Agenda

State of Utah
School and Institutional
Trust Lands Administration

Board of Trustees Meeting Agenda
March 12, 2020
10 a.m.
Location: SITLA Offices 6th Floor Boardroom
675 East 500 South, SLC UT 84102

1. **Welcome**

2. **Approval of Board Meeting Minutes**
   - February 11, 2020

3. **Confirmation of Upcoming Meeting Dates**
   - April 9th Regular Meeting
   - May 13th – 14th Board Tour and Meeting
   - June 11th Regular Meeting
   - July 9th Only If Needed
   - August 13th Regular Meeting
   - September 9th – 10th Board Tour and Meeting
   - October 8th Regular Meeting
   - November 12th Regular Meeting
   - December 10th Only If Needed

4. **County Advisory or Utah Tribes Presentations**

5. **Public Comment Period**

   SITLA welcomes comments from the public. The Board sets aside 15 minutes at each Board meeting to hear from anyone wishing to speak. Each presenter is allowed one opportunity and has up to three (3) minutes for remarks. Any member of the public who desires to make a comment shall speak at the podium after stating his/her name for the record. The public comment segment of the Board meeting is not the time for a question and answer discussion. SITLA staff are available for dialogue outside of Board meetings.

6. **Chair's Report**
   - Subcommittee Assignments
   - Land Trust Protection & Advocacy Office Memorandum of Understanding (MOU)

7. **Advocate Report**
   - Justin Atwater, Director, Lands Trust Protection & Advocacy Office (LTPAO)

8. SITFO Update [TIME CERTAIN: 10:30 a.m.]

- Dave Damschen, State Treasurer
- Peter Madsen, Chief Investment Officer, School & Institutional Trust Funds Office (SITFO)

9. Notifications

Notification items do not require Board action and are only informational. Staff is prepared to discuss any of the items if a member of the Board requests it.

a. Minor Development Transaction – Sale of 5.0266 +/- Acre Parcel of Religious Use Land in Green Springs (West Church Site)
b. Minor Development Transaction – Sale of .5542 +/- Acre Parcel of Religious Use Land in Green Springs (Expansion)
c. Minor Development Transaction – Sale of .43 +/- Acre Parcel in Big Water (Crowley)
d. Minor Development Transaction – Exchange of .59 +/- Acre Parcel for .64 Acre Parcel in Iron County (New Harmony)

10. Director's Report

a. Notification of Current Events
   - Dave Ure, Director
b. Legislative Update
   - Tim Donaldson, Assistant Director, Legislative / Solar

11. Board Actions

a. Ratification of Paradox 2.0 OBA
   - Wes Adams, Assistant Director, Oil & Gas
b. Ratification of Kicking Mule OBA
   - Wes Adams, Assistant Director, Oil & Gas
c. Ratification of New Day Energy Development OBA
   - Jerry Mansfield, Resource Specialist, Mining
d. Ratification of 2020-2021 Grazing Assessment Rates and Proposed Formula for Future Grazing Seasons
   - Ron Torgerson, Deputy Assistant Director, Surface
e. Request to Sell 83.5 Acres +/- of Development Property in Fossil Hills, St. George, Washington County (Fossil Hills)
   - Kyle Pasley, Assistant Director, Planning & Development

12. Adjourn

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SITFO

Overview & Update

February 2020

Overview and Update:
Introduction, Objectives, Processes, Portfolio, and Performance

State of Utah, School &
Institutional Trust
Funds Office

Introduction

History

- 1894 - Congress granted more than 7 million acres of land into 12 separate trusts
  - Division of State Lands and Forestry within the Department of Natural Resources managed the trusts for ~90 years
- 1981- Investment of the trusts legislatively assigned to state treasurer
- 1991 - Public School Trust Lands Task Force authorized to study management of trusts
- 1994 - School and Institutional Trust Lands Administration (SITLA) created
- 1999 – School LAND Trust Program created
- 2013 – School Trust Investment Task Force created to study the appropriate and prudent investment oversight, process, and structure of funds
  - Recommended creation of independent state agency tasked with investment of all trust investments
- 2014 – School and Institutional Trust Funds Office (SITFO) created
  - Board formed
  - National search for executive director
- 2015 – Executive director hired
- 2016 – First employee hired, Investment Beliefs and Investment Policy created, first investment made

Introduction

Mission and Purpose

- Our mission is to responsibly maximize the return on the invested principal of the School and Institutional Trusts for the current and future benefit of Utah's education programs.

- We are an independent team of outcome-oriented investors. We aim to carry our fiduciary responsibility forward to assist in the creation of a brighter future for Utah's public education programs. We consider education to be an invaluable public resource and believe the School and Institutional Trusts are an enduring investment in our community as a whole.

- We aim to ground our decision-making in objective research and sound portfolio theory. We value long-term growth over short-term gains, impartial analysis over conventional wisdom, and will always conduct investment decisions outside the reach of political influence and act with undivided loyalty to the schools, universities and state institutions for which we serve.

- We invest School and Institutional Trust Lands Administration revenues in a manner that supports the distribution policy in perpetuity while providing for intergenerational equity between current and future beneficiaries. In addition to the School Trust Fund, there are 10 additional institutional trusts:
  - Miners Hospital
  - Institute for the Blind
  - Reservoirs Fund
  - Normal School
  - University of Utah
  - School of Mines
  - Utah State University
  - Utah State Hospital
  - Deaf School Fund
  - State Industrial School

Governance

Board of Trustees

DAVID DAMSCHEN - *Chair, Board of Trustees*

David became the Utah State Treasurer after serving seven years as the Chief Deputy State Treasurer. Previously, he led treasury management efforts at AmericanWest Bank and U.S. Bank for almost 20 years. David is veteran of the U.S. Coast Guard and holds a Certified Treasury Professional (CTP) credential.

KENT A. MISENER, CFA - *Vice Chair, Board of Trustees*

Kent Misener, CFA serves on several boards and Investment Committees representing multiple billions of dollars. He managed $9 billion in benefits-related assets as the Chief Investment Officer of Desert Mutual Benefit Administrators (DMBA). Kent has an MBA in Business Administration and operates Verapath Global Investing LLC.

DAVID R. NIXON – *Board of Trustees*

David worked at Coopers & Lybrand and as Assistant Treasurer and Director of Global Investments at EDS, responsible for assets totaling $15 billion. David has an accounting MBA. His extensive international experience includes work in both developed and emerging markets and living in Colombia, Belgium, and England.

JOHN LUNT, CFA - *Board of Trustees*

John serves on the investment committee for the $8 billion Utah Educational Savings Plan (UESP) and was board president of Utah Retirement Systems (URS), a $20 billion pension fund. He has an MBA in Finance and International Business and is the Founder and President of Lunt Capital Management, Inc.

JASON GULL - *Board of Trustees*

Jason worked as head of secondary investments at Adams Street Partners with $30 billion of assets under management. He serves as a member of the BYU Cougar Capital Advisory Board and the BYU Marriott School National Advisory Board. Jason has an MBA from Yale.

Resources

SITFO Staff

PETER MADSEN - *Director, Chief Investment Officer*

SITFO was formed SITFO in 2015. Peter has led the organization since it's founding. He has been critical in establishing the direction of the organization. Working in the investment management industry since 1999, his most recent experience includes Managing Director of Cube Capital, an investment group in London. His career includes a range of experience in global investing for large institutional clients such as pension funds and endowments, as well as permanent school fund experience from another state. Peter holds a Bachelor of Arts degree from the University of Utah in International Political Economy and Russian. He also holds an MBA focused in International Finance from the Middlebury Institute of International Studies.

BRIAN SCOTT - *Senior Investment Analyst*

Brian joined SITFO in 2017, bringing valuable expertise in research, portfolio management, and computer science. Preceding SITFO Brian was a quantitative analyst and software developer at Aspen Partners, an alternative investment manager and index provider. Prior to Aspen Brian was credit analyst with Wells Fargo Energy Group, where he covered E&P reserve based lending. Brian has a Master's of Science in Financial Engineering from Claremont Graduate University, a Bachelor's from Colorado State University, and is currently a CFA Level II candidate.

JOHNNY LODDER- *Investment Analyst*

Johnny joined SITFO in 2019 to support in the evaluation, due diligence and ongoing monitoring of investments. He previously performed manager research across a variety of alternative investment strategies for Aksia, an international alternatives consultant. Prior to that, Johnny spent time with Sorenson Impact where he collaborated with venture funds and foundations to identify and fund socially impactful businesses. Johnny earned a Bachelor of Science in Finance from the University of Utah.

RYAN KULIG - *Administrative Analyst*

Ryan joined SITFO in 2016 to help manage office operations, portfolio administration, and investment analysis. Before joining SITFO, he worked for Sax Angle Partners, specializing in fundamental and technical analysis of equity investment opportunities. Prior to that, he performed financial analysis of federal grant activity at MRK Advisors. Ryan earned his Bachelor of Business Administration in Global Business with an Emphasis in Finance and a Minor in Economics from the University of Portland.

Resources
Advisors and Vendors

FUND EVALUATION GROUP - *Investment and Risk Consultant*

Fund Evaluation Group (FEG) was hired in 2016 to assist with all aspects of policy, asset allocation, investment selection and risk management. FEG advises on $67 billion of institutional investments, has 126 employees, 69 of which are investment professionals and 21 dedicated to investment selection efforts.

INDEPENDENT RESEARCH AND DATA - *Bloomberg, eVestment, Capital Economics, PitchBook*

These partners and advisors facilitate the provision of raw data as well as its objective interpretation.

FUND MANAGERS - *Strategy Specific Investment Advisory Relationships*

The buying and selling of individual securities is carried out by best in class, specialized investment managers. These investment managers are consistently evaluated across their investment decisions, before and after selection.

CUSTODIAN BANK - *Northern Trust*

Northern Trust is one of the largest global custodian banks . They were hired in 2016 to institutionalize custody of assets and to provide an independent accounting and reporting of the trusts' assets.

RISK MANAGEMENT- *Software and Services*

SITFO avails itself of software systems and services to provide quantitative risk management analysis. In addition, SITFO utilizes FEG as an independent party with proprietary tools and dedicated risk management staff to provide performance analysis and additional risk reporting.

Operations

Organization Structure

OST (Office of the State Treasurer)

- The elected State Treasurer acts as ex officio chairperson of the SITFO board
- Provides operational support for the SITFO office

SCT (School Children's Trust)

- Oversees the work of SITLA and SITFO on behalf of School Fund
- Administers the distribution for the School Fund, ~95% of the trust

Land Trusts Protection and Advocacy Office

-Established by legislation in 2019 to advocate on behalf of the 11 trusts

SITLA (School & Institutional Trust Lands Administration)

- SITLA manages Utah's 3.4 million acres of trust land, generating revenue through oil, gas, mineral leases, and real estate sales
- All proceeds are deposited into permanent trusts for each beneficiary (the 11 trust funds)

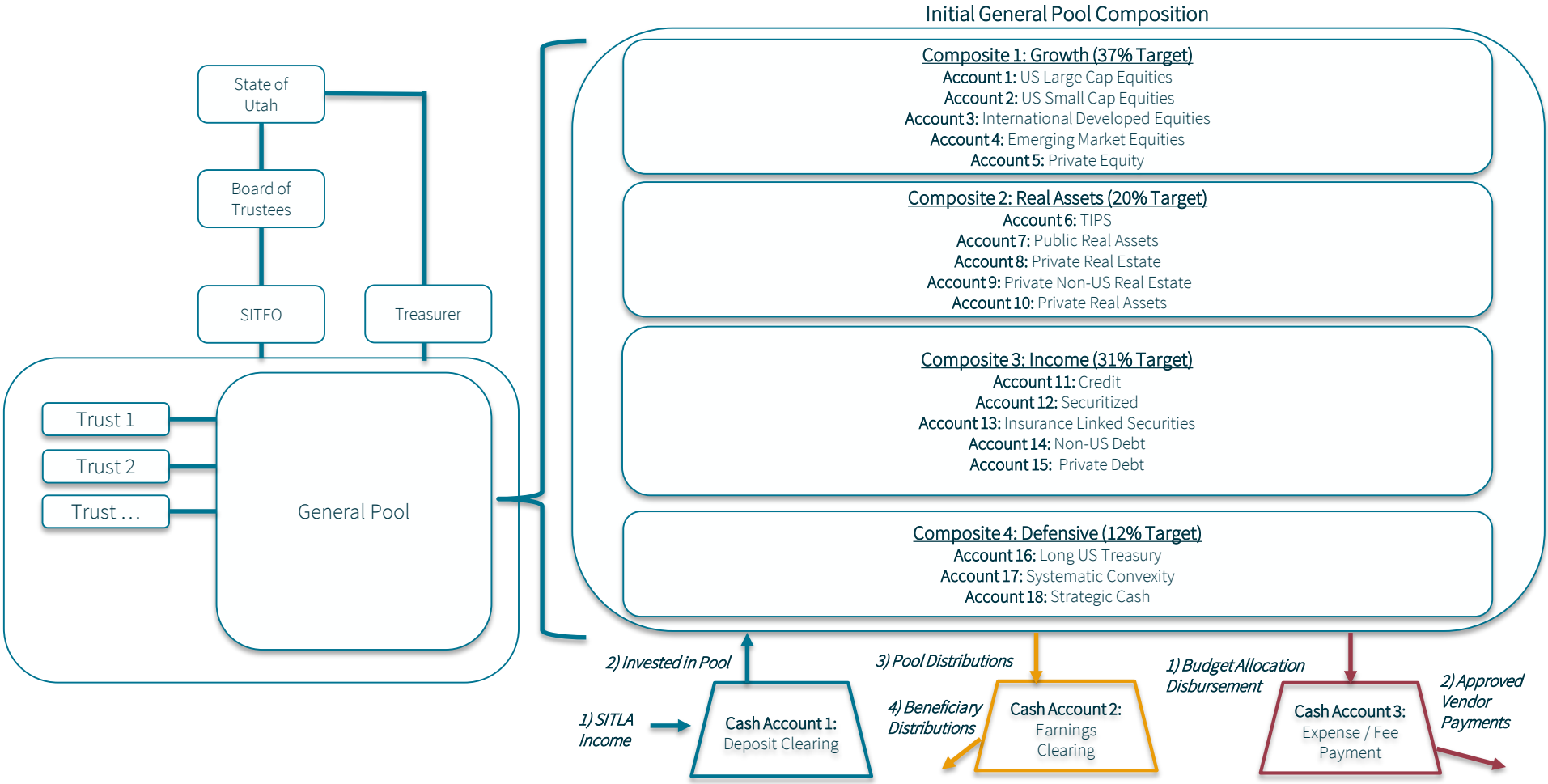
SITFO (School & Institutional Trust Funds Office)

- SITFO invests the trust fund revenues from SITLA, and annual earnings are distributed to each beneficiary
- The (11) trusts are managed with similar asset allocations because return and risk objectives are the same.

Beneficiaries

11 Permanent Trust Funds: Public Schools, Miners Hospital, Utah Schools for the Blind, Reservoirs Trust, Normal Schools, University of Utah, School of Mines, Utah State University, Utah State Hospital, Utah Schools for the Deaf, Youth Development Center

Governance
Structure



Governance

- Investment Beliefs
  - What is it and why is it important?
  - How was it developed?
  - Will it change and why?

- Investment Policy
  - What is it and why is it important?
  - How was it developed?
  - Will it change and why?

- Trustees authority and responsibility
  - What are they?
  - What are they not?
  - Pros/cons

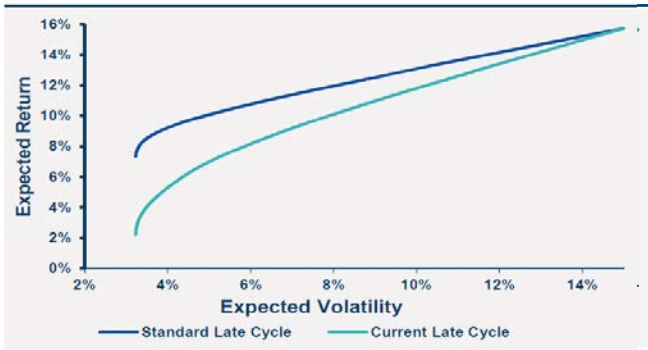
Governance

- Expectations of institutional investors
  - Return expectations are falling across the industry as yields and growth have fallen
  - Pensions struggling to meet liabilities and lowering assumed actuarial rate
  - Endowments and foundations struggling to meet CPI + 5%
  - SITFO's investment objectives and risk tolerance is similar to industry peers
  - Institutional time horizons are measured in decades, endowments are perpetual and have no end date

- Given a long-time horizon for investments
  - Illiquid or private markets play an important role
  - Patience for long-term strategies, avoid over-reacting to market fluctuations
  - Avoid the whiplash of abandoning underperformance and chasing outperformance
  - Performance is best measured over a full market cycle

- Objective analysis and diversification
  - It is critical to build portfolios based on forward looking analysis
  - There is no certainty, diversification is a proven risk mitigant

1/ **Expect a lower efficient frontier**



The chart compares two efficient frontiers and plots the risk and total return profiles of 200 efficient cross asset portfolios (with different allocations optimised by volatility levels) for each frontier. The Standard Late Cycle frontier is calculated on historical average yearly returns and a covariance matrix during the Late Cycle regime. The Current Late Cycle frontier is calculated taking into account current bond and dividend yields. Asset class universe (local currency): US equities total return (S&P 500), US and Euro govies (JPM), US and Euro IG (ML), US and Euro HY (ML), GEM bond (JPM), US IL all maturities (Barclays).

Source: Amundi Research, Bloomberg.

A Note About Backwards Looking Peer Comparisons

- Historical comparisons can be helpful, but should approached with a degree of caution
  - They rarely convey a full sense of the unique objectives and constraints faced by each institution
  - They don't necessarily separate luck from skill
  - They don't tell you what will work best in the future
- Focus should be on the primary objectives of each institution, the road ahead, and the removal of as many obstacles as possible that stand in the way of achieving the objectives

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RVK

Investment Process

Mandate and Objectives

- Investment objective: CPI +5%
  - 10-year inflation estimate at ~2.2% (long term average ~3.3%)
  - Targeting marginally higher than 7.2% to offset estimation errors in assumptions (fees, inflation, etc.)
  - Given our time horizon, the risk of falling short is of greater consequence than the risk associated with pursuing less efficient portfolios

- Parameters for risk tolerance based on 2016 board discussion
  - IPS statement of volatility similar to stock/bond mix that reflects the allocation (70/30)
  - Drawdown of -25%, -45% in extreme scenario
  - 35% max illiquidity in drawdown structures
  - All asset classes for consideration

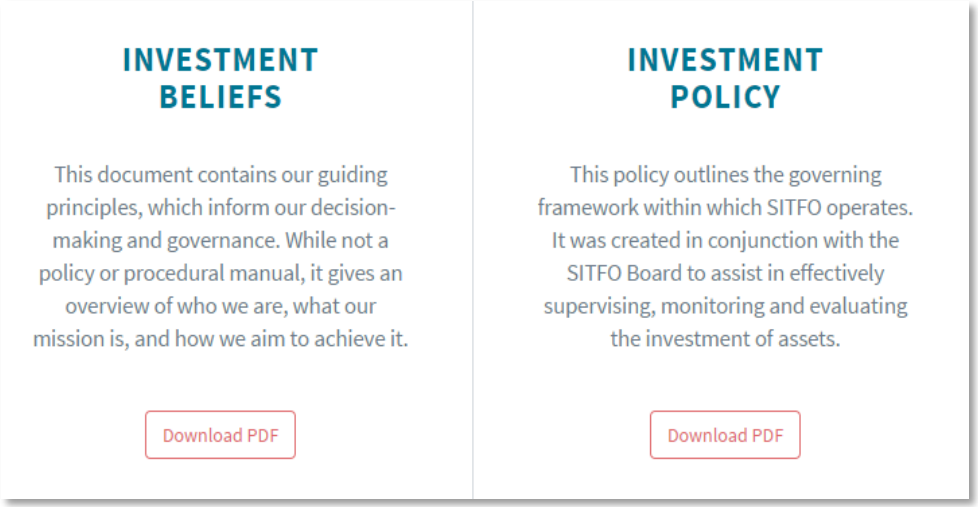
- Given return objective and drawdown tolerance, we estimate annualized volatility of ~14% is acceptable (-3std ~35% drawdown, if 7-8% expected return)

Investment Process

Resources and Framing

- Foundational Elements:
  - Investment beliefs – establish in advance agreed upon principles for guidance and direction
  - Investment policies – outline specifics of governance, responsibility, authority
  - Asset allocation – trustees are responsible for asset allocation, facilitated by research from staff and consultant
  - Investment process – disciplined practices built on the foundational elements above

- Balance and alignment:
  - Balance need for return with sustainability of returns
  - Align resources/capabilities with complexity
  - Tolerance for risk, illiquidity, and the appropriate time horizon

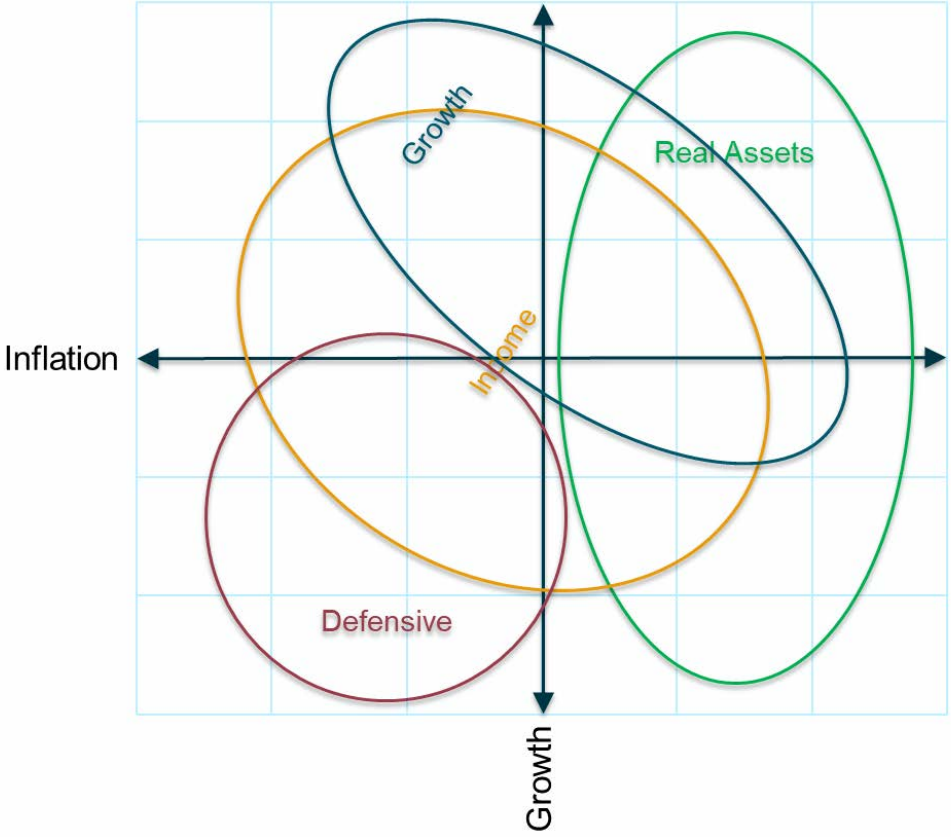


sitfo.utah.gov/investments/

Investment Process

Asset Allocation

- Framing the portfolio in order to diversify across fundamental and long-term factors
- Simplify thinking for clarity and communication
- Heuristic for answering the question “how much risk are we taking and where are we taking it?”



Investment Process

Asset Allocation

- Target returns by category:
  - Growth: CPI + 6%

    Expected to provide the strongest positive returns during periods of sustained economic growth, as well as presenting the highest expected risk (e.g., stocks, private equity).

  - Real Assets: CPI + 5.5%

    Inflation oriented and typically backed by hard assets (e.g., real estate, infrastructure, commodities, etc.). Real assets may present characteristics of income and growth, and thus have a moderate risk profile (e.g., commercial real estate, natural resources).

  - Income: CPI + 4.5%

    Income is expected to generate positive returns during a range of economic growth scenarios via an income stream. Although this category is not expected to contribute as much risk as growth, it is still considered a risk-taking investment (e.g., corporate bonds, asset backed securities).

  - Defensive: CPI +2.5%

    The investments in this grouping are intended to do well in negative economic scenarios or periods of market stress (e.g., cash, government bonds, hedging strategies). We do not categorize corporate bonds, or other assets that rely on economic growth, as defensive.

Investment Process

Elements and Application

Idea Generation
Board, Staff, Consultant, Managers, Networks, News flow, etc.

Asset Allocation Framework

- Fit w/objectives
- Gaps/Needs
- Portfolio optimization Contribution to:
  - Risk
  - Return
  - Liquidity
  - Diversification

Asset Class Structure

- Repeat asset allocation questions
- Opportunity set specific
- Liquidity
- Active/Passive
- Marginal contribution

Manager Selection

- Strategy fit
- Marginal contribution
- Investment Due Diligence
  - Desktop review
  - Phone/In-person/On-site reviews
  - Fee negotiation
  - Diversification
- Operational Due Diligence

Portfolio and Risk Management

- Constraints/sizing
- Monitoring
- Rebalancing
- Capital flows
- Measuring

Resources, Responsibilities

	Asset Allocation Framework	Asset Class Structure	Manager Selection	Portfolio and Risk Management
Resources	MPI, Bloomberg	MPI, Bloomberg	MPI, eVestment, PitchBook, Dynamo	MPI, Dynamo, Bloomberg, Caissa
Responsibilities	Board, Staff, Consultant	Staff, Consultant	Staff, Consultant	Staff, Consultant, Custodian

Investment Process

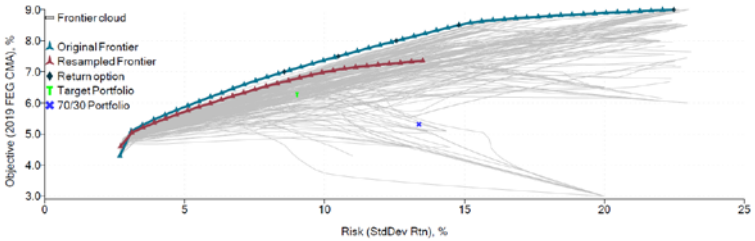
Asset Allocation Framework: Blend Quantitative and Qualitative Judgement

- Quantitative analysis of return objectives and potential risks
- Overlay of qualitative judgement and policy constraints

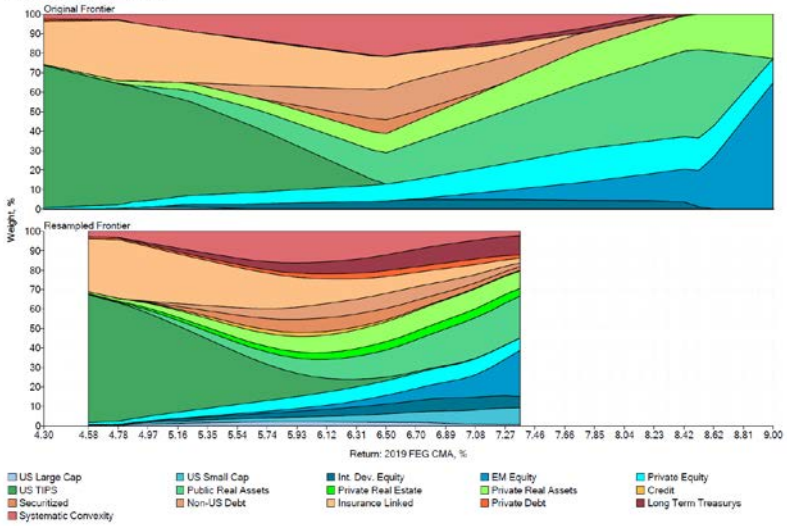
Efficient Frontiers and Weighting Comparisons

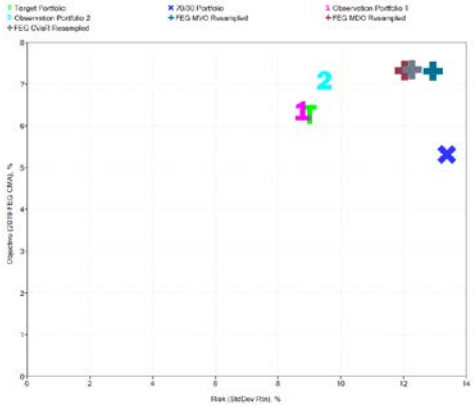
Asset Class Weights Per Return Target

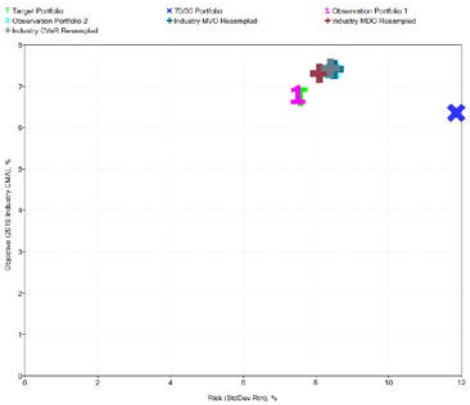
	Original 7.00	7.50	8.00	8.50	9.00	Resampled 7.00	Target Portfolio
US Large Cap	0.0	0.0	0.0	0.0	0.0	1.0	7.5
US Small Cap	0.0	0.0	0.0	0.0	0.0	6.9	7.5
Int. Dev. Equity	4.8	4.6	4.3	2.0	0.0	6.6	7.5
EM Equity	2.6	6.8	11.7	18.0	65.0	10.0	7.5
Private Equity	11.9	15.2	17.0	16.7	12.3	8.2	7.0
US TIPS	0.0	0.0	0.0	0.0	0.0	0.3	3.0
Public Real Assets	23.3	30.2	37.3	44.9	0.0	20.5	4.0
Private Real Estate	0.0	0.0	0.0	0.0	0.0	4.5	9.0
Private Real Assets	13.0	16.1	18.0	18.3	22.7	10.4	4.0
Credit	0.0	0.0	0.0	0.0	0.0	0.3	7.0
Securitized	2.1	0.0	0.0	0.0	0.0	2.9	8.0
Non-US Debt	14.8	10.9	5.8	0.0	0.0	4.9	4.0
Insurance Linked	10.1	3.7	0.0	0.0	0.0	5.7	5.0
Private Debt	0.0	0.0	0.0	0.0	0.0	2.9	7.0
Long Term Treasurys	1.3	2.1	2.1	0.0	0.0	9.6	5.0
Systematic Convexity	16.0	10.5	3.7	0.0	0.0	5.4	7.0

