Attachment – 2

BOARD OF INVESTMENT TRUSTEES

BOARD OF TRUSTEES

MEMORANDUM

November 20, 2019

TO: Board of Investment Trustees and Board of Trustees

FROM: Linda Herman, Executive Director

SUBJECT: Environmental, Social, Governance – Required Annual Update – 2019

As detailed in the Board's Governance Manual, the Boards are required to annually provide a comprehensive report describing the implementation and outcomes of the Board's ESG policy, including recommendations for updates or revisions to this policy, as part of the year-end reporting process.

This report includes the following:

I. Industry Developments
II. Current Manager ESG Updates and Corporate Engagement
III. Consultant Initiatives
IV. Recent Board Actions
V. Staff Research

I. Industry Developments

- **CalPERS –** Citing lost earnings from prior divestment activities, the California Public Employees' Retirement System (CalPERS) is seeking to end the divestment from tobacco companies that has been in place since 2001. Tobacco divestment has cost the plan $3.6 billion in lost earnings since it was enacted. Additionally, the plan rejected calls to divest from two private prison companies, GEO Group and CoreCivic.

- **CalSTRS –** In a move that is counter to the CalPERS decision, CalSTRS announced that they will restrict any future investment in private prison companies. The companies included from this restriction are CoreCivic, Geo Group, G4S, Serco, and Sodexo. These holdings currently comprise $12.1 million of the CalSTRS portfolio, which represents .005% of the portfolio.

- **Norway Government Pension Fund Global (GPFG) –** Norway recently announced that their sovereign wealth fund, the GPFG, will be divesting from some fossil fuel investments in their portfolio. However, the fund will not be divesting from major integrated energy companies such as ExxonMobil, Total, Petrobras, BP, ConocoPhillips, Royal Dutch Shell, and Chevron as these companies maintain renewable energy divisions. Given that fossil fuels represent a material portion of GDP, employment, and export value for Norway, some believe it makes sense for their sovereign wealth fund to maintain an underweight exposure to energy as to not be over leveraged to the performance of the energy sector.

- **PRI Signatory Growth –** The number of signatories to the Principles for Responsible Investment reached 2,698 by the end of October 2019. Over the last year, this group has grown by 31%, which includes an addition of 82 institutional investors, 481 investment managers, and 78 service providers. Montgomery County became a signatory October 2019.

II. Current Manager ESG Updates and Corporate Engagement

- **Long Duration Fixed Income Manager –** Exited a position in a utility company after allegations arose that the company was partially responsible for a very large wildfire that caused several billion dollars' worth of property damage. In 2019, they began to reduce their exposure to a food company after the SEC began an investigation into the company's accounts which led to management turnover. They spoke with the Treasurer, and strongly encouraged their team to adopt a more conservative financial profile as the company addresses some of its governance and operating challenges. They did not receive the response they were looking for from the Treasurer, so they fully exited the position. At the firm level, they recently published an ESG Policy that describes the firm's approach to ESG as part of the overall investment process. They also recently developed reporting for their investment teams that include third party ESG data from Sustainalytics to enable their investment professionals to better monitor portfolio holdings.

- **Long Duration Fixed Income Manager –** In a prior year, this manager reduced their exposure to a large U.S. bank with an aggressive retail sales culture that resulted in lawsuits and headline risk. However, in 2019, the manager engaged with the bank and demanded improved disclosure and governance. The manager ultimately re-purchased the bonds as they became satisfied with the bank's changes, which included centralizing control function and risk oversight, improving whistleblowing procedures, and committing to improving corporate culture moving forward. Additionally, during the fiscal year, this manager's Sustainable Investment Team undertook 2,200 specialist ESG engagements across 52 companies globally.

