurately represent the portfolio performance had we managed the strategy with this fee structure. Neither past performance nor hypothetical performance is indicative of future results. There can be no assurances that investors will have returns on invested capital similar to the returns presented because of, among other reasons, lack of operating history, differences in the share class invested in, differences in performance and management fees, economic conditions, regulatory climate, portfolio size, leverage, expenses and structure, as well as investment policies and techniques. The Unrestricted/IPO eligible shares do, but the Restricted/non-IPO eligible shares do not, participate in the gains and losses attributable to "new issues" (formerly "hot issues"). During certain periods, "new issues" may make a material contribution to the Funds' performance.

The December 2019 and the 2019 YTD returns reflect a 49 basis points increase of positive PnL as a result of a rebate of funds in excess of the ITE Cap). The rebate was credited to investors invested in the pass-through share classes of Atlas Enhanced Fund, Ltd. and Atlas Enhanced Fund, L.P. (the "Share Classes") from January 1, 2019 through, at a minimum January 1, 2020 (the "Rebate Period"). The rebate is applied only to calendar year 2019 and only to those investors invested in the Share Classes during the Rebate Period.

An investment in the funds managed by BAM is speculative and involves a high degree of risk. BAM will employ certain trading techniques, such as short selling and the use of leverage, which may increase the risk of investment loss. As a result, performance may be volatile, and an investor could lose all or a substantial amount of his or her investment. Further, the funds managed by BAM have substantial limitations on an investor's ability to redeem or transfer their shares, and there is no secondary market for an interest in the funds and none is expected to develop. Finally, the funds' fees and expenses may offset trading profits. These risks and other important risks are described in detail in a Confidential Private Offering Memorandum available for each of the funds. Prospective investors are strongly urged to review the relevant Confidential Private Offering Memorandum carefully, and consult with their own financial, legal and tax advisors before making an investment in the funds. This is not an offer or solicitation with respect to the purchase or sale of any security. An offering of interests in the funds managed by BAM will be made only by means of a Confidential Private Offering Memorandum and in such jurisdictions where permitted by law. Any investment decision in connection with the funds should be made only on the information contained in the Confidential Private Offering Memorandum that will be provided to prospective investors. This update is not intended to constitute legal, tax or accounting advice or investment recommendations.

Disclosure

Past performance is no guarantee of future results. There can be no assurance nor should it be assumed that future investment performance will conform to any performance set forth in this presentation or that any investments in the funds will be able to avoid losses. An investment in our Funds can lose value. The investment results set forth in this report are provided for illustrative purposes only and may not be indicative of the future investment results.

Although forward-looking statements contained in this presentation are based upon what management of BAM believes are reasonable assumptions, there can be no assurance that forward-looking statements will prove to be accurate, as actual results and future events could differ materially from those anticipated in such statements. BAM undertakes no obligation to update forward-looking statements if circumstances or management's estimates or opinions should change except as required by applicable securities laws. The reader is cautioned not to place undue reliance on forward-looking statements.

The Standard & Poor's 500 Index ("S&P 500") is an index of publicly traded common stocks. The Hedge Fund Research Inc. Equity Hedge Index ("HFRI Hedge") is an index comprised of hedge fund constituents that maintain long and short positions, primarily in equity and equity derived instruments. We have included the results of the S&P 500 and HFRI Hedge Indices (together "the Indices") to show the historical performance of the relevant markets they represent. Comparison of the Fund's performance to the Indices has limitations. The volatility and other material characteristics of the Indices may differ from the Fund's investments and strategies. Furthermore, the Fund may hold substantially more or fewer positions than the holdings of these indices (or their underlying components). In fact, certain or all of the securities held by the Indices (or their underlying components) may not be held by the Fund and certain or all of the securities held by the Fund may not be held by the Indices (or their underlying components) and the Fund may invest in more geographically diverse and less liquid assets than what is held by the Indices.

Pursuant to an exemption from the Commodity Futures Trading Commission in connection with pools whose participants are limited to qualified eligible persons, an offering memorandum for this pool is not required to be, and has not been, filed with the Commission. The Commodity Futures Trading Commission does not pass upon the merits of participating in a pool or upon the adequacy or accuracy of an offering memorandum. Consequently, the Commodity Futures Trading Commission has not reviewed or approved this offering or any offering memorandum for this pool.



Investment
Management

Two Sigma Absolute Return Enhanced

December 2022

Important Disclosure and Disclaimer Information

This document is provided to the recipient for information purposes only as part of a one-on-one discussion and does not contain certain material information about the investment processes and products discussed, including important disclosures and risk factors associated with an investment therein. As a sophisticated party, the recipient acknowledges that this document and any other information provided in connection herewith should not be relied upon for investment, accounting, legal or tax advice, nor does this document or the associated presentation purport to advise you personally concerning the nature, potential, value or suitability of any particular execution methodology, sector, geographic region, security, portfolio of securities, transaction, investment strategy or other matter. The recipient is reminded that an investment in any security or securities transaction is speculative and involves significant risk, including risk of total loss of capital. In addition, as a condition of receiving this document, the recipient agrees that it will hold harmless and indemnify Two Sigma (as defined below) and its affiliates from any liability resulting from the recipient's use of or reliance on any of the information contained herein for any purpose.

This information does not constitute an offer to sell or the solicitation of any offer to buy any security interest or service, which may only be made at the time a qualified offeree receives a confidential offering memorandum describing the offering, the applicable subscription agreement and certain related materials or otherwise executes the relevant investment management agreement (the "Offering Document(s)"). The information provided herein is qualified in its entirety by such Offering Document(s). The recipient hereof should make an independent investigation as to the matters contained herein, including by consulting its own tax, legal, accounting and other advisors.

This document is highly confidential, is the property of Two Sigma (as defined below) and is to be used solely for your informational purposes. Any internal or external distribution of this information without the express written consent of Two Sigma is prohibited and could be highly damaging to the business operations of Two Sigma and its affiliates. This document shall remain the property of Two Sigma and Two Sigma reserves the right to require the return of this questionnaire at any time.

The recipient is reminded that past performance is not an indicator or guarantee of future results. There is no guarantee that the investment products, strategies, or services discussed herein will be able to achieve their respective investment objectives or that any investor will make a profit, or will not sustain losses, including a total loss of their investment. All results set forth herein, both actual and, if applicable, pro-forma, reflect reinvestment of income. Please see the following pages of this document for important information regarding the use of indices for comparison purposes.

All of the information contained herein is believed to be accurate as of the date hereof, unless otherwise indicated. Certain information contained herein is based on data obtained from third parties and, although believed to be reliable, has not been independently verified by anyone at or affiliated with Two Sigma Investments, LP ("TSI") or Two Sigma Advisers, LP ("TSA," and together with TSI, the "Firm" or "Two Sigma"). Two Sigma provides no assurance as to its accuracy or completeness. There can be no guarantee that the data, information, calculations or methods used to create this report is free from errors,

omissions, imperfections or malfunctions. While some such errors, omissions, imperfections or malfunctions will never be detected, Two Sigma will detect certain such errors, omissions, imperfections or malfunctions that, in its sole discretion, it will not address or fix in the production of current or future such reports and that it will not analyze in order to produce revised reports. Each may modify its investment approach with respect to the investment products it manages and/or any portfolio parameters set forth herein at any time and in any manner that it believes is consistent with the overall investment objectives and disclosures outlined in the applicable Offering Document(s), without notice to investors.

AN INVESTMENT IN ANY OF THE TWO SIGMA INVESTMENT PRODUCTS IS SPECULATIVE AND INVOLVES SIGNIFICANT RISKS, INCLUDING THE RISK OF TOTAL LOSS OF CAPITAL. IN ADDITION, OPPORTUNITIES FOR WITHDRAWAL OR TRANSFER OF INTERESTS IN THE INVESTMENT PRODUCTS DESCRIBED HEREIN ARE LIMITED AND THEREFORE AN INVESTOR MAY NOT HAVE ACCESS TO CAPITAL WHEN THEY DESIRE. THE INVESTMENT PRODUCTS DESCRIBED HEREIN ARE NOT REGISTERED AS INVESTMENT COMPANIES UNDER THE US INVESTMENT COMPANY ACT OF 1940, AS AMENDED. CONSEQUENTLY, INVESTORS WILL NOT BE AFFORDED THE PROTECTIONS OF THE INVESTMENT COMPANY ACT. THE INTERESTS IN THE INVESTMENT PRODUCTS WILL NOT BE REGISTERED UNDER THE US SECURITIES ACT OF 1933, AS AMENDED, OR THE LAWS OF ANY JURISDICTION, INCLUDING THE LAWS OF ANY STATE OF THE UNITED STATES OF AMERICA OR THE LAWS OF ANY NON-US JURISDICTION.

Forward looking statements: This document may include certain statements regarding anticipated future events. These forward-looking statements are inherently subject to significant business, economic, and competitive uncertainties and contingencies, many of which are beyond Two Sigma's control. In addition, these forward-looking statements are subject to assumptions with respect to future business strategies and decisions that are subject to change. Factors which could cause actual results to differ materially from those anticipated include, but are not limited to: competitive and general business, economic, market and political conditions in the United States and abroad; changes in the legal, regulatory and legislative environments in the markets in which Two Sigma operates; and the ability of management to effectively implement certain strategies. Words like "potentially," "believe," "expect," "anticipate," "promise," "plan," and other expressions or words of similar meanings, as well as future or conditional verbs such as "will," "would," "should," "could," or "may" are generally intended to identify forward-looking statements. The recipient is reminded that past performance is not an indicator or guarantee of future results.

Any statements made regarding future events constitute only subjective views or beliefs, should not be relied upon, are subject to change due to a variety of factors, both general and specific, many of which cannot be predicted or quantified and are beyond the control of TSI, the TSI managed investment products, TSA, TSA-managed investment products, and/or their respective affiliates and agents. Future actual results could differ materially from those set forth herein, and no assurances are given that these statements will prove to be accurate or complete, in whole or in any part.