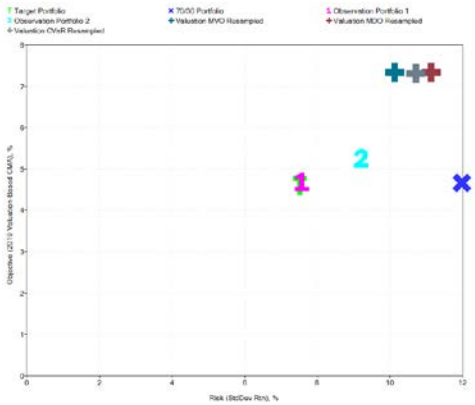


Allocations Across Return





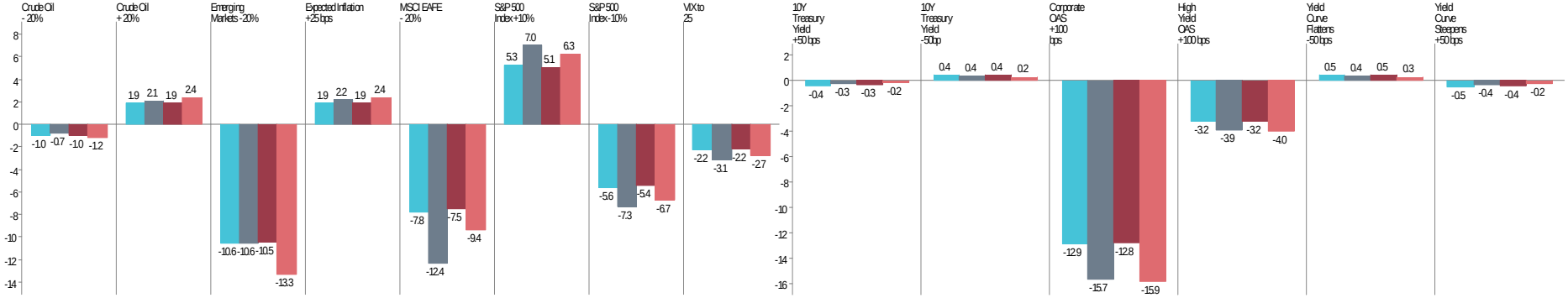


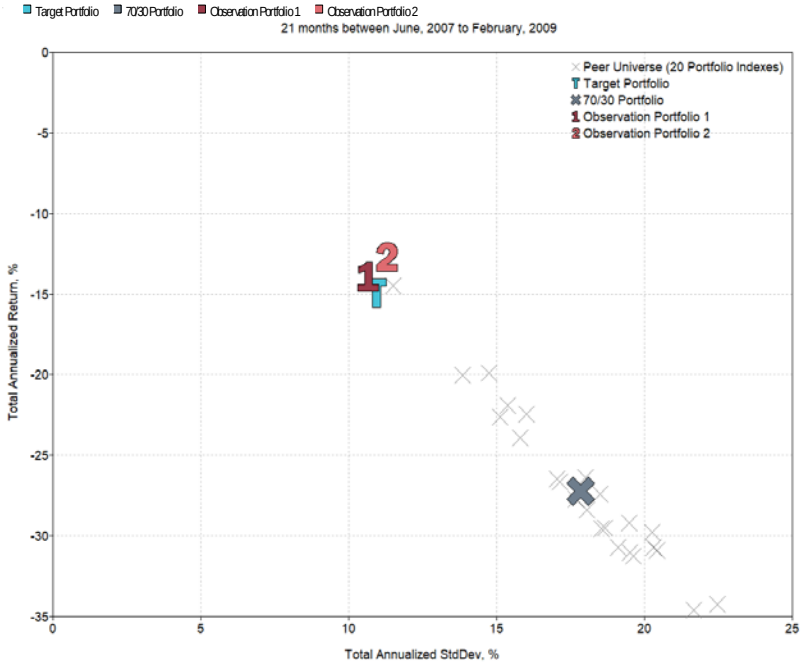


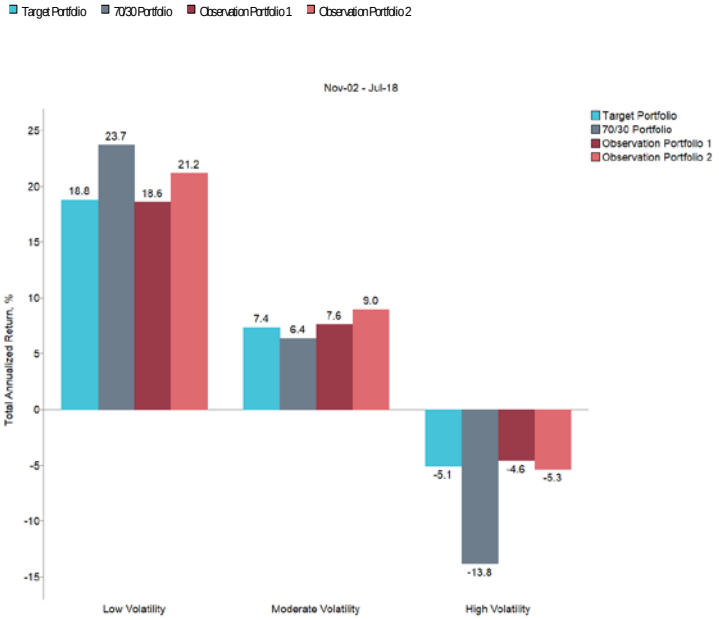
Investment Process

Asset Allocation Framework: Regime, Stress, Scenario Testing

- Series of metrics for measuring portfolio changes/referencing risk
- Continued overlay of qualitative judgment and policy constraints



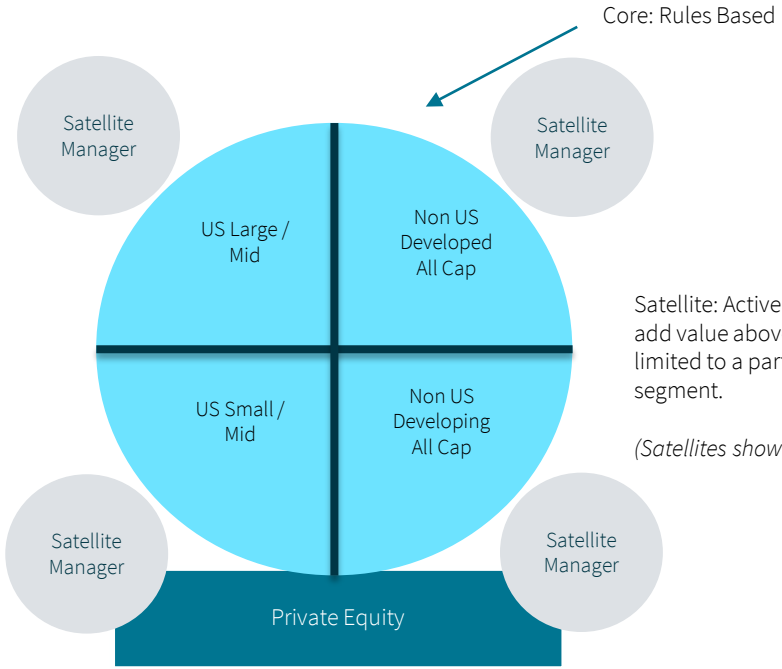




Investment Process

Asset Class Structure Case Study: Growth

- Global
  - Structural overweight to small cap and developing markets; leaning into growth, inefficiencies, correlation benefits
- Breadth
  - Equal weight to large and small to increase the opportunity set, target higher returns and improve correlations
- Value-Add
  - Private equity to capture illiquidity premium, value-add of sponsors and off market opportunity set
  - Active managers or non-index exposures as satellite components to enhance returns or reduce risk



Satellite: Active managers who we believe will add value above and beyond the core. Not limited to a particular style, region, or cap segment.

(Satellites shown as sample illustrations.)

Risk Category	Asset Class	Portfolio Weight	Asset Class Weight	Benchmark
Growth	U.S. Equity – Large	7.50%	20.3%	Russell 1000
Growth	U.S. Equity – Small	7.50%	20.3%	Russell 2000
Growth	Non-U.S. Equity Developed	7.50%	20.3%	MSCI EAFE IMI
Growth	Non-U.S. Equity Emerging	7.50%	20.3%	MSCI Emerging + Frontier
Growth	Private	7.00%	18.9%	Private Equity Index

Investment Process

Asset Class Structure Case Study: Private Equity Portfolio Construction

- The themes outlined in the statement of beliefs are the basic drivers of private equity portfolio construction
- Global investing to participate in the growth and development, as well as diversification
- Breadth is expected to come from strategies that provide returns similar to the asset class beta (larger funds, secondaries, co-invest funds, etc.)
- Smaller managers where appropriate in an attempt to better align with managers
- Satellites so as to avail ourselves of less efficient, high growth opportunities, or ad-hoc opportunities

Sub-Asset Class	Target Ranges	Number of GPs	FoFs
Venture / Growth	20%-30%	3-4	0-1
Control / Buyout / Buy & Build	40%-50%	3-6	0-1
Diversified / Secondaries	20%-30%	2-3	NA
Opportunistic / Special Sits	0% - 10%	0-3	0-1
Total	100%	10-15	

Sub-Asset Class	Commitment as % of Total 2019	Commitment % of Target 2019
Venture / Growth	2%	29%
Control / Buyout / Buy & Build	2%	32%
Diversified / Secondaries	0%	0%
Opportunistic / Special Sits	2%	28%
Total	6%	90%

Geographic Area	Target Ranges
U.S.	55%-65%
Developed Non-U.S.	25%-35%
Emerging Markets	20%-30%

Geographic Area	Commitment as % of Total 2019	Commitment % of Target 2019
U.S.	4%	56%
Developed Non-U.S.	1%	18%
Emerging Markets	1%	16%
	6%	90%

Investment Process

Asset Class Structure: Role of Private Assets

- The expected role of private equity is to provide both return and diversification

- Returns are expected to come partially through the illiquidity premium and financial structuring, but more importantly from partnering with managers who add value through one of more of the following ways:
  - Improving operations
  - Participating in high growth market opportunities
  - Identifying strong management teams
  - Deal structuring
  - Sourcing

- Diversification for the overall portfolio is expected to come primarily though:
  - Providing access to the large and growing market of unlisted companies
  - Special situations or opportunistic investments will be included and are expected to be less conventional strategies, sector specialists, or other strategies that meet or exceed our returns for the asset class, which also improve diversification

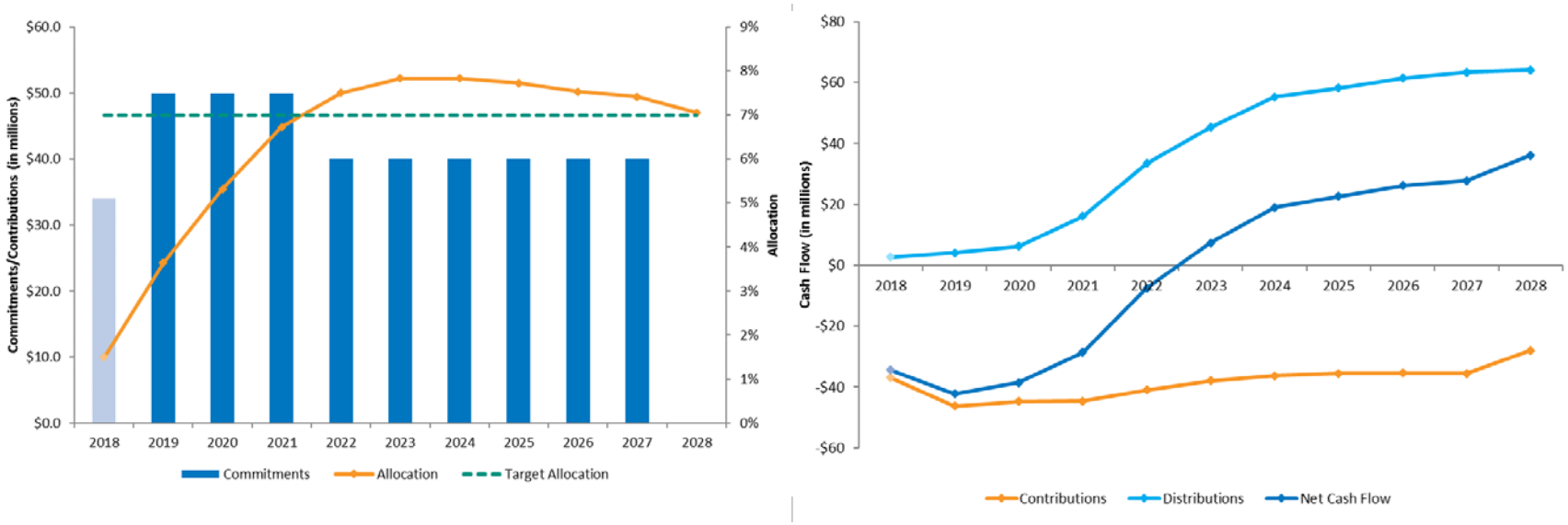
- Private assets also mitigate risk relative to public markets through:
  - The inability to buy/sell, less frequent marks
  - Resiliency of support that PE sponsored companies receive

Investment Process

Asset Class Structure: Private Equity Implementation

- Commitments are made in tranches each year based on the opportunity set determined through the expected portfolio construction, manager capacity (existing or new relationships), and market environment
- Commitment amounts are limited each year so as to provide vintage year diversification
- Capital committed and invested over multiple years for each fund, pacing our commitments is not an exact equation
- The early years of each investment period are known as the "j-curve" referring to negative returns associated with capital deployment and expenses occurring before capital appreciation is recognized

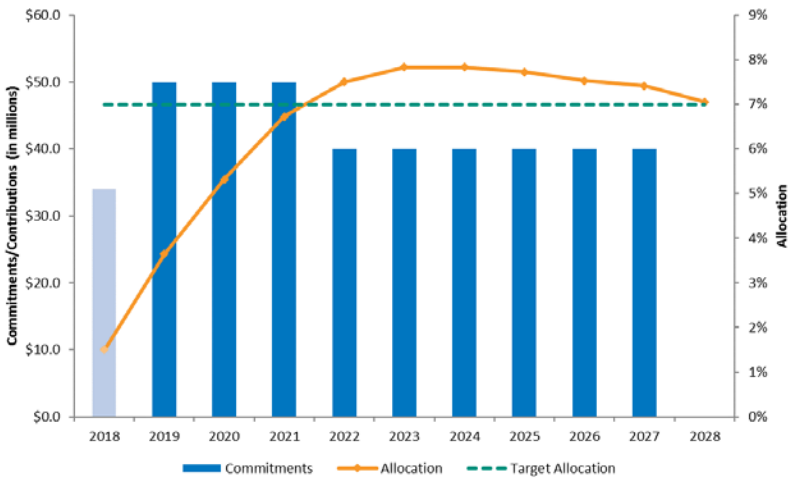
Private Equity Pacing



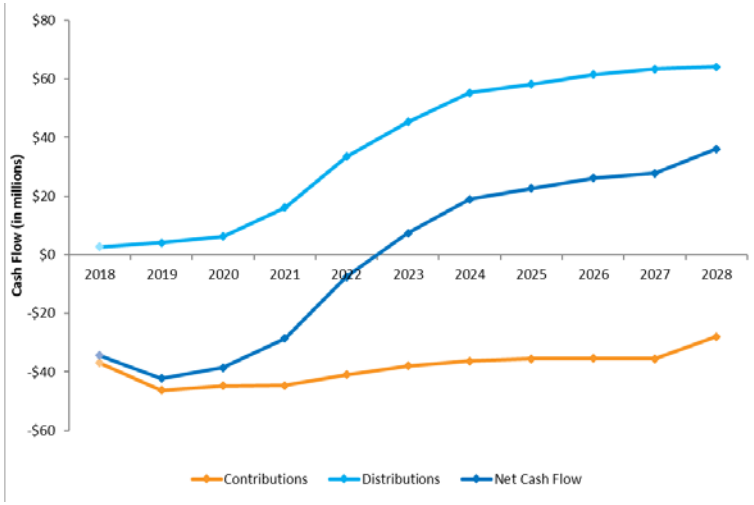
Investment Process

Asset Class Structure: Private Equity Implementation

Commitments vs. Portfolio Allocation



Net Cash Flow



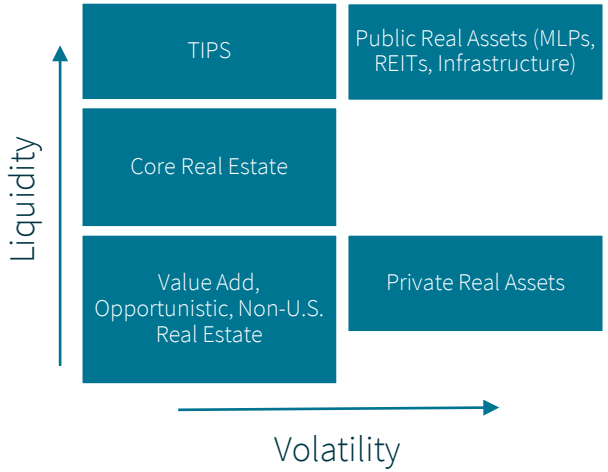
Summary Cash Flow -	*Private Equity*					*t + 5*					*t + 10*
	2Q 2018	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
Porfolio Value	$2,490,644,598	$2,563,397,821	$2,649,631,799	$2,736,728,117	$2,824,695,398	$2,913,542,352	$3,003,277,776	$3,093,910,554	$3,185,449,659	$3,277,904,156	$3,310,683,197
Proposed Spending	-	*(60,000,000)*	*(60,000,000)*	*(60,000,000)*	*(60,000,000)*	*(60,000,000)*	*(60,000,000)*	*(60,000,000)*	*(60,000,000)*	*(60,000,000)*	
Commitments	34,000,000.00	*-*	*50,000,000*	*50,000,000*	*50,000,000*	*40,000,000*	*40,000,000*	*40,000,000*	*40,000,000*	*40,000,000*	*40,000,000*
NAV	37,231,058	49,104,106	96,563,638	145,564,354	190,165,716	218,669,193	235,388,255	242,296,621	246,159,155	246,785,286	245,577,807
Allocation (%)	1.49%	1.92%	3.64%	5.32%	6.73%	7.51%	7.84%	7.83%	7.73%	7.53%	7.42%
Contributions	(14,517,456)	(37,079,287)	(46,244,822)	(44,744,709)	(44,675,167)	(41,018,961)	(37,923,368)	(36,301,407)	(35,586,149)	(35,414,139)	(35,555,239)
Distributions	1,125,000	2,618,708	4,021,480	6,240,315	16,028,464	33,488,761	45,311,468	55,270,303	58,224,493	61,522,151	63,363,716
Net Cash Flow	(13,392,456)	(34,460,579)	(42,223,342)	(38,504,394)	(28,646,703)	(7,530,200)	7,388,100	18,968,896	22,638,344	26,108,012	27,808,477

Investment Process

Asset Class Structure: Real Assets

- Liquid Strategies
  - Flexibility
  - Offset illiquidity risk
  - Adjust based on valuations and asset allocation needs

- Private Strategies
  - Core real estate as semi-liquid, inflation oriented
  - Value-add/opportunistic real estate for higher return
  - Global exposure for diversification and return
  - Private real assets as diversifiers from SITLA
    - Water, agriculture, timber, power
    - Smaller target given SITLA

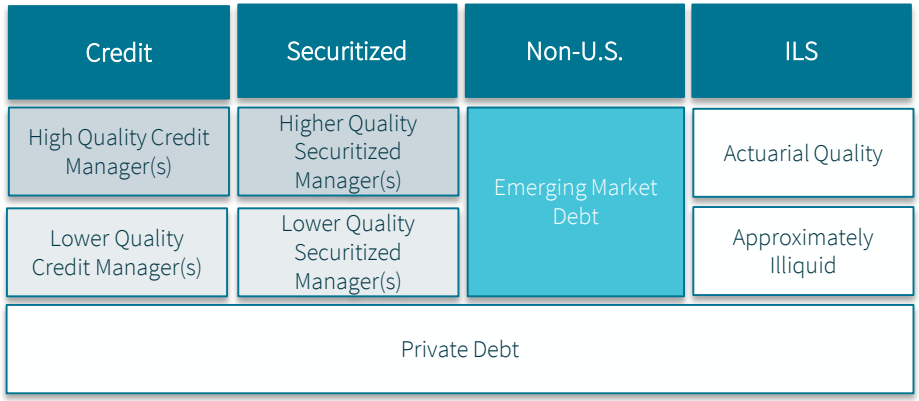


Risk Category	Asset Class	Portfolio Weight	Asset Class Weight	Benchmark
Real Assets	TIPS	3.00%	17.6%	Barclays U.S. 0-5-year TIPS Index
Real Assets	Public Real Assets	4.00%	23.5%	Alerian North American Energy Index
Real Assets	Private Real Estate	9.00%	52.9%	NCREIF Property Index
Real Assets	Private Real Assets	4.00%	23.5%	Thompson One Private NR Index

Investment Process

Asset Class Structure: Income

- Return/Risk
  - Understanding implicit equity beta, geared towards credit not duration
  - Overweight securitized to diversify away from corporate risk
- Breadth/Opportunity
  - Broad mandates within asset class
  - Global and inclusion of private debt to participate in less traveled markets
- Benefits
  - Global macroeconomic headwinds
  - Higher up in capital structure than equity, lower volatility, similar forward looking returns
  - Higher proportion of returns as income for repurposing
  - Regulatory changes generating opportunities in credit



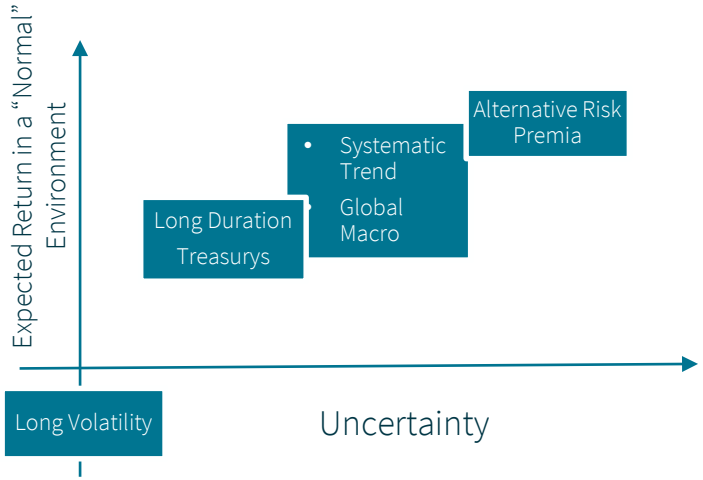
Risk Category	Asset Class	Portfolio Weight	Asset Class Weight	Benchmark
Income	U.S. Corporate Debt	7.0%	22.6%	50% Barclays U.S. Corp, 25% Barclays U.S. Corp HY, 25% CS Leveraged Loans
Income	U.S. Securitized Debt	8.0%	25.8%	50% Barclays MBS, 25% Barclays CMBS, 25% Barclays ABS
Income	Insurance Linked Securities	4.0%	12.9%	Eurekahedge ILS Advisers Index
Income	Non-U.S. Debt (EMD)	5.0%	16.1%	50% Citi Non-U.S. WGB, 16.7% JPM EMBI, 16.7% JPM GBI-EM (Unhedged), 16.7% JPMorgan CEMBI
Income	Private	7.0%	22.6%	Thomson Private Debt Index

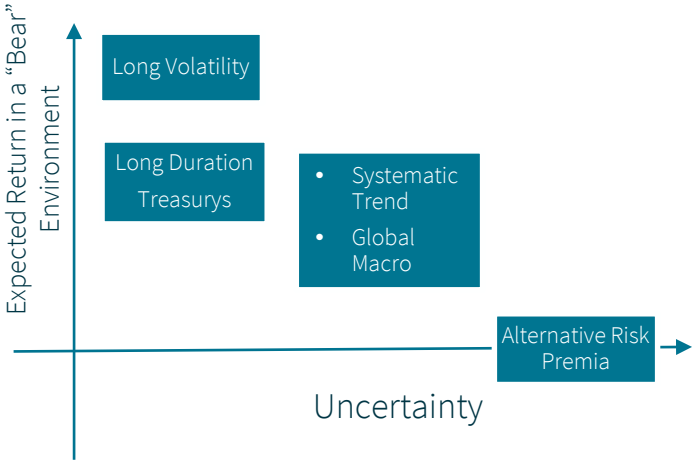
Investment Process

Asset Class Structure: Defensive

- Context
  - Total portfolio return objective is demanding complex
  - Time horizon and risk tolerance should allow for volatility and negative performance in any short-term period

- Purpose
  - Avoid equity beta
  - Include positive carry with caution
  - Looking for convexity, not Sharpe ratio





Investment Process

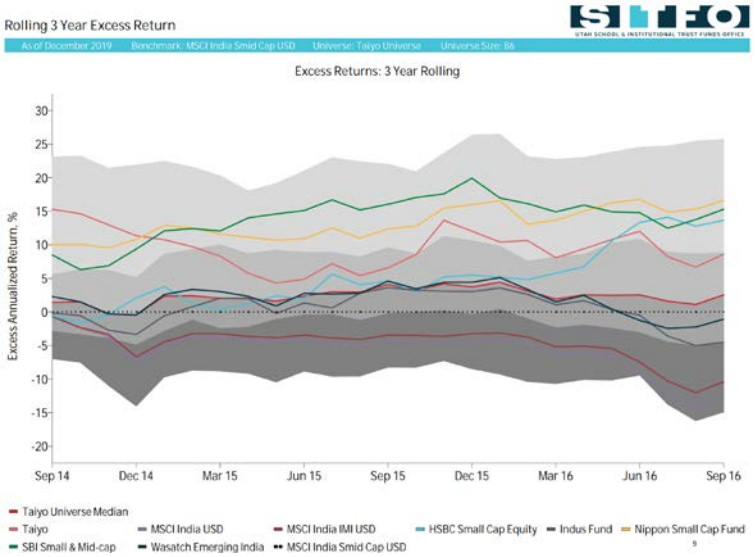
Idea Generation

- Strategy ideas are sourced through asset allocation outputs, FEG, the Board, internal research, and third-party research vendors, among other sources. Strategy ideas are continuously tracked and scored on a quantitative basis to assist in determining priority within SITFO's capital deployment pacing.

Coverage	Priority	Strategy	Category	Asset Class	Target Returns	Target Risk	Target Correl.	Portfolio Gap	Curent Valuations	Speed to Deploy
				(3=H, 2=M, 1=L, Risk and Correl use inverted)						
RK	1.5	US	Real Assets	Private Real Estate	2	2	2	0	1	2
PM	1.8	India VC	Growth	Private Equity	3	1	2	2	2	1
RK	1.8	Mining	Real Assets	Private Real Assets	2	1	1	3	2	2
PM	1.8	Trade Finance	Income	Public Real Assets	1	2	3	3	1	1
PM	1.8	Biotech	Growth	USSC	3	1	2	2	1	2
PM	2.0	China A Shares	Growth	EM	2	2	2	3	1	2
BS/PM/JL	2.0	Port Alpha TIPS	Real Assets	TIPS	1	3	3	2	2	1
JL	2.3	Transport	Income	Public Real Assets	2	3	2	3	2	2

- SITFO works jointly with FEG to analyze the competitive landscape and identify the most attractive investment manager available within each strategy using a variety of qualitative and quantitative inputs and models.

Firm/Product	Treynor Ratio	Rank	Max Drawdown	Rank	Calmar Ratio	Rank	Downside Semi-St. Dev.	Rank	Alpha	Rank
Taiyo	-0.04	98	-48.37	98	-0.06	95	9.65	2	-5.43	95
MSCI India USD	0.05	16	-26.38	19	0.19	22	5.65	31	2.04	23
MSCI India IMI USD	0.05	23	-26.32	19	0.18	23	4.54	60	1.70	26
HSBC Small Cap Equity	-0.03	90	-45.47	93	-0.04	90	6.32	24	-4.76	93
Indus Fund	0.01	67	-24.19	7	0.09	64	5.91	29	-0.88	69
Nippon Small Cap Fund	0.04	38	-37.28	76	0.13	48	4.52	62	1.63	26
SBI Small & Mid-cap	0.08	7	-35.02	67	0.23	10	4.67	55	4.91	5
Wasatch Emerging India	0.12	5	-20.15	2	0.49	2	5.23	36	6.52	2
MSCI India Smid Cap USD	0.02	61	-32.80	63	0.10	56	0.00	100	0.00	57
Taiyo Universe Median	0.03	50	-31.04	50	0.12	50	4.68	50	0.43	50



Investment Process

Underwriting – Investment Manager Research Report

- A deep-dive investment manager research report is generated internally by SITFO staff or provided by FEG. The reports provides a detailed overview of the firm, investment team, investment strategy and philosophy, investment process, risk management procedures, and historical performance against peers.

GLOBAL FIXED INCOME AND CREDIT

[redacted] FUND L.P.

PRIVATE DEBT – A1

MANAGER SUMMARY

[redacted] billion in assets under management as of September 30, 2019 and approximately 1200 employees in over 20 offices across the U.S., Europe, Asia, and Australia. Common stock [redacted] Exchange under the ticker symbol [redacted] distinct but complementary and integrated groups that invest in the tradable credit, direct lending, real estate, and private equity markets with the belief that it can effectively invest in all levels of a company's capital structure. Ares' investment management activities are also undertaken by a number of subsidiaries.

STRATEGY SUMMARY

[redacted] the strategy) is seeking $2 billion [redacted] defines as a collection of sectors [redacted] traditional asset classes. Ares believes it can earn a yield premium over corporate direct lending by identifying underpenalized alternative credit sectors and crafting bespoke structures [redacted] side potential and are secured by [redacted] alternative credit into three verticals:

- Specialty Assets – investments secured by non-traditional, cash flow generating financial assets in which Ares' counterparty is a non-financial institution.
- Financial Assets – investments secured by cash flow generating financial assets which are associated with banks and other lending institutions.
- Real Assets – investments secured by cash flow generating "hard" assets, including investments collateralized by real estate.

[redacted] three prior Indicus Credit Opportunities Funds (ICOF) in terms of fund size and opportunity set. While [redacted] focused primarily on specialty assets and financial assets [redacted] intends to implement a relative value philosophy to actively allocate capital across the three aforementioned verticals.

The fund will be managed by [redacted] who previously oversaw all of Ares' structured [redacted] Isabel Holsinger, who served as co-head [redacted] group prior to joining Ares in 2019. A[redacted] investment professionals across the [redacted]

FEG'S SIX-TENET PERSPECTIVE

CONVICTION / [redacted] affiliates and employees intend to commit 2.5% ($50 million) [redacted] cash, half of which is expected to come from the P[redacted] indicating the team's confidence in the strategy. Additionally [redacted] invested significant resources into building an alternative [redacted] form, demonstrating a long-term commitment to the space.

CONSISTENCY / While [redacted] marks an evolution from [redacted] strategy, its larger size, significant changes to the investment [redacted] and an expanded opportunity set limit continuity. Nevertheless, Holsinger and Ashton's focus on developing alternative credit platforms throughout their careers lends a degree of consistency to the strategy.

PRAGMATISM / [redacted] positions it as one of the few firms with the capability to execute its relative value philosophy across several discrete asset classes requiring dedicated expertise. From a sourcing standpoint, the firm's size provides greater flexibility compared to sector focused competitors with smaller capital bases.

INVESTMENT CULTURE / [redacted] operates under a "one team" culture in which collaboration a[redacted] ment teams is encouraged. Senior investment professionals are afforded the opportunity participate in the carried interest from other investment groups based on a significant contribution to a successful investment.

RISK CONTROL / [redacted] controls risk primarily through its credit underwriting and structuring expertise. Since the firm began investing in alternative credit, it has generated an annualized loss rate of 0.02%, significantly below the loss rates for public non-investment credit markets (approximately 2%).

ACTIVE RETURN / Across the three prior ICOF funds, [redacted] generated a net internal rate of return (IRR) of 11.1%, outperforming the HFRI RV: Asset-Backed Index by 270 basis points. On a Total Value to Paid In (TVPI) basis, the first two [redacted] have performed in the top quartile of the Thompson One Opportunistic Credit universe.

