PERA’s overall approach to investment stewardship is straightforward: Seek out quality investments that are expected to provide the best risk-adjusted returns to PERA’s portfolio over the long term. We break down this approach to financial sustainability into four parts.

Protect
Protect members’ interests by watching costs

Integrate
Integrate relevant factors into PERA’s investment strategy

Advocate
Advocate for stronger markets

Evaluate
Evaluate exposures and recognize limitations

0.32%
Cost to manage Total Fund assets on behalf of PERA members

66,522
Company and shareholder proposals on ESG issues voted by PERA in 2019

80%
PERA staff participates in approximately 80% of our eligible private fund advisory boards

9.1%
10-year annualized return on PERA's investments

$55 Million
Estimated savings by managing 63% of assets internally

100%
Wind energy powering 6,239 apartment units in which PERA invests

>25
Legislative and regulatory offices engaged about matters that can affect the long-term value of PERA’s investments

1984
The year PERA began investing in commercial real estate, including 27 years of strong risk-adjusted returns from affordable housing investments, among many others

0.26%
Cost for members to participate in the PERA Advantage Socially Responsible Investment (SRI) Fund

$1 Billion
Invested in LEED® certified real estate projects

>$4 Trillion
In assets represented by the primary advocacy group in which PERA participates

35.6% Less
Carbon intensity in PERA's Global Equity portfolio relative to its benchmark and 28.1% less relative to the MSCI ESG Leaders Index

As of December 31, 2019 except where noted.
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A MESSAGE FROM PERA MANAGEMENT

As the world grapples with the impacts of the COVID-19 pandemic, we are witnessing changes in communities, businesses, and markets that were unimaginable at this time last year. The new realities we face are challenging organizations to adapt quickly in order to succeed. Under such extraordinary circumstances, a firm’s success is tested not only by how it manages its business, but by how it manages its relationships with the many people who make that business possible.

For Colorado PERA, this has been a time to reflect on our own stakeholder relationships, and the ways in which we continue evolving our practices to better serve our membership. We have always esteemed the contributions to PERA's success by our many stakeholders. From members, retirees, and their beneficiaries to our Board of Trustees, employees, external partners, and state legislators, all have had a role in shaping this organization and the value we strive to provide in return.

With this 2020 Investment Stewardship Report, we are reaffirming our commitment to the interests of our stakeholders as we pursue the long-term financial sustainability of the Fund. Since we published our first Investment Stewardship Report in 2018, we have continued to engage with a multitude of stakeholder groups on matters pertaining to our investments and our fiduciary duty. Throughout the process, we have thoughtfully considered your feedback as we continue to move PERA, and our investment stewardship, forward.

In response to these inputs, we have honed our investment stewardship efforts over the past few years. The PERA Board of Trustees’ Strategic Plan for 2019–2023 includes an objective to solidify a stance on environmental, social, and governance (ESG) issues that can affect our financial success over the long term. In 2019, PERA staff carried out the Board’s strategic initiative to raise awareness of our investment stewardship among our stakeholders as a first step in answering mounting interest around the sustainability of our investment portfolio. In 2020, we are turning our focus to supporting the PERA Board as they evaluate potential enhancements to their Proxy Voting Policy so that PERA can more effectively drive long-term shareholder value at the companies in which we invest.

As we continue to prioritize financial sustainability, we recognize that ESG factors may be intertwined with many other factors that can be material to our investment decisions, and thus to our stakeholders. With that in mind, PERA has taken steps to further demonstrate our recognition of stakeholder interests in our investment stewardship efforts. Related enhancements are spotlighted throughout this report and include the following:

- In 2019, we established PERA’s Investment Stewardship Division and reassigned our corporate governance and proxy voting functions from the Legal department to the Investments department in alignment with industry best practice and in support of our investment processes.

- At the portfolio level, our Real Estate investments in innovative green buildings, affordable housing for low-income families, and local Colorado properties demonstrate the feedback loop between PERA and our stakeholders by generating returns to PERA’s portfolio while enhancing the quality of life for people in the communities where we do business.