- **High Yield Fixed Income Manager –** One of their oil and gas holdings is a leader in implementing clean environment technologies. The company has energy efficient natural gas powered frac fleets and drilling rigs, closed loop mud systems to eliminate need for disposing of drilling muds in a separately excavated pit, and green completion technology that limits methane emissions. The company also supported the first Clean Natural Gas (CNG) fueling station in West Virginia and is expanding its CNG fleet across the country. In the last 12 months, the manager has decided to enhance their research process by adding data from Sustainalytics, a top vendor in the space. In addition, the manager has long engaged with the companies in their portfolios around ESG factors and is working to make this engagement more systematic and robust.

- **High Yield Fixed Income Manager –** Recently passed on an investment in an oil and gas company that extracts from acreage that abuts residential areas, thereby increasing the risk of fines and lawsuits, particularly in the event of a material mishap. The analyst also noted that environmentalists are seeking to enact legislation that will disallow this practice. The manager recently analyzed a new issuance from a building materials company that had material asbestos-related liabilities. While the manager was concerned with this liability, they were pleased that this company reached a liability settlement that allows them to pay 35% of the company's positive annual operating cash flow. This agreement was approved by the labor unions, shareholders, and the legislature. Importantly, this payment is made after the company's operating expenses, supplier payments, debt service, and taxes which makes the interest payments on the bond structurally superior to the asbestos liability. Given their comfort level with the new asbestos funding agreement, the manager invested in this new issue.

- **Domestic Equity Manager –** Recently purchased stock in a U.S. refiner that is making progress to reduce its emissions with the improvements in refining efficiencies and less carbon intensity by introducing more hydrogen processes and renewable exposure. The company leads the industry as a tier 1 operator, but with additional concerns around the environment, it is trying to improve its positioning with a joint venture to build a renewable diesel refinery. With low carbon mandates in North America and Europe projected to continue driving strong demand and premium pricing for renewable diesel, this expansion provides an opportunity for the company to generate low carbon fuel credits. The company is also one of the largest and lowest cost producers of ethanol in the US. Ethanol demand will continue to grow as global mandates to reduce greenhouse gas (GHG) emissions increase and favorable blend economics support growth. The company remains a consolidator in the ethanol industry and has implemented best operating practices from the refining industry in its ethanol plants. Fuels produced in the U.S. from biomass feedstocks can reduce GHG emissions, reduce waste, improve energy security, create jobs and, ultimately, provide attractive investments. In the manager's opinion, developing and maintaining fuel blends that meet anticipated regulatory requirements and customer demand, is a long-term opportunity and driver of shareholder value.

- **Domestic Equity Manager –** Developed a 40-point questionnaire for their analysts to assess ESG opportunities and risks that was rolled out in September 2019. The questionnaire covers the following:

    - Environmental issues: climate change, natural resources, pollution, and waste
    - Social issues: human capital, product liability, and social opportunities
    - Governance issues: corporate governance, compensation, and corporate behavior

  During the last year, the manager engaged a software company about the gender pay gap. After being pushed by shareholders including our manager, this company announced they have achieved global gender pay parity in October 2018, which is defined as ensuring employees in the same job and location are paid fairly relative to one another, regardless of gender or ethnicity. In February 2019, the manager also created a new role of Global Head of Sustainable Investing, who will lead the efforts across sustainability-focused investment research.

- **Domestic Equity Manager –** Engaged with 19 businesses across their portfolio over the prior 12 months as shown below:

    - Communications Company: Board structure and composition
    - Communications Company: Labor management, activism, and corporate structure
    - Business Services Company: Board structure and succession planning
    - Real Estate Company: Corporate culture and executive compensation
    - Integrated Energy Company: Climate change impact, community impact, and reputational risk
    - Integrated Energy Company: Climate change impact, business ethics, and shareholder rights
    - Beverage Company: Water and waste management, product safety, and quality risk

    - Machinery Company: Ecofriendly product and innovation, cybersecurity, labor management, and board structure
    - Energy Company: Executive compensation
    - Integrated Energy Company: climate change impact, business ethics, and board structure/composition
    - Financial Company: Executive compensation
    - Healthcare Equipment Company: Litigation, regulatory risk, and executive compensation
    - Pharmaceutical Company: Corporate culture, product safety and quality risk, succession planning
    - Utility Company: climate change mitigation and impact
    - Chemical Company: Corporate strategy, shareholder rights, succession planning
    - Defense Contractor: Executive compensation
    - Real Estate Company: Board structure and composition and executive compensation
    - Integrated Energy Company: Business ethics, diversity, board structure and compensation, climate change impact
    - Health Insurance Provider: Corporate culture and board structure/composition