FIRM / STRATEGY DETAILS	FUND TERMS	CONTACT INFORMATION
Strategy: Opportunistic Alternative Credit	**Management Fee:** 1.25% on invested capital (1.125% for first closers)	[redacted]
Industry Focus: Generalist	**Fee Offset:** 100%	New York, NY 10167
Geographic Focus: Global	**Organizational Expenses:** $4 million	
Target Fund Size: $2 billion	**GP Commitment:** 2.5% up to $50 million	
Portfolio Investments: 30 to 50 investments	**Term:** 7 years	
Individual Investment Size: $30 to $70 million	**Distribution Waterfall:** European	
Expected Closing: February 2020 First Close	**Carried Interest:** 20%	
	Preferred Return: 6%	
	Investment Period: 3 years	

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Manager Research Report: [redacted] Income & Growth Fund VIII

Firm:	[redacted] vestment Management, Inc.
Product:	[redacted] come & Growth Fund VIII, L.P.
Category:	[redacted]
Asset Class:	Private Real Estate

I. Firm Background:

A. [redacted] was founded in 1980 to provide institutionalized real estate offerings. In 1999, [redacted] merged with [redacted] an international real estate firm, in efforts to enhance the firm's global footprint. Today, LaSalle manages approximately $59.5 billion across real estate markets in the Americas, Europe and Asia Pacific. The firm's America's Private Equity Business, which oversees the Income & Growth Fund Series represents approximately $20.3 billion of the firm's AUM.

B. [redacted] is a wholly owned and operationally independent subsidiary [redacted] a publicly traded corporation listed on the New York Stock Exchange (NYS[redacted] As of June 29, 2019, the top five shareholders of [redacted] lude Vanguard Group, Inc. (12.99%), Blackrock Inc. (9.56%), Generation Investment Management LLP (8.27%), State Street Corporation (3.14%) and Atlanta Capital Management company LLC (2.75%). Management stated that [redacted] represented approximately 8% o[redacted] operating income for the fiscal year ended December 31, 2018.

C. [redacted] had 750 employees firm-wide as of year-end 2018, including over 200 employees dedicated to the America's Private Equity Business. [redacted] may also leverage [redacted] more than 7,000 employees where necessary. [redacted] maintains 24 offices globally, including the firm's headquarters located in Chicago, IL.

II. Team Background

A. The Fund Series team consists of 11 dedicated employees, including three investment professionals as follows:

1. [redacted] and an MBA from the Kellogg School of Management at Northwestern University.
2. [redacted] 1985 as a member of the firm's U.S. Acquisitions group and has since served in a variety of positions, most recently as president of Fund VI and VII and chairman of the Fund Series. He previously led the Fund Series as CIO from 1996 (inception) to February [redacted]

Investment Process

Underwriting – Investment Thesis Memo

- An investment cover memo is further produced which provides key terms/fees of the investment, the investment thesis, rationale for hiring and firing the manager, favorable and unfavorable aspects of the strategy, and rationale for over or under-weighting the proposed investment size.

SITFO

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Investment Cover Memo: [redacted]

Firm:	[redacted]	**Firm/Strategy AUM ($MM):**	144,000 in firm AUM / 4,991 invested within strategy since inception
Product:	[redacted]	**Target Fund Size ($MM):**	2,000 (no hard cap)
Final Close:	September 2020	**Strategy Inception Date:**	2011
Category:	Income	**Target Portfolio Weight:**	0.6% / $15MM
Asset Class:	Private Debt	**Risks:**	Credit risk; Regulatory environment risk
Sub-Asset Class:	Asset backed / Direct lending	**Target IRR (net):**	11%
Benchmark/Peer Group:	Thompson One Opportunistic Credit Index	**Investment Period/Term:**	4 years / 8 years (two optional one-year extensions)
Fees:	Management fee of 1.25% on invested capital / Administrative fee of 0.02% on invested capital / Carried interest of 20% with a 6% preferred return and European waterfall	**Analyst:**	Johnny Lodder

I. Investment Thesis/Opportunity:

A. Asset-backed finance remains a stable asset class with an emphasis on downside protection, which we view as attractive in a late cycle environment. The asset class aims to derive attractive risk adjusted returns from non-traditional collateral and direct origination, rather than as a function of corporate lending, leverage, or lower quality loans.

B. Regulatory changes and retrenchment from commercial banks once active in asset-backed finance has resulted in increased opportunities for non-traditional lenders to tailor creative financial solutions, specifically those with the size and capabilities of a large multi-strategy firm such as Ares.

C. SITFO made a previous investment [redacted]) and view the firm as a core relationship within the portfolio's pri[redacted] The fund series has now been rebranded t[redacted]n expanded mandate and opportunity set (see below).

II. Rationale for Hiring Manager:

A. [redacted] large multi-strategy firm with approximately 1,200 employees across a variety of credit, private equity, and real estate offerings. The strength [redacted]esence and capabilities in such markets provides key advantages in sourcing origination opportunities for the fund. Further, many of the investments that the fund will pursue will include components to which the broader Ares platform can contribute to in the diligence process.

B. The team has significant industry experience wit[redacted]n (Co-Head of Alt Credit) and [redacted]er (Co-Head of Alt Credit) having suc[redacted]oyed capital to asset backed investments through multiple credit cycles [redacted] are further supported by 18 dedicated senior investment professionals with over 20 years of industry experience on average across a variety of underlying sectors.

C. [redacted]y members of th[redacted]r team will commit 2.5% (up to $50 million) to the fund, exhibiting conviction in the strategy and an alignment of interest with LPs.

III. Rationale for Firing Manager:

A. Given that this is a private debt, multi-year investment, SITFO is unable to terminate the relationship without incurring a large discount in the secondary market. Nonetheless, key person provisions are in place should senior investment professionals leave the firm.

B. Should the investment strategy drift or fail to deliver per expectations, SITFO would reevaluate future commitments to Ares.

IV. Favorable Aspects of Strategy:

A. Asset-backed finance strategies such as [redacted]ften focus within a narrow band of sectors or specialties. Such specialization can lead to outperformance during prolonged periods of favorable conditions but can oftentimes lead to a lack of flexibility as markets change. On the contrary, the Pathfinder mandate remains flexible in its ability to deploy capital across a broad range of sectors, structures (e.g. ABS debt, CLOs) and deal sizes, allowing it to better navigate changing market conditions.

B. The [redacted] strategy emphasizes downside protection and capital preservation which SITFO views as favorable late cycle. The strategy accomplishes downside protection by primarily originating asset-backed investments that carry structural protections, front-loaded cash flows, and seniority within the capital structure. As such, 2% of realized investments since strategy inception have generated negative returns, with an average recovery rate on those deals of 90% (annualized loss rate of 0.02%). [redacted]

C. Fund series returns have been relativel[redacted]008) an[redacted]2) being top quartile performers on a TVPI basis [redacted]ormance has been negatively

Investment Process

Underwriting - Operational Due Diligence

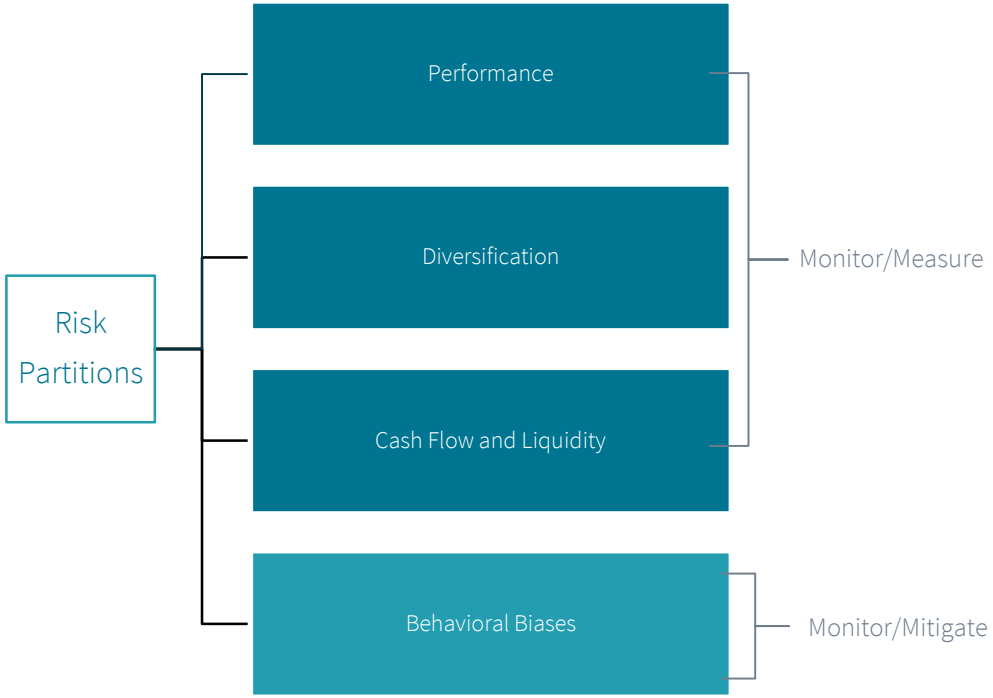
- Operational due diligence is be conducted by FEG's ODD team which stands independently from both SITFO staff and the FEG investment research team.
- Key components of the operational due diligence process include the following:

Due Diligence Item	Completed	Comments
Initial Call or On-Site Meeting	Yes	
QER	Yes	
RFI Questionnaire/DDQ	Yes	
FEG Compliance Memo	Yes	Reviewed by FEG Compliance January 2020
Performance Data	Yes	
References	Yes	
Form ADV	Yes	
Audited Financials	Yes	
SEC Audit Letters	No	
GIPS Compliance Report	N/A	
Subscription/Offering Documents	Yes	

Investment Process

Portfolio and Risk Management

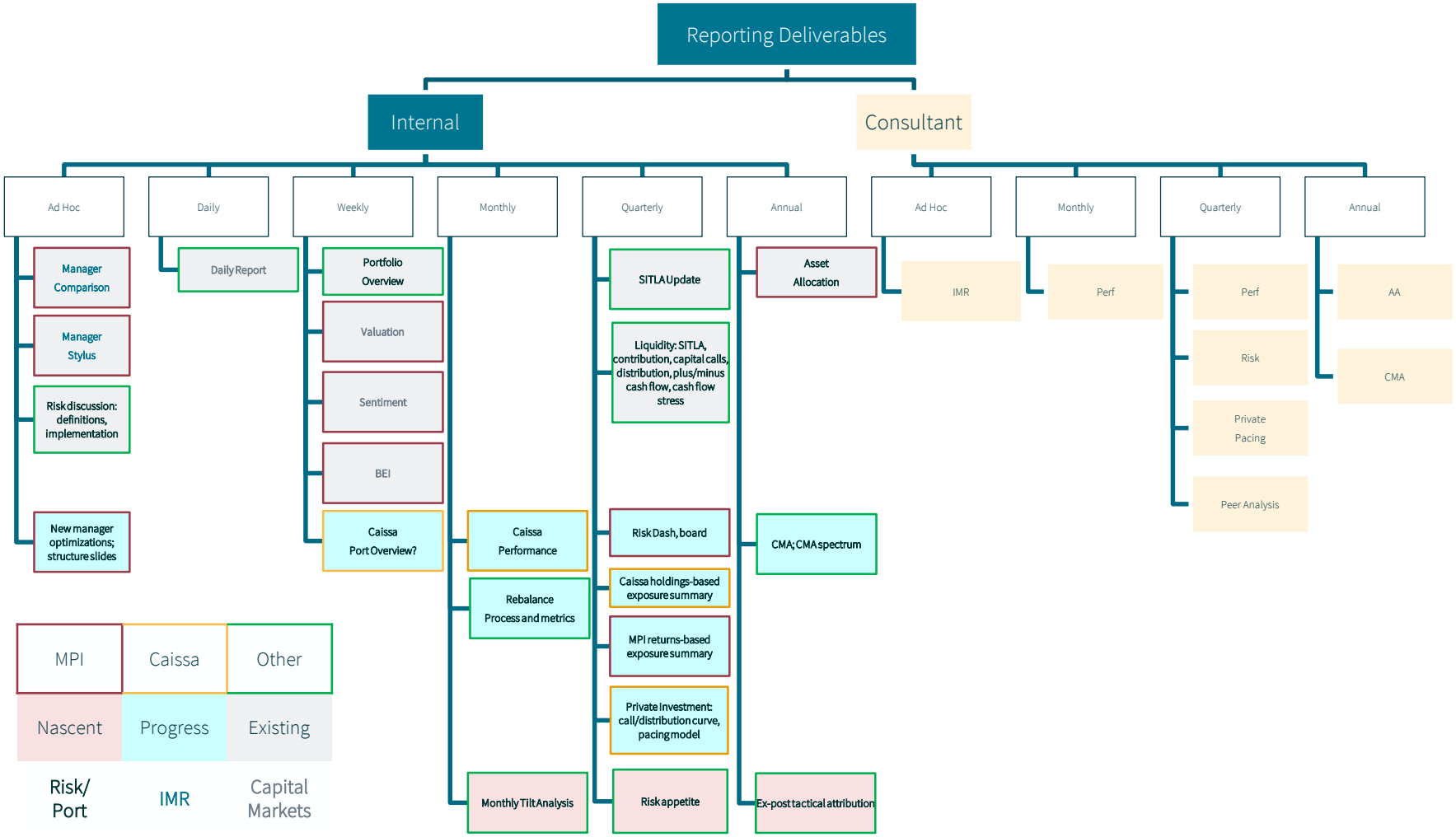
- Risk partitions



Investment Process

Portfolio and Risk Management

- Observe endogenous and exogenous portfolio dynamics
- Detailed portfolio monitoring



Context and Progress Update

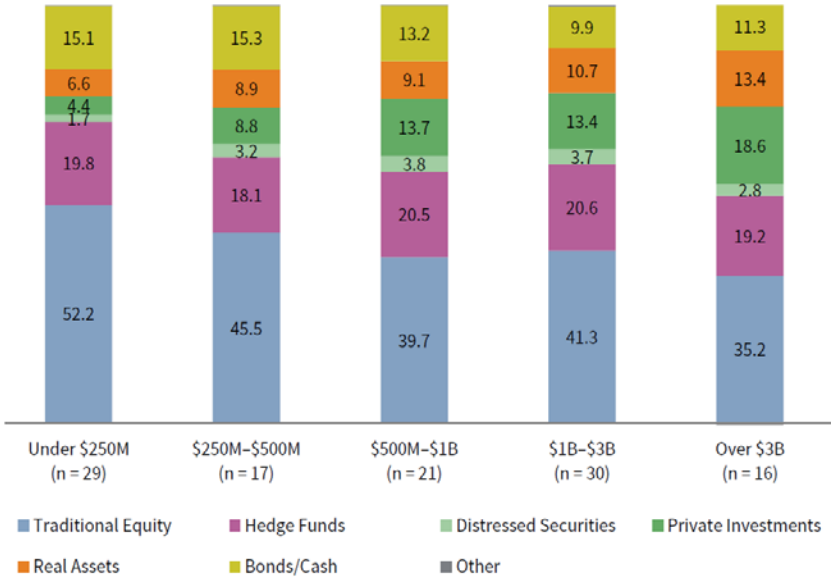
SITFO Portfolio and Staff vs Peers

Context and Progress Update

SITFO Portfolio and Staff vs Peers

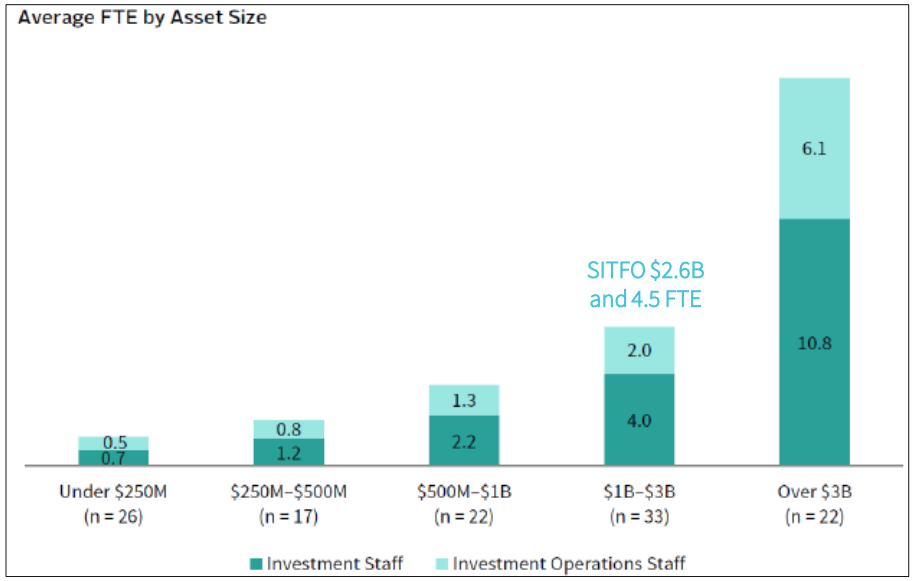
- As portfolios increase in size, they tend to increase in complexity and to be driven more by staff than committee or consultant
- With the increase in complexity and greater reliance on staff, attracting and retaining talent is paramount
- Figure 2 shows the increased diversification and complexity as portfolios increase in size
- Figure 4 shows that portfolios with $1-$3B in assets warrant a total staff of 6 FTE (4 investment and 2 operations FTE)
- SITFO currently employs 4.5 FTE (3 investment and 1.5 operations)

FIGURE 2. MEAN ASSET ALLOCATION BY ASSET SIZE
As of June 30, 2017 • n = 113



Sources: Cambridge Associates LLC Investment Office Organization and Governance Survey and Investment Pools Database.

FIGURE 4. INVESTMENT OFFICE STAFF SIZE
As of June 30, 2017 • n = 120

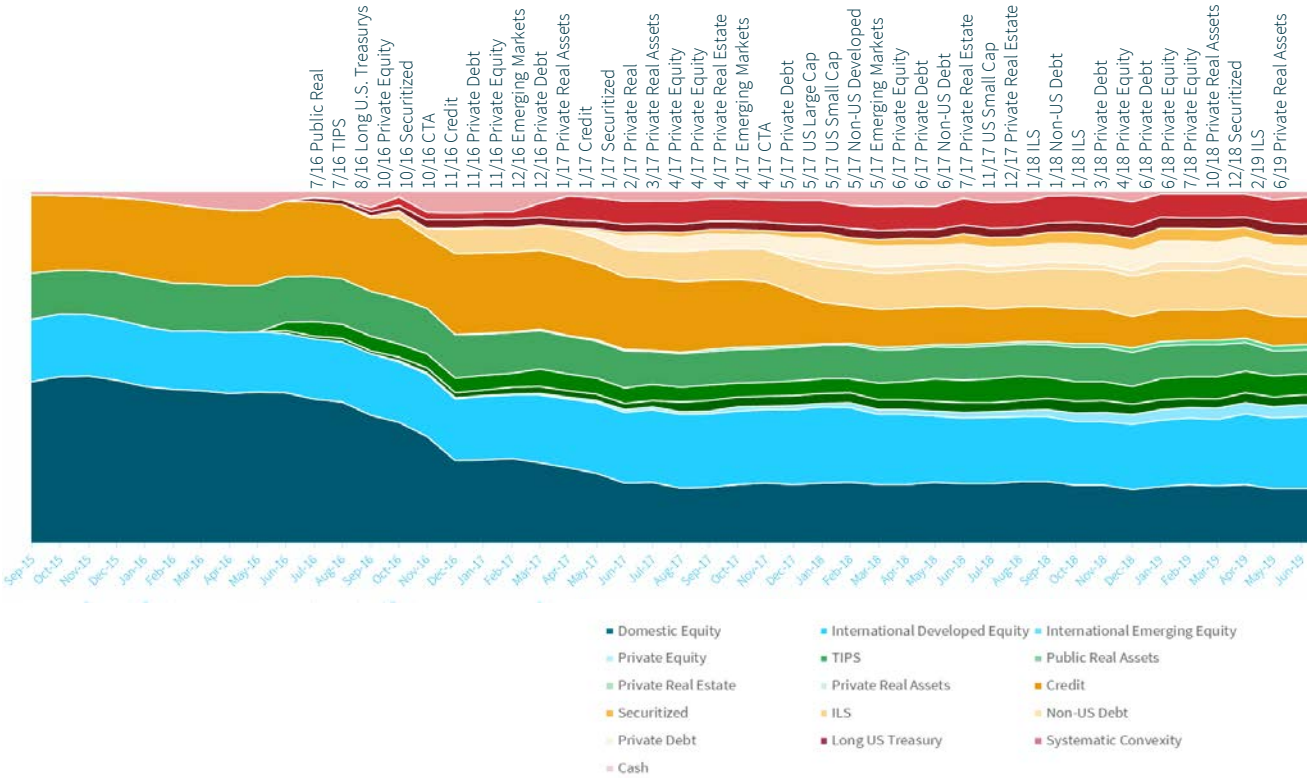


Source: Cambridge Associates LLC Investment Office Organization and Governance Survey.

Context and Progress Update

SITFO Portfolio

- SITFO is building a portfolio based on institutional frameworks and relying less on traditional assets
- To date, SITFO utilizes 50 investment managers/funds
- In FY19 SITFO hired 8 investment managers with a projected total number of ~75-100 across the portfolio

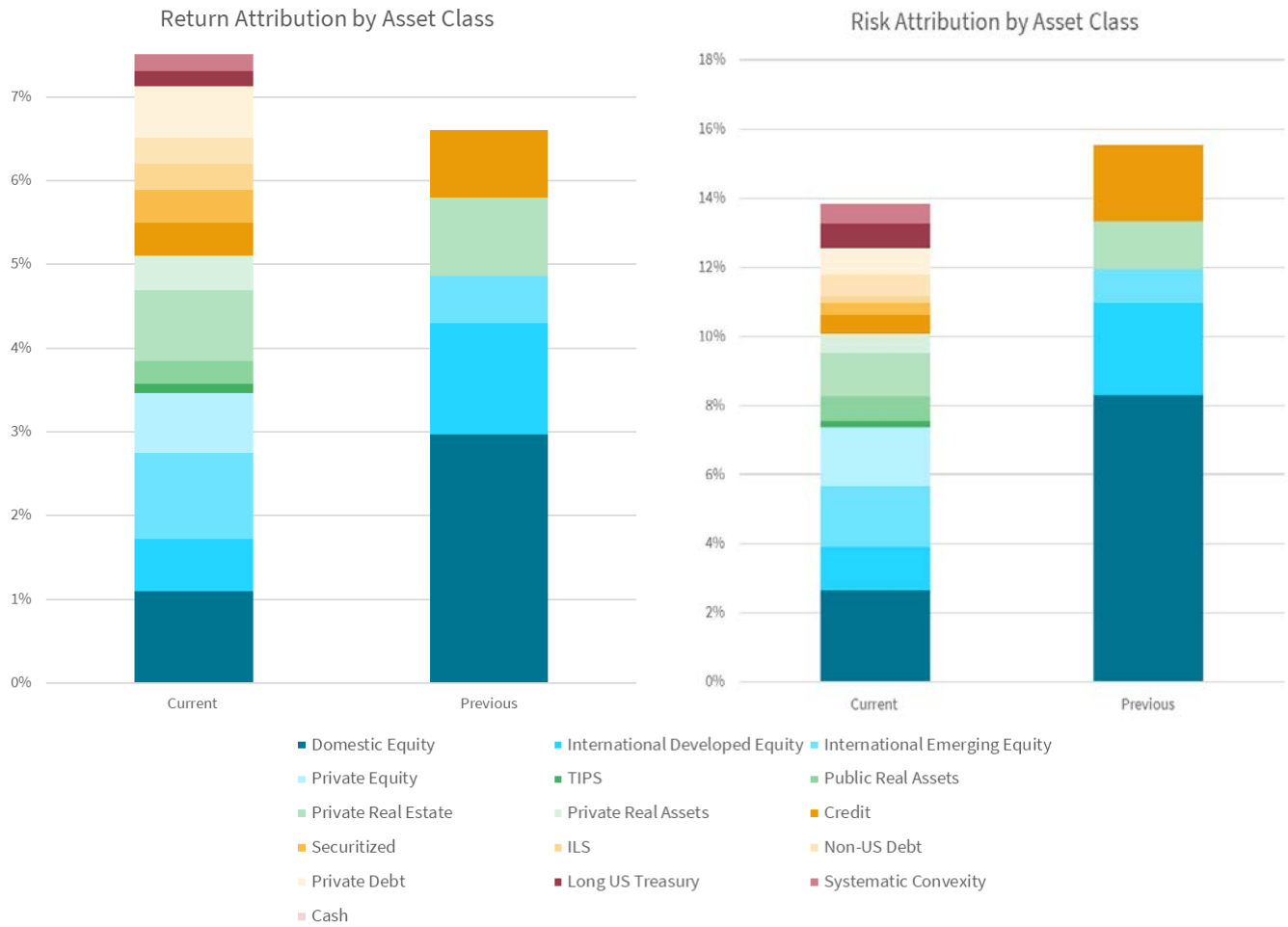


Asset Allocation Target by Asset Class

Context and Progress Update

SITFO Portfolio

- Portfolios are built using a forward-looking framework of return and risk
- Current portfolio is projected to return above 7% annualized over a 10-year horizon
- The current asset allocation is expected to meet our CPI + 5% objective with less risk than the previous portfolio

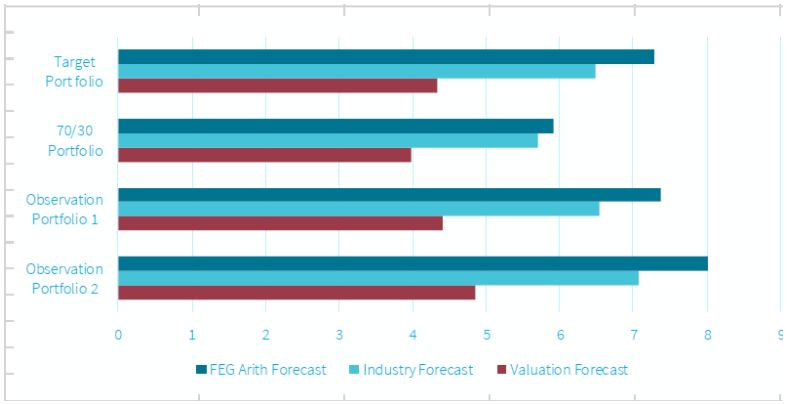


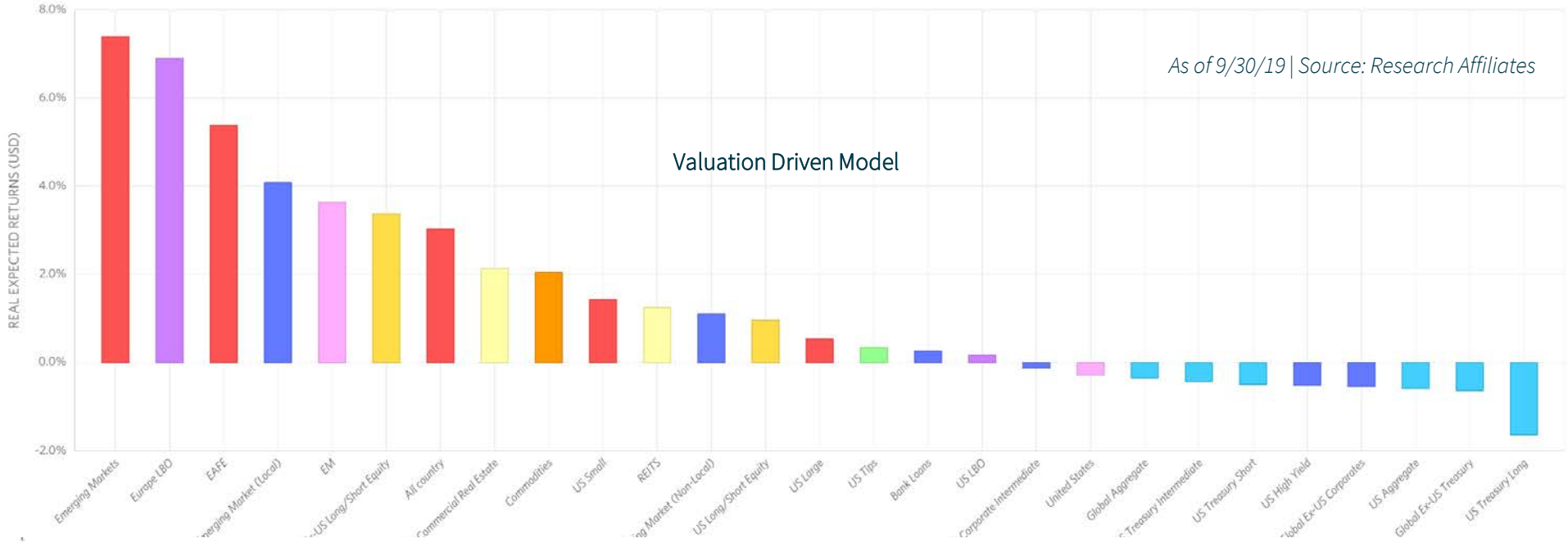
Context and Progress Update

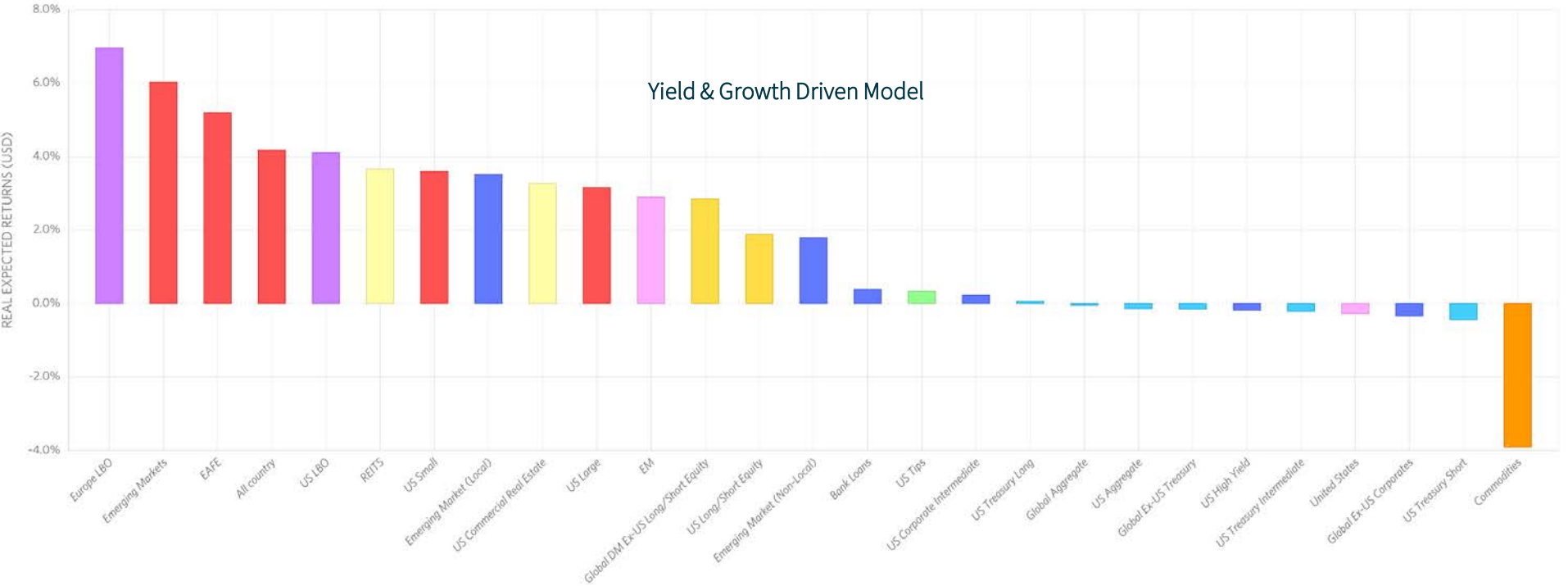
Asset Allocation

- Optimization – trying to meet return objectives, with least risk possible
- Avoid over reliance on any single asset class
- Mindful of estimation errors, illiquidity, fees, and other qualitive risks