- While we continue to advocate for enhanced transparency and disclosure, we are increasing our own transparency on PERA’s investments and stewardship by presenting a number of short videos on our website. We believe this makes our initiatives more accessible to our members and others who have a stake in PERA’s success.

Through our integrative approach to investment stewardship, we expect to continue weathering near-term market volatility to provide meaningful benefits to our stakeholders over the long-term. The PERA Board and staff will continue taking new information and dynamics into consideration, as we evolve PERA’s value proposition to our members.

Thank you to all of our stakeholders for your continued interest in PERA’s success. We wish you and your families wellness and resiliency in these trying times.

Sincerely,

Ron Baker
Executive Director

Amy C. McGarrity
Chief Investment Officer
Look for these symbols throughout the report for specific examples of how PERA’s four-part stewardship approach is used to achieve financial sustainability over the long term.

Protect
Protect members’ interests by watching costs

Integrate
Integrate relevant factors into PERA’s investment strategy

Advocate
Advocate for stronger markets

Evaluate
Evaluate exposures and recognize limitations

Look for this symbol to see notable additions to the report in 2020.
INTRODUCTION

Stewardship is the heart of PERA’s mission. As stewards of pension plan assets, we manage approximately $52 billion in assets on behalf of more than 620,000 members. That is a tremendous responsibility, and one we accept whole-heartedly. In fulfillment of our fiduciary duty, PERA’s investment stewardship is founded on our commitment to the long-term financial sustainability of the Fund for its beneficiaries.

This report explores PERA’s approach to seeking financial sustainability through investment stewardship. With increasing focus on environmental, social, and governance (ESG) considerations within the investment industry, we uphold PERA’s view of stewardship as a more integrative framework for achieving financial sustainability. Under this approach, we have found opportunities to invest in firms and partnerships that integrate quality practices into their business models, while prioritizing long-term financial sustainability.

PERA’s stewardship approach adheres to our investment policies by maintaining our foundational focus on maximizing risk-adjusted returns across the Total Fund. Throughout this report we demonstrate how PERA uses the lens of stewardship to guide our decisions in the fulfillment of our fiduciary duty. We conclude with a discussion of industry perspectives on sustainable investing, and reflect on how they help inform PERA’s ongoing investment stewardship toward the ultimate financial sustainability of the Fund.
PERA’S INVESTMENT STEWARDSHIP PHILOSOPHY

PERA uses the term “stewardship” to describe our sustainable investing philosophy. We believe stewardship encompasses risk and opportunity factors that are relevant to our investment decisions as fiduciaries. Under our fiduciary duty we have the foremost obligation to invest in opportunities that provide the best risk-adjusted returns. We evaluate appropriate investments that fall within the parameters set forth by the PERA Board.

That means we may consider factors characterized within an ESG framework, but we will not limit our investment decisions to only those factors. Instead, we recognize that sustainable practices are pieces in the mosaic of information necessary to determine an investment’s comprehensive value.

Companies that effectively manage stewardship risks and opportunities may demonstrate innovation, leadership, alignment with stakeholders, and financial success. These are qualities of companies that are built to last, and which present potential for increased financial value.

Ultimately, we believe the best investments for long-term financial sustainability are found in quality companies and partnerships that practice strong stewardship over all aspects of business in order to generate profits and attractive investment returns.

WHAT IS ESG?

ESG is an acronym for environmental, social, and governance factors which investors may consider as part of their investment decision framework. Underlying each of these motifs are countless elements of sustainable practices. ESG is the most common label used to indicate global sustainability within the investment industry, but it is not the only label. Sustainable investing, socially responsible investing, and corporate social responsibility are also among the many terms investors may use to describe sustainable investing. Each designation can be underpinned by unique approaches and limitations, which investors may apply to their portfolios for alignment with their investment philosophies and policies.
PERA'S INVESTMENT STEWARDSHIP APPROACH

PERA's approach to financial sustainability is guided by four practices for sound investment stewardship.