- **International Equity Manager** – Research conducted by the manager's in-house ESG team highlighted a Canadian-based freight railway company that ranks attractively for their ESG process. This railroad is among the most efficient and well-run railway operators, with less exposure to eastern coal and more exposure to long-haul routes, which are more energy efficient. The ESG team noted that this railroad is 15% more fuel efficient compared to other rail companies and is 4x more energy efficient relative to trucking companies. This efficiency leads to heightened free cash flow margins. Given the higher fuel efficiency, they benefit relative to competitors given the Canadian carbon tax.

- **International Equity Manager –** Avoided buying the largest provider of online casino technology as they felt uncomfortable about the company selling into unregulated markets. This decision proved wise as Malaysia subsequently moved from an unregulated market to a regulated market, which banned the presence of this online casino, resulting in a share price decline of 25%. The manager also voted against a compensation package for the CEO of a global shipping company, as the manager wasn't happy with the low degree of transparency provided by this management team.

- **International Equity Manager –** Purchased a global packaging business in part due to a meeting this year where the company announced initiatives that would substantially reduce fiber content in its packaging, which would result in carbon and fuel reductions, decreasing cost. The company recently announced that it is the first integrated packaging manufacturer to be a net positive recycler. They also recently sold a British retailer business due to concerns over corporate governance, primarily board acquiescence and issues related to executing their strategic plan. The manager also has enhanced their ESG practices through their purchase of Sustainalytics to better monitor the ESG performance of their portfolio holdings.

- **International Equity Manager** – Engaged in discussions with a Spanish multi-national apparel business to analyze their recycling processes as the manager felt they could improve margins over the long-term by adopting recycling, which would also be beneficial to the environment. This manager also engaged with a leading aerospace manufacturer around energy efficiency and their carbon footprint. They have also pushed other companies to develop and improve sustainability practices. In addition to their engagement practices, they also passed on purchasing a global pharmaceutical business due to poor environmental and social considerations.

- **Listed Infrastructure Manager** – Meaningfully reduced their position in a European toll road operator following the collapse of one of its bridges in the city of Genoa. Despite the valuation remaining attractive, they reduced the position due to concerns over the culture of safety at the company. The manager also pressured the operator of a channel tunnel between the U.K. and Europe to develop internal ESG guidelines. Following pressure from shareholders including the manager, the company has: 1. clarified its view on accountability and responsibility with respect to ESG internally 2. bolstered the health and safety training for all employees (not just construction/operations employees) 3. invested in significant security measures around the route, including extensive fencing between the trains/platforms to prevent people from being able to jump on or between trains, resulting in accidental deaths.

- **Public Real Estate Manager** – Purchased a Japanese REIT partly due to the company being a first mover in ESG-related initiatives globally. This REIT was the first in Japan to issue a green bond, issuing ¥8bn in bonds. The company listed the following rationale for issuing green bonds: (1) winning public support by demonstrating proactive involvement in green projects; (2) strengthening the funding base by establishing relationships with new investors; and (3) potentially raising funds on relatively favorable terms. The terms under which REITs in Japan have been issuing green bonds and taking out green loans appear to be better than those under which they issue regular bonds and take out regular loans. On the engagement side, they recently engaged with two Japanese developers with the aim of promoting shareholder value through the creation of share buybacks. Through active dialogue and engagement with management over an extended period of time, they received a firm conviction that the management would embark on a buyback program. These companies ultimately pursued buybacks, which resulted in a stronger return for the company as investors began to view them as good stewards of capital.