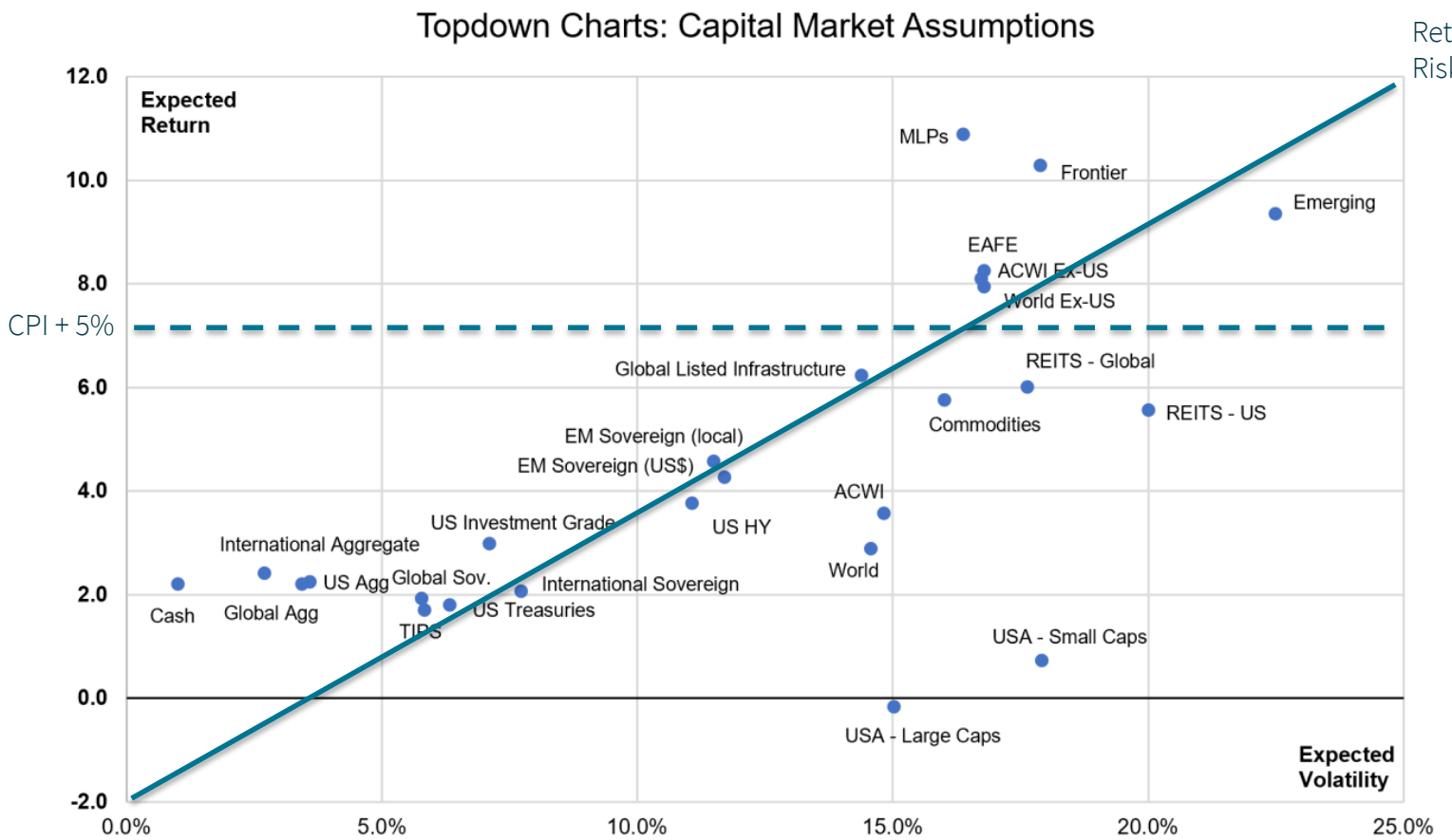
	Expected 10 Year Return			Expected Risk (Volatility)		
	FEG	Industry µ	Valuation Sensitive	FEG	Industry µ	Valuation Sensitive
Growth						
U.S. Large Cap	5	7	3	15	16	14
U.S. Small Cap	6	8	3	23	20	19
Intl Dev Equity	7	7	8	20	17	17
EM Equity	9	10	10	33	23	22
Private Equity	9	10	7	17	24	29
Real Assets						
TIPS	3	3	3	7	6	6
Public Real Assets	8	7	4	22	18	23
Private Real Estate	8	7	4	18	14	13
Private Real Assets	9	7	9	18	14	18
Income						
Credit	4	5	3	11	8	10
Securitized	4	4	3	11	4	3
Non-U.S.	6	6	6	13	12	11
ILS	8	8	8	5	5	5
Private Debt	8	8	3	15	11	7
Defensive						
Long Treasuries	3	3	3	20	14	12
CTA	4	4	4	10	8	12
Cash	2	2	2	0	1	1




As of 9/30/19 | Source: Research Affiliates
Valuation Driven Model
REAL EXPECTED RETURNS (USD)
8.0%
6.0%
4.0%
2.0%
0.0%
-2.0%
Emerging Markets
Europe LBO
EAFE
EM
All country
Commercial Real Estate
Commodities
US Small
REITS
US Long/Short Equity
US Large
US Tips
Bank Loans
US LBO
United States
Global Aggregate
US Treasury Intermediate
US Treasury Short
US High Yield
US Aggregate
Global Ex-US Treasury
US Treasury Long


Yield & Growth Driven Model
REAL EXPECTED RETURNS (USD)
8.0%
6.0%
4.0%
2.0%
0.0%
-2.0%
-4.0%
Europe LBO
Emerging Markets
EAFE
All country
US LBO
REITS
US Small
Emerging Market (Local)
US Commercial Real Estate
US Large
EM
Global DM Ex-US Long/Short Equity
US Long/Short Equity
Emerging Market (Non-Local)
Bank Loans
US Tips
US Corporate Intermediate
US Treasury Long
Global Aggregate
US Aggregate
Global Ex-US Treasury
US High Yield
US Treasury Intermediate
United States
Global Ex-US Corporates
US Treasury Short
Commodities

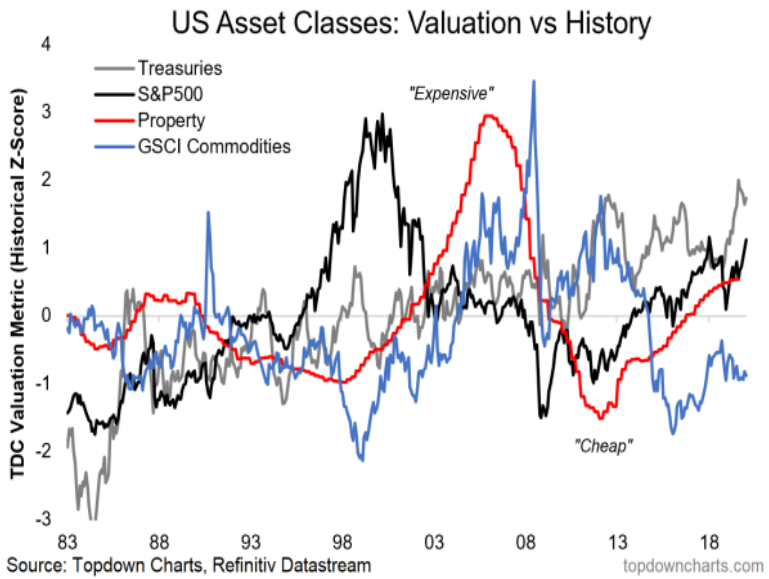
Return vs. Risk Ratio

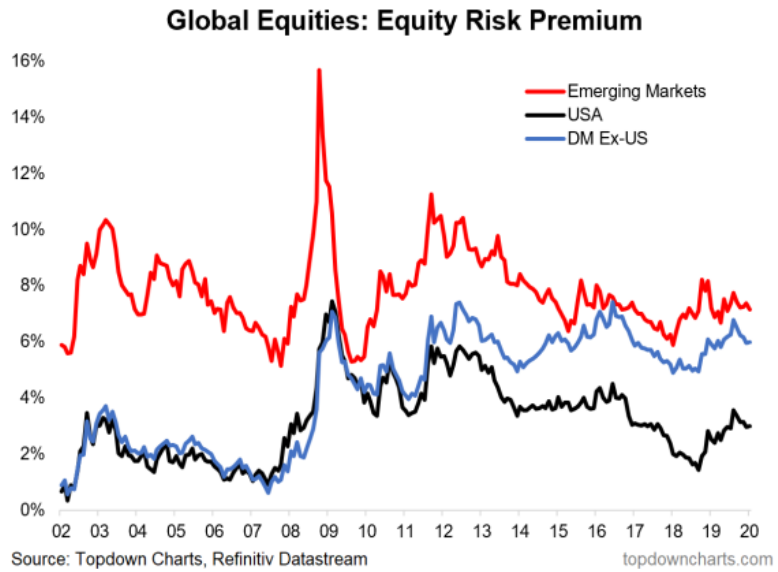


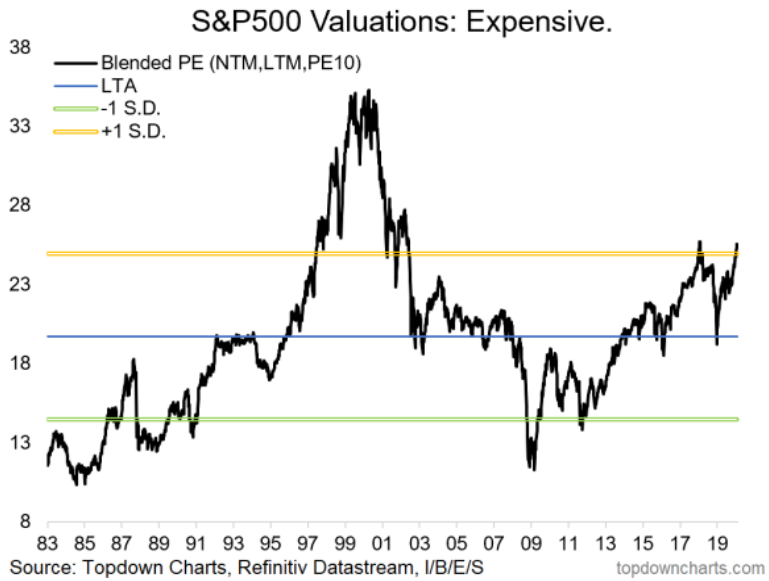
Source: Topdown Charts

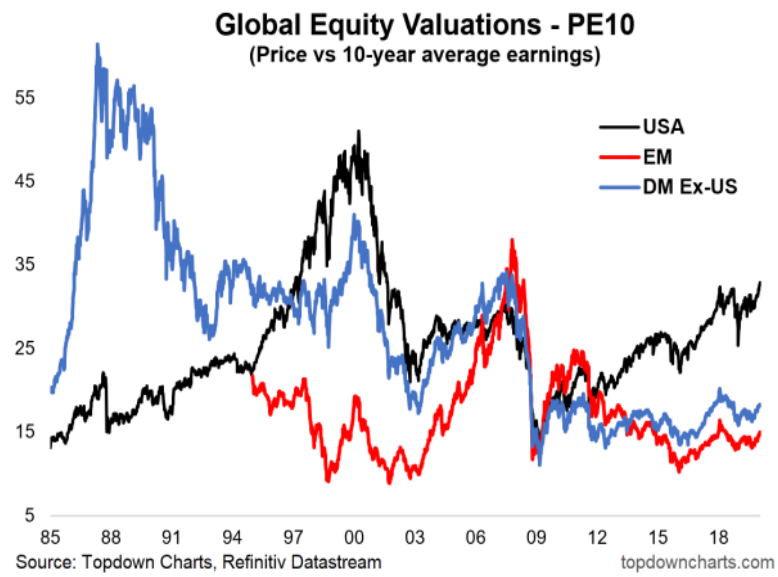
www.topdowncharts.com

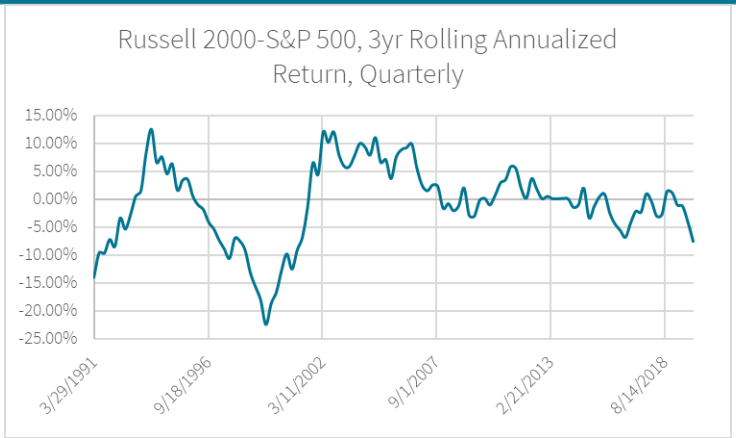
Projections as 20 January 2020, based on expected trend earnings growth, dividend yield, valuation mean-reversion adjustment, hedging and FX changes, yield to maturity, trend nominal GDP. Figures are subject to change and are not a guarantee of performance or offer of securities.

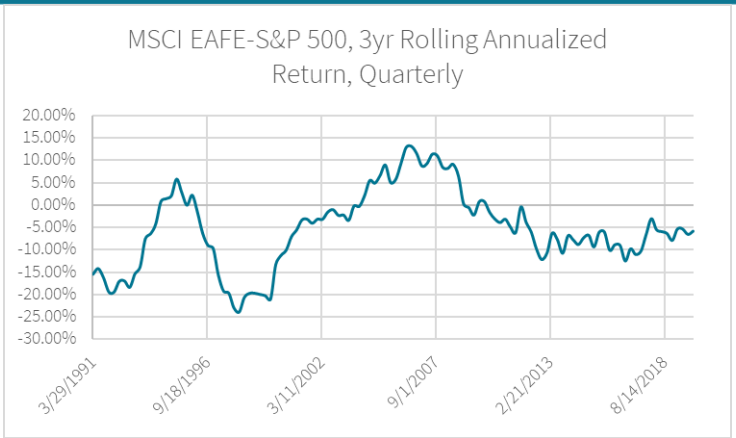

US Asset Classes: Valuation vs History
Treasuries
S&P500
Property
GSCI Commodities
"Expensive"
"Cheap"
TDC Valuation Metric (Historical Z-Score)
4
3
2
1
0
-1
-2
-3
83
88
93
98
03
08
13
18
Source: Topdown Charts, Refinitiv Datastream
topdowncharts.com

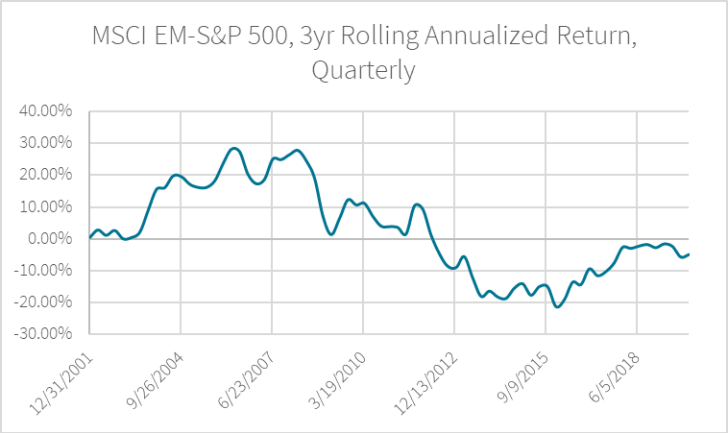

Global Equities: Equity Risk Premium
Emerging Markets
USA
DM Ex-US
16%
14%
12%
10%
8%
6%
4%
2%
0%
02
03
04
05
06
07
08
09
10
11
12
13
14
15
16
17
18
19
20
Source: Topdown Charts, Refinitiv Datastream
topdowncharts.com

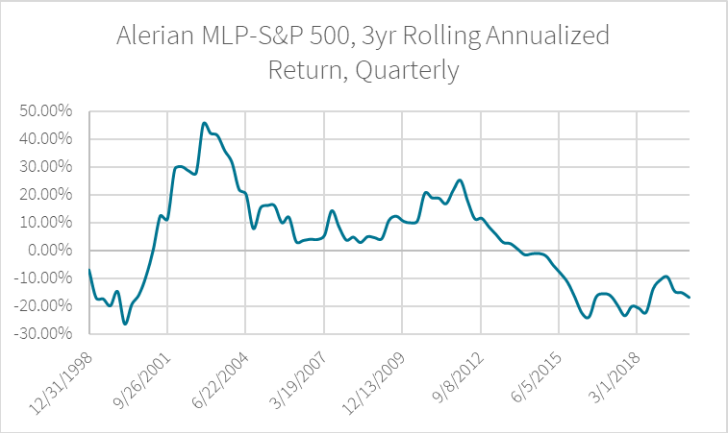

S&P500 Valuations: Expensive.
Blended PE (NTM,LTM,PE10)
LTA
-1 S.D.
+1 S.D.
38
33
28
23
18
13
8
83
85
87
89
91
93
95
97
99
01
03
05
07
09
11
13
15
17
19
Source: Topdown Charts, Refinitiv Datastream, I/B/E/S
topdowncharts.com

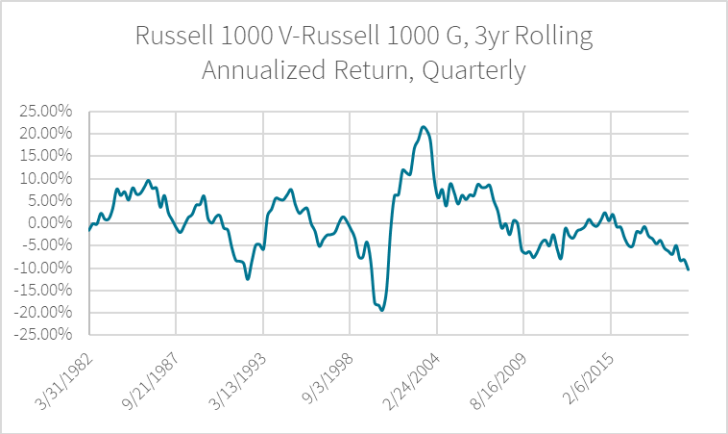

Global Equity Valuations - PE10
(Price vs 10-year average earnings)
USA
EM
DM Ex-US
55
45
35
25
15
5
85
88
91
94
97
00
03
06
09
12
15
18
Source: Topdown Charts, Refinitiv Datastream
topdowncharts.com

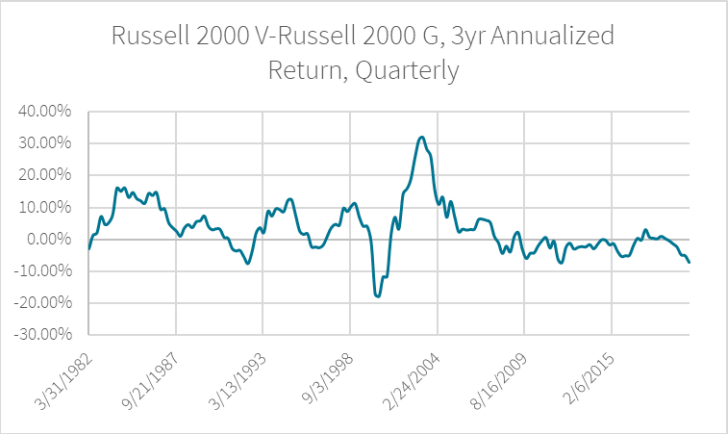

Russell 2000-S&P 500, 3yr Rolling Annualized Return, Quarterly
15.00%
10.00%
5.00%
0.00%
-5.00%
-10.00%
-15.00%
-20.00%
-25.00%
3/29/1991
9/18/1996
3/11/2002
9/1/2007
2/21/2013
8/14/2018


MSCI EAFE-S&P 500, 3yr Rolling Annualized Return, Quarterly
20.00%
15.00%
10.00%
5.00%
0.00%
-5.00%
-10.00%
-15.00%
-20.00%
-25.00%
-30.00%
3/29/1991
9/18/1996
3/11/2002
9/1/2007
2/21/2013
8/14/2018


MSCI EM-S&P 500, 3yr Rolling Annualized Return, Quarterly
40.00%
30.00%
20.00%
10.00%
0.00%
-10.00%
-20.00%
-30.00%
12/31/2001
9/26/2004
6/23/2007
3/19/2010
12/13/2012
9/9/2015
6/5/2018

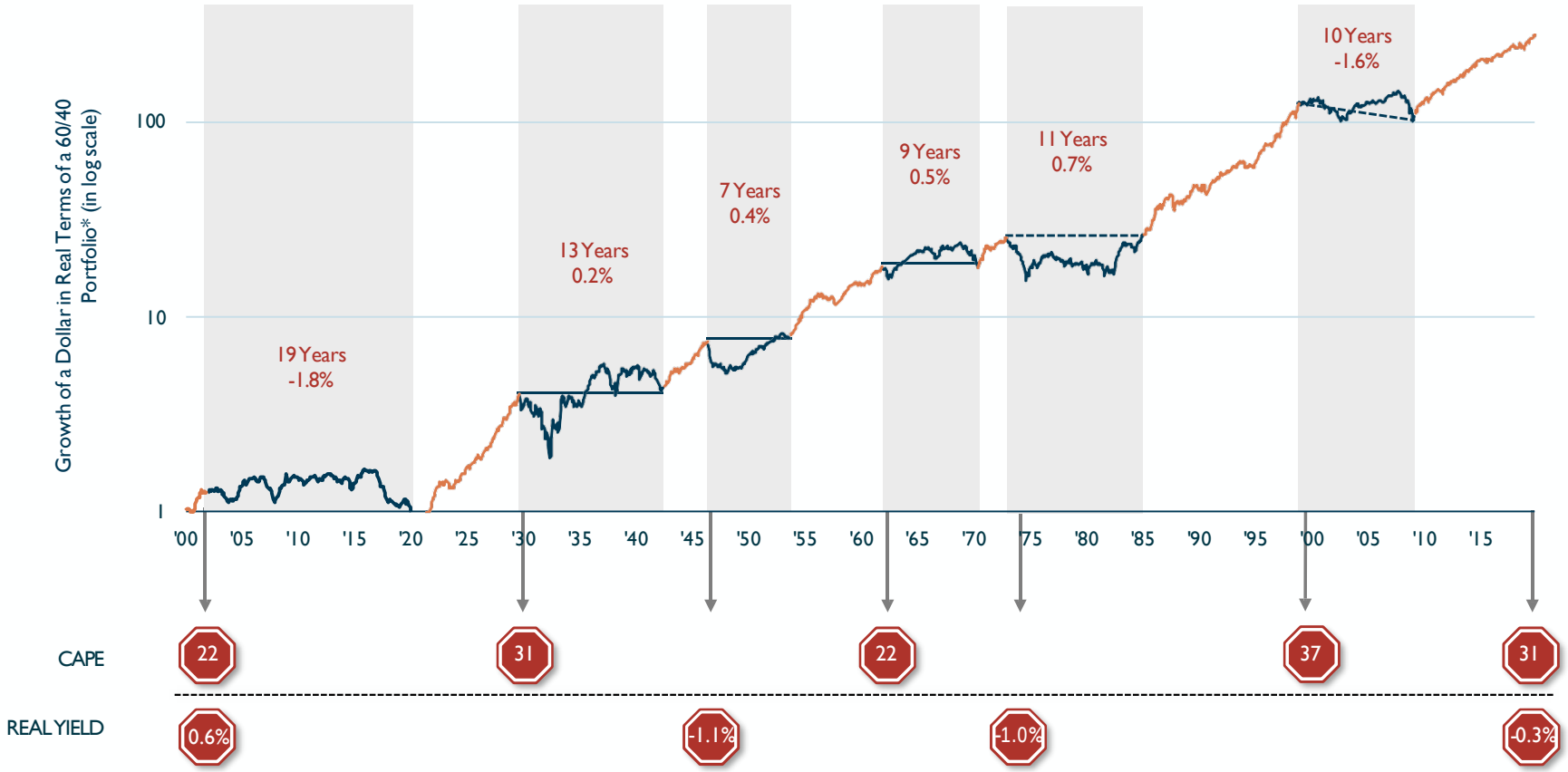

Alerian MLP-S&P 500, 3yr Rolling Annualized Return, Quarterly
50.00%
40.00%
30.00%
20.00%
10.00%
0.00%
-10.00%
-20.00%
-30.00%
12/31/1998
9/26/2001
6/22/2004
3/19/2007
12/13/2009
9/8/2012
6/5/2015
3/1/2018


Russell 1000 V-Russell 1000 G, 3yr Rolling Annualized Return, Quarterly
25.00%
20.00%
15.00%
10.00%
5.00%
0.00%
-5.00%
-10.00%
-15.00%
-20.00%
-25.00%
3/31/1982
9/21/1987
3/13/1993
9/3/1998
2/24/2004
8/16/2009
2/6/2015


Russell 2000 V-Russell 2000 G, 3yr Annualized Return, Quarterly
40.00%
30.00%
20.00%
10.00%
0.00%
-10.00%
-20.00%
-30.00%
3/31/1982
9/21/1987
3/13/1993
9/3/1998
2/24/2004
8/16/2009
2/6/2015

60/40: "LOST DECADES" ARE MORE COMMON THAN YOU THINK

Most started with either high valuations on stocks and bonds – today, they're both expensive



As of 12/31/19 | Sources: Bloomberg, Global Financial Data (early history), Factset (S&P500 returns and CPI), J.P. Morgan (J.P. Morgan GBI United States Traded), Shiller data; real yields are the yield on the 10-Year U.S. Treasury minus the 12 month trailing CPI.
*60% U.S. Equities (S&P 500), 40% U.S. Bonds (U.S. Treasuries) rebalanced monthly. Past Performance is not indicative of future results.

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Portfolio in Transition

Private Market Adjustments

- Adjusting the portfolio weights to scale up private markets, keeping public market over/under weights proportional shows a return similar to peer median and in excess of policy benchmark for FY19

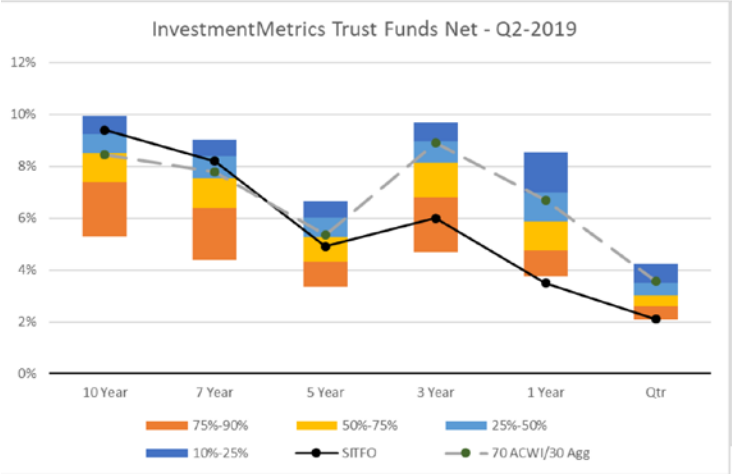
	Portfolio Weight	Target Weight	Active Weight	Adjusted Target	Adj Active Weight	Adjusted Weight	SITFO Return By Asset Class	Adj Portfolio Return	Asset Class Return	Benchmark Return
	6/30/2018	6/30/2018					FY19	FY19	FY19	FY19
U.S. Large Cap	9.5%	7.5%	2.0%	8.9%	0.7%	8.2%	6.0%	0.49%	10.0%	0.89%
U.S. Small Cap	7.6%	7.5%	0.1%	8.9%	-1.3%	6.2%	-4.9%	-0.30%	-3.3%	-0.29%
International Developed	10.2%	7.5%	2.7%	8.9%	1.3%	8.8%	2.6%	0.23%	1.1%	0.10%
Emerging Markets	9.0%	7.5%	1.5%	8.9%	0.1%	7.6%	-1.7%	-0.13%	1.2%	0.11%
Private Equity	*1.5%*	*7.0%*	*-5.5%*	*1.5%*	*0.0%*	*7.0%*	*15.7%*	*1.10%*	*15.8%*	*0.24%*
Public Real Assets	6.6%	4.0%	2.6%	5.1%	1.5%	5.5%	1.3%	0.07%	3.1%	0.16%
TIPS	2.8%	3.0%	-0.2%	4.1%	-1.2%	1.8%	3.2%	0.06%	4.8%	0.20%
Private Real Estate	9.6%	9.0%	0.6%	10.1%	-0.5%	8.5%	3.9%	0.34%	6.5%	0.65%
Private Natural Resources	*0.8%*	*4.0%*	*-3.2%*	*0.8%*	*0.0%*	*4.0%*	*46.4%*	*1.86%*	*-5.1%*	*-0.04%*
Credit	11.2%	7.0%	4.2%	7.9%	3.3%	10.3%	4.2%	0.43%	7.9%	0.62%
Non-U.S. Debt	3.6%	5.0%	-1.4%	5.9%	-2.3%	2.7%	9.8%	0.27%	7.2%	0.42%
Securitized - HFRI RV: FI AB	3.8%	4.0%	-0.2%	4.9%	-1.1%	2.9%	5.5%	0.16%	3.7%	0.18%
Securitized - BBG Securitized	6.9%	4.0%	2.9%	4.9%	2.1%	6.1%	2.7%	0.16%	6.4%	0.31%
Income – ILS	1.8%	4.0%	-2.2%	4.9%	-3.0%	1.0%	-6.0%	-0.06%	-0.1%	-0.01%
Private Debt	*2.7%*	*7.0%*	*-4.3%*	*2.7%*	*0.0%*	*7.0%*	*8.6%*	*0.60%*	*3.8%*	*0.10%*
Long U.S. Treasuries	2.7%	5.0%	-2.3%	5.0%	-2.3%	2.7%	12.7%	0.34%	12.3%	0.62%
CTA	7.7%	7.0%	0.7%	7.0%	0.7%	7.7%	1.1%	0.09%	3.8%	0.27%
Cash	2.1%	0.0%	2.1%	0.0%	2.1%	2.1%	2.1%	0.04%	2.3%	0.00%
Totals	100.0%	100.0%	0.0%	100.0%	0.0%	100.0%		**5.7%**		**4.5%**

Assumptions: Hold portfolio weights constant for FY19. Determine amount of involuntary overweight due to private markets deployment versus voluntary. Adjust portfolio weights to reflect full investment in private markets. Use SITFO investment manager returns.