» We protect our members’ interests through cost conscious investment management.
» We integrate relevant and financially material factors into our investment decisions.
» We advocate for stronger capital markets and business practices.
» We evaluate various exposures within our portfolios on an ongoing basis to cultivate a deeper understanding of their real and potential financial impacts.

In this section, we highlight our work to preserve and enhance our members' retirement assets through responsible investment stewardship. Within the context of our long-term investment horizon, we describe our ongoing cost stewardship to protect assets, and discuss the opportunities to integrate ESG stewardship into the portfolio while seeking risk-adjusted returns. We also demonstrate PERA's influence as the voice of our membership in the global marketplace through our focus on advocacy. This section concludes with evaluations of various ESG exposures within our portfolios to reinforce our commitment to promoting objective analysis and increased disclosures for better stewardship.

BUILDING A PORTFOLIO WITH LONG-TERM SUSTAINABILITY

Meeting perpetual financial needs requires using PERA's breadth of resources to design a sustainable framework on which to build a long-term investment portfolio. In constructing the portfolio, PERA has allocated assets across diverse public and private markets. We actively manage investments in public equity and debt instruments in both developed and emerging markets, commercial real estate properties, private equity partnerships, and opportunistic interests. Allocating assets to diverse strategies allows PERA to maintain a broad investment portfolio, which is imperative for long-term financial success.

PERA's long-term investment horizon provides time to not only identify, but to understand and anticipate changing market forces and their far-reaching impacts. This is especially advantageous as technology changes the quality of, and rate at which, information is disseminated and priced by markets. As new data become available, PERA is poised to thoughtfully evaluate broad consequences of information without compromising long-term gains with short-sighted decisions. This long-term vision helps PERA manage excess volatility created in public markets by investors reacting to short-term signals.

By looking deep into the investment horizon for diverse opportunity sets, PERA seeks to identify enduring companies that will contribute to thriving economies, while avoiding those that will be unable to compete in the long run. PERA believes companies with strategies built for longevity are high-quality firms that adapt their business models to meet stakeholder interests and provide strong risk-adjusted returns. In the long run, this focus on high-quality companies should boost performance of the Total Fund and contribute to its sustainability.

Target Asset Allocation (as of December 31, 2019)

- Global Equity: 54.0%
- Fixed Income: 23.0%
- Private Equity: 8.5%
- Real Estate: 8.5%
- Opportunity Fund: 6.0%
COST-CONSCIOUS INVESTING

PERA aims to earn risk-adjusted returns in an efficient, cost-effective manner without sacrificing our focus on quality investments. We acknowledge there are inherent monetary costs to investing. These costs may be explicit or implicit and may vary depending on factors such as market structures, investment needs and availability, relationship agreements, regulatory fees, operational efficiencies, and manager expertise. We advocate for cost transparency where we can, and seek the lowest possible costs to preserve risk-adjusted returns in both our defined contribution and defined benefit plans.

REDUCED FEES FOR PERA’S CAPITAL ACCUMULATION PLANS

PERA recognizes the value of saving for retirement. All PERA members have the option to invest for retirement through PERA’s 401(k) Plan, and members of affiliated employers have the option to participate in PERA’s 457 Deferred Compensation Plan. Additionally, eligible members can opt to forgo participation in the Defined Benefit (pension) Plan in favor of sole participation in the Defined Contribution Plan. The 401(k) Plan, 457 Deferred Compensation Plan, and the Defined Contribution Plan are collectively called the Capital Accumulation Plans (CAPs). These plans are separate from the Defined Benefit Plan, and provide the opportunity for PERA members to self-direct their own money across a wide variety of investment options to help meet their individual retirement savings goals.

As of December 31, 2019, the CAPs offer 16 PERAdvantage funds in which participants may choose to invest their individual account assets. The options range from target date funds to funds specializing in specific asset classes and strategies. The costs to invest in each plan include a $1 flat participation fee per month ($12 per year per plan), and plan administration fees of 0.03% on assets. The low participation fee and low asset-based fees encourage PERA members to participate.