- **Private Equity Manager** – Invested in a manufacturer of continuous positive airway pressure (CPAP) cleaners for people suffering from sleep apnea. This cleaning product very efficiently and automatically cleans the CPAP machine, whereas their competitors utilize cleaning solution that results in caustic solution being put back into the sewer systems. This automatic process results in lower cost for the company and a higher price point for the cleaner given that it is much more efficient and convenient for the end user. Additionally, this firm has incorporated ridesharing and more efficient scheduling processes at one of their homecare investments, which results in lower fossil fuel consumption, as well as lowering expenses.

- **Private Equity Manager** – Seeks to use governance structures that provide appropriate levels of oversight in the areas of audit, risk management, potential conflicts of interest, and management team compensation that align the interests of the fund and management teams. The manager believes in a strong and independent Board of Directors, which means that they will seek independent representatives on portfolio company boards of both majority and minority investments. The manager will only make non-control investments after performing significant diligence to attain comfort that the controlling persons share their desire for transparency and good governance.

- **Private Real Assets Manager** – Utilize business practices and technology deployment to minimize the overall environmental impacts of their activities include: using infrared technology to detect ineffective piping, installing plunger lifts to reduce methane emissions, replacing gas-fired pumps with solar-powered pumps, using natural gas and low-emission diesel to power well pads, using natural gas vehicles for transporting equipment, utilizing more efficient compressors, favoring pipeline over trucking for transportation, and utilizing water-management programs such as water recycling. Consequentially, many of the operators who work with the manager have been recognized by the U.S. Environmental Protection Agency and other agencies at the state and local levels for their ongoing dedication to environmental and operational excellence. The manager also uses a comprehensive 220-page document that includes both general and office safety rules and standards as well as environmental information and protocols. When selecting operators, the manager looks for those who are committed to responsible environmental stewardship with robust processes and procedures in place to meet and exceed all current laws, and regulations and standards.

- **Private Real Assets Manager** – Focused on conservation strategies within their timber investments. After acquiring working timberland, they typically partner with conservation-oriented non-governmental organizations (NGOs) to sell working forest conservation easements that restrict development and land conversion but allow for ongoing forest management. These transactions have a positive impact on the environment as this agreement permanently restricts development on a portion of the land and conserves important natural values of a forest property, including fisheries, water, wildlife habitat, and open space.

- **Private Debt Manager** – Analyzes the following environmental aspects of any business prior to investment:

  - The direct spend on energy and the resulting CO2 emissions
  - Level of water use
  - Processes and procedures for mitigating E-waste
  - Incentive programs in place at the company for promoting sustainability
  - R&D spent on services or software relating to "green" products
  - Understanding whether sustainability factors drives selection of supply chain partners

  In the past year, the company has invested in two businesses that improve the energy efficiency of the end users. One business was a provider of mobile software that tracks medical equipment within hospitals. This application significantly reduces paper waste and allows for less inventory on hand. Another business sells software that enables facilities teams to better manage and maintain large commercial buildings, hospitals, and campuses. This software allows buildings to be run more efficiently, which reduces energy needs and costs.

- **Private Real Estate Manager** – As part of the manager's due diligence process, every property will undergo, at a minimum, a Phase I Environmental Inspection conducted by a third-party Environmental Consultant. Some of the manager's environmental initiatives are:
  - Reduce energy usage through retrofitting lighting to lower energy using LED lights within the warehouse space as well as the exterior parking fields at retail and industrial assets.
  - Reduce water usage at each of its assets. The GP redesigns and implements new landscaping schemes at its retail and industrial assets with lower water-using plantings and incorporates the use of hardscape alternatives.
  - Improve the local ecosystem surrounding its assets by engaging with architects and local consultants

III. Consultant Initiatives and Approach to ESG

- **NEPC (General Consultant) –** Over the last 12 months, NEPC has incorporated an ESG Scorecard into their manager evaluation process. This scorecard evaluates the firm's commitment to ESG, the level of ESG integration in the investment process, their corporate engagement policies, and the level of firm resources that have been dedicated to ESG. Each firm is rated between a 1 and 5 with a 1 indicating a best in class ESG approach and a 5 indicating no ESG integration. Additionally, each ESG evaluation includes the NEPC manager research analyst's qualitative thoughts and commentary about how each manager's ESG practices compare to peers. Additionally, NEPC recently released their approach to structuring an impact investment program and evaluating and measuring success.