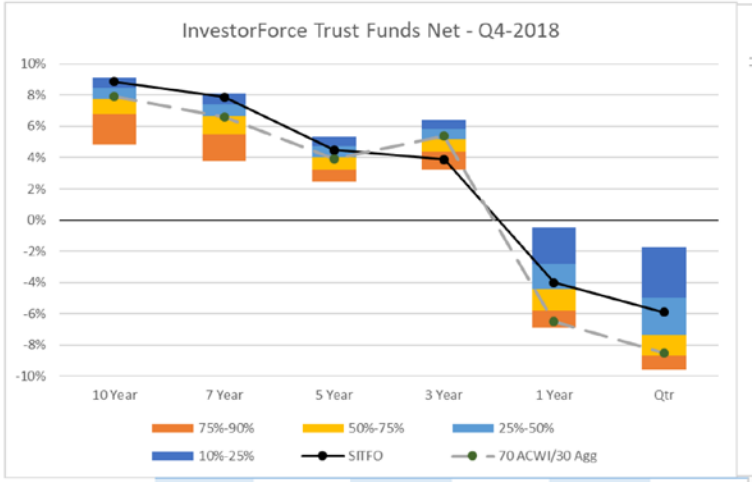
FY19 Performance

Peer Comparison

- FY19 Significantly below median (MSCI ACWI +16.2%, BBAgg +6.1%)
- CY18 Above median as traditional equities and bonds underperformed (MSCI ACWI -9.4%, BBAgg 0.0%)



	10 Year	7 Year	5 Year	3 Year	1 Year	Qtr
90th %	5.3%	4.4%	3.3%	4.7%	3.7%	2.1%
75th %	7.4%	6.4%	4.3%	6.8%	4.7%	2.6%
50th %	8.5%	7.5%	5.3%	8.1%	5.9%	3.0%
25th %	9.2%	8.4%	6.0%	9.0%	7.0%	3.5%
10th %	9.9%	9.0%	6.7%	9.7%	8.5%	4.2%
SITFO	9.4%	8.2%	4.9%	6.0%	3.5%	2.1%
70 ACWI/30 Agg	8.5%	7.8%	5.4%	8.9%	6.7%	3.6%



	10 Year	7 Year	5 Year	3 Year	1 Year	Qtr
90th %	4.9%	3.8%	2.4%	3.2%	-6.9%	-9.6%
75th %	6.8%	5.5%	3.2%	4.4%	-5.8%	-8.7%
50th %	7.8%	6.6%	4.0%	5.2%	-4.4%	-7.3%
25th %	8.5%	7.4%	4.7%	5.9%	-2.8%	-5.0%
10th %	9.1%	8.1%	5.3%	6.4%	-0.5%	-1.8%
SITFO	8.9%	7.9%	4.5%	3.9%	-4.0%	-5.9%
70 ACWI/30 Agg	7.9%	6.6%	3.9%	5.4%	-6.5%	-8.5%

FY19 Performance

Estimate / Update

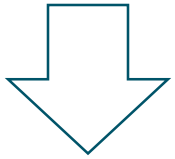
- CY19 Significantly above objective, still waiting on private markets data (a slight increase expected for the CY19 return from here)

	Current %	Target %	Market Value	YTD	2018	2017	2016	2015	2014	2013	2012
Total Fund			**2,643,454,808**	**11.7**	**-4.0**	**10.4**	**5.9**	**2.2**	**8.7**	**20.2**	**13.5**
CPI + 5%				7.4	7.1	5.6	5.8	6.7	6.8	8.0	6.4
Policy Index				**13.9**	**-4.4**	**12.5**	**5.0**	**0.9**	**7.6**	**19.2**	**14.2**
Difference				-2.1	0.4	-2.2	1.0	1.3	1.1	1.0	-0.7
Active Index				**14.1**	**-3.0**	**12.1**	**7.3**	**1.7**	**8.2**	**24.4**	**-**
Difference				-2.4	-1.0	-1.8	-1.3	0.5	0.6		
Growth Composite	**41%**	**37%**	**1,086,659,317**	**20.1**	**-11.4**	**21.5**	**8.6**	**0.4**	**9.6**	**29.3**	**18.0**
Target Index				**23.3**	**-9.6**	**24.9**	**10.7**	**-0.9**	**7.6**	**27.8**	**16.6**
Difference				-3.2	-1.8	-3.3	-2.0	1.3	2.1	1.4	1.5
Active Index				**22.1**	**-9.3**	**25.3**	**10.8**	**-0.8**	**7.9**	**-**	**-**
Difference				-2.0	-2.1	-3.7	-2.2	1.2	1.7		
Real Assets Composite	**18%**	**20%**	**473,149,008**	**8.3**	**1.2**	**1.6**	**7.5**	**13.5**	**15.5**	**10.8**	**9.6**
Target Index				**7.0**	**1.2**	**5.8**	**5.3**	**12.2**	**12.7**	**13.8**	**10.1**
Difference				1.4	0.0	-4.2	2.2	1.4	2.8	-3.0	-0.5
Active Index				**10.2**	**1.6**	**4.8**	**7.8**	**12.9**	**12.0**	**13.3**	**10.5**
Difference				-1.9	-0.5	-3.2	-0.3	0.7	3.5	-2.6	-0.9
Income Composite	**31%**	**31%**	**816,322,424**	**6.5**	**0.9**	**5.0**	**3.7**	**1.4**	**3.8**	**1.3**	**4.2**
Target Index				**8.4**	**-0.6**	**6.0**	**4.9**	**0.9**	**4.1**	**-0.8**	**4.2**
Difference				-1.9	1.6	-1.0	-1.2	0.5	-0.3	2.0	0.0
Active Index				**7.5**	**-0.2**	**4.9**	**4.7**	**0.9**	**4.6**	**-**	**-**
Difference				-1.0	1.1	0.1	-1.0	0.4	-0.8		
Defensive Composite	**10%**	**12%**	**267,324,059**	**4.8**	**-1.5**	**1.9**	**-6.7**	**0.6**	**0.4**	**0.5**	**0.6**
Target Index				**10.1**	**-1.8**	**5.1**	**-13.0**	**0.1**	**0.0**	**0.1**	**0.1**
Difference				-5.2	0.3	-3.2	6.3	0.5	0.4	0.4	0.5
Active Index				**7.7**	**0.0**	**0.4**	**-4.4**	**0.3**	**0.3**	**0.2**	**0.3**
Difference				-2.9	-1.5	1.5	-2.3	0.3	0.1	0.3	0.3

Appendix

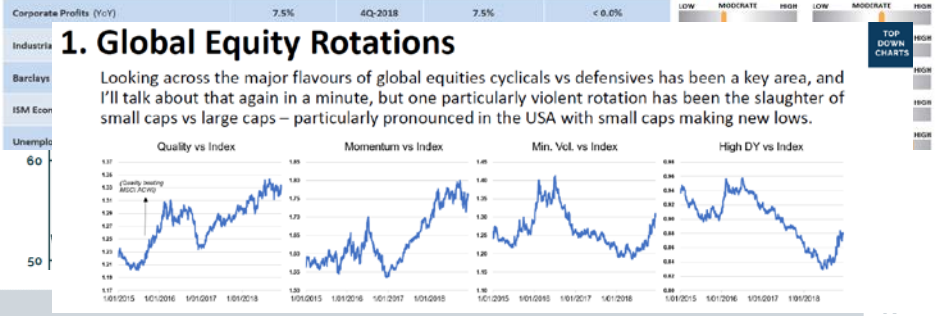
Investment Process

External Partners and Subscriptions



Idea Generation
Board, Staff, Consultant, Managers, Networks, News flow, etc.

Investment Process	Software, Data, Service Provider	Functionality
Idea Generation	*Consultant*	• Manager research specialist • Information flow, research
	Markov Processes International (MPI): returns-based portfolio analysis software	• Manager database search (via eA) • Manager history and comp • Various index history
	eVestment: alternative and hedge fund manager database	• Manager search • Manager history and comp
	Pitchbook: private equity database	• Manager search • Manager history and comp
	Bloomberg: market data and analysis software/hardware	• Historical data • Information flow, research
	External research/news: • BAC • Top Down Charts • Capital Economics • FT, WSJ, Economist	• Information flow, research • Topical analysis
	Additional research: board, staff, custodian, managers, relationship networks	• Information flow, research • Topical analysis



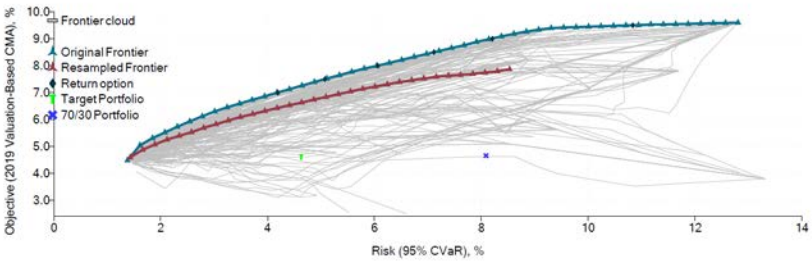
Investment Process

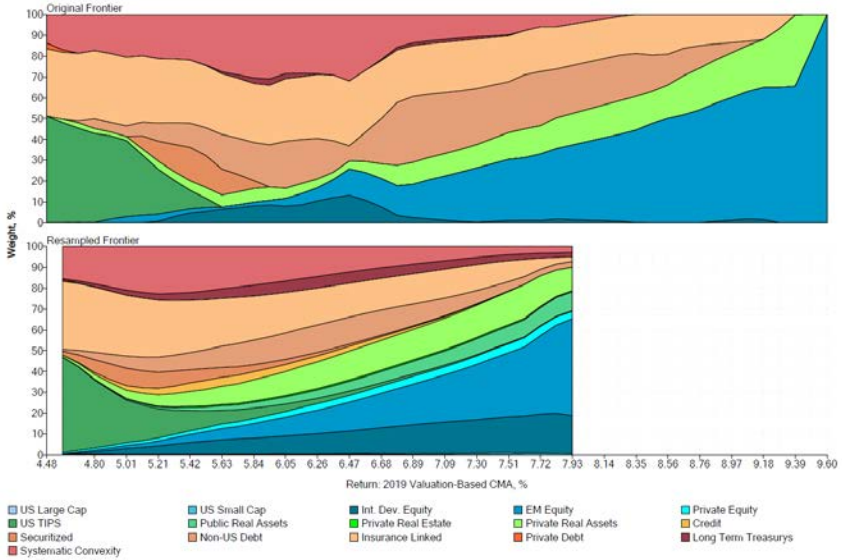
External Partners and Subscriptions

Investment Process	Software, Data, Service Provider	Functionality
Asset Allocation Framework	*MPI*	• Portfolio optimization • Portfolio stress • Portfolio simulation
	Bloomberg	• Historical data to proxy asset classes, managers, compute various statistics
	Consultant	• Duplicate computations compare results • Provide different tack towards same objective • Capital market assumptions
	External research/news: • BAC • Top Down • Capital Economics • FT, WSJ, Economist	• Information flow, research • Topical analysis • Capital market assumptions

Asset Class Weights Per Return Target

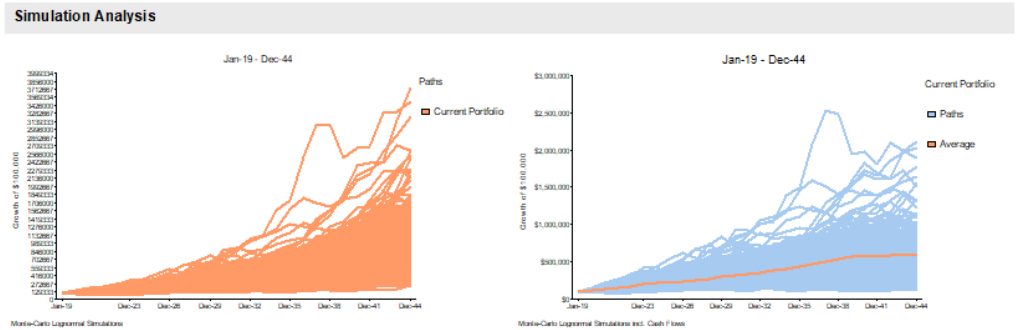
	Original						Resampled		
	7.00	7.50	8.00	8.50	9.00	9.50	7.00	7.50	Target Portfolio
US Large Cap	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	7.5
US Small Cap	0.0	0.0	0.0	0.0	0.0	0.0	0.6	0.9	7.5
Int. Dev. Equity	1.8	1.0	1.3	0.0	1.3	0.0	14.6	17.5	7.5
EM Equity	18.8	29.2	37.2	49.0	59.2	83.3	22.0	31.6	7.5
Private Equity	0.0	0.0	0.0	0.0	0.0	0.0	3.8	4.4	7.0
US TIPS	0.0	0.0	0.0	0.0	0.0	0.0	0.8	0.4	3.0
Public Real Assets	0.0	0.0	0.0	0.0	0.0	0.0	6.7	8.2	4.0
Private Real Estate	0.0	0.0	0.0	0.0	0.0	0.0	0.7	0.6	9.0
Private Real Assets	10.8	12.7	15.4	15.1	21.6	16.7	14.9	16.1	4.0
Credit	0.0	0.0	0.0	0.0	0.0	0.0	0.9	0.2	7.0
Securitized	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.0	8.0
Non-US Debt	30.4	24.5	22.8	16.0	4.5	0.0	9.1	4.2	4.0
Insurance Linked	24.2	22.3	19.6	19.9	13.4	0.0	14.0	9.4	5.0
Private Debt	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	7.0
Long Term Treasurys	1.4	0.5	0.0	0.0	0.0	0.0	4.2	2.7	5.0
Systematic Convexity	12.6	9.8	3.8	0.0	0.0	0.0	7.2	3.8	7.0



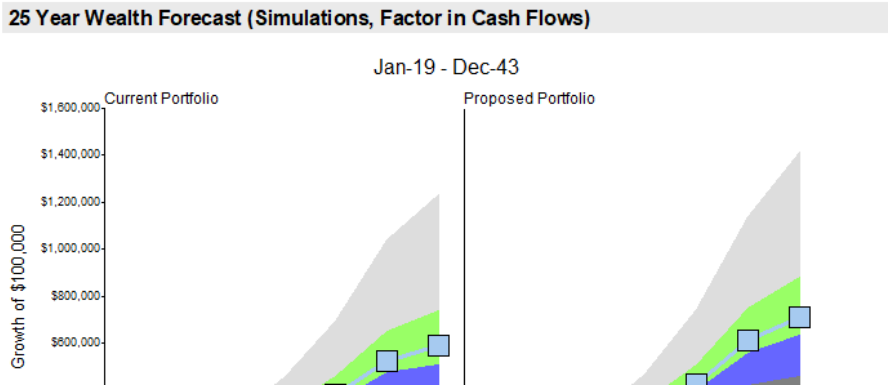


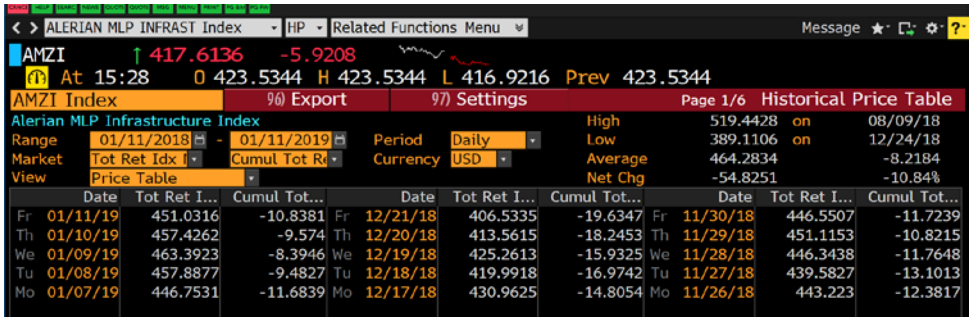
Investment Process

External Partners and Subscriptions



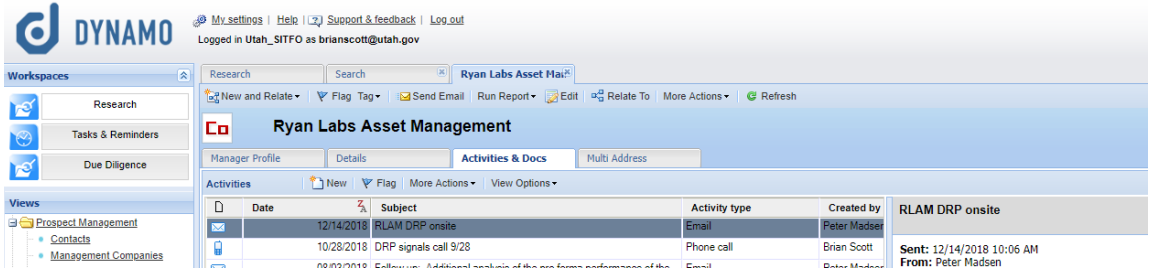
Investment Process	Software, Data, Service Provider	Functionality
Asset Class Structure	*MPI*	• Portfolio optimization • Portfolio stress • Portfolio simulation
	Bloomberg	• Historical data to proxy asset classes, managers, compute various statistics
	Consultant	• Asset class specialization
	External research/news: • BAC • Top Down • Capital Economics • FT, WSJ, Economist	• Information flow, research • Topical analysis



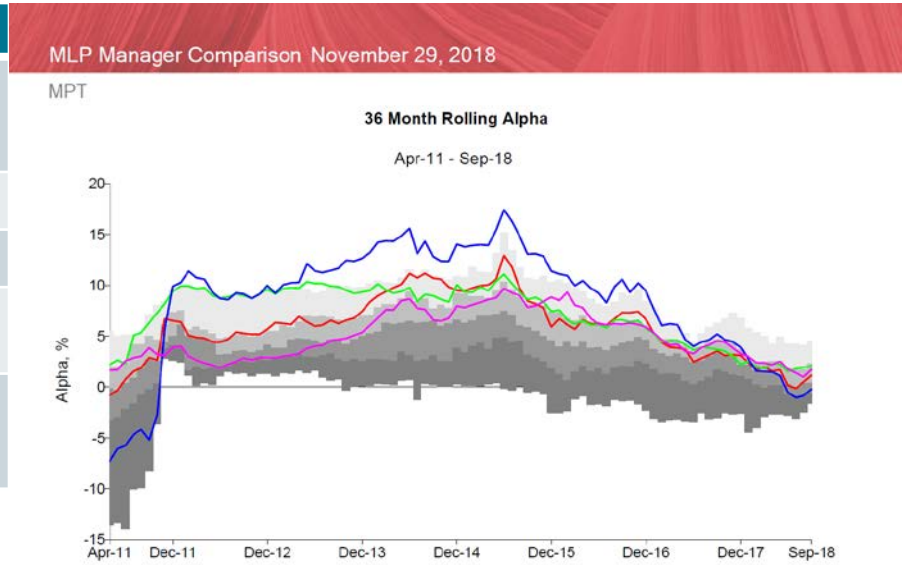


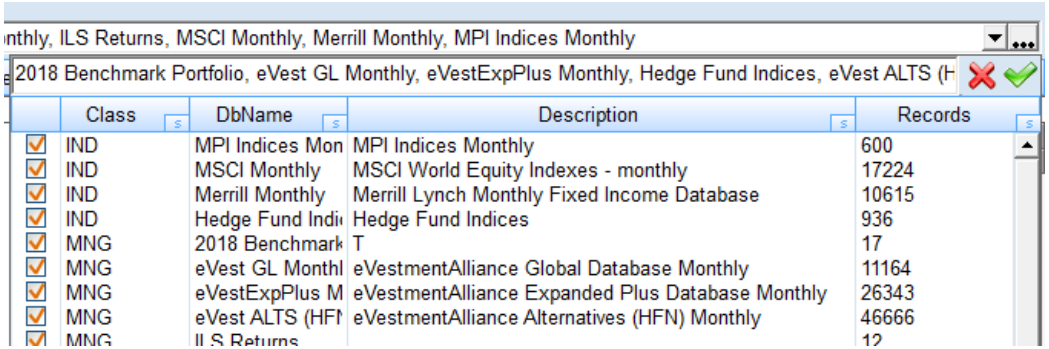
Investment Process

External Partners and Subscriptions



Investment Process	Software, Data, Service Provider	Functionality
Manager Selection	*MPI*	• Manager comparison • Contribution to portfolio risk return profile
	eVestment	• Historical data and comp
	Pitchbook	• Historical data and comp
	Consultant	• Investment due diligence • Operational due diligence
	Dynamo: • Manager database with web-based user interface	• CRM database • Track progress/updates • Retain institutional information



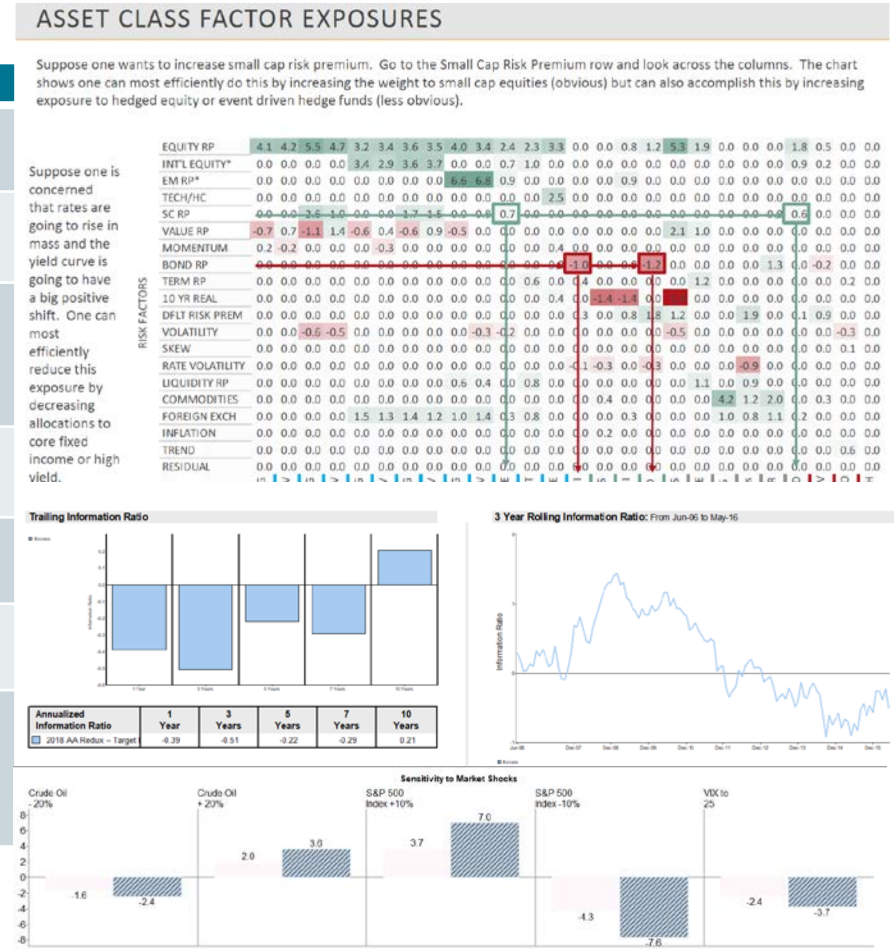


Investment Process

External Partners and Subscriptions

Portfolio and Risk Management

Investment Process	Software, Data, Service Provider	Functionality
Portfolio and Risk Management	*Northern Trust:* custodian	• Operations fulcrum • Information flow, research
	Consultant	• Performance reporting • Manager monitoring
	Caissa	• Holdings-based risk reporting • Private investment reporting • Performance reporting • Broad portfolio monitoring
	MPI	• Returns-based risk reporting • Manager monitoring
	Dynamo	• Track manager progress/updates • Retain institutional information
	Bloomberg	• Historical data • Information flow, research
	External research/news: • BAC • Top Down • Capital Economics • FT, WSJ, Economist	• Information flow, research • Topical analysis



9a

Notification

West Church Site

Notification

TO: Board of Trustees, School and Institutional Trust Lands Administration

FROM: Aaron Langston, P&DG Utah South

DATE: February 20, 2020

BENE: Schools

RE: ***Notice of Minor Development Transaction—Sale of 5.0266 + Acre Parcel of Religious Use land in Green Springs***

Introduction

The LDS church requesting a 5.0266-acre parcel for a church site (4.3911-acres plus a 0.6355-acre parcel for a ROW) that is zoned Administrative and Professional (AP). This new church site is being referred to as the "West Church Site" because of its proximity to the church site that was sold in 2018 (and is now being expanded by a half acre for additional parking).

The subject west church site and corresponding ROW is currently part of a larger (8.61-acre) parcel contemplated to be a future City cemetery site. Despite its desire to acquire the parcel, the City has been unable to provide the necessary funding for the proposed acquisition. When the LOI from the LDS church was received, Staff met with the City to discuss the possibility of selling that land for a second church site, to which the City consented.

Original Offer

The LDS church submitted an offer to purchase a 5.0266-acre parcel for a second church site and a corresponding ROW, at appraised value. An appraisal dated January 10, 2020 valued the site at $600,000 ($119,284 per acre).

Revised Offer

The Real Estate Committee requested the LDS church to purchase the oddly shaped parcel of land directly under the proposed parking lot so that the Trust Lands would not be left with an ill-configured parcel. They revised the layout (see Exhibit B) and are working on a revised legal description at the time of this writing. The additional acreage will be valued at the same valuation, or $119,284 per acre, and will be added to the $600,000 price for the lands included in the original offer.

Return to the Trust

The Trust will meet its fiduciary responsibility by selling this property at or above appraised value.

Intended Action

Staff feels the proposed offer meets the intent of the general plan, meets its fiduciary responsibility to the Trust and thereby supports this transaction. Upon Board approval, Staff will make arrangements with the buyer for a timely closing.

This transaction was discussed in the Real Estate Sub Committee on January 28, 2020 with a favorable recommendation from the committee for approval by the full Board of Trustees.