Addressing Potential Conflicts of Interest: Like many Proprietary and Confidential – Not for Redistribution

investment managers, Two Sigma has potential conflicts of interests. The Firm has taken steps to mitigate these potential conflicts, but they can never be completely eliminated. Examples include:

Shared Resources: Research, technology and other resources are shared among trading vehicles/investment products, as well as among Two Sigma and its affiliates, including among TSI, TSA and Two Sigma Securities, LLC.

Portfolio Construction: Trading strategies (some of which are highly capacity constrained) may be shared among different trading vehicles/investment products and can be included or excluded in such trading vehicles/investment products at Two Sigma's discretion.

Investment of Firm Capital: Invested Firm capital is not distributed equally across trading vehicles/investment products and is more highly-concentrated in investment products utilizing strategies with shorter holding periods and/or strategies not available to external investors. Additionally, invested Firm capital often utilizes higher levels of effective leverage.

Fees: Investment products managed by Two Sigma utilize different fee structures.

These descriptions are not complete nor does this list represent all of Two Sigma's potential conflicts of interest. Please refer to the relevant Offering Memorandum or Investment Management Agreement, in addition to TSA's Form ADV, for a more complete discussion of potential conflicts of interest.

Please see the Applicable Offering Memorandum. This information is high-level in nature and may not be complete; the information is subject to change at any time and is qualified in its entirety by the more complete disclosures, risk factors and other terms that are contained in applicable Offering Document(s) and SEC Form ADV. In the case of any inconsistency between the descriptions or terms in this presentation and those contained in the applicable Offering Documents (as may be amended from time to time), the applicable Offering Document shall control.

Where relevant, this financial promotion has been issued by Two Sigma International Limited ("TSIL") which is authorised and regulated by the Financial Conduct Authority ("FCA"). This financial promotion is intended for professional clients and eligible counterparties only. This document is only made available to professional clients and eligible counterparties as defined by the FCA and also to persons of a kind to whom such strategies may lawfully be promoted by an authorised person by virtue of section 238(5) of the Financial Services and Markets Act 2000, the Financial Services and Markets Act 2000 (Exemption) Order 2001 and COBS 4.12.4r.

Tactex Asset Management Inc. (the "Agent") acts as an exempt market dealer in qualifying jurisdictions of Canada with respect to the distribution of securities of certain, specified TSA-managed funds (pursuant to an Agency Agreement between TSA and the Agent) to certain eligible Canadian investors who are permitted to subscribe or apply for securities under an available prospectus exemption. Canadian investors desiring to obtain any further information should please contact

Québec H4C 3C5, Attention: Todd Beallor; Email: tbeallor@tactex.ca; Tel: 1.416.617.1760; Fax: 1.866.859.9764.

TSA provides investment advisory services in connection with multiple strategies and is the investment adviser to, among other entities, Two Sigma Absolute Return Fund, LP, Two Sigma Absolute Return Cayman Fund, Ltd. ("Absolute Return Cayman"), Two Sigma Absolute Return Enhanced Fund, LP, Two Sigma Absolute Return Enhanced Cayman Fund, Ltd. (collectively, the "Feeder Funds"), Two Sigma Absolute Return Master Fund, Ltd. (the "Master Fund" and collectively, "Absolute Return" or the "Funds").

The offer and the marketing of shares of the Funds in Switzerland will be exclusively made to, and directed at, qualified investors (the "Qualified Investors"), as defined in Article 10(3) and (3ter) CISA and its implementing ordinance, at the exclusion of qualified investors with an opting-out pursuant to Art. 5(1) FinSA and without any portfolio management or advisory relationship with a financial intermediary pursuant to Article 10(3ter) CISA ("Excluded Qualified Investors"). Accordingly, the Funds have not been and will not be registered with the Swiss Financial Market Supervisory Authority and no representative or paying agent are currently or are expected to be appointed in Switzerland. Marketing materials relating to the shares of the Funds may be made available in Switzerland solely to Qualified Investors, at the exclusion of Excluded Qualified Investors. The legal documents of the Funds may be obtained free of charge from the Funds.

Any investment products described or referenced herein may not be offered or sold to the public in Brazil. Accordingly, any such investment products have not been nor will be registered with the Brazilian Securities Commission - CVM nor have they been submitted to the foregoing agency for approval. Documents relating to any such investment products, as well as the information contained therein, may not be supplied to the public in Brazil or used in connection with any offer for subscription or sale of securities to the public in Brazil.

The use of the term "Scientific Discretionary" is intended to express, for informational purposes, the combination of human discretion with certain quantitative methods and data. "Scientific" does not imply that a strategy is free from the risks associated with discretionary investment management, or that scientifically-minded or systematic approach will necessarily reduce risks or produce gains



Who We Are

The Science of Intelligent Investing

We are a **technology company** applying our talents to the domain of finance

The world of **finance provides fertile ground for exploration** — vast data, fast feedback, and unbounded opportunity

We work passionately to shape the future of investment management through the **intelligent application of technology**

We have a creative spirit but **speak the language of science**

Our most potent discoveries stem from research and the scientific method, so we focus on **continuous innovation**





What We Do

Two Sigma¹ aims to consistently generate alpha in liquid global markets across a range of conditions using a disciplined, scientific approach

- ◆ Deploy and seek to continuously improve **intelligent investment management systems** first created in 2001
- ◆ Trade equities, futures, FX, and derivatives in 40+ countries
- ◆ Tap the **talents of 2,000+ employees** headquartered in New York with additional offices in Houston, Stamford, Chicago, London, Hong Kong, Shanghai, Portland and Tokyo²
- ◆ Operate as a **Registered Investment Adviser** with the SEC³, a **Qualified Professional Asset Manager ("QPAM")⁴**, and a **Private Fund Manager ("PFM")** licensed with the AMAC⁵
- ◆ Manage **\$61.7 billion** of assets for a global, diversified client base across the Two Sigma Group. This includes \$44.6 billion in absolute return, \$12.7 billion in benchmark-relative, and \$4.3 billion in private investment mandates⁷

Created positive net alpha
every year since our
inception⁶

1. As referenced in this presentation, "Two Sigma" or "the Firm" generally refers collectively to Two Sigma Investments, LP, and Two Sigma Advisers, LP and their affiliates.

2. Employee count is approximate as of November 1, 2022.

3. Two Sigma Investments, LP and Two Sigma Advisers, LP are registered with the U.S. Securities and Exchange Commission (the "SEC"). Registration does not imply review, endorsement or approval by the SEC.

4. QPAM designation applicable to Two Sigma Advisers, LP only.

5. PFM designation applicable to Two Sigma China Co., Ltd. only, a Wholly Foreign-Owned Enterprise.

6. "Net alpha" is measured against zero for absolute return products and against the applicable benchmark for beta-1 products and is net of management fees, incentive allocations and all other fund and trading expenses, in each case, to the extent applicable. Statistics regarding investor and product performance are dollar-weighted by AuM as of December 31, 2021. Performance statistics only include performance of unaffiliated investors.

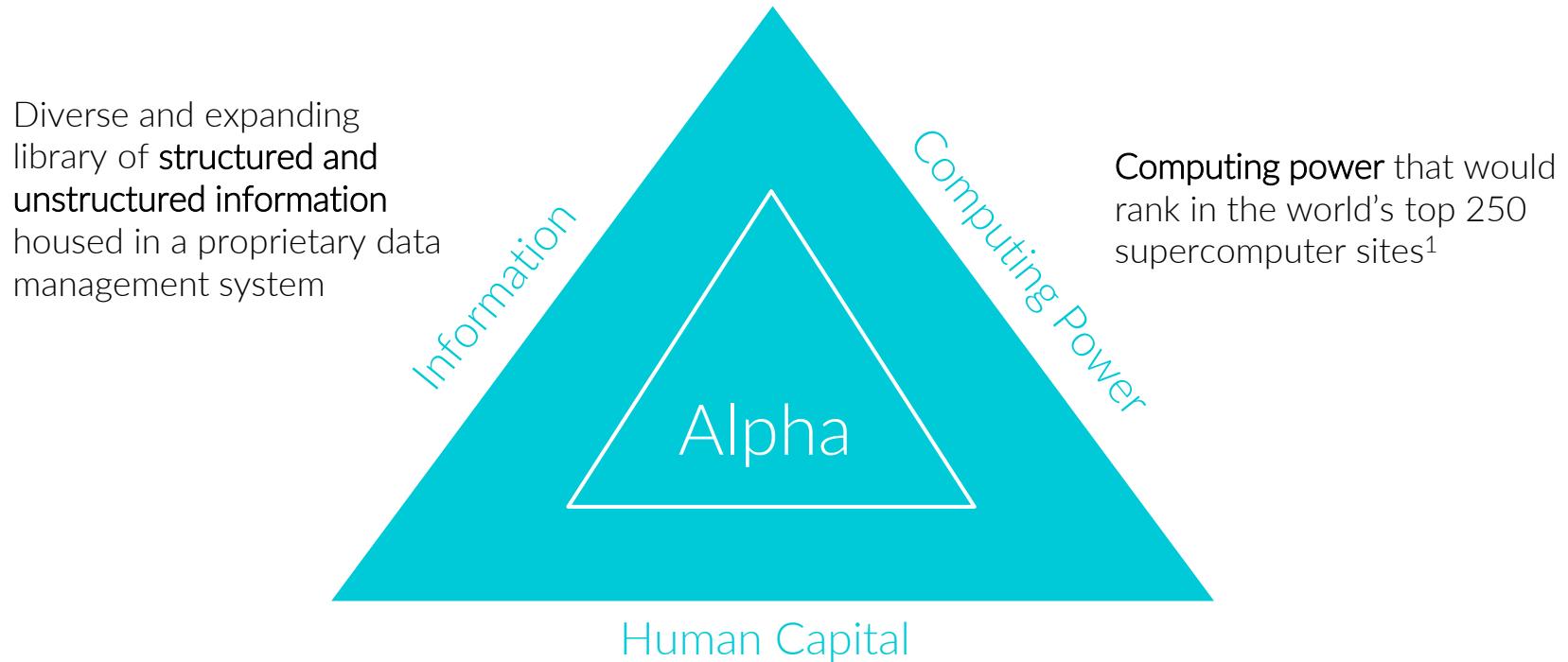
7. AuM is approximate as of November 1, 2022. Beginning August 1, 2020, "Two Sigma Group" AUM includes the AUM of the following affiliated investment managers: Two Sigma Investments, LP ("TSI"), Two Sigma Advisers, LP ("TSA"), Two Sigma China Co., Ltd. ("TSC"), TSPI, LP, and Two Sigma Ventures, LP. Absolute return and benchmark relative assets are managed across TSI, TSA and TSC and reflect the most recently available valuations as of the date of this report and include capital activity as of the first day of the following month. Private investment assets are managed across TSPI, LP and Two Sigma Ventures, LP and reflect the most recently available valuations as of the date of this report and include any unfunded capital commitments. In order to avoid double-counting assets, Two Sigma AUM has been adjusted downward to account for instances where a product advised by one Two Sigma investment manager invests in another product managed by the same, or an affiliated, Two Sigma investment manager.