- **Franklin Park Associates (Private Equity Consultant) –** Franklin Park undertook the following ESG-related initiatives over the last 12 months:
    - Became a signatory to the Principles of Responsible Investments, which demonstrates their commitment to ESG and responsible investing and incorporates best practices from other private equity market participants.
    - Updated their impact investment manager database during the year, which includes the evaluation of 215 impact managers.
    - Entered into a relationship with Tideline, a leading impact investment consultant, to provide impact investment solutions, including goal setting, due diligence, measurement, monitoring, and reporting.

- **Aberdeen (Private Real Assets Consultant) –** In the last year, the Aberdeen Private Real Assets team has continued its dialogue with their Europe-based ESG group to remain current on specific trends that affect the investment environment and the needs of their investors. In addition, the Real Assets team has implemented a review of the ESG space as part of their quarterly team portfolio meeting to analyze and discuss any ESG related topics in the private real assets space as well as highlight certain ESG items from their underlying managers. Finally, Aberdeen continues to include ESG as an integral component of their Operational Due Diligence practices.

IV. Recent Board Actions

- **PRI –** In October 2019, the Boards became signatories to the Principles for Responsible Investing (PRI). Staff and the Boards believe that becoming a signatory will further enhance our ability to underwrite and monitor ESG risks and opportunities in the future. Other institutional investors who are signatories include CalPERS, CalSTRS, Canada Pension Plan Investment Board (CPPIB), Harvard University Endowment, Los Angeles County Employees Retirement Association (LACERA), Maryland State Retirement & Pension System, and New York City Employees Retirement System. The six Principles for Responsible Investment offer a menu of possible actions for incorporating ESG issues into investment practice. They are shown below:

    1. We will incorporate environmental, social and corporate governance (ESG) issues into investment analysis and decision-making processes. Signatories can follow the first principle by supporting the development of ESG-related tools, metrics and analyses and by encouraging research and analysis by service providers and academics on ESG-related issues.

    2. We will be active owners and incorporate ESG issues into our ownership policies and practices. Signatories can follow the second principle by promoting and protecting shareholder rights and by engaging with companies on ESG issues.

3. We will seek appropriate disclosure on ESG issues by the entities in which we invest. Organizations can ask companies to integrate ESG components into their annual financial reports and request standardized reporting of ESG issues through tools such as the Global Reporting Initiative (GRI). The GRI is a sustainability reporting effort that asks organizations to disclose their impact on issues such as climate change, human rights, and corruption.

4. We will promote acceptance and implementation of the principles within the investment industry. Signatories can communicate their ESG expectations to service providers and revisit relationships with providers that do not adhere to ESG guidelines.

5. We will work together to enhance our effectiveness in implementing the principles. Organizations can collaborate to address new issues and support initiatives by sharing information, tools and resources.

6. We will each report on our activities and progress towards implementing the principles. Through this principle, organizations can raise awareness of ESG principles among stakeholders and beneficiaries.

- **ESG Monitoring and Evaluation –** Natixis, a French asset manager that purchases stakes in other asset managers, ran a portfolio ESG analysis of the Employees' Retirement System's (ERS) and Consolidated Retiree Health Benefits Trust's (CRBHT) public equity and fixed income portfolios. Natixis analyzed our portfolio on a security level basis and determined the following:

    - Environmental – Higher environmental rating relative to our benchmark
    - Social - Higher social score relative to the benchmark
    - Governance – Higher governance score relative to the benchmark

  Additionally, Natixis calculates an ESG momentum score, which considers the trajectory of each company's ESG profile rather than just the absolute level. They have conducted research showing that ESG Momentum has a positive correlation with future investment performance. Their analysis showed that 100% of our public managers demonstrated positive ESG Momentum.