Exhibit A

Original Depiction of the proposed west church site and ROW

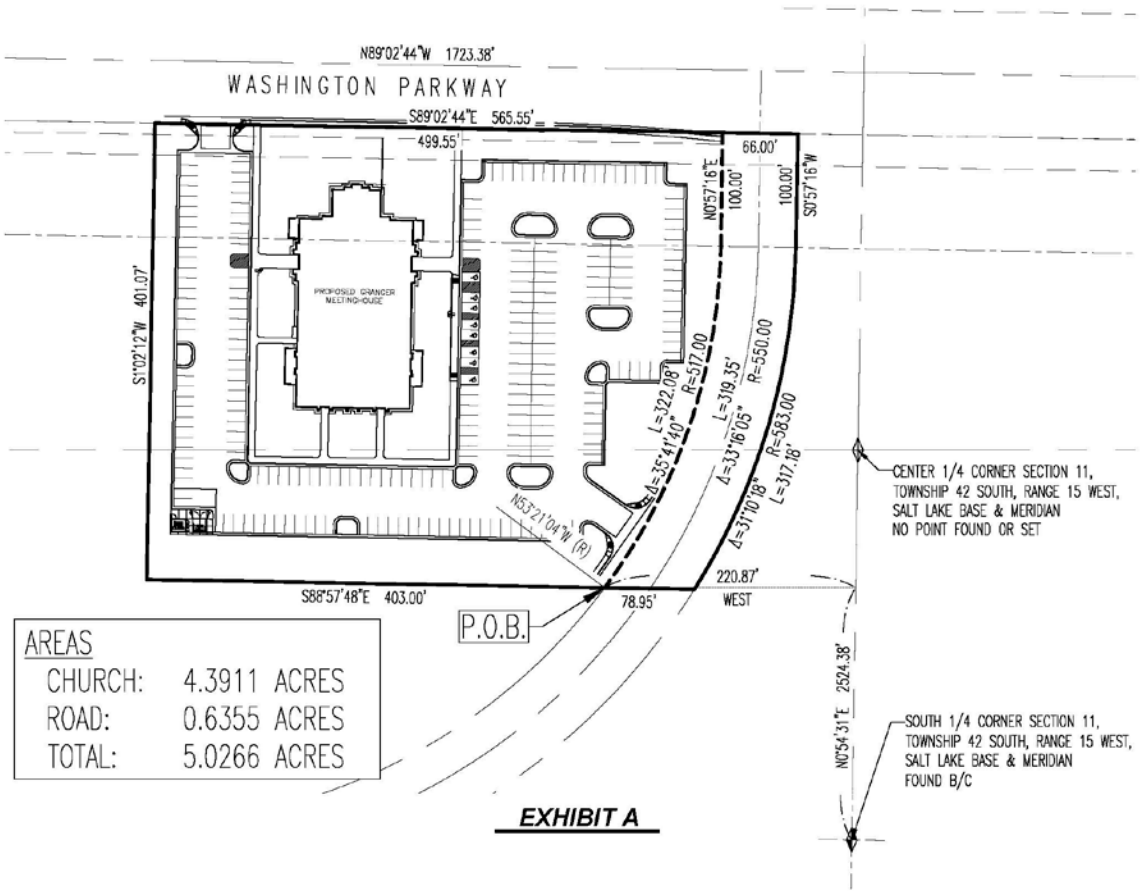


Exhibit B

Revised Depiction of the proposed west church site and ROW

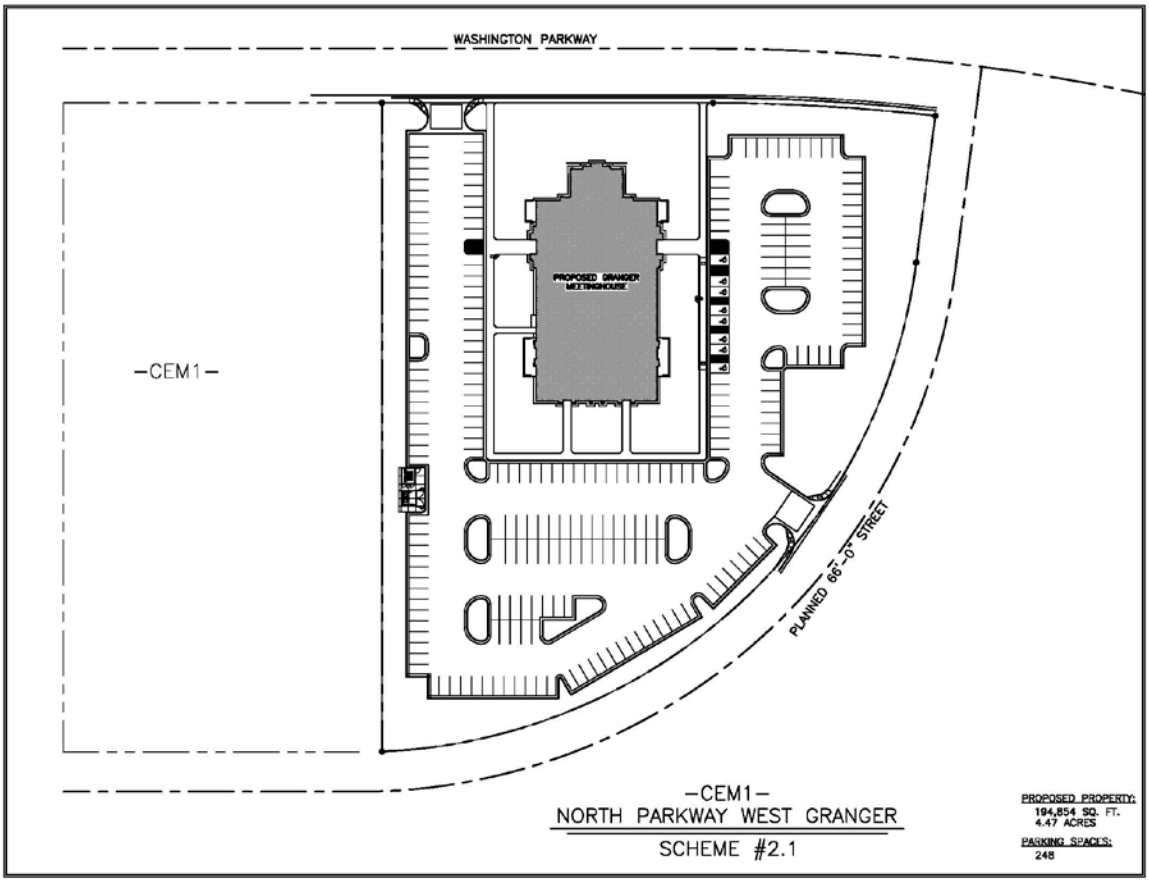
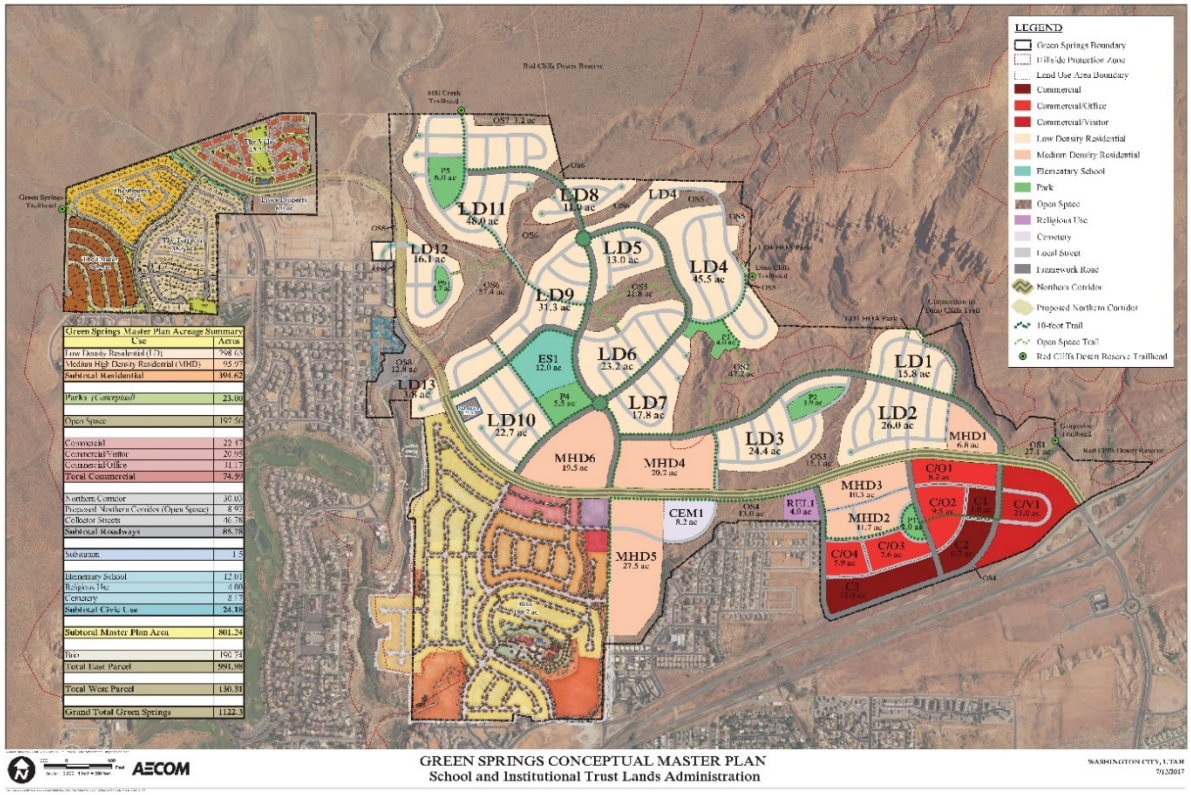
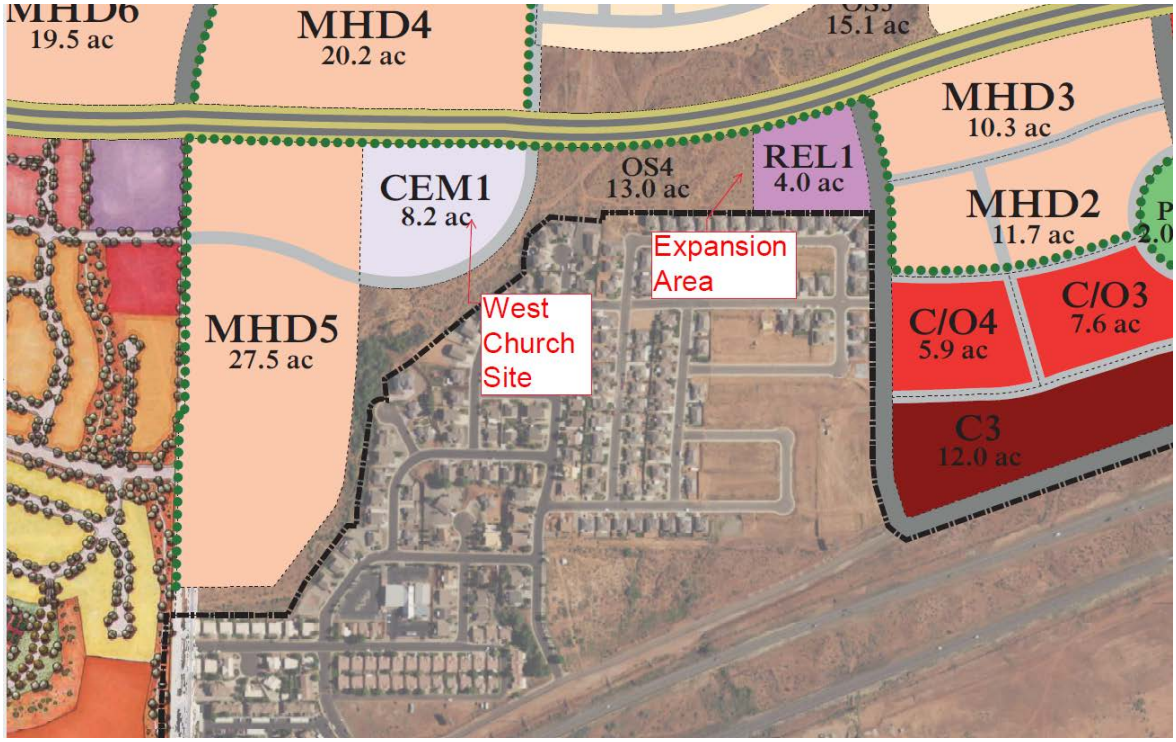


Exhibit C

Green Springs Master Plan
(Subject site is in the east half of the CEM1 parcel)





9b

Notification

Green Springs

Expansion

Notification

TO: Board of Trustees, School and Institutional Trust Lands Administration

FROM: Aaron Langston, P&DG Utah South

DATE: January 15, 2020

BENE: Schools

RE: ***Notice of Minor Development Transaction—Sale of 0.5542 Acre Parcel of Religious Use land in Green Springs***

Introduction

In July of 2018, the LDS church purchased a 4.92-acre parcel that had been planned to be a church site and was depicted as such on the Green Springs master plan. The sale was based off a February 2018 appraisal that valued the total property at $590,000, or $120,000 per acre.

As the LDS church finalizes plans to construct the church, it concluded that the site would offer an insufficient quantity of parking stalls. To correct the shortage, they have requested an expansion of 0.5542-acres from the contiguous land to the west, which is shown as open space on the Green Springs master plan. Removing this open space from the master plan will not adversely affect the overall developability of the Green Springs block.

Current Offer

The LDS church submitted an offer to purchase the 0.5542 expansion area for additional parking at appraised value. An appraisal dated January 10, 2020 valued the site at $68,000, or $122,699 per acre.

Return to the Trust

The Trust will meet its fiduciary responsibility by selling this property at or above appraised value.

Intended Action

Staff feels the proposed offer meets the intent of the general plan, meets its fiduciary responsibility to the Trust, will realize revenue on lands originally set aside as open space, and thereby supports this transaction. Upon Board approval, Staff will make arrangements with the buyer for a timely closing.

This transaction was discussed in the Real Estate Sub Committee on January 28, 2020 with a favorable recommendation from the committee for approval by the full Board of Trustees.

Exhibit A

Depiction of expansion area shown to the west of the existing church site

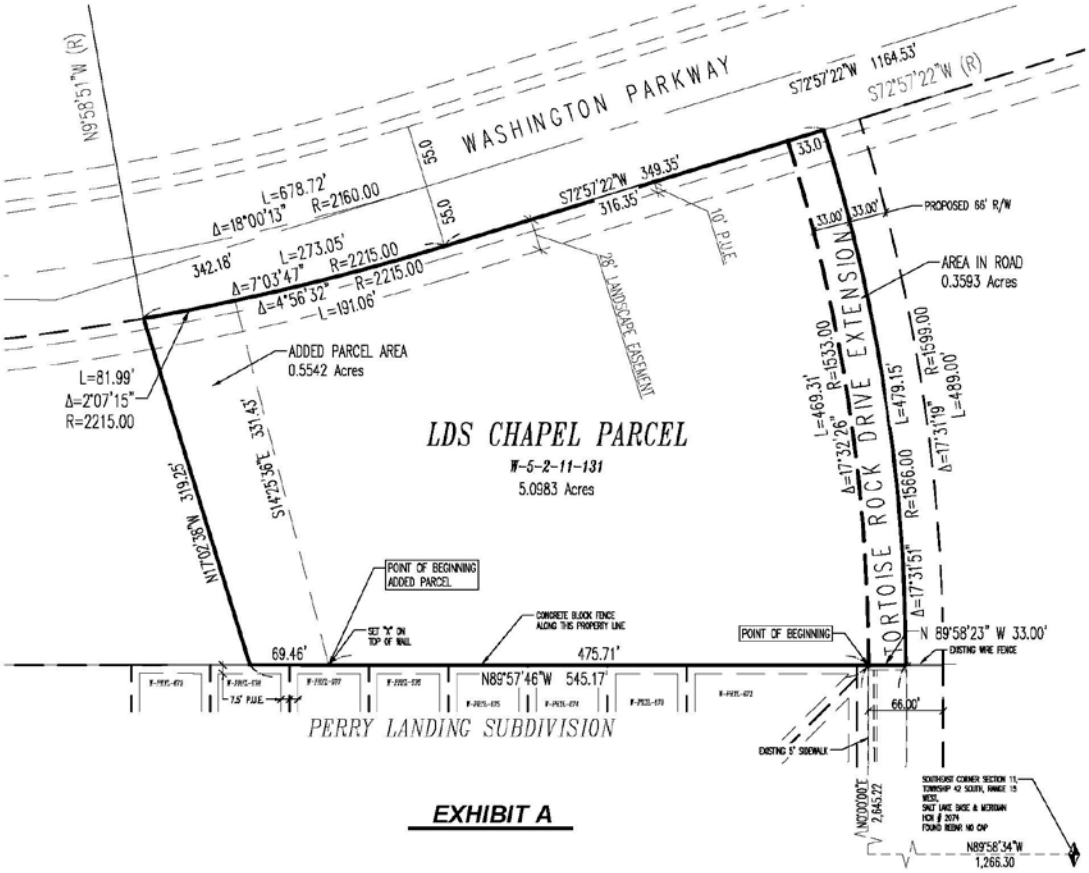
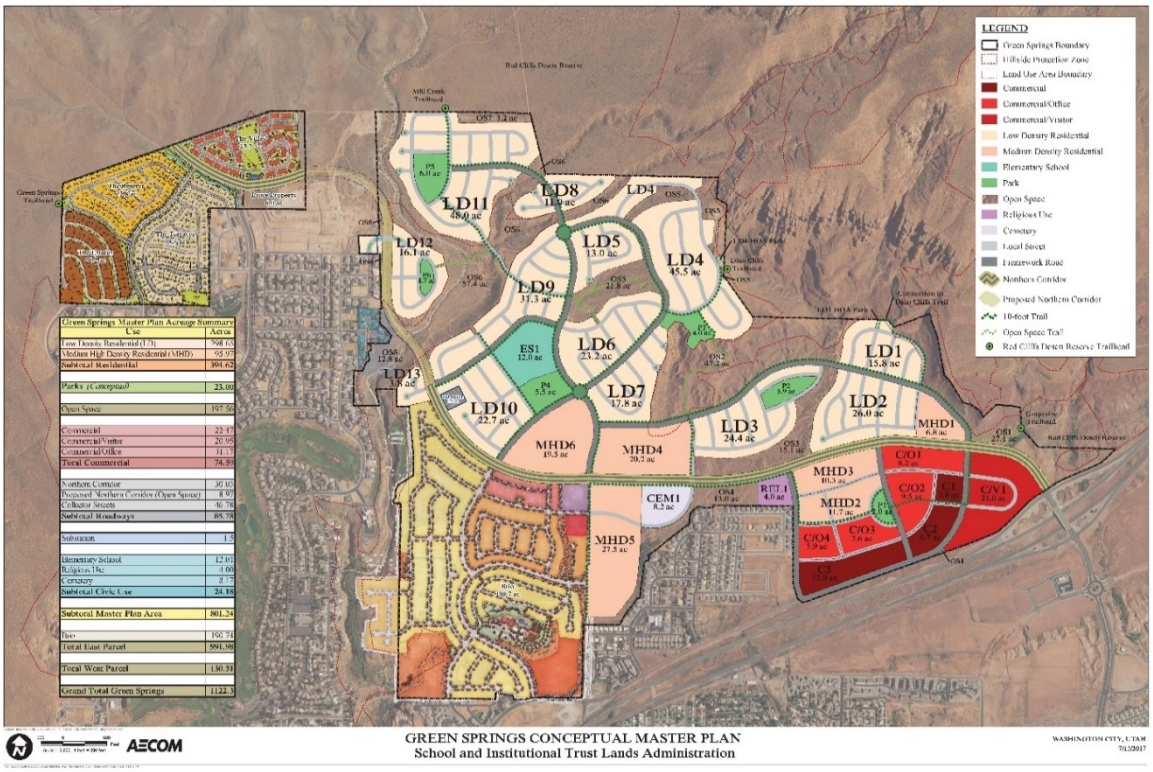
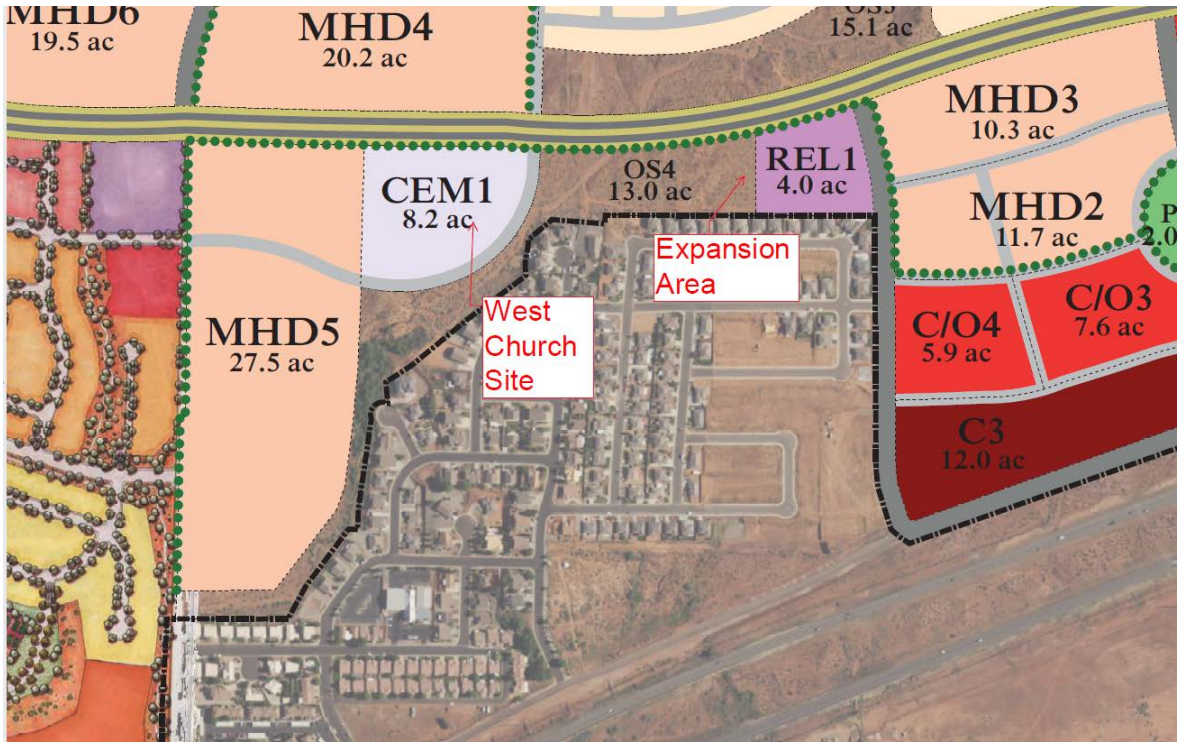


Exhibit B

Green Springs Master Plan

(Subject site is in the open space immediately west of the purple REL1 parcel)





9c

Notification

Big Water (Crowley)

Memorandum

TO: Board of Trustees, School and Institutional Trust Lands Administration

FROM: Aaron Langston, P&DG Utah South

DATE: January 9, 2020

BENE: Schools

RE: ***Notice of Minor Development Transaction—Sale of 0.43 Acre Parcel in Big Water***

Introduction

In 2012, two separate owners of single-family homes along Freedom Blvd purchased 0.58-acre parcels behind their homes from the Trust (Certificate of Sale numbers 26559 and 26542). Those parcels are situated between a deep ravine known as Wahweap Creek and the rear properties of the single-family homes, making them completely landlocked and essentially undevelopable. Those parcels were each sold for approximately $13,080 per acre.

A property owner to the south (also on Freedom Blvd) recently approached the Trust to acquire a 0.43-acre parcel behind their home. This parcel similarly is situated between the property owners' lot and the Wahweap Creek ravine, as shown in the attached exhibit.

Intended Action

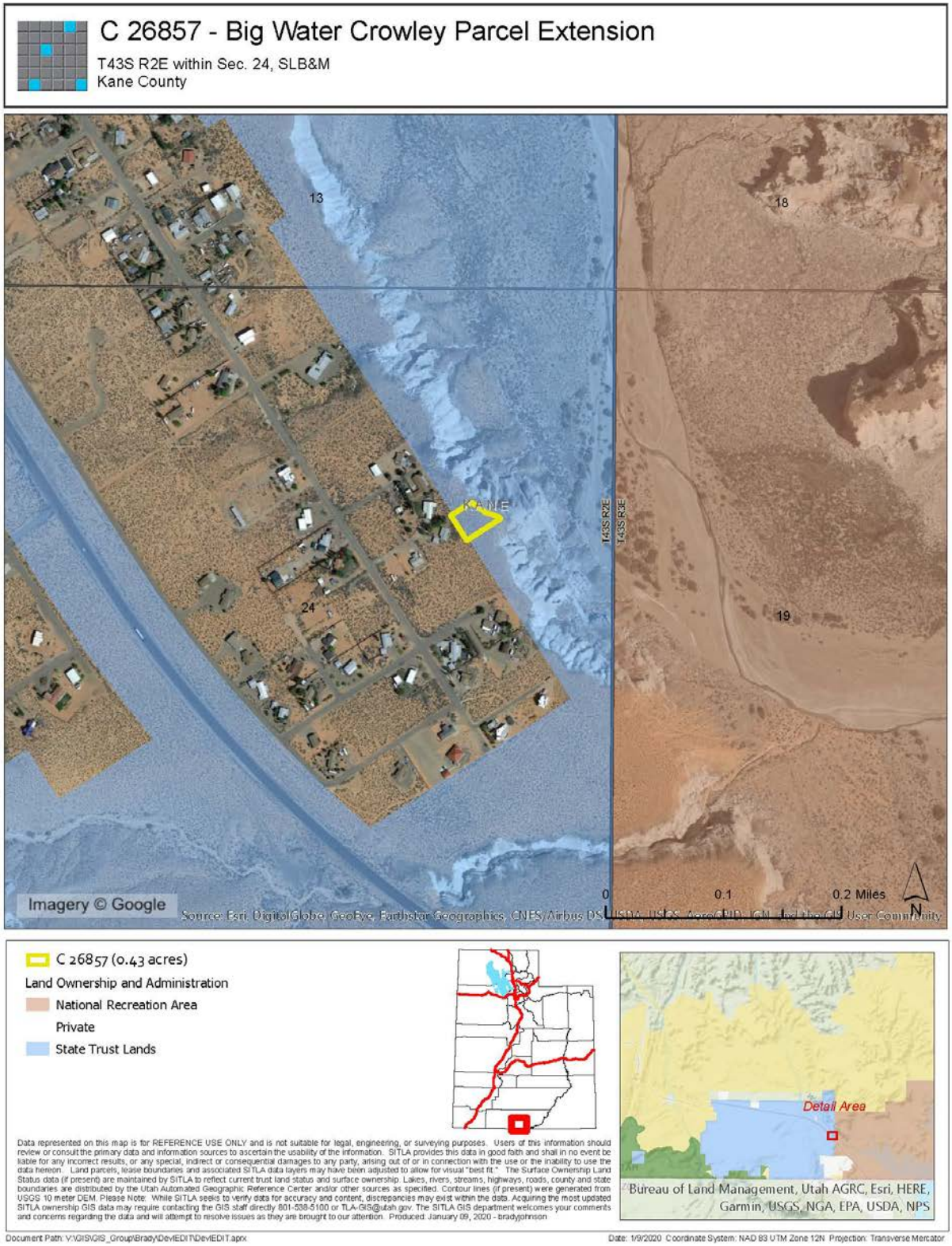
A January 2020 appraisal for the subject 0.43-acre parcel valued it at $7,500 ($15,625 per acre), which represents a modest 2% annual increase from the 2012 transactions.

It is therefor the intent of the Trust to sell the 0.43-acre parcel at appraised value, plus a $1,000 administration fee.

This transaction was discussed in the Real Estate Sub Committee on January 28, 2020 with a favorable recommendation from the committee for approval by the full Board of Trustees.

Exhibit A

Depiction of disposal parcel



9d

Notification

New Harmony

Notification

TO: Board of Trustees, School and Institutional Trust Lands Administration

FROM: Aaron Langston, P&DG Utah South

DATE: January 14, 2020

BENE: Schools

RE: ***Notice of Minor Development Transaction—Exchange of 0.59 Acre Parcel for 0.64 Acre Parcel in Iron County***

Introduction

A 40-acre parcel just north of MP-42 that completely spans I-15 was sold to a Mr. James Stapely in 1913. That parcel also spans Old U.S. 91 on the southern edge, but because Old U.S. 91 cuts through the sales parcel at an angle, the portion east of the sales parcel but west of Old U.S. 91 is triangularly shaped and completely prevents access to the northern portion of the sales parcel from Old U.S. 91 without crossing through additional Trust Lands (see attached Exhibit for reference).

The current owner of the northern portion of the sales parcel, William Hirshi, approached the Trust Lands to see if he could potentially acquire the Trusts Lands' triangularly shaped parcel, or otherwise gain an access easement through those lands for possible future development of his property. After several meetings, it was determined that a property exchange would square up both boundaries, making both parcels easier for future development. Under this scenario, the Trust would exchange the triangularly shaped parcel for the northern portion of the Hirshi property.

The Trust Lands Administration mandated that if it were to entertain an exchange, the parcel it would exchange for would need to be slightly larger than the parcel it would dispose of in order to help ensure that the Trust would benefit from the exchange.

Current Offer

Legal descriptions were drawn up, showing that the parcel the Trust would gain is 0.64 acres and the parcel it would dispose of is 0.59 acres. In addition, Mr. Hirshi would be required to pay for the appraisal, the legal descriptions, and the title report, and the Trust would not compensate him for the additional property it acquires, to which he agreed.

The appraisal (dated January 14, 2020) valued the larger parcel currently owned by Mr. Hirshi at $21,000 and the smaller parcel currently owned by the School Trust Lands at $19,500 so the exchange will benefit the Trust monetarily too.

Return to the Trust

The Trust will benefit from this proposed exchange by disposing of property that would be more difficult to develop for a parcel that will square up the boundary and increase the developability of the overall parcel.

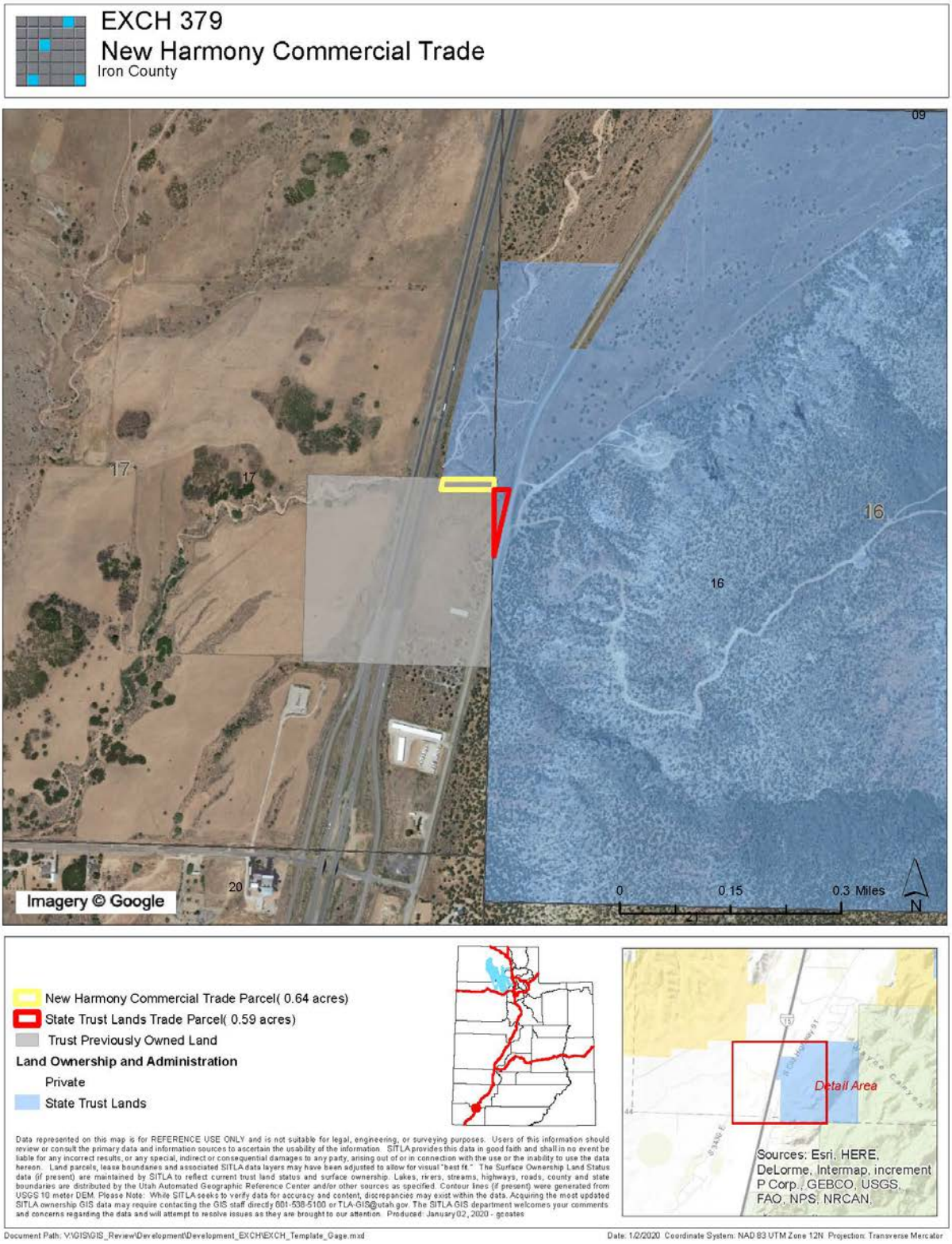
Intended Action

Staff feels the proposed exchange meets its fiduciary responsibility to the Trust and thereby supports this transaction. Upon Board approval, Staff will make arrangements with the private property owner for a

timely closing. This transaction was discussed in the Real Estate Sub Committee on January 28, 2020 with a favorable recommendation from the committee for approval by the full Board of Trustees.

Exhibit A

Depiction of the proposed exchange parcels



11a

Paradox 2.0

OBA

BOARD MEMORANDUM

DATE: March 12, 2020

TO: Board of Trustees, Utah School & Institutional Trust Lands Administration (SITLA)

FROM: Wesley Adams, Assistant Director – Oil & Gas

RE: Paradox Basin 2.0 Other Business Arrangement (OBA)

LANDS PROPOSED FOR LEASE:

T22S, R17E, SLB&M, Grand County, UT
Sec. 16: All
Sec. 36: All

T22S, R18E, SLB&M, Grand County, UT
Sec. 32: All

1,920.00 Acres

FUND: School 100%

APPLICANT(S):

Rose Petroleum (Utah) LLC (Rose)
10940 S Parker Rd. Suite 884
Parker, CO 80134

Rockies Standard Oil Company (Rockies)
3319 N. University Ave. Suite 200
Provo, UT 84604

REQUIREMENT

As provided for under Utah Code Annotated 53C-2-401(1)(d)(ii), which permits the SITLA Board of Trustees to approve "Other Business Arrangements" (OBA), Rose and Rockies submitted a proposal to lease SITLA lands for Oil, Gas and Associated Hydrocarbons purposes on December 6, 2019.

This proposed Paradox 2.0 OBA was reviewed by the SITLA Board's Mineral Committee on February 19, 2020 and provided a recommendation for approval before the full Board of Trustees.

PROPOSAL

Rose and Rockies propose to lease Sections 16 & 36 of T17S-22E and Section 32 of T22S-18E under an OBA. Rose and Rockies desire to set the royalty rate at 12.5%, with a two (2) year primary term and option to extend lease covering Section 16 for three (3) years and the leases covering Sections 32 & 36 for four (4) years, with a bonus consideration of $10/ acre for the first two years, and renew with an additional $10/ acre for the options to extend. Rose and Rockies agree to split lease ownership 75% and 25%, respectively. Additionally, with respect to the State 16-42 Well, located in Section 16, Rose and Rockies seek to defer plugging liability and allow for either future development or scientific research with the Department of Energy's Northern Paradox Basin Research Project.