How We Serve Our Investors

Two Sigma's systematic approach combines financial markets expertise, massive amounts of data and world-class computing power in an effort to create a sustained advantage

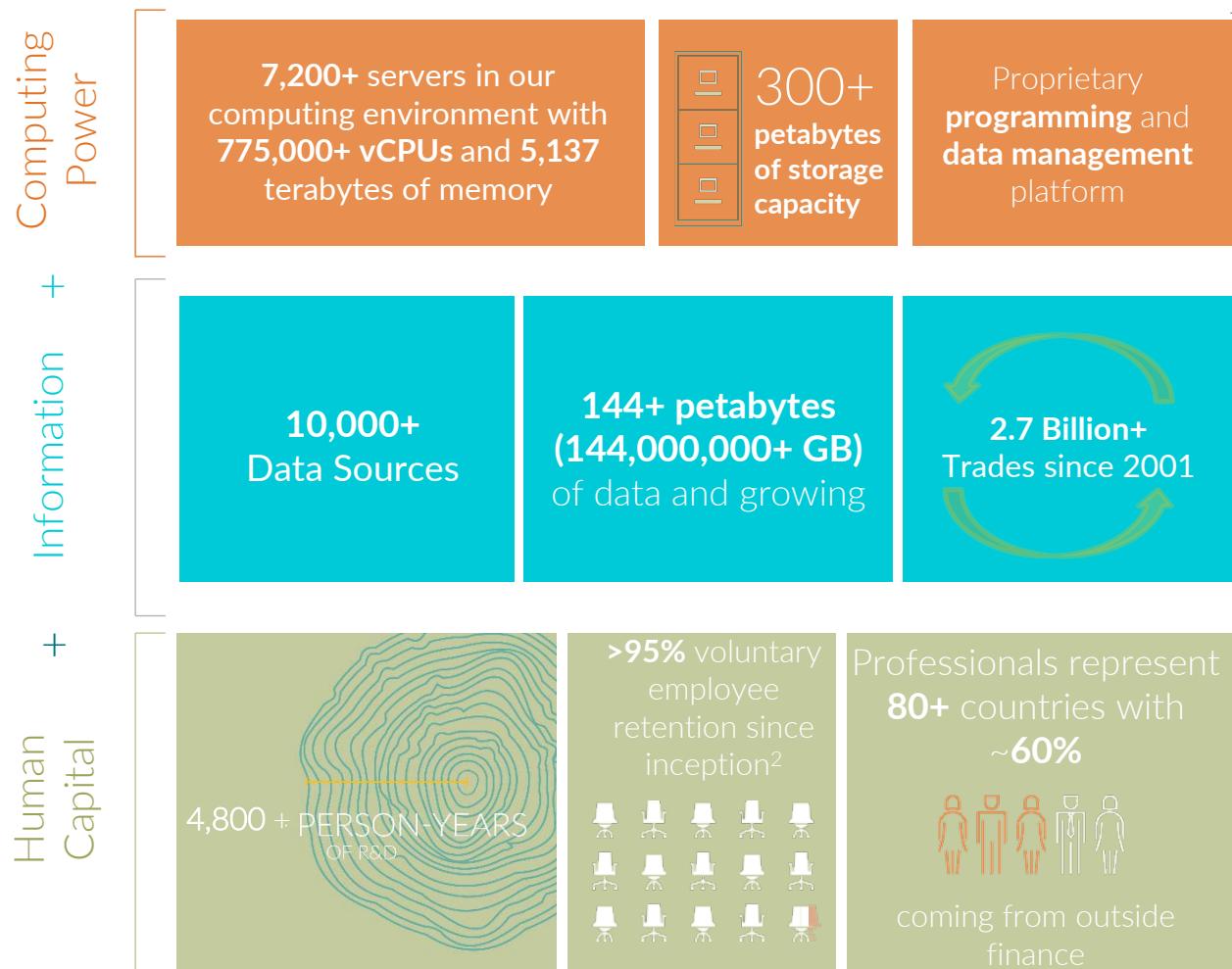


Experienced and diverse team of 1,000+ in research and development, including 200+ PhDs, working collaboratively on an integrated platform to create alpha

1. Based on Two Sigma's SimFarm computing power compared with publicly-available data from <http://www.top500.org>, (November 2018 list) accessed January 2019.



Where We Are Today



- Two Sigma believes that **measurement leads to improvement**, so we try to measure as much as possible

Two Sigma Performance¹

- 93.6% of our investors have earned positive alpha
- 70.2% positive (net alpha) product quarters
- 20 consecutive years of positive alpha

1. "Net alpha" is measured against zero for absolute return products and against the applicable benchmark for beta-1 products and is net of management fees, incentive allocations and all other fund and trading expenses, in each case, to the extent applicable. Statistics regarding investor and product performance are dollar-weighted by AuM as of December 31, 2021. Performance statistics only include performance of unaffiliated investors. "Net alpha product quarters" is an asset weighted figure derived by (i) taking the sum of the average notional AuM of each Two Sigma-managed product group by quarter and (ii) dividing the sum of the average notional AuM for the positive net alpha product quarters by (i).

2. "Voluntary employee retention" is calculated by subtracting the rate of voluntary employee attrition from 100%. Voluntary employee attrition is calculated first for each calendar year as the number of voluntary departures divided by the average headcount in that calendar year, then averaged across all calendar years since Two Sigma's inception. This statistic is as of December 31, 2021.

Two Sigma Absolute Return Enhanced Profile

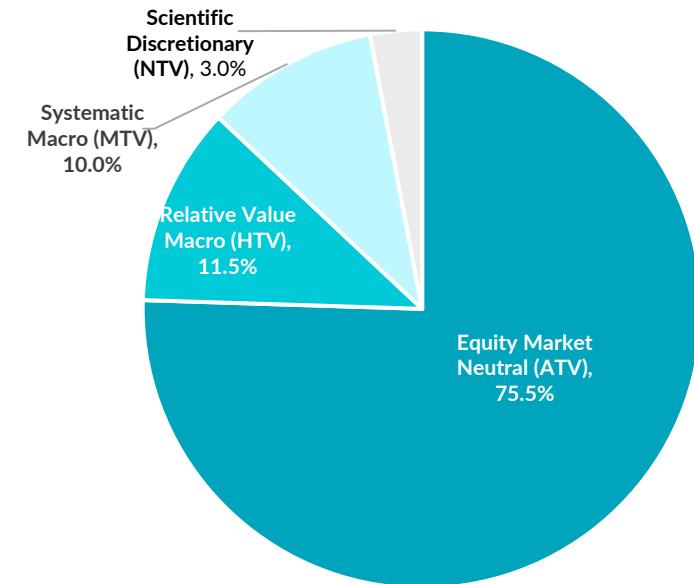
Strategy Objective

Two Sigma Absolute Return Enhance Fund, LP ("Absolute Return Enhanced") seeks to deliver low-correlated absolute returns through the application of equity market neutral and macro strategies to global liquid markets

Overview¹

Launch date:	November 2011
Mandate:	Equity Market Neutral + CTA/Managed Futures + Relative Value Macro + Scientific Discretionary Macro
Typical Markets/Instruments:	Equities, Futures, FX Spot & Forwards, Government Bonds, CDS and Macro Relative Value
Max Volatility Across TSA Portfolios ³ :	No more than 12% annualized over a 3-year rolling period
Liquidity:	Monthly, with 30 days' notice
Fees:	3.0% management fee, 20.0% incentive allocation
Leverage Adjusted Product Group AuM ⁴ :	\$15,593 million (as of December 1, 2022)
Inception-to-Date Annualized Net Return (November 2011 to November 2022) ⁵ :	9.45% (as of November 30, 2022)

Absolute Return Enhanced Capital Allocation²



1. "Typical" statistics are approximations based on historical data. Such information is not intended to suggest that the investment product has (or will continue to) perform in such a way.

2. Allocation percentages are as of November 1, 2022 and are subject to certain withdrawal terms as set forth in more detail in Absolute Return Enhanced's Confidential Offering Memorandum, which also contains certain risks, conflicts of interest and other important information relating thereto, including additional information regarding Two Sigma Absolute Return Allocator Fund, LLC.

3. "TSA Portfolios" mean ATV and MTV.

4. This figure is presented as of December 1, 2022. Product Group AUM is the aggregate AUM of the feeder funds that are invested in Two Sigma Absolute Return Master Fund, LLC (the "Absolute Return Master Fund"). Leverage Adjusted Product Group AUM is the Product Group AUM adjusted to account for the different leverage levels employed by the feeder funds that are invested in the Absolute Return Master Fund.

5. Return statistics reflect the performance of Absolute Return Enhanced for the periods referenced and are net of a 3% management fee, 20% incentive allocation and all other fund expenses, and reflect the reinvestment of income. Each investor's rate of return may vary from Absolute Return Enhanced's performance due to, among other things, the timing of capital transactions, different fee arrangements, and the allocation of new issue income, if any. Performance statistics are computed using monthly returns. Refer to Absolute Return Enhanced's offering materials for a complete description of investment terms and details. November 2022 performance is estimated and all 2022 performance information is unaudited.