- **CERES –** The Boards joined the CERES Investor Network in 2018 to gain a better understanding of climate risk within the portfolios, explore opportunities embedded in the clean energy economy, and develop a dialogue with other institutional investors on ESG related matters. Since joining, Staff has been an active participant in the Disclosure Working Group, which seeks to push companies to disclose all relevant sustainability information using the Global Reporting Initiative (GRI) guidelines as well as additional sector-relevant indicators. The goal of this working group is for more companies to disclose material sustainability risks and opportunities within their financial filings.

V. Staff Research

- **Discussions with Other Plans –** Staff engaged in dialogue with the following pension plans to discuss their approach to ESG and fossil fuel divestment

    - **NYCERS –** While the New York City Employees' Retirement System (NYCERS) announced their intention to divest $5 billion in fossil fuel holdings in 2018, they are still currently studying the issue, and none of the city's five boards have voted to divest from these securities.

- **Alaska Permanent Fund –** In May 2019, the Alaska Permanent Fund, a sovereign wealth fund within the state of Alaska, published a report supporting their decision not to divest from fossil fuel investments. Some of the rationale for the decision included cyclicality of the energy sector, which typically performs best late in the economic cycle, limited penetration of renewables (2% of global energy market share), attractive valuations (higher dividend yield, lower P/E and P/B ratios), and more conservative balance sheets.

- **SFERS** – The San Francisco Employees' Retirement System voted in 2018 to divest of five fossil fuel companies with "high climate transition risk." These companies are Hess Corp, Apache Corp, Gulfport Energy, QEP Resources, and WPX Energy. There is no timeline for divestment and these companies are given the chance to make changes to their policies before divestment occurs.

- **Impact Investing -** At the annual board retreat in October 2019, the Board received presentations from our private market consultants, and two investment managers, on the topic of impact investing including how it contrasts with other strategies such as responsible, sustainable, ESG, traditional investing, and current market opportunities. These opportunities were mapped to the United Nations list of Sustainable Development Goals (SDGs), which include the environment, health and wellness, food and agriculture, education, underrepresented populations, and economic development.

- **AON Divestment Study** – Staff conducted research on the work performed by some of the largest pension consulting firms in the country to understand their analysis of the risk associates with fossil fuel divestment. A recent study was published by AON, a global investment consultant, supporting their opposition to a fossil fuel divestment strategy. Some of the reasons cited for their opposition are shown below:

    - *Diversification Impact* – Over the last 20 years, a portfolio that excludes fossil fuels results in a lower return, higher tracking error, and typically higher volatility (one exception was within emerging markets, where excluding fossil fuels resulted in slightly lower volatility).
    - *Conflict*– Unlike other divestment movements such as tobacco, gambling, or firearms, every government entity will still rely on, and therefore support, fossil fuels with energy consumption, transportation, infrastructure projects, etc. Conversely, governments can both divest from gambling securities and restrict such activities within their jurisdictions.
    - *Cost* – Several academic studies have concluded that there will be a financial impact to a fossil fuel divestment strategy. The most conservative estimate cites an annual cost of 0.57% while the most optimistic projection is 0.07%.
    - *Demand Growth* – While AON expects renewables to remain a growth industry, they believe that fossil fuel demand will continue to grow over the next 30 years and that peak demand for fossil fuels is many decades away. This demand growth projection is due to global population growth in the middle class, which will increase energy demand for all fuels (fossil fuels and renewables) for the coming decades.