RECOMMENDATION
SITLA Oil & Gas staff reviewed the Rose/ Rockies proposal and recommend that the SITLA Board of Trustees grant approval to issue an OBA as outlined below and as further agreed to in writing by Rose/ Rockies:

1. Relinquish the currently active Oil and Gas Lease (ML-53815) in Section 16 of T22S-R17E

2. Issue three (3) new Oil, Gas and Associated Hydrocarbon Leases, effective June 1, 2020, covering 1,920 acres, under the current SITLA lease form and amend the terms to reflect the following royalty escalation for oil only:

   [Total Lease or Unitized Production]
   - 12.5% for 0 – 500,000 BBL OIL
   - 14.5% for 500,001 – 1,000,000 BBL OIL
   - 16.5% for 1,000,001 BBL OIL and thereafter

3. Overriding Royalty Interest is limited to 2.5% on the leases

4. As consideration for this offer, a Bonus Payment of $10/ acre, primary term of two (2) years with an option to extend (with an additional payment of $10/ acre) three (3) years in Section 16, T22S-R17E and (4) years in Section 36, T22S-17E and Section 32, T22S-18E

5. A Letter of Credit in the amount of $15,000 to cover incidental pad reclamation costs for the State 16-42 Well must be provided before leases will be issued and will be returned upon satisfactorily plugging the well or otherwise utilizing the well for UGS, DOE or development purposes before May 31, 2022.

Respectfully submitted,

Wes Adams
Assistant Director – Oil & Gas

State of Utah
School and Institutional
Trust Lands Administration

675 East 500 South, Suite 500
Salt Lake City, Utah 84102-2813
801-538-5100 Fax 801-355-0922
trustlands.utah.gov

David Ure
Director

February 21, 2020

Colin Harington
Manager
Rose Petroleum (Utah) LLC
10940 S Parker Rd. Suite 884
Parker, CO 80134

Kimball Hodges
Manager
Rockies Standard Oil Company
3319 N. University Ave., Suite 200
Provo, UT 84604

Sent via email to colin.harrington@rosepetroleum; khodges@rockiesstandard.com

Re: Paradox 2.0 Other Business Arrangement
Grand County, UT

Dear Colin and Kimball:

The School and Institutional Trust Lands Administration ("***SITLA***") has reviewed your letter, sent via email on December 6, 2019, regarding a proposed Paradox 2.0 Other Business Arrangement ("***OBA***") and sets forth the following terms for your consideration.

RECITALS

WHEREAS, SITLA holds certain lands in trust identified as Sections 16 & 36, Township 22 South, Range 17 East, and Section 32, Township 22 South, Range 18 East, SLM, all in Grand County, Utah (collectively, the "***Property***"), and

WHEREAS, Rose Petroleum (Utah) LLC ("***Rose***") and Rockies Standard Oil Company, LLC ("***RSOC***" and collectively with Rose, "***Lessees***") desire to explore and produce hydrocarbon resources from the Property, and

WHEREAS, SITLA, Rose, and RSOC desire, pursuant to Utah Administrative Code R850-21-300(1) and (4), to enter into an other business arrangement for the development of hydrocarbon resources from the Property.

AGREEMENT

NOW THEREFORE, SITLA, Rose and RSOC propose to enter into this OBA on the following terms and conditions:

1. SITLA, Rose and RSOC agree to enter into separate oil, gas, and hydrocarbon leases covering the Property on SITLA's standard oil and gas lease form (the "***Leases***"). Rose will be granted seventy-five percent (75%) interest and RSOC will be granted twenty-five percent (25%) interest in each of the Leases. Each Lease will be amended to (i) reflect a royalty rate of twelve and one-half percent (12.5%) (calculated as provided in the Leases) with the percentage to increase as provided in the escalation table below, and (ii) contain a primary term of two (2) years with an option to extend as outlined below. Lessees shall pay SITLA Ten Dollars ($10.00) per acre covered by each of the Leases as a lease bonus payment on or before the execution of the Leases. If the full Lease bonus payment of $19,200 (reflecting $10.00/acre x 1,920 acres) is paid to SITLA on or before May 31, 2020, the leases will be issued with a date of June 1, 2020. All lease bonus payments must be paid or no Leases will be issued by SITLA.

    a. Relinquishment: ML 53815 is an active oil and gas lease, which Lessees agree to relinquish, and will be terminated effective upon the issuance of the new Lease covering Section 16: 22S-17E, SLM.

    b. Royalty Escalation Table. The royalty percentage under each of the Leases for oil, gas, and associated hydrocarbons will begin at twelve and one-half percent (12.5%), calculated as provided in the Leases, and will increase for all Leases with the gross production from a single Lease, or if unitized, with gross production from the unit, as follows:

Royalty	Total Lease or Gross Unitized Production (If Unitized) (BBL Oil)
12.5%	0 – 500,000 BBL
14.5%	500,001 – 1,000,000 BBL
16.5%	1,000,001 BBL and thereafter

    c. Lessees may not grant overriding royalty interest that exceed a total of 2.5% of the net revenue interest for each lease, so that maximum burden of each of the Leases never exceeds 19.0%.

    d. The Lessees are granted an option to extend each Lease as follows:
        i. The Lessees will have the option to extend the Lease covering Section 16 All: T22S-R17E for three (3) additional years beyond the primary term by providing written notice and paying to SITLA a payment of $10 per acre on or before May 1, 2022.

ii. The Lessees will have the option to extend the Leases covering Section 36 All: T22S-R17E & Section 32 All: T22S-18E for four (4) additional years beyond the primary term by providing written notice and paying to SITLA a payment of $10 per acre on or before May 1, 2022.

e. Rose must serve as the operator for each of the Leases entered into pursuant to this OBA. Any change in operator requires the prior written consent of SITLA.

2. The State 16-42 Well, (API 4301931605) (the "***Well***") located within Section 16: T22S-R17E, SLM requires plugging operations to be commenced, pursuant of the Division of Oil, Gas and Mining ("***DOGM***") rules and regulations and SITLA lease requirements, as previously addressed with RSOC in the letter dated November 29, 2018. However, because the Utah Geological Survey ("***UGS***") and United States Department of Energy ("***DOE***") are currently looking for existing wellbore candidates to conduct an extensive scientific study of the Northern Paradox Basin, SITLA withdraws its letter dated November 29, 2018, *provided, however*:

   a. In the event UGS, DOE or Rose/RSOC do not (i) re-drill, re-stimulate, and in each case produce, or otherwise operate the Well in connection with the UGS and DOE scientific study or (ii) provide written notice to SITLA of the intent to do the same along with a plan of operations (which operations must then occur within 6 months of such notice) on or before May 31, 2022, then SITLA will proceed with formal action to have the Well plugged pursuant of DOGM authority.

   b. In consideration, Lessees shall provide SITLA with a letter of credit in an amount of the greater of either $15,000 or an amount sufficient to reclaim location as supported from a bona fide contract bid, by May 31, 2020 to cover the deferral of plugging liabilities and provide surety on performance above any bonding for the Well with DOGM. The letter of credit will be returned upon satisfactorily plugging of the Well and reclamation of the surface or upon demonstrating that the Well is capable of production in paying quantities as defined in the new lease issued under this OBA and complying with all other provisions of such Lease.

   c. In the event the Well is re-drilled, re-stimulated and capable of production in paying quantities or is otherwise operated in connection with the UGS and DOE scientific study, in each case, within the time period set forth above, the Well will be deemed to governed by the terms of the new Lease issued under paragraph 1(a) above. Otherwise, SITLA will proceed with action to require the Well be plugged.

3. The terms and conditions of this OBA are intended to govern and control each of the Leases entered into covering the Property. In the event of a conflict between the terms and conditions of this OBA and the terms and conditions of the Leases, the terms and conditions of this OBA will control.

4. Neither Lessee may assign or sublease all or any part of this OBA or the Leases without prior written consent of SITLA.

5. This OBA is governed by the laws of the State of Utah without regard to its choice or conflicts of laws principles that may refer the interpretation of this OBA to the laws of another jurisdiction. SITLA and Lessees agree that all disputes arising out of this OBA may only be litigated in the Third Judicial District Court for Salt Lake County, Utah, and Lessees hereby consents to the jurisdiction of such court. Lessees may not bring any action against SITLA without exhaustion of available administrative remedies and compliance with applicable requirements of the Utah Governmental Immunity Act. SITLA does not waive, limit, or modify any sovereign immunity from suit except as specifically provided herein.

6. This OBA, together with the Leases, set forth the entire agreement and understanding between SITLA and Lessees with respect to the subject matter of this OBA. No subsequent alteration or amendment to this OBA is binding upon SITLA or Lessee unless in writing and signed by each of them.

THE TERMS OF THIS OBA ARE SUBJECT IN ALL RESPECTS TO APPROVAL BY THE SITLA BOARD OF TRUSTEES. THE BOARD RESERVES THE RIGHT TO APPROVE, ALTER, AMEND, OR DENY ANY TERMS HEREIN OR THE ENTIRE THE OBA REQUEST IN THEIR SOLE DISCRETION. Should these proposed terms meet with your approval, please so indicate by signing, scanning and returning this OBA to wesadams@utah.gov on or before February 28th, 2020.

Sincerely,

Wesley Adams
Assistant Director/ Oil & Gas

The parties intend to allow for the electronic execution, imaging and storage of this OBA and the admissibility into evidence of such an image in lieu of the original paper version of this OBA. The parties agree that any computer printout of any such image of this OBA shall be considered to be an "original" when maintained in the normal course of business and shall be admissible as between the parties to the same extent and under the same conditions as other business records maintained in paper or hard copy form. The parties agree not to contest, in any proceeding involving the parties in any judicial or other forum, the admissibility, validity or enforceability of any image of this OBA because of the fact that such image was stored or handled in electronic form.

ACCEPTED AND AGREED TO THIS _____DAY OF FEBRUARY, 2020.

Rose Petroleum (Utah) LLC

By: _____
Name: _____
Title: _____

Rockies Standard Oil Company, LLC

by: Petro Fuego, LLC, its manager

By: _____
Name: _____
Title: _____

Enclosures: Rose/ RSOC Letter

Rose Petroleum

Rose Petroleum (Utah) LLC, 10940 S Parker Rd, Suite 884, Parker, CO. 80134

To: Wes Adams
State of Utah School and Institutional Trust Lands Administration
675 East 500 South, Suite 500
Salt Lake City, Utah 84102

RE: OBA Proposal for oil and gas lease on Section 16 & 36, T22S, R17E, Section 32, T22S, R18E, Grand County, Utah

Dear Wes,

Pursuant to our discussions and following your meeting with Gregor Maxwell, Rose Petroleum (Utah) LLC **"Rose"** and Rockies Standard Oil Company, LLC **"RSOC"** hereby formally offers to enter into the leases for oil, gas, and hydrocarbons covering all of Section 16 & 36, T22S, R17E, Grand County, Utah and Section 32, T22S, R18E, Grand County, Utah under OBAs with SITLA. Rose will hold a 75% Working Interest and RSOC will hold a 25% Working Interest in the leases, and Rose and RSOC have agreed that Rose will serve as operator. Our proposed terms are as follows:

1) Leased Lands: Section 16, T 22 S, R 17 E, SLM, Grand County, ALL. 640 acres.
2) Effective Date: TBA – June 2020 onwards
3) Initial Term: Two (2) year from Effective Date
4) Lessor Royalty: 12.5%
5) Bonus: $6400 total ($10.00 per acre)
6) Other: Lease to have an extension term option for a further 3 years, bonus payment to exercise the option of $6400 total ($10 per acre)

1) Leased Lands: Section 36, T 22 S, R 17 E, SLM, Grand County, ALL. 640 acres.
2) Effective Date: TBA – June 2020 onwards
3) Initial Term: Two (2) year from Effective Date,
4) Lessor Royalty: 12.5%
5) Bonus: $6400 total ($10.00 per acre)
6) Other: Lease to have an extension term option for a further 4 years, bonus payment to exercise the option of $6400 total ($10 per acre)

1) Leased Lands: Section 32, T 22 S, R 18 E, SLM, Grand County, ALL. 640 acres.

Rose Petroleum (Utah) LLC, 10940 S Parker Rd, Suite 884, Parker, CO. 80134

2) Effective Date: TBA – June 2020 onwards
3) Initial Term: Two (2) year from Effective Date
4) Lessor Royalty: 12.5%
5) Bonus: $6400 total ($10.00 per acre)
6) Other: Lease to have an extension term option for a further 4 years, bonus payment to exercise the option of $6400 total ($10 per acre)

In addition, we request that the plugging and abandonment of the State 16-42 vertical well (S16 T22S R17E) is delayed to accommodate potential well re-use either in the overall development of the acreage or as part of the 4 year Department of Energy Northern Paradox Basin research project, to the benefit of all parties.

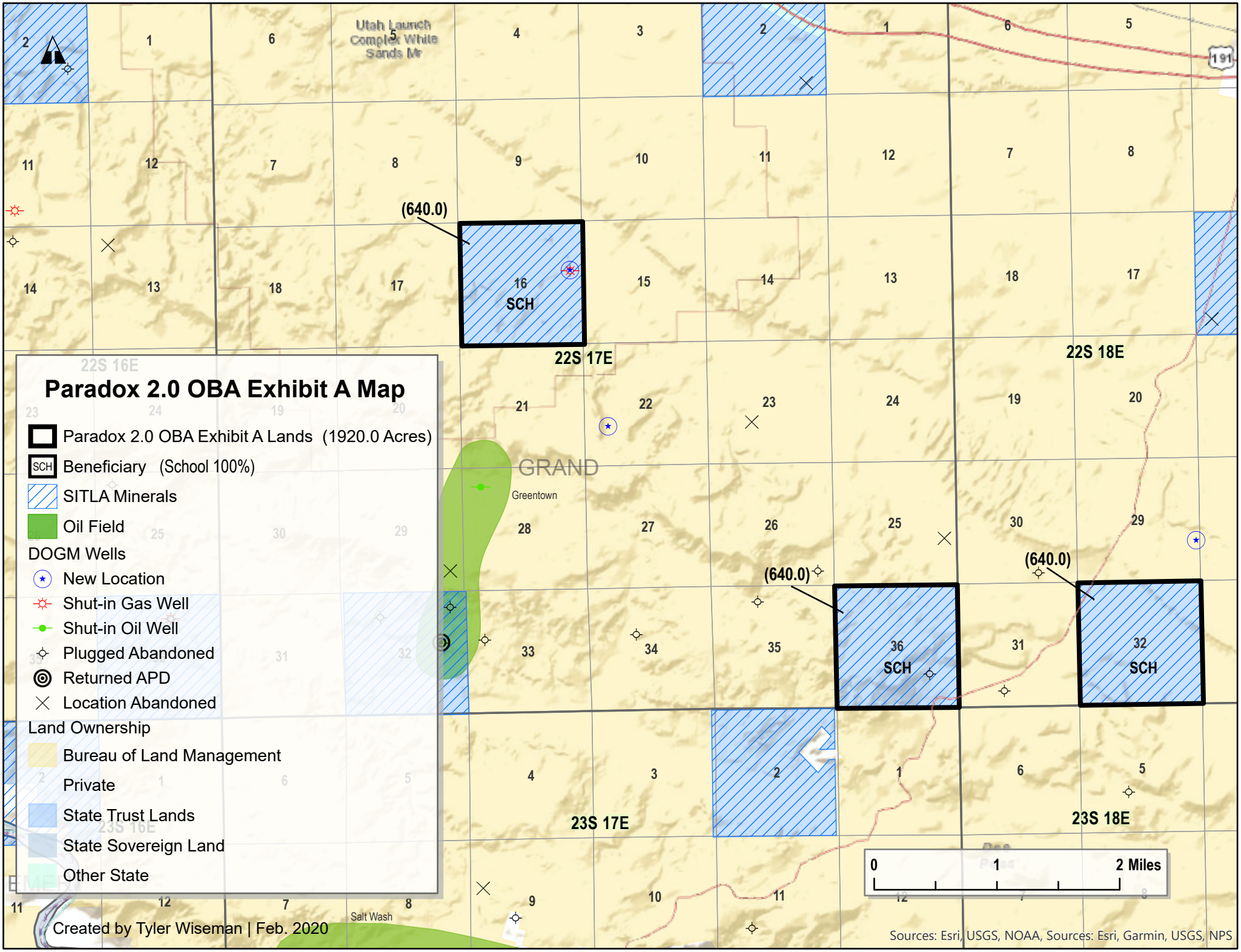
We attach the rationale supporting our offer as an Appendix, below.

Thank you for your help and consideration,

Yours Sincerely,

Colin Harrington
Manager of Rose Petroleum (Utah) LLC
colin.harrington@rosepetroleum.com
410.739.3388

Kimball Hodges
Manager of Petro Fuego, LLC
Petro Fuego, LLC as manager of Rockies Standard Oil Company, LLC
khodges@rockiesstandard.com
801.224.4771


Paradox 2.0 OBA Exhibit A Map
Paradox 2.0 OBA Exhibit A Lands (1920.0 Acres)
SCH Beneficiary (School 100%)
SITLA Minerals
Oil Field
DOGM Wells
New Location
Shut-in Gas Well
Shut-in Oil Well
Plugged Abandoned
Returned APD
Location Abandoned
Land Ownership
Bureau of Land Management
Private
State Trust Lands
State Sovereign Land
Other State
(640.0)
16 SCH
(640.0)
36 SCH
(640.0)
32 SCH
22S 17E
22S 18E
23S 17E
23S 18E
22S 16E
23S 16E
GRAND
Greentown
Utah Launch Complex White Sands Mr
Salt Wash
191
0 1 2 Miles
Created by Tyler Wiseman | Feb. 2020
Sources: Esri, USGS, NOAA, Sources: Esri, Garmin, USGS, NPS

11b

Kicking Mule

OBA

BOARD MEMORANDUM

DATE: March 12, 2020

TO: Board of Trustees, Utah School & Institutional Trust Lands Administration (SITLA)

FROM: Wesley Adams, Assistant Director – Oil & Gas

RE: Kicking Mule Other Business Arrangement (OBA)

LANDS PROPOSED FOR LEASE:

T34S, 24E, SLB&M, San Juan County, UT
Sec. 2: All

640.16 Acres

FUND: School 100%

APPLICANT:
Kuenzler & Flora Reserve Corporation (KFRC)
3310 W. Aqueduct Avenue
Littleton, CO 80123

REQUIREMENT
As provided for under Utah Code Annotated 53C-2-401(1)(d)(ii), which permits the SITLA Board of Trustees to approve "Other Business Arrangements" (OBA), KFRC submitted a proposal to lease SITLA lands for Oil, Gas and Associated Hydrocarbons purposes on January 17, 2020.

This proposed Kicking Mule OBA was reviewed by the SITLA Board's Mineral Committee on February 19, 2020 and provided a recommendation for approval before the full Board of Trustees.

PROPOSAL
KFRC or its designee propose to re-enter and conduct sidetrack operations of the Lewis Road 3424-2-1H (Well), pursuant of Division of Oil, Gas and Mining (DOGM) rules on or before April 30, 2022. KFRC believes there is good cause to test additional zones within the intra-salt #6 clastic, which was bypassed when the original well was drilled by Anadarko Petroleum in 2015 and subsequently plugged and abandoned. KFRC seeks a royalty rate of 17%, bonus payment of $5/ acre and a primary term of two (2) years with the option to extend three (3) years, if the Well is re-entered. If the Well is deemed to be non-productive upon further testing, KFRC agrees to plug and abandon the well pursuant of DOGM rules and regulations.

RECOMMENDATION
SITLA Oil & Gas staff reviewed the KFRC proposal and recommend that the SITLA Board of Trustees grant approval to issue an OBA as outlined below and as further agreed to in writing by KFRC:

1. Issue one (1) new Oil, Gas and Associated Hydrocarbon Lease, effective April 1, 2020, covering 640.16 acres, under the current SITLA lease form and amend the terms to reflect the following:

    - 17% royalty
    - $3/acre annual rental

2. As consideration for this offer, a Bonus Payment of $5/ acre and primary term of five (5) years

3. A non-performance penalty of $15,000.00, due by May 1, 2022, for failure to re-enter and conduct sidetrack operations of the Lewis Road 3424-2-1H. The non-performance penalty must be paid in order to continue the lease in full force and effect.

Respectfully submitted,

Wes Adams
Assistant Director – Oil & Gas

State of Utah
School and Institutional
Trust Lands Administration

SITLA

675 East 500 South, Suite 500
Salt Lake City, Utah 84102-2813
801-538-5100 Fax 801-355-0922
trustlands.utah.gov

David Ure
Director

February 21, 2020

Zane A. Kuenzler
President
Kuenzler & Flora Reserve Corporation
3310 W. Aqueduct Avenue
Littleton, CO 80123

Sent via email to zanekuenzler@kfrcorp.com

Re: Kicking Mule Other Business Arrangement
San Juan County, UT

Dear Zane:

The School and Institutional Trust Lands Administration ("***SITLA***") has reviewed your letter dated, January 17, 2020, regarding a proposed Kicking Mule Other Business Arrangement ("***OBA***") and sets forth the following terms for your consideration.

RECITALS

WHEREAS, SITLA holds certain lands in trust identified as Section 2, Township 34 South, Range 24 East, in San Juan County, Utah (the "***Property***"), and

WHEREAS, SITLA and Kuenzler & Flora Reserve Corporation ("***KFRC***") desire, pursuant to Utah Administrative Code R850-21-300(1) and (4), to enter into an other business arrangement for the development of Helium or Associated Hydrocarbon resources from the Property.

AGREEMENT

NOW THEREFORE, SITLA and KFRC propose to enter into this OBA (see attached Exhibit A Map) on the following terms and conditions:

1. SITLA agrees to issue a new lease for the captioned lands described above on its current lease form, effective April 1, 2020, except that the royalty rate will be 17.0% and annual rentals will be $3 per acre. The lease will have a primary term of five (5) years. A bonus payment of $5 per acre ($3,200 total) will be due by March 31, 2020 or the lease will automatically terminate.

2. Subject to the Utah Division of Oil, Gas, and Mining's approval, KFRC or its SITLA pre-approved (in writing) designee, agrees to re-enter and sidetrack the Lewis Road 3424-2-1H ("***Well***") on or before April 30, 2022 to further test and explore production potential of the Well. If the actions described above are completed, KFRC and SITLA agree that the Well will be deemed to have been drilled pursuant to the lease issued under this OBA. All terms and conditions of this OBA and the lease will apply to the Well. If KFRC or its designee fails to re-enter and sidetrack the Well as prescribed, it shall pay SITLA a non-performance penalty of $15,000.00, due by May 1, 2022. Failure to make the non-performance penalty as specified will result immediate termination of the lease.

3. The terms and conditions of this OBA are intended to govern the lease entered into covering the Property. In the event of a conflict between the terms and conditions of this OBA and the terms and conditions of the lease, the terms and conditions of this OBA will control.

4. KFRC may not assign or sublease all or any part of this OBA or the lease without prior written consent of SITLA.

5. This OBA is governed by the laws of the State of Utah without regard to its choice or conflicts of laws principles that may refer the interpretation of this OBA to the laws of another jurisdiction. SITLA and Lessees agree that all disputes arising out of this OBA may only be litigated in the Third Judicial District Court for Salt Lake County, Utah, and KFRC hereby consents to the jurisdiction of such court. Lessees may not bring any action against SITLA without exhaustion of available administrative remedies and compliance with applicable requirements of the Utah Governmental Immunity Act. SITLA does not waive, limit, or modify any sovereign immunity from suit except as specifically provided herein.

6. This OBA, together with the lease, set forth the entire agreement and understanding between SITLA and KFRC with respect to the subject matter of this OBA. No subsequent alteration or amendment to this OBA is binding upon SITLA or KFRC unless in writing and signed by each of them.

THE TERMS OF THIS OBA ARE SUBJECT IN ALL RESPECTS TO APPROVAL BY THE SITLA BOARD OF TRUSTEES. THE BOARD RESERVES THE RIGHT TO APPROVE, ALTER, AMEND, OR DENY ANY TERMS HEREIN OR THE ENTIRE THE OBA REQUEST

IN THEIR SOLE DISCRETION. Should these proposed terms meet with your approval, please so indicate by signing, scanning and returning this OBA to wesadams@utah.gov on or before February 28th, 2020.

Sincerely,

Wesley Adams
Assistant Director/ Oil & Gas

The parties intend to allow for the electronic execution, imaging and storage of this OBA and the admissibility into evidence of such an image in lieu of the original paper version of this OBA. The parties agree that any computer printout of any such image of this OBA shall be considered to be an "original" when maintained in the normal course of business and shall be admissible as between the parties to the same extent and under the same conditions as other business records maintained in paper or hard copy form. The parties agree not to contest, in any proceeding involving the parties in any judicial or other forum, the admissibility, validity or enforceability of any image of this OBA because of the fact that such image was stored or handled in electronic form.

ACCEPTED AND AGREED TO THIS 25TH DAY OF FEBRUARY, 2020.

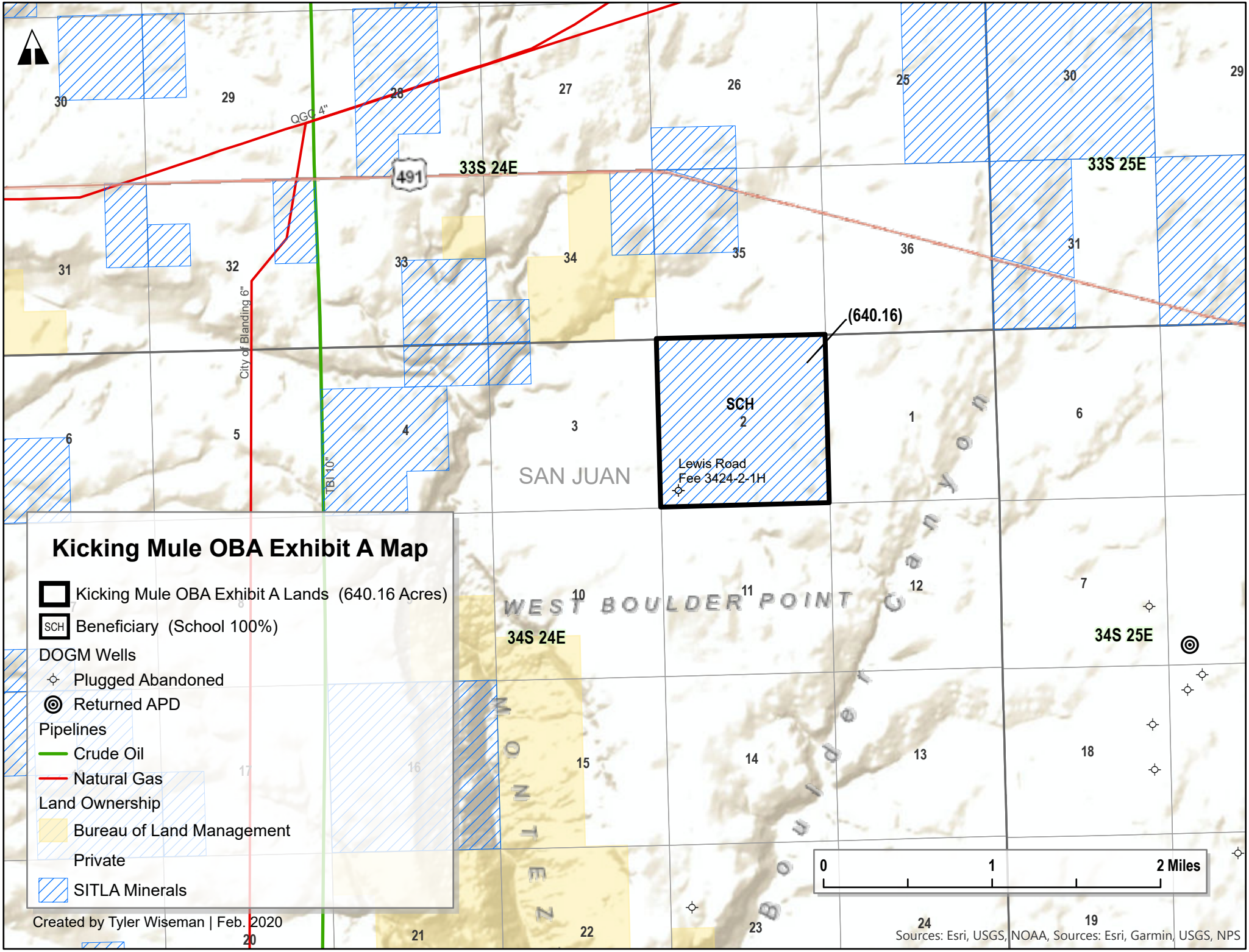
Kuenzler & Flora Reserve Corporation

By: _____

Name: ZANE A. KUENZLER

Title: PRESIDENT

Enclosures: Exhibit A Map
KFRC Letter


Kicking Mule OBA Exhibit A Map
Kicking Mule OBA Exhibit A Lands (640.16 Acres)
SCH Beneficiary (School 100%)
DOGM Wells
Plugged Abandoned
Returned APD
Pipelines
Crude Oil
Natural Gas
Land Ownership
Bureau of Land Management
Private
SITLA Minerals
Created by Tyler Wiseman | Feb. 2020
33S 24E
33S 25E
34S 24E
34S 25E
491
QGC 4"
City of Blanding 6"
TBI 10"
(640.16)
SCH
Lewis Road
Fee 3424-2-1H
SAN JUAN
WEST BOULDER POINT
Boulder Canyon
Montez
0
1
2 Miles
Sources: Esri, USGS, NOAA, Sources: Esri, Garmin, USGS, NPS

KUENZLER & FLORA
RESERVE CORPORATION

3310 W. AQUEDUCT AVENUE
LITTLETON, CO 80123
WWW.KFRCORP.COM

January 17th, 2020

State of Utah
School and Institutional Trust Lands Administration
675 East 500 South, Suite 500
Salt Lake City, UT 84102-2818

ATTN: Wes Adams
Assistant Director/Oil & Gas

RE: Request for Other Business Arrangement
Lewis Road Acreage
San Juan County, UT

Mr. Adams,

Kuenzler & Flora Reserve Corporation (KFR) is requesting an "Other Business Arrangement" with the School and Institutional Trust Lands Administration (SITLA) covering trust land minerals located in San Juan County, Utah (Exhibit A). The trust lands are described as:

ALL: Section 2, Township 34 South, Range 24 East, 6th P.M., San Juan County, Utah

On the requested acreage, in 2015, Anadarko Petroleum Drilled and tested the Lewis Road 3424-2-1H (The Well) in the Gothic shale. After testing uneconomic rates of oil and gas the well was plugged and abandoned. KFR believes an oil and gas productive zone was bypassed as the rig took a two-hundred-barrel hydrocarbon kick while drilling the intra-salt #6 clastic section. This zone was untested and is potentially oil productive. Attached to this proposal are geologic and engineering addendums which contain proprietary information and are marked confidential. This information is the main reason for requesting an OBA and not putting the parcel up for competitive bid. We are interested in leasing the minerals and proceeding with development of oil and gas on the acreage and are willing to do so under the following terms and conditions.

1. On or before April 30th, 2020, KFR will request issuance of leases on the Proposed OBA covering the lands shown in Exhibit A. The leasable section of the Proposed OBA covers approximately 640 acres, more or less. Upon receipt of the lease and execution by KFR, two originally executed leases per tract will be returned to SITLA for its signature together with a check as bonus consideration in the sum of $5 per net mineral acre leased, or fraction thereof. The lease(s) will be issued on the standard SITLA lease form in effect when the lease(s) are issued with an effective date being the first day of the following month in which the leases are requested. Lease terms will be five (5) years, 17% landowner royalty and $5 per net mineral acre, or fraction thereof. The total bonus consideration to SITLA at the time of leasing for all leases will be approximately $3,200.