For more information, please contact:

Two Sigma Investments, LP

Two Sigma Advisers, LP

100 Avenue of the Americas
New York, NY 10013

P +1 212 625 5700

F +1 212 625 5800

www.twosigma.com

RE: Commissioner's Report
(No Action Requested)

- One more significant gas royalties settlement achieved; continuing negotiations with six remaining
- Nearing end of new minerals system design testing; phased go-live planned in January
- Planning for legislative session; meeting with legislators and providing information as requested
- Presented to North Dakota Petroleum Council year-end board meeting (November 29th)
- Attended Governor Burgum's budget presentation to legislature (December 7th)
- Attended December 9th SIB Investment Committee meeting as voting member
- Attended December 16th State Investment Board meeting as voting member

HR Update

- Chief Investment Officer – offer accepted, pending background check
- Otherwise fully staffed

SURFACE DIVISION

Encumbrances issued by
Commissioner during November
2022:

14 Right of Way Agreements
generating \$126,947 in income
for the Trusts.



Photo Credit: Jacob Lardy
McKenzie County 147-101-16

MINERALS DIVISION

The Minerals Division is preparing for the Department's next online Oil & Gas Lease Auction. Due to IT system updates, the auction will open on **March 7, 2023**, and close on **March 14, 2023**. The auction will be hosted by EnergyNet.

90 mineral tracts, comprising a total of 8,611.87 net mineral acres, have been nominated to date.

The **nomination deadline** has been extended to **January 20, 2023**.

Mineral Tracts nominated for the
March 7-14, 2023
Online Oil & Gas Lease Auction

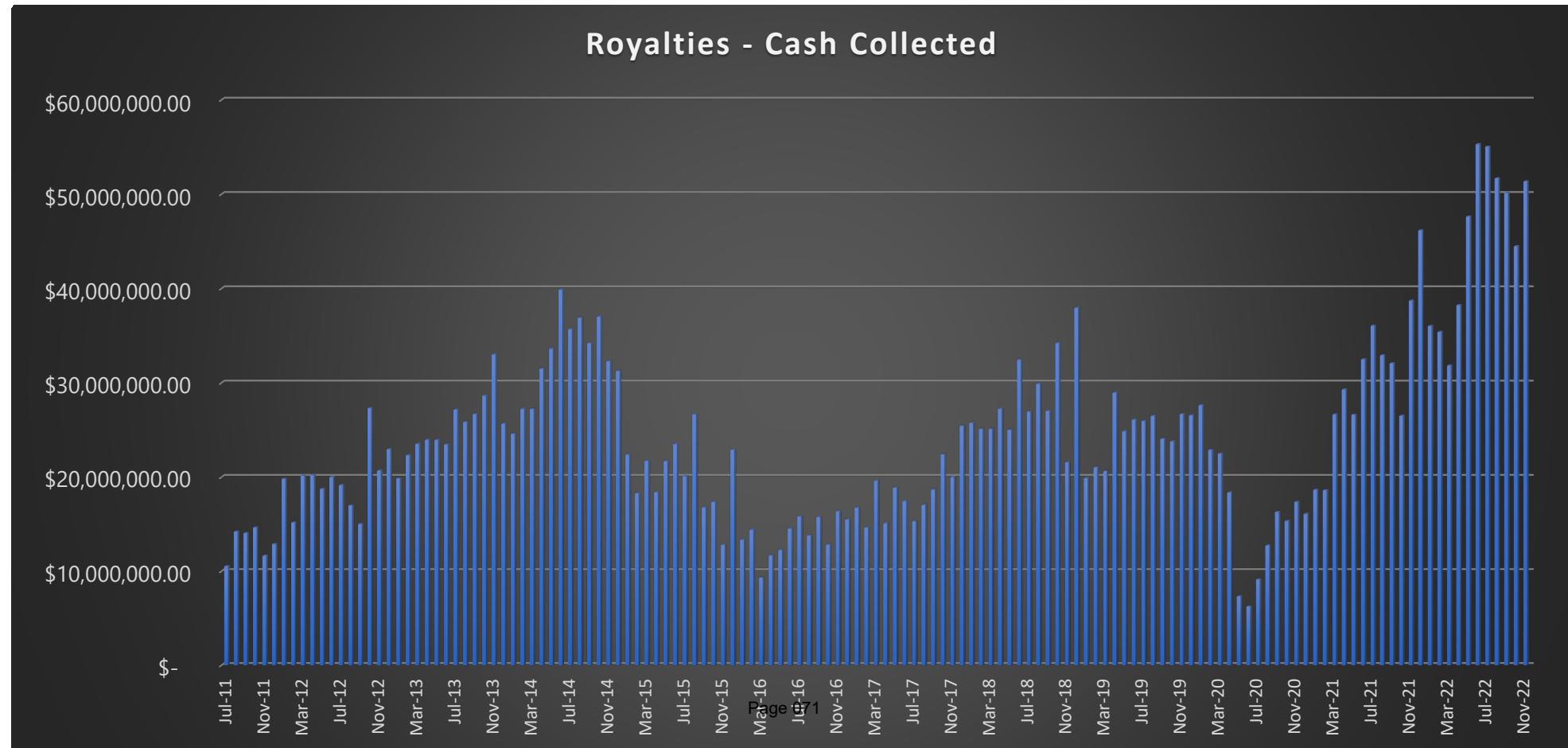
County	Tracts	Net Acres
Billings	6	800
Burke	11	1045.22
Divide	27	2,640.14
Golden Valley	4	289.17
McKenzie	5	720
Stark	18	1,442.84
Ward	19	1,674.50
Totals	90 tracts	8,611.87 net acres

NDDTL-managed Interests in Wells & Production

Summary of NDIC well and production data from 1/2021 through 09/2022 as provided by MineralTracker on 11/19/2022

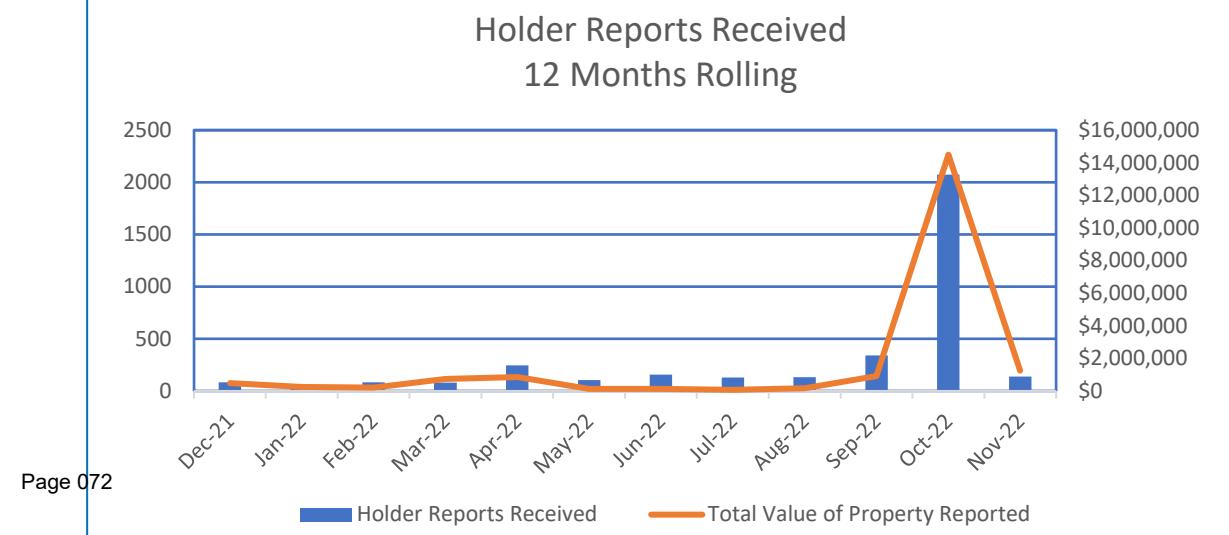
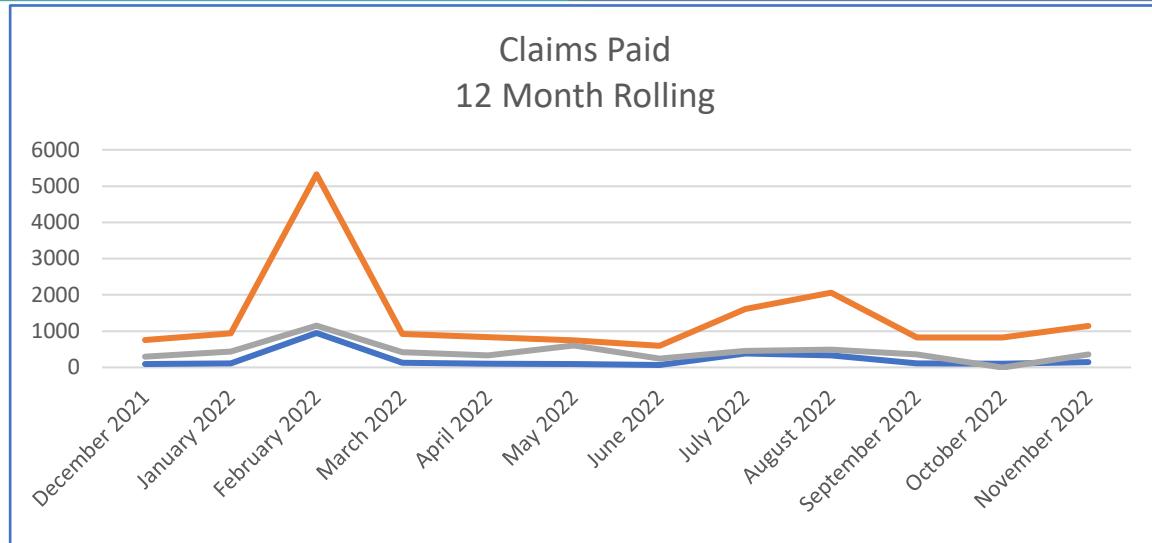
Production Month	State Total Producing Well Count	DTL Producing Well Count	% of State Total	State Total Oil Production	DTL Gross Oil Production	% of State Total	DTL Net Oil Production	% of State Total	State Total Gas Production	DTL Net Gas Production	% of State Total
1/1/2021	15,688	7,762	49.48%	35,193,988	16,734,855	47.55%	468,380	1.33%	88,323,040	1,123,471	1.27%
2/1/2021	15,600	7,773	49.83%	30,021,984	14,574,224	48.55%	404,534	1.35%	75,753,835	989,314	1.31%
3/1/2021	16,019	7,924	49.47%	34,018,211	16,664,675	48.99%	462,244	1.36%	88,869,457	1,197,104	1.35%
4/1/2021	16,198	8,024	49.54%	33,327,638	16,411,570	49.24%	482,547	1.45%	88,594,617	1,264,888	1.43%
5/1/2021	16,426	8,128	49.48%	34,688,116	17,603,893	50.75%	547,633	1.58%	92,646,964	1,400,369	1.51%
6/1/2021	16,646	8,240	49.50%	33,747,575	16,861,175	49.96%	530,298	1.57%	89,817,187	1,346,876	1.50%
7/1/2021	16,690	8,240	49.37%	33,156,322	16,337,528	49.27%	495,438	1.49%	89,390,537	1,262,362	1.41%
8/1/2021	16,756	8,248	49.22%	34,046,077	16,817,110	49.40%	488,992	1.44%	91,909,291	1,284,148	1.40%
9/1/2021	16,836	8,281	49.19%	33,087,875	16,395,776	49.55%	474,772	1.43%	90,643,730	1,282,516	1.41%
10/1/2021	16,958	8,362	49.31%	34,123,358	17,009,956	49.85%	484,892	1.42%	92,925,368	1,321,258	1.42%
11/1/2021	17,056	8,388	49.18%	34,542,381	17,167,755	49.70%	495,434	1.43%	92,483,741	1,336,967	1.45%
12/1/2021	16,998	8,408	49.46%	35,174,974	17,442,025	49.59%	502,137	1.43%	93,965,319	1,350,973	1.44%
1/1/2022	16,675	8,245	49.45%	33,454,475	16,636,138	49.73%	483,786	1.45%	88,067,069	1,283,554	1.46%
2/1/2022	16,545	8,189	49.50%	30,279,102	15,336,010	50.65%	422,539	1.40%	80,574,017	1,155,212	1.43%
3/1/2022	16,881	8,330	49.35%	34,570,481	17,429,614	50.42%	478,482	1.38%	93,402,598	1,328,609	1.42%
4/1/2022	16,706	8,276	49.54%	26,890,920	13,820,248	51.39%	396,676	1.48%	73,605,413	1,073,061	1.46%
5/1/2022	16,725	8,277	49.49%	31,928,557	16,422,478	51.44%	472,616	1.48%	85,700,517	1,237,931	1.44%
6/1/2022	17,032	8,404	49.34%	32,053,704	16,434,353	51.27%	470,231	1.47%	91,018,491	1,330,675	1.46%
7/1/2022	17,110	8,432	49.28%	31,817,942	16,131,107	50.70%	450,139	1.41%	94,799,549	1,377,358	1.45%
8/1/2022	17,325	8,516	49.15%	31,564,744	15,954,373	50.54%	445,493	1.41%	93,819,443	1,367,305	1.46%
9/1/2022	17,428	8,603	49.36%	31,324,387	16,337,297	52.16%	438,561	1.40%	92,718,278	1,347,400	1.45%