ERS Carbon 200 Exposure - October 2019

Coal or Oil	Company	Market Value
O	Aker BP	$1,047,250
C	Anglo American	$208,494
O	Antero Resources	$210,563
O	Apache Corp	$3,145,205
C	ArcelorMittal	$328,027
O	BASF	$963,004
O	BHP Group	$159,331
O	BP	$1,713,797
O	Cabot	$18,360
O	California Resources	$1,243,338
O	Carrizo	$139,500
O	Chesapeake	$1,516,081
O	Chevron	$1,890,295
O	Cimarex	$8,866
O	Concho	$31,599
O	ConocoPhillips	$1,274,848
O	Consol Energy	$205,938
O	Continental Resources	$6,336
O	Denbury Resources	$878,924
O	Devon Energy	$291,157
O	Diamondback Energy	$32,760
O	Encana Corp	$625,045
O	ENI	$432,883
O	EOG	$1,001,183
O	EP Energy	$4,729
O	EQT	$4,468
O	Equinor	$531,150
O	Extracion Oil	$94,875
O	Exxon Mobil	$673,065
C	Glencore	$633,636
O	Gulfport	$1,314,163
O	Hess Corp	$2,188,316
O	Inpex	$455,250
C	Itochu	$182,764
O	Marathon Oil	$616,230
O	MEG Energy	$329,625
C	Mitsubishi	$391,186
O	Murphy Oil	$651,939
O	Noble Energy	$1,678,851
O	Oasis Petroleum	$671,518
O	Occidental Petroleum	$244,367
O	Paramount Resources	$366,300
O	Parsley Energy	$1,014,267
O	PDC Energy	$595,609
O	Petrobras	$1,458,693
O	Pioneer Natural Resources	$48,470
O	Range Resources	$511,626

Coal or Oil	Company	Market Value
O	Royal Dutch Shell	$4,008,028
O	Seven Generations Energy	$1,067,625
O	SM Energy	$1,502,731
O	Southwestern Energy	$73,920
C	Sumitomo Mining	$74,402
O	Statoil	$626,165
O	Suncor	$2,389,674
C	Teck Resources	$253,826
O	Total SA	$1,779,884
C	Warrior Met Coal	$99,960
O	Whiting Petroleum	$1,826,140
O	WPX Energy	$348,195
O	YPF	$769,920
	Total ERS Carbon 200	**$46,854,348**

Total Oil	$44,682,052	95.36%
Total Coal	$2,172,296	4.64%
Total	$46,854,348	100.00%

Decrease from 9/30/2018	**$21,797,876**

ERS Portfolio Size	**$4,321,059,300**
Carbon 200 % of Portfolio	**1.08%**

CRHBT Carbon 200 Exposure - October 2019

Coal or Oil	Company	Market Value
O	Antero Resources	$44,625
O	Apache Corp	$1,091,685
O	California Resources	$295,678
O	Carrizo	$23,250
O	Chesapeake	$433,372
O	Chevron	$382,101
O	ConocoPhillips	$417,931
O	Consol Energy	$48,875
O	Denbury Resources	$123,018
O	Devon Energy	$96,711
O	Encana Corp	$202,493
O	ENI	$121,939
O	EOG	$271,765
O	EP Energy	$2,364
O	Extracion Oil	$31,500
O	Gulfport Energy	$299,638
O	Hess Corp	$628,776
O	Marathon Oil	$233,388
O	MEG Energy	$94,313
O	Murphy Oil	$139,407
O	Noble Energy	$541,618
O	Oasis Petroleum	$186,463
O	Occidental Petroleum	$50,909
O	Paramount Resources	$132,275
O	Parsley Energy	$291,695
O	PDC Energy	$136,752
O	Petrobras	$73,324
O	Range Resources	$74,531
O	Royal Dutch Shell	$1,230,656
O	SM Energy	$328,529
O	Southwestern Energy	$22,000
O	Statoil	$287,232
O	Suncor	$823,939
C	Teck Resources	$76,143
O	Total SA	$586,704
O	Whiting Petroleum	$366,518
O	WPX Energy	$24,313
O	YPF	$165,498
	Total CRHBT Carbon 200	**$10,381,925**

Total Oil	$10,305,782	99.27%
Total Coal	$76,143	0.73%
Total	$10,381,925	100.00%

Decrease from 9/30/2018	**$2,739,662**

CRHBT Portfolio Size	**$1,107,163,252**
Carbon 200 % of Portfolio	**0.94%**