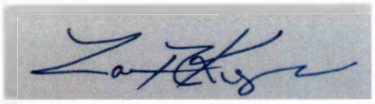
2. On or before April 30th, 2022, KFR, or its designee as approved by SITLA, will permit re-entry and sidetracking operations of the Lewis Road 3424-2-1H with the Utah Division of Oil, Gas, and Mining AND commence operations to test additional zones in the well. Re-entry and testing operations of the Lewis Road 3424-2-1H will be deemed the Initial Test Well in this agreement. Operations will be deemed commenced when KFR rigs up a workover rig to begin cleaning out the abandonment cement plugs of The Well. Operations will include drilling out the existing cement plugs in the wellbore, sidetracking to approximately 6400ft or deeper, running and cementing liner, perforating and testing zones for production. The Well will be either completed timely as a producer of commercial quantities of hydrocarbons or plugged and abandoned as a dry hole in compliance with the rules and regulations then in practice by the Utah Division of Oil, Gas and Mining and the laws of the State of Utah.

3. If the Initial Test Well (Lewis Road 3424-2-1H) is re-entered and tested as required in paragraph 2 and whether or not it is completed as a producer of commercial quantities of oil and/or gas or plugged and abandoned as a dry hole, KFR will have earned the lease for the additional 3 remaining years of primary term.

It is understood by KFR that the terms of this OBA must be approved by the SITLA Board of Trustees. We ask that our request be placed on the agenda for the next Board meeting for consideration. We understand that the Board has the authority to accept, amend or deny any terms set forth herein and that the terms are not final until the Board has agreed to them.

Should these terms meet with your approval, please so indicate by signing and returning one copy of this letter to my attention either by email to zanekuenzler@kfrcorp.com or by U.S. Mail addressed to the undersigned at the letterhead address.

Sincerely,



Zane A. Kuenzler

President

Kuenzler & Flora Reserve Corporation

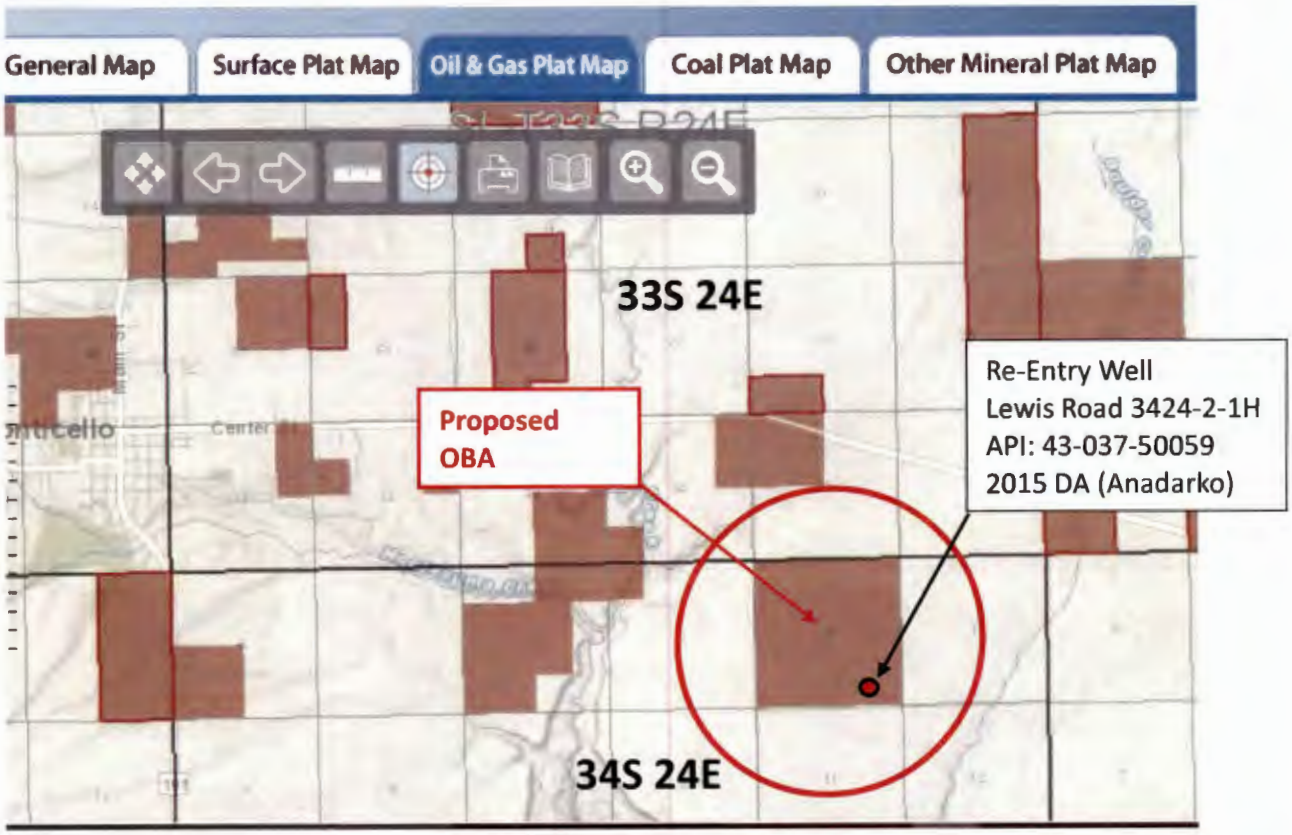
ACCEPTED AND AGREED TO THIS_____DAY OF_____2020

SCHOOL AND INSTITUTIONAL TRUST LANDS ADMINISTRATION

By:_____ Title:_____

Exhibit 'A'

to that certain OBA Offer Letter, by and between SITLA and KFRC, dated 1/17/20



11c

New Day Energy

OBA

BOARD MEMORANDUM

DATE: March 12, 2020

TO: Board of Trustees, Utah School & Institutional Trust Lands Administration (SITLA)

FROM: Tom Faddies, Assistant Director/Minerals
Jerry Mansfield, Resource Specialist

RE: Other Business Arrangement (OBA) – Non-Competitive Lease of Bituminous/Asphalitic Sands Mineral Lease, Uintah County, Utah, New Day Energy Development, LLC.

LANDS PROPOSED FOR LEASE:

T4S, R20E, SLB&M	Uintah County
Sec. 25: Lots 3(38.36), 4(38.79), W½, W½SE¼	1,510.79 Acres
Sec. 36: Lots 1(39.12), 2(39.38), 3(39.62), 4(39.88), W½, W½E½ (All)	
T4S, R21E, SLB&M	
Sec. 30: Lots 3(38.85), 4(38.71), E½SW¼	
Sec. 31: Lots 3(38.74), 4(38.78), NE¼SW¼	
T5S, R21E, SLB&M	
Sec. 14: Lot 2(40.10), 3(40.46)	
Sec. 15: SE¼NE¼	

FUND: School and Multiple

APPLICANT: New Day Energy Development, LLC
9930 Sego Lily Drive
Sandy, Utah 84094

As provided for under Utah Code Annotated 53C-2-401(1)(d)(ii), which permits the Board of Trustees to approve "Other Business Arrangements" (OBA), New Day Energy Development, LLC on February 18, 2020, submitted a proposal to lease, under the Bituminous/Asphaltic Sands minerals lease category the above-referenced land. The reason this action requires Board approval is the lease would be issued through the "Other Business Arrangement" (OBA) lease process.
This proposed OBA has been reviewed by the SITLA Board's Mining Committee and they have recommended the Board consider it for approval.

Lease History

The State of Utah acquired section 25, T4S, R20E, SLB&M under School in Lieu List 297-115746, June 27, 1966. Section 36, T4S, R20E, SLB&M was acquired through U.S. Confirmatory Patent 1226121 through the Enabling Act upon statehood or survey date. Section 30 and 31, T4S, R21E, SLB&M, were acquired through School in Lieu List 297-115887, June 27, 1966. Section 14, T5s, R21E, SLB&M was acquired through School in Lieu List 297-113244. Section 15, T5S, R21E, SLB&M was acquired through School in Lieu List 297-113243. Some of the acquired land had reservation for prior existing rights and several mining claims have been claimed to be pre-existing, though SITLA has never recognized them. There is a Sand and Gravel lease on a portion of the lands in section 25 held by Staker & Parson Companies. All the lands being considered for this OBA lease for Bituminous-Asphaltic Sands are currently leased for Oil, Gas and Associated Hydrocarbons by Hoodoo Mining and Production Company LLC. There have been no Bituminous-Asphaltic Sands leases on any of these lands since

February 2017. All of the proposal lands have been offered for lease competitively since April of 2015 without any bids being submitted.

Proposal

New Day has proposed to lease the lands listed above through the "Other Business Arrangement" process. They propose leasing the lands with the standard lease terms for annual rental ($1 per acre), minimum royalty ($10 per acre) and production royalty (8%). They intend to incorporate an in-situ radio frequency heating technology to produce bitumen from the leased bituminous-asphaltic sands. In exchange for these terms New Day agrees to perform the following:

- Pay an initial bonus payment of $1,000.00 for the lands they have selected for their OBA lease,
- Perform a core drilling program that would include 20 drill holes on the lease hold that would define bituminous/asphaltic sands,
- Drill data would be analyzed and shared with SITLA through a professional pre-feasibility report in the nature of the Canadian 43-101 report,
- Quit claim deed to SITLA all the mining claims they hold on the lands they would lease (approximately 320 acres), and
- Work requirements would be completed within 2 years.

Recommendation

The Trust Lands Administration Mining staff have reviewed the New Day proposal and recommend that the Board of Trustees, of the School and Institutional Trust Lands Administration, grant approval to issue an "Other Business Arrangement" (OBA) lease to New Day Energy Development, LLC for Bituminous/Asphaltic Sands. Issuance of the Bituminous/Asphaltic Sands OBA lease will include the work requirements outlined above with the following standard Bituminous/Asphaltic Sands Lease terms:

- One-time Bonus bid of $1,000.00,
- Standard Annual Rental rate for Bituminous/Asphaltic Sands lease ($1 per acre, total $1,511.00)
- $10.00 per acre annual minimum royalty beginning with the first year of the lease ($15,110.00)
- 8% production royalty and no less than $3.00 per barrel; after ten years of production, royalty may be increased by not more than 1% per year to a maximum of 12.5%
- Ten-year lease term.
- A performance bond may be required

Respectfully Submitted by:

Tom Faddies
Assistant Director of Minerals

Jerry Mansfield
Resource Specialist

PyroPhase INC.

5000 South Cornell Avenue
Suite 18C
Chicago, Illinois 60615

Telephone for this writer: (309) 258-4148
E-mail for this writer: LHannah@pyrophase.com

February 18, 2020

Mr. Jerry W. Mansfield
Resource Specialist
State of Utah, School and Institutional Trust Lands Administration
675 East 500 South, Suite 500
Salt Lake City, UT 84102-2818

Regarding: OBA Proposal – Asphalt Ridge

<u>Group A Lands – Collier Family and Affiliates claimed lands since approximately 1921</u>
Uintah County, T4S R20E Section 25, NW4 of SW4 and NE4 of SW4 and SE4 of SW4 and SW4 of SE4
Uintah County, T4S R20E Section 36, NW4 of NE4 and SW4 of NE4 and SE4 of NE4
Uintah County, T5S R21E Section 14, SW4 of SW4

<u>Group B Lands - Direct bid for adjacent SITLA controlled acreage</u>
Uintah County, T4S R20E Section 25, SW4 of SW4 and NW4 of SE4 and NE4 of SE4 and SE4 of SE4
Uintah County, T4S R20E Section 36, NE4 of NE4 and S2 and NW4
Uintah County, T4S R21E Section 30, SW4
Uintah County, T4S R21E Section 31, W2 of SW4 and NE4 of SW4
Uintah County, T5S R21E Section 14, NW4 of SW4
Uintah County, T5S R21E Section 15, SE4 of NE4

<u>Group C Lands – Direct bid for adjacent SITLA controlled acreage subject to existing gravel leases</u>
TBD, but expected in Uintah County, T4S R20E Section 25, NW4

Dear Mr. Mansfield:

Initially, we would like to thank you for your continuing assistance in providing general information as to the process of securing SITLA lands for possible development at Asphalt Ridge, Uintah County, Utah. PyroPhase, Inc. and the Collier family and affiliates continue to be quite keen in pursuing resource development at Asphalt Ridge. To that end, a Utah LLC has been established to hold title to the leases and to be the legal entity under which the project operates. New Day Energy Development, LLC is that

entity and its managing member is Mr. Steve Young who has been intimately involved in this process. PyroPhase, Inc. will be part of New Day and will be bringing all of its RF Heating technologies to bear.

New Day Energy Development, LLC is interested in in situ production as a main component to establishing a commercially viable resource development system. PyroPhase, a major part of New Day, has many patents for using Radio Frequency heating to lower viscosity of heavy oil and bitumen and produce the resources conventionally, without the footprint of a full-fledged mining operation. Further, PyroPhase has been working on many methods that it wishes to deploy that would mitigate the vexatious problem of fines in the produced materials and, as such, would make the resource far more valuable for all concerned. Should additional information be desired, we will gladly provide such.

Details of our proposal are as follows. First, the New Day Group would transfer, by quit claim deed, its interests in the Group A properties above in exchange for a lease on those properties and the adjacent properties set forth in Groups B and C. As we understand that certain of the properties are subject to gravel leases (Group C), our new leases would be subject to those leases and not interfere with their operations. This formula would be mutually beneficial for many reasons. First, as the Collier family has maintained ownership claims on the properties dating back to the 1920s and continues to file annually its notices on those properties, it would clarify the status of the title of the properties which have been the subject of many legal disputes through the decades. Next, much of the property sought under the Group B lands above has substantial overburden issues and an in situ solution is realistically the only economically sound approach that is presently foreseeable. Finally, PyroPhase's Chief Scientist, Dr. Richard Snow, was a driving force in the first, and perhaps only, successful in situ resource extraction back in the early 1980s at Asphalt Ridge. Since that time, PyroPhase, Inc. has been established and many new RF Heating solutions have been developed and patented by the company. Using earlier iterations of RF Heating systems, 35% resource recovery was achieved in 21 days on a limited scale. PyroPhase believes 70% ultimate recovery is achievable using its tools and knowledge base. Therefore, we feel that commercialization is realistic in a relatively short time period and that both SITLA and the New Day Group would see significant short term and long-term benefits of substantial size should our proposal be accepted. Attached is a map of the lands involved.

As to our proposal for securing the above lands, there appear to be three components to be contained in a State of Utah Mineral Lease for Bituminous-Asphaltic Sands:

The bonus bid
The annual rental
The minimum royalty

Accordingly, we propose and seek acceptance of $1,000 for the bonus bid, annual rental of $1 per acre on the approximate 1,520 acres referenced lands and a minimum royalty of 8% ($10 per acre per year minimum). Applied to those designated lands above, this would total out as follows:

The bonus bid	$1,000
The annual rental	$1,520
The minimum royalty	$15,200
Total	$17,720

As for the immediate particulars of our intended approach, we would start by taking at least 20 core samples on the subject properties. We would intend to commence coring activities on the heels of all required regulatory filings, etc. (such as cultural inventories and the like). We think that would be conducted as soon as paperwork clears. We would like to be able to start core drilling in early summer. We will not know the exact pattern of the coring until a site inspection is done by our selected geologists, but such information will be provided promptly. Of course, if core samples show an area is particularly conducive to in situ recovery at any point in the drilling sequence, we would likely change the drilling pattern of remaining coring holes and use such as part of a collection grid. In any event, we would make core samples publicly available within the statutorily prescribed period. Precise mapping of the bitumen resource is certainly to everyone's benefit. We look forward to your input so that activities on this project can commence quickly.

Please let us know if the above would meet your criteria and is acceptable. As mentioned before, should additional information be needed, please contact us. The writer will be the contact person for this project and my contact information is:

Lance Hannah
VP of Project Development
5000 S. Cornell Ave., Suite 18C
Chicago, IL 60615
Telephone: 309-258-4148
E-mail: LHannah@pyrophase.com
and
Lance.Hannah2020@gmail.com

Also please send copies of all matters pertaining to this project to:

Steve Young
Managing Member
New Day Energy Development, LLC
9930 Sego Lily Drive
Sandy, UT 84094
Telephone: 801-243-1133
E-mail: th46young@q.com

We look forward to hearing from you and appreciate the help received to date.

Sincerely,

Lance Hannah
VP of Project Development

Attachments: as indicated

KEY: "A" markings indicate Collier claimed lands to be quit claimed to SITLA and leased back to the PyroPhase Group

"B" markings indicate adjacent lands sought to be leased under OBA provisions

"C" markings indicate adjacent lands sought to be leased under OBA provisions, but subject to gravel mining grant rights

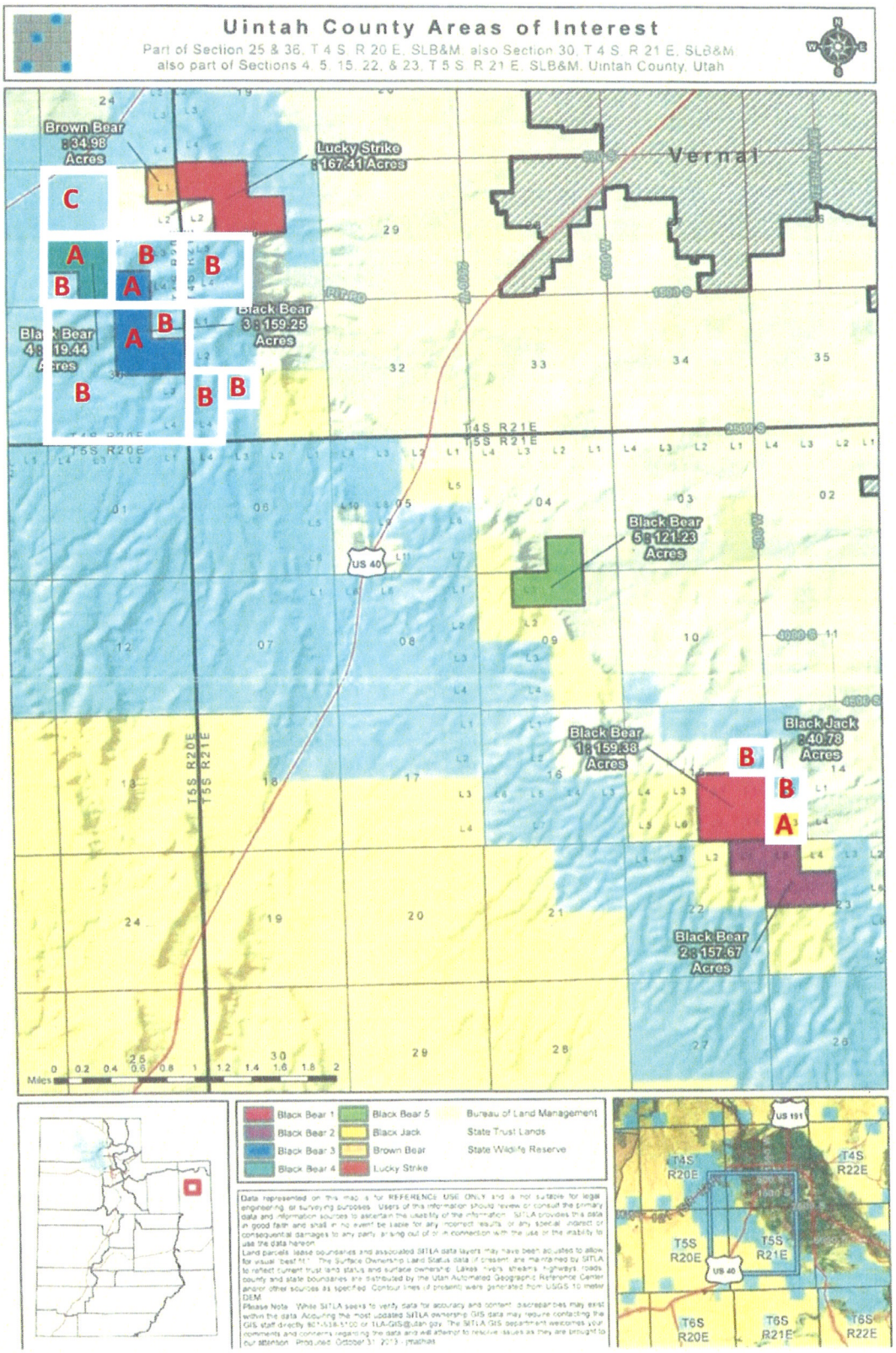


EXHIBIT A

11d

- Grazing Assessment Rates, 2020 – 2021

- Proposed Formula for Future Grazing Seasons

MEMORANDUM

DATE: February 20, 2020

TO: SITLA Board of Trustees

FROM: Michelle E. McConkie, Assistant Director

SUBJECT: Proposed 2020/2021 Grazing Assessment Rates; Proposed Formula for Future Grazing Seasons

BENEFICIARY: All

Summary:

Pursuant to Utah Administrative Code R850-50-500, the Board shall establish annual grazing assessments to be charged for each AUM and shall review these assessment rates annually.

The 2020/2021 recommended grazing assessments are:

- Standard Assessment - $6.00 + $0.10 weed feed= **$6.10 per AUM**
- Block Assessment - $10.54 + $0.10 weed feed= **$10.64 per AUM**

In its October 2019 meeting, the Surface Group Committee discussed updating the formula used for determining grazing assessments to simplify it while continuing to ensure assessments accurately reflect market value. In anticipation of this evaluation, it was proposed that grazing assessment rates for 2020/2021 remain the same as the 2019/2020 rates. This is reflected in the rates set forth above.

In addition, the administration proposes a revised formula be used to set future grazing rates. This new formula would be effective as of the 2021/2022 grazing season. The administration recommends the delay in the implementation of the new formula so that it may inform industry about the proposed changes. This will allow existing permittees to assess how the changes will impact their activities.

Current Formula:

- In March of 2003, the Board directed the Agency to evaluate a separate grazing assessment structure for selected land blocks and to explore ways of improving the overall grazing program. As a result, a new structure for grazing assessments was implemented by the Board in 2005.

- The grazing assessment formula currently in effect applies private lease rates as reported from USDA National Agricultural Statistics Service ("**NASS**") and creates an index of

lease rates compared to the previous year's private lease rate. The formula is designed to be used each year to establish the index for the next year:

$UTFVI_t = 1.01787 \text{ X } UTFV_{t-1} / UTFV_{t-2}$

Where: $UTFVI_t$ = Utah Forage Value Index
UTFV = Utah private AUM lease rate (as reported by NASS)

Proposed New Formula:

- After the October 2019 Surface Group Committee meeting, the administration evaluated private grazing lease data to determine a proposed new formula.

- The proposed new formula is tied to the private market, while recognizing differences in circumstances. For example, the Agency requires its grazing permittees to perform tasks and expend money (in addition to the assessment costs) that private landowners typically do not require of their permittees. In addition, the federal grazing rates on adjacent BLM permits remain at $1.35 per AUM, causing concerns with SITLA permittees on scattered sections due to the disparity.

- The new formula would be a percentage of the NASS private lease rate, averaged over a 3-year period. Using a 3-year running average will help moderate any dramatic swings in either direction. This new formula will reflect current market rates and will also be simpler to follow and implement.

    - Standard Assessment - 36% of the (NASS) private lease rate
    - Block Assessment - 63% of the (NASS) private lease rate
      Ex. NASS DATA private lease rates for 3 years: 16.50 + 17.00 + 18.00= 51.5/3 = 17.167
      17.167 x 36% = $6.18 per AUM for Standard
      17.167 x 63% = $10.82 per AUM for Block

Conclusion:

Proposed grazing assessments for 2020/2021 are as follows:

- Standard Assessment - $6.00 + $0.10 weed feed= **$6.10 per AUM**
- Block Assessment - $10.54 + $0.10 weed feed= **$10.64 per AUM**

As previously discussed, these rates are the same as the previous grazing season and were calculated using the existing formula.

It is also proposed that the new formula described herein be approved for use effective as of the 2021/2022 grazing season.

Both the proposed grazing assessments for the 2020/2021 grazing season and the new formula proposed for the 2021/2022 grazing season were discussed by the Surface Group Committee in its January 2020 meeting.

11e

Request to Sell

Fossil Hills, St. George

Notification

TO: Board of Trustees, School and Institutional Trust Lands Administration

FROM: Kyle Pasley, Assistant Director

DATE: February 20, 2020

BENE: Schools

RE: ***Request to sell 83.5 acres +/- of development property in Fossil Hills, St. George, Washington County***

Introduction

In the summer of 2016, the Trust sold a 91.5 acre +/- parcel at the corner of River Road and Brigham Road in St. George to Quality Development for the purposes of lower income townhome development (Exhibit A). The parcel in question had several development constraints including gypsypherous soils that made full development expensive.

Part of the original transaction was to offer a right of first refusal to Quality on the adjoining mineral lease parcel. The purpose of this extension was to provide some continuity of development and access. Further was the option to tie grading plans together to account for reconditioning of problem soils. This parcel also currently runs a gypsum mine operation under a Mineral Lease with through the Trust (ML 51108 see Exhibit B). To date the mineral lease has returned approximately $153,352 to the Trust.

This option could be requested by buyer at any time within 6 months of the cessation of mining operations or at ten years from effective date of the COS (November 2015).

Quality has reached a point in development of the adjoining parcel where they have requested a takedown of the mining parcel earlier than the parameters set forth in the original COS. The product Quality has been producing is moderate to lower income owner occupied property that is in severe shortage in Washington County.

Staff has talked to the mining partner (PCI) and the development partner to ascertain the feasibility of development on the west side of the parcel while mining completes on the East side of the parcel. Both parties are amenable to this solution including a written approval from PCI. Furthermore there has been internal cooperation between the Mining Group and the Planning and Development Group on this transaction.

Proposed Transaction

It is proposed that Quality purchase the entirety of the ML51108 parcel (83.5 acres +/-) at appraised, development value. This will allow them to develop the western portion that PCI will not be mining. Additionally this will allow the Trust to capture any increased value from adjacent development from the intervening years.

PCI will continue to mine the eastern portion of the parcel with the intent of bringing the grading to a matching level with adjacent development plans. The Trust will maintain mineral rights and royalties will continue to be paid to the Trust until mining is complete.

As stated previously this transaction has been vetted through the Minerals group and Planning and Development and both feel that this is a good solution that will earn the Trust increased revenue.

This transaction was discussed in the Real Estate Sub Committee on January 28, 2020 with a favorable recommendation from the committee for approval by the full Board of Trustees.

Exibit A

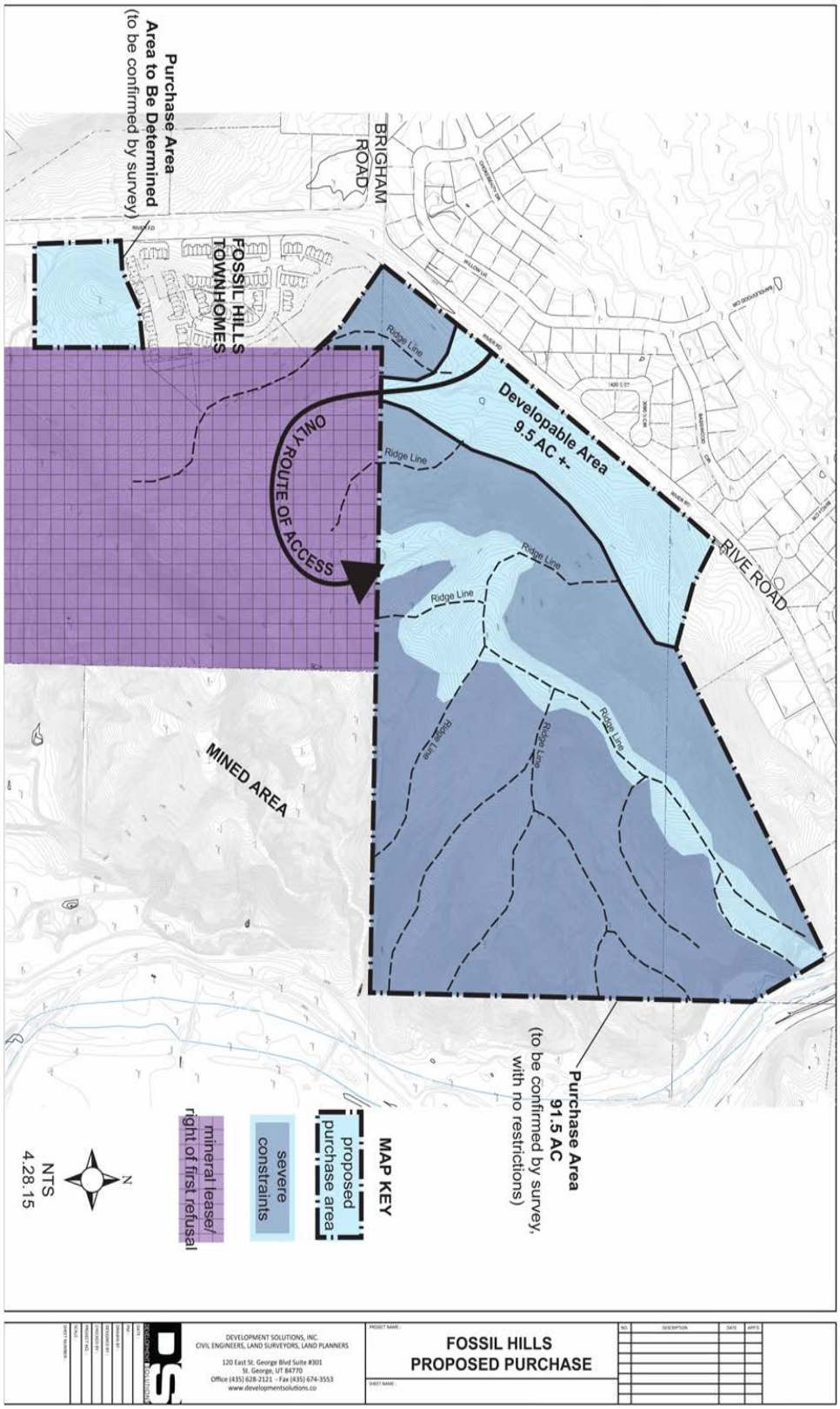

Purchase Area
Area to Be Determined
(to be confirmed by survey)
BRIGHAM ROAD
FOSSIL HILLS TOWNHOMES
Developable Area
9.5 AC +-
ONLY ROUTE OF ACCESS
Ridge Line
RIVE ROAD
MINED AREA
Purchase Area
91.5 AC
(to be confirmed by survey, with no restrictions)
MAP KEY
proposed purchase area
severe constraints
mineral lease/ right of first refusal
N
NTS
4.28.15
DEVELOPMENT SOLUTIONS, INC.
CIVIL ENGINEERS, LAND SURVEYORS, LAND PLANNERS
120 East St. George Blvd Suite #301
St. George, UT 84770
Office (435) 628-2121 - Fax (435) 674-3553
www.developmentsolutions.co
FOSSIL HILLS
PROPOSED PURCHASE

Exhibit B

SITLA Web Map

SITLA Active Other Minerals Leases

Land Ownership

Private

State Trust Lands

N