As of November 2022, for fiscal year 2022-23 the Department has received **\$252,738,267** in royalties as compared to **\$166,288,859** last fiscal year at this time.



UNCLAIMED PROPERTY DIVISION

For the month of November 2022, the Division paid 356 claims with \$456,259 returned to rightful owners/heirs and received 139 holder reports with a dollar value of \$1,263,316.



**RE: Financial Statements Position Report (Unaudited) for period ended September 30, 022
(No Action Requested)**

The following statements represent the unaudited financial position for the various trusts and funds managed by the Department of Trust Lands. The unaudited financial positions are two months delayed as a significant portion of the revenue for Commons Schools Trust, Strategic Investment and Improvements Fund, and Coal Development Trust includes gross production tax, oil extraction tax and coal severance tax distributions which are received two months after production date.

NORTH DAKOTA
BOARD OF UNIVERSITY AND SCHOOL LANDS

Financial Position Report
(Unaudited)

For period ended September 30, 2022



Board of University and School Lands		
Comparative Financial Position (Unaudited)		
Schedule of Net Assets		
Assets by Trust:	September 30, 2022	September 30, 2021
Common Schools	\$5,493,630,742	\$5,727,405,886
North Dakota State University	83,819,189	86,162,609
School for the Blind	14,482,303	15,378,657
School for the Deaf	22,187,515	24,446,028
State Hospital	14,780,372	16,346,641
Ellendale *	26,764,209	27,904,158
Valley City State University	14,649,574	15,073,306
Mayville State University	10,731,781	10,348,862
Youth Correctional Center	29,715,509	30,502,581
State College of Science	20,505,268	22,056,973
School of Mines **	25,563,906	26,688,395
Veterans Home	5,442,784	6,038,379
University of North Dakota	40,541,129	41,352,103
Capitol Building	6,292,153	3,601,107
Strategic Investment and Improvements	967,035,699	628,858,830
Coal Development	70,652,057	71,448,412
Indian Cultural Education Trust	1,282,528	1,437,515
Theodore Roosevelt Presidential Library	50,483,394	55,748,291
Total	<u>\$6,898,560,111</u>	<u>\$6,810,798,732</u>
Assets by Type:		
Cash	\$525,976,572	\$355,122,331
Receivables	8,818,509	6,978,185
Investments ***	6,297,334,096	6,388,861,856
Office Building (Net of Depreciation)	235,778	307,163
Farm Loans	4,591,926	4,988,534
Energy Development Impact Loans	8,799,229	9,587,974
School Construction Loans (Coal)	26,935,398	29,528,980
Payables	-	-
Due to/from Other Trusts and Agencies	25,868,603	15,423,709
Total	<u>\$6,898,560,111</u>	<u>\$6,810,798,732</u>

*** Ellendale Trust**

The following entities are equal beneficiaries of the Ellendale Trust:

Dickinson State University	School for the Blind
Minot State University	Veterans Home
Dakota College at Bottineau	State Hospital
	State College of Science - Wahpeton

**** School of Mines**

Benefits of the original grant to the School of Mines are distributed to the University of North Dakota.

***** Investments**

Includes available cash available for loans, investments, abandoned stock and claimant liability.

Board of University and School Lands		
Comparative Financial Position (Unaudited)		
Combined Permanent Trusts	September 30, 2022	September 30, 2021
Balance Sheet		
Assets:		
Cash	\$175,460,187	\$103,242,727
Interest Receivable	7,389,127	5,931,514
Investments	5,611,729,005	5,936,373,025
Farm Loans	4,591,926	4,988,534
Accounts Receivable	-	-
Accounts Payable	-	-
Due from Other Agencies	25,782,829	15,342,204
Office Building (Net of Depreciation)	235,778	307,163
Total Assets	\$5,825,188,852	\$6,066,185,167
Liabilities:		
Unclaimed Property Claimant Liability	\$22,357,233	\$16,461,434
Due to Other Funds	17,334	19,152
Accounts Payable	-	-
Total Liabilities	22,374,567	16,480,586
Equity:		
Fund Balance	5,971,957,865	6,057,564,355
Net Income/(Loss)	(169,143,580)	(7,859,774)
Total Liabilities and Equity	\$5,825,188,852	\$6,066,185,167
Income Statement		
Income:		
Investment Income	\$26,837,158	\$28,068,126
Realized Gain/(Loss)	23,486,217	155,176,813
Unrealized Gain/(Loss)	(256,976,214)	(197,356,407)
Royalties - Oil and Gas	42,803,317	29,832,403
Royalties - Coal	116,462	63,714
Royalties - Aggregate	7,230	2,318
Bonuses - Oil and Gas	943,792	576,790
Bonuses - Coal	8,010	-
Rents - Surface	1,483,508	1,681,242
Rents - Mineral	131,826	41,627
Rents - Coal	6,101	4,100
Rents - Office Building	-	-
Encumbrances - Surface	116,019	-
Sale of Capital Asset	-	-
Miscellaneous Income	50	-
Oil Extraction Tax Income	40,539,913	23,294,217
Unclaimed Property Income	290,130	(1,225,623)
Total Income	(120,206,481)	40,159,320
Expenses and Transfers:		
Investment Expense	1,519,863	560,570
In-Lieu and 5% County Payments	-	-
Administrative Expense	624,878	656,380
Operating Expense - Building	12,358	22,144
Transfers to Beneficiaries	46,780,000	46,780,000
Total Expense and Transfers	48,937,099	48,019,094
Net Income/(Loss)	(\$169,143,580)	(\$7,859,774)

Board of University and School Lands

Comparative Financial Position (Unaudited)

Capitol Building Trust

	<u>September 30, 2022</u>	<u>September 30, 2021</u>
Balance Sheet		
Assets:		
Cash	\$1,614,365	\$592,961
Interest Receivable	25,073	20,923
Investments	4,652,714	2,987,222
Total Assets	<u><u>\$6,292,152</u></u>	<u><u>\$3,601,106</u></u>
Liabilities:		
Due to Other Trusts and Agencies	\$0	\$0
Accounts Payable	-	-
Total Liabilities	<u><u>\$0</u></u>	<u><u>\$0</u></u>
Equity:		
Fund Balance	6,772,499	3,462,488
Net Income	(480,347)	138,618
Total Liabilities and Equity	<u><u>\$6,292,152</u></u>	<u><u>\$3,601,106</u></u>
Income Statement		
Income:		
Investment Income	\$18,624	\$9,312
Realized Gain(Loss)	(258)	1,504
Unrealized Gain/(Loss)	(22,461)	(7,473)
Royalties - Oil and Gas	531,266	134,252
Bonuses - Oil and Gas	-	-
Bonus - Coal	-	-
Rents - Surface	(1,011)	987
Rents - Mineral	802	802
Encumbrances - Surface	-	-
Royalties - Aggregate	-	-
Total Income	<u><u>526,962</u></u>	<u><u>139,384</u></u>
Expenses and Transfers:		
Investment Expense	40	(3,656)
In-Lieu and 5% County Payments	-	-
Administrative Expense	7,269	4,422
Transfers to Facility Management	1,000,000	-
Transfers to Legislative Council	-	-
Transfer to Supreme Court	-	-
Total Expense and Transfers	<u><u>1,007,309</u></u>	<u><u>766</u></u>
Net Income/(Loss)	<u><u><u><u>(\$480,347)</u></u></u></u>	<u><u><u><u>\$138,618</u></u></u></u>

Board of University and School Lands

Comparative Financial Position (Unaudited)

Coal Development Trust

	September 30, 2022	September 30, 2021
Balance Sheet		
Assets:		
Cash	\$886,417	\$875,628
Interest Receivable	149,962	216,234
Investments	33,795,278	31,158,090
Coal Impact Loans	8,799,229	9,587,974
School Construction Loans	26,935,398	29,528,980
Due from other Trusts and Agencies	285,913	271,684
Total Assets	\$70,852,197	\$71,638,590
Liabilities:		
Due to Other Trusts and Agencies	200,139	190,179
Equity:		
Fund Balance	70,463,180	71,117,671
Net Income	188,878	330,740
Total Liabilities and Equity	\$70,852,197	\$71,638,590
Income Statement		
Income:		
Investment Income	\$105,203	\$95,723
Interest on School Construction Loans	105,985	180,643
Realized Gain/(Loss)	(1,862)	15,579
Unrealized Gain/(Loss)	(147,196)	(\$77,424)
Coal Severance Tax Income	126,446	121,311
Total Income	188,576	335,832
Expenses and Transfers:		
Investment	(302)	4,848
Administrative	-	244
Transfers to General Fund	-	-
Total Expense and Transfers	(302)	5,092
Net Income/(Loss)	\$188,878	\$330,740

Board of University and School Lands		
Comparative Financial Position (Unaudited)		
Strategic Investment and Improvements Fund	September 30, 2022	September 30, 2021
<u>Balance Sheet</u>		
	Assets:	
Cash	\$347,994,892	\$250,276,045
Interest Receivable	1,307,064	879,643
Investments	617,733,741	377,703,142
Due from other Trusts or Agencies	-	-
Total Assets	<u><u>\$967,035,697</u></u>	<u><u>\$628,858,830</u></u>
	Liabilities:	
Accounts Payable	\$0	\$0
	Equity:	
Fund Balance	1,045,209,177	860,465,447
Net Income	(78,173,480)	(231,606,617)
Total Liabilities and Equity	<u><u>\$967,035,697</u></u>	<u><u>\$628,858,830</u></u>
<u>Income Statement</u>		
	Income:	
Investment Income	\$1,532,097	\$1,032,466
Realized Gain/(Loss)	(30,756)	\$168,126
Unrealized Gain/(Loss)	(3,002,676)	(\$835,527)
Interest on Fuel Prod Facility	51,491	5,599
Interest - Miscellaneous	918,506	\$49,994
Interest and Penalty	5,783	\$15,885
Royalties - Oil and Gas	38,579,302	\$21,550,313
Bonuses - Oil and Gas	5,531,352	(\$3,712,533)
Royalties - Coal	17,243	\$42,268
Rents - Mineral	94,491	\$13,107
Tax Income - Oil Extraction & Production Distribution	83,390,903	\$0
Total Income	<u><u>127,087,736</u></u>	<u><u>18,329,698</u></u>
	Expenses and Transfers:	
Administrative	176,985	242,914
Investment Expense	13,176	7,864
Transfers to General Fund	-	-
Transfer to Attorney General (HB 1003)	-	-
Transfer to Agriculture Department (HB 1009)	-	5,000,000
Transfer to ND Insurance Commissioner (SB 2287)	-	200,000
Transfer to Office of Management & Budget (HB 1015)	205,000,000	205,000,000
Transfer to Office of Management & Budget (HB 1015)	71,055	9,500,000
Transfer to Innovation Loan Fund (HB 1141)	-	15,000,000
Transfer to Department of Commerce (SB 2018)	-	15,000,000
Transfer from General Fund	-	(14,463)
Total Expense and Transfers	<u><u>205,261,216</u></u>	<u><u>249,936,315</u></u>
Net Income/(Loss)	<u><u>(\$78,173,480)</u></u>	<u><u>(231,606,617)</u></u>

As of September 30, 2022 the SIIF had a fund balance of \$967,035,697. The fund balance is made up of two parts. The committed fund balance is that portion of the fund that has either been set aside until potential title disputes related to certain riverbed leases have been resolved or appropriated by the legislature. The uncommitted fund balance is the portion of the fund that is unencumbered, and is thus available to be spent or dedicated to other programs as the legislature deems appropriate. The uncommitted fund balance was \$633,749,763 as of September 30, 2022.

Board of University and School Lands		
Comparative Fiduciary Statements (Unaudited)		
Indian Cultural Trust	September 30, 2022	September 30, 2021
Fiduciary Net Position		
Assets:		
Cash	\$424	\$2,103
Interest receivable	1,135	\$739
Investments	1,280,969	\$1,434,673
Total Assets	<u>\$1,282,528</u>	<u>\$1,437,515</u>
Liabilities:		
Accounts payable	-	-
Total Liabilities	<u>-</u>	<u>-</u>
Net Position:		
Net position restricted	<u>1,282,528</u>	<u>1,437,515</u>
Total Net Position	<u>\$1,282,528</u>	<u>\$1,437,515</u>
Changes in Fiduciary Net Position		
Additions:		
Contributions:		
Donations	<u>\$0</u>	<u>\$0</u>
Total Contributions	<u>0</u>	<u>0</u>
Investment Income:		
Net change in fair value of investments	52,926	(10,165)
Interest	5,998	6,752
Less investment expense	342	(131)
Net Investment Income	<u>59,266</u>	<u>(3,544)</u>
Miscellaneous Income	-	-
Total Additions	<u>\$59,266</u>	<u>(\$3,544)</u>
Deductions:		
Payments in accordance with Trust agreement	-	-
Administrative expenses	-	-
Total Deductions	<u>\$0</u>	<u>\$0</u>
Change in net position held in Trust for:		
Private-Purpose	<u>59,266</u>	<u>(3,544)</u>
Total Change in Net Position	<u>59,266</u>	<u>(3,544)</u>
Net Position - Beginning FY Balance	<u>1,441,059</u>	<u>1,441,059</u>
Net Position - End of Month	<u>\$1,500,325</u>	<u>\$1,437,515</u>

Board of University and School Lands		
Comparative Fiduciary Statements (Unaudited)		
Theodore Roosevelt Presidential Library	September 30, 2022	September 30, 2021
Fiduciary Net Position		
Assets:		
Cash	\$20,287	\$132,867
Interest receivable	(53,851)	(70,868)
Investments	50,516,958	55,686,292
Total Assets	<u>\$50,483,394</u>	<u>\$55,748,291</u>
Liabilities:		
Accounts payable	-	-
Total Liabilities	-	-
Net Position:		
Net position restricted	50,483,394	55,748,291
Total Net Position	<u>\$50,483,394</u>	<u>\$55,748,291</u>
Changes in Fiduciary Net Position		
Additions:		
Contributions:		
Donations	-	17,500,000
Total Contributions	-	17,500,000
Investment Income:		
Net change in fair value of investments	2,083,144	393,195
Interest	235,987	262,823
Less investment expense	13,476	5,128
Net Investment Income	<u>2,305,655</u>	<u>650,890</u>
Miscellaneous Income	80	24
Total Additions	<u>2,305,735</u>	<u>18,150,914</u>
Deductions:		
Payments in accordance with Trust agreement	-	-
Administrative expenses	13,476	62,928
Total Deductions	<u>\$13,476</u>	<u>\$62,928</u>
Change in net position held in Trust for:		
Private-Purpose	2,319,211	18,213,842
Total Change in Net Position	<u>2,319,211</u>	<u>18,213,842</u>
Net Position - Beginning FY Balance	38,446,695	38,446,695
Net Position - End of Month	<u>\$40,765,906</u>	<u>\$56,660,537</u>

**RE: Executive Estimate of Board Assets
(No Action Requested)**

EXECUTIVE ESTIMATE OF ASSETS
NORTH DAKOTA DEPARTMENT OF TRUST LANDS
As of November 30, 2022

	11/30/2022 Value	MOM\$ 10/31/2022 Value	MOM% Change	YOY\$ 11/30/2021 Value	YOY% Change
Cash	256,082,684	494,473,849	-48.21%	384,211,315	-33.35%
Investments ^[1]	7,017,683,190	6,503,890,327	7.90%	6,470,210,462	8.46%
Tax Receivables ^[2]	-	12,403,751	-100.00%	18,119,488	-100.00%
Loans ^[3]	40,260,056	40,260,056	0.00%	43,864,600	-8.22%
Receivables ^[4]	6,720,920	5,949,437	12.97%	4,896,963	37.25%
Sub-Total Net Assets	\$7,320,746,851	\$7,056,977,419	3.74%	\$6,921,302,828	5.77%
Mineral Rights ^[5]	2,813,480,347	2,813,480,347	0.00%	2,391,439,503	17.65%
Surface Rights ^[6]	511,088,869	511,088,869	0.00%	523,938,730	-2.45%
Building Value ^[7]	1,015,196	1,015,196	N/A		N/A
Total Net Assets	\$10,646,331,263	\$10,382,561,831	2.54%	\$9,836,681,061	8.23%

[1] Approximately 60% of the portfolio is publicly traded for which values are current to the as of date.

The remaining 40% is private assets, the values of which are updated as the managers provide them, typically 30-60 days after the end of each quarter.

[2] Estimated value of production, extraction, and severance tax payments not yet received by the Department because they are not distributed until two months after production date.

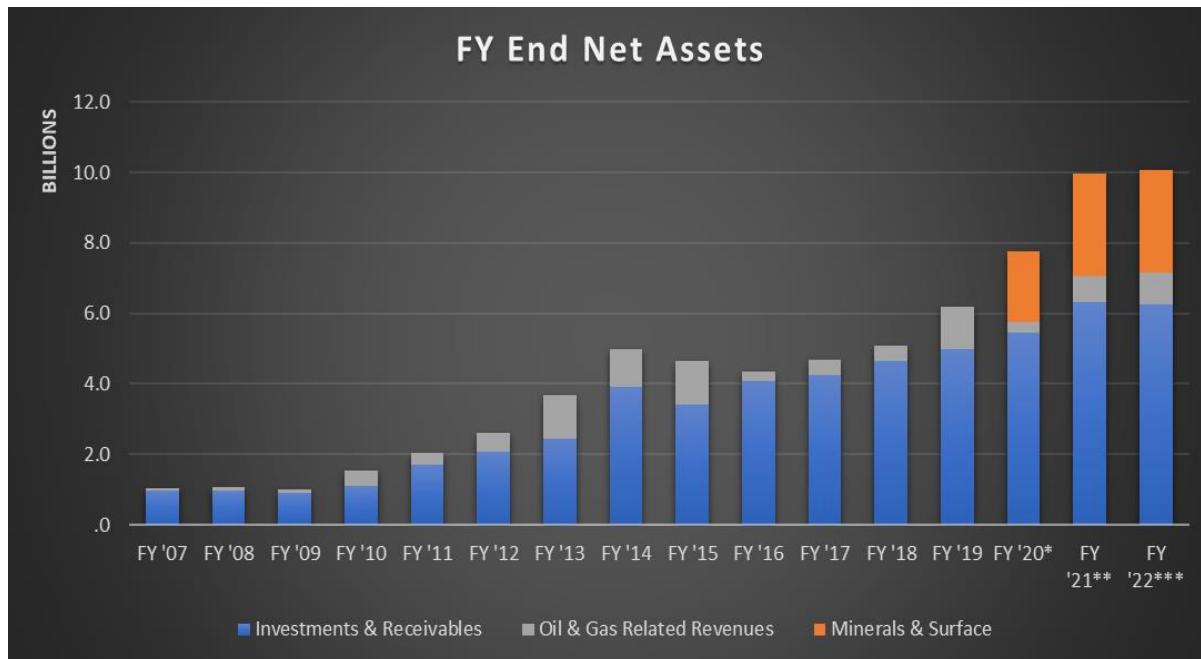
[3] Various loan programs funded with trust assets.

[4] Loans and investments interest accrued, but not yet paid.

[5] Valued annually via contract with Mineral Tracker. The last valuation is as of December 31, 2021.

[6] Valued annually via the Department's fair market value policy/formulas. The last valuation is as of March 2022.

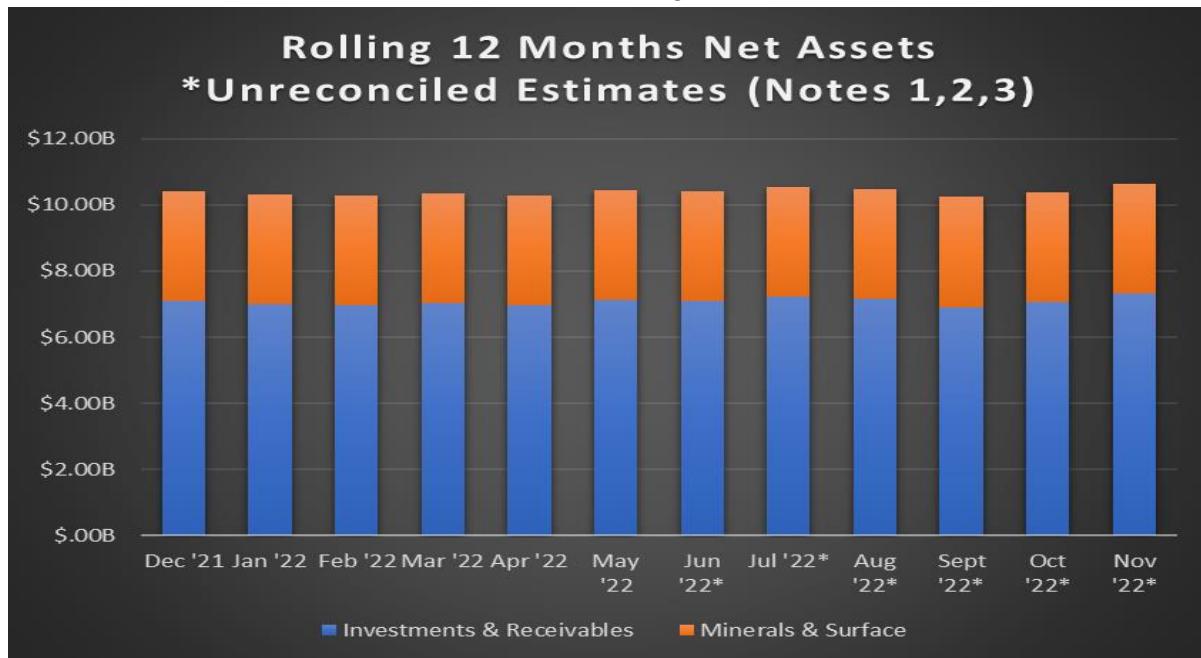
[7] Updated annually via broker price opinion. The last was completed as of Sept. 15, 2022.



* FY End 2020 - included initial Mineral valuations as of 12/31/19 amounting to \$1,449,002,408 and surface fair market value as of 12/31/19 amounting to \$538,179,773.

** FY End 2021 - included new Mineral valuations as of 12/31/20 amounting to \$2,391,439,503 and surface fair market value as of 12/31/20 amounting to \$523,938,730.

*** FY End 2022 - included most recent Mineral valuations as of 12/31/21 amounting to \$2,813,480,347 and surface fair market value as of 12/31/21 amounting to \$511,088,869.



Notes:

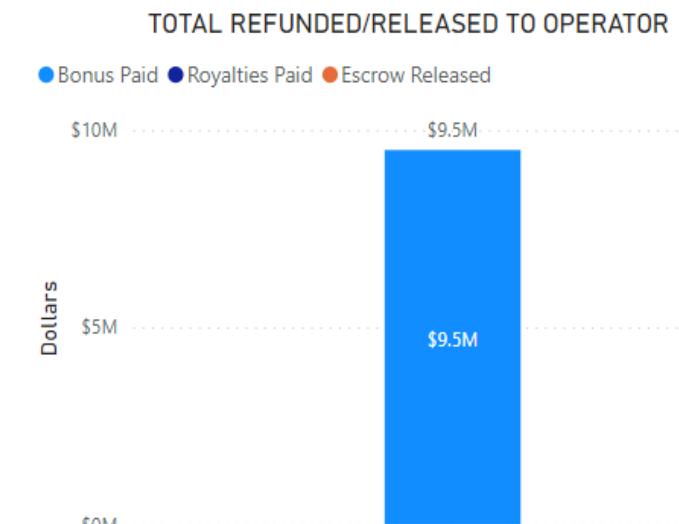
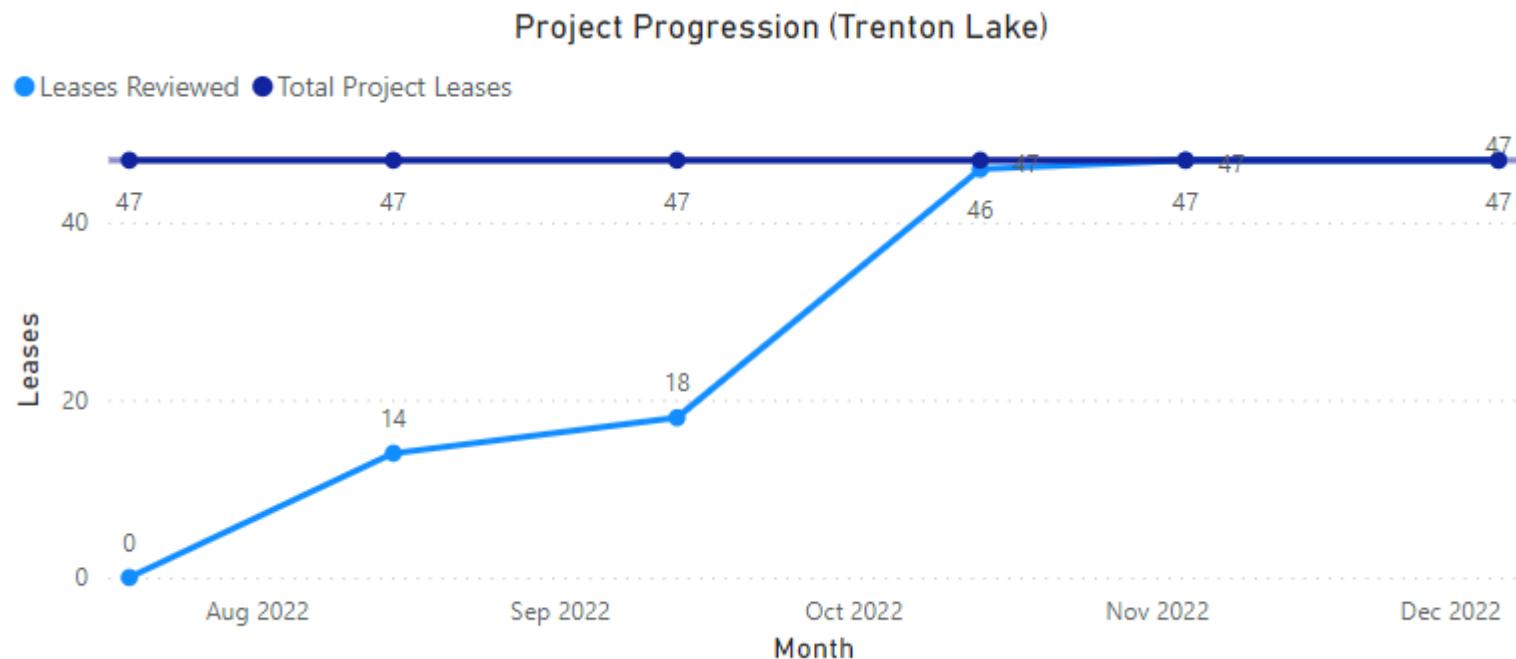
- 1. Oct. 2021 to Nov. 2021 - included most recent Mineral valuations amounting to \$2,391,439,503 and surface fair market value of \$523,938,730.
- 2. Dec. 2021 to Jul. 2022 - included Mineral valuations amounting to \$2,813,480,347, surface fair market value of \$511,088,869.
- 3. Sept. 2022 - included \$1,015,149 building value appraised as of 9/15/22.

ACREAGE ADJUSTMENT PART II

November 1st, 2023, DEADLINE
PROJECT COMPLETE - FINAL REPORT



TRENTON LAKE PROJECT PROGRESSION

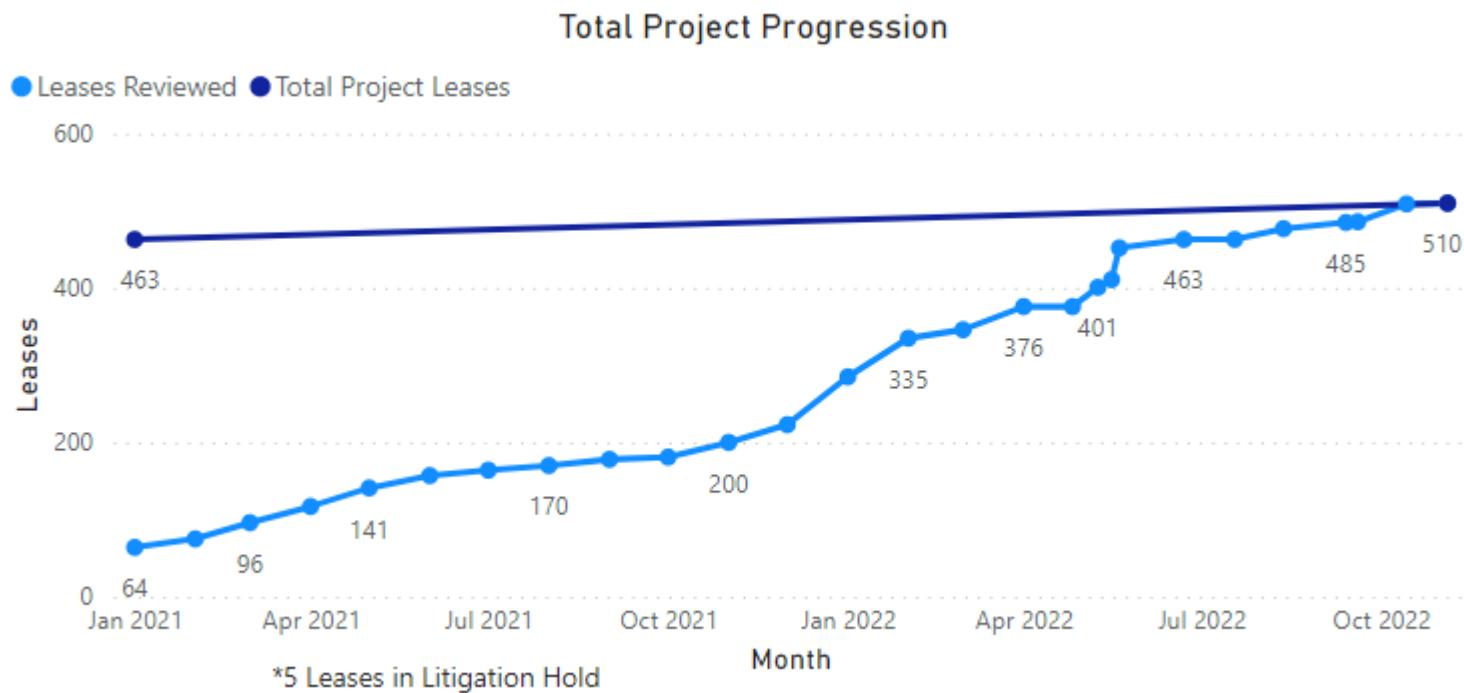


ACREAGE ADJUSTMENT SURVEY REPORT

PROJECT TOTAL
PROJECT COMPLETE - FINAL REPORT



TOTAL PROJECT PROGRESSION



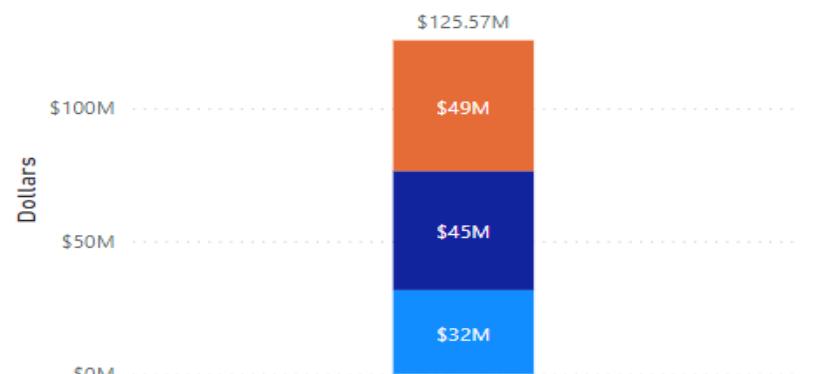
PROGRESS TO ESTIMATED \$87M BUDGET PROJECT VALUE

● Total Project Est. Remaining ● Bonus/Royalty Paid Out ● Litigation Hold



TOTAL REFUNDED/RELEASED TO OPERATOR

● Royalties Paid ● Bonus Paid ● Escrow Released



COMMON SCHOOLS TRUST FUND (CSTF)



\$500 MILLION TO BE DISTRIBUTED IN 2023-25 BIENNIAL

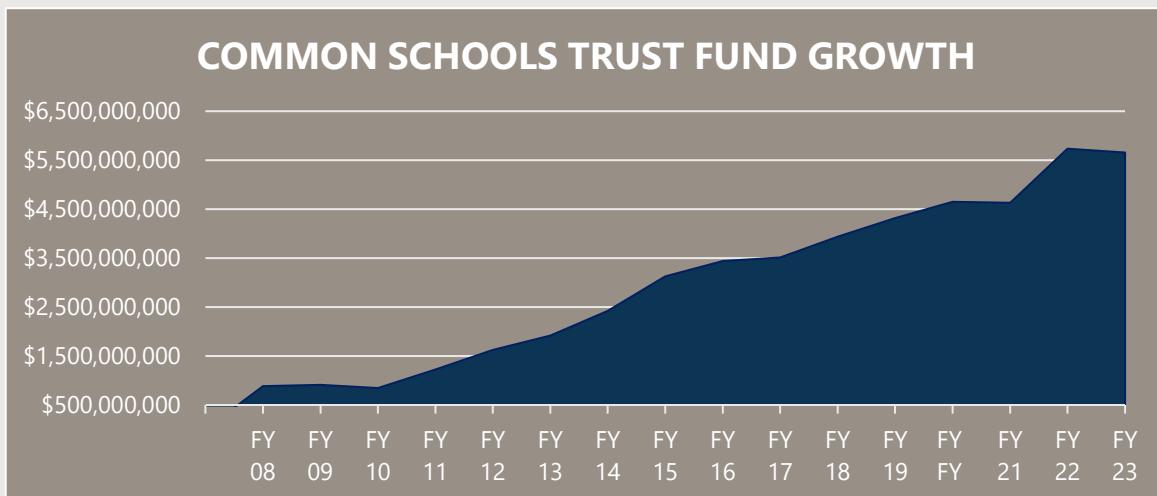


18.7% INCREASE IN DISTRIBUTION OVER LAST BIENNIAL



\$5.66 BILLION VALUE AS OF FISCAL END 2022

\$1.8 BILLION IN K-12 DISTRIBUTIONS OVER LAST 10 YEARS



DEPARTMENT OF TRUST LANDS REVENUE STREAMS CONTRIBUTING TO CSTF



MINERALS

- 10% OF THE OIL EXTRACTION TAX
- MINERAL LEASE BONUSES
- ROYALTY REVENUE



SURFACE

- RIGHTS OF WAY INCOME
- SURFACE RENTAL INCOME
- AGGREGATE LEASING

COMMON SCHOOLS TRUST FUND DISTRIBUTION CALCULATION

10% OF FIVE-YEAR AVERAGE VALUE OF TRUST INVESTMENTS (N.D. CONST ART. 9, SEC. 2)

2.88% NET AVERAGE ANNUAL DISTRIBUTION OVER PAST 10 YEARS

PERCENTAGE OF ROLLING AVERAGE VALUE FORMULA SMOOTHs DISTRIBUTIONS FOR LONG-TERM GROWTH

RE: Litigation Update
(No Action Requested)

- Newfield (royalty deductions) – ND Supreme Court reversed and remanded in our favor; at October 28th status conference, district court set November 28th briefing deadline
- MHA (Missouri riverbed ownership) –Appealed D.C. Federal District Court denial of our motion to intervene; D.C. Circuit Court of Appeals briefing to be completed in January
- EEE (OHWM title dispute / takings claim) – ND Federal District Court issued order May 31st granting Board's motion to dismiss on all counts: federal preemption, sovereign immunity, takings; Plaintiffs appealed to 8th Circuit; briefing complete, awaiting scheduling of oral arguments
- Leland/Whiting (OHWM river island ownership) – Watford City trial September 12-16, 2022; awaiting completion of transcripts so briefing can begin
- Continental Interpleader (OHWM fed/state dispute) – briefing complete for “Acquired Federal Lands” issue; awaiting ND Federal District Court decision
- Whitetail Wave (OHWM title dispute / takings claim) – ND Supreme Court issued opinion on September 29th dismissing the appeal and sending back to trial court for further quiet title actions on the at issue parcels