In an ongoing effort to reduce fees paid by participants, PERA has worked to reduce the CAPs’ administration fees from 0.50% of assets in 1995 to 0.03% of assets in 2019. PERA also internally manages a portion of the funds offered through the Plans, resulting in lower overall investment management fees. Reductions in administration and investment management fees have decreased the all-in costs of PERA’s 401(k) Plan down from 0.66% of assets in 2011 to 0.16% of assets in 2019. That’s a 76% decrease in fees. Those smaller investment costs equal bigger nest eggs for participants, and more efficient Plan management. The PERA Board has made the continuing reduction of CAPs fees a priority, and we will regularly evaluate additional potential cost savings that would benefit participants.

LOW AGGREGATE INVESTMENT MANAGEMENT FEES

As part of our cost stewardship within PERA’s Defined Benefit Plan, we emphasize low-cost, high-quality internal management of the majority of our assets, while selectively partnering with external experts where those relationships add value. As our assets have grown over the past 10 years, we have kept internal investment management costs consistently low. The lower costs of managing the majority of our assets internally help to offset the costs of managing assets externally. This enables PERA to provide higher quality returns at lower overall costs.

Within the public equity and fixed income asset classes, PERA’s experts manage the majority of assets in-house, resulting in significant overall cost savings. As PERA’s assets have grown, the competitive advantage of using in-house investment professionals has also increased, saving PERA over $55 million annually.

Lower Fees = More Savings

2011 0.66%  2019 0.16%  76% All-in Fee Decrease in PERA’s 401(k) Plan

See the new “Protect” video for a snapshot of PERA’s investment cost stewardship at www.copera.org/stewardship.
In 2019, PERA utilized external experts for a portion of our public equity and fixed income investments, as well as for partnerships that help facilitate our private asset investment strategies where they can produce compelling results. The complexity of private asset strategies necessitates deeper resources and specialized expertise to transform underlying assets to generate expected returns generally higher than those of public investments. Where we can, we negotiate with our external partners for lower management fees. In every partnership, we hold our managers to high standards, and select only those managers which we believe will add the greatest value on a risk-adjusted basis at fair cost.

Since 2014, PERA’s real estate investors have focused on driving fees lower while pursuing investment structures that maximize risk-adjusted returns. One way we have done this is by shifting focus to develop smaller investment structures, which allow for asset flexibility over the long run, decision-making capability, better overall transparency, and potential management and incentive fee reductions. Staff have also worked to reduce both management and incentive fees by shifting assets toward direct investing, which gives PERA full ownership control of underlying assets. In the past five years, PERA has almost doubled its investment dollars in direct investing in pursuit of compelling long-term returns, while reducing management and incentive fees.

Assets in PERA’s Real Estate portfolio have also been strategically allocated to certain fund strategies that allow for increased flexibility in cash management while further reducing fees. PERA has successfully negotiated perpetual management fee structures to lock in below-market costs for new fund investments in these strategies, as well as for future add-on investments. Besides cost reduction benefits, the move to these funds has allowed for more flexibility in diversification and tactical investing, while also offering higher asset quality and an income dividend.

While private asset management contracts generally restrict investors from fully disclosing most fee-related information to the general public, PERA staff has full access to this information and carefully evaluates fees paid on an ongoing basis. This fee information is also reviewed by the PERA Board’s Investment Committee. PERA continues to strive toward increased transparency within our contractual limits. To that end, we have adopted the Institutional Limited Partner Association’s (ILPA) Reporting Template which aims to standardize disclosures of fees, expenses, and carried interest costs within private asset partnerships. In joining our peers in the adoption of the ILPA Template, PERA endeavors to bring forth mainstream transparencies that address potential risks and promote efficiencies within private markets.
UNBUNDLING EQUITY RESEARCH AND TRANSACTION COSTS

PERA’s efforts to increase transparency and reduce investment costs go beyond product and management fees. As an institutional investor, PERA is also concerned with research and transaction costs, which have implications for large and small investors alike. These costs may add significant financial burdens to asset managers and owners.

The second iteration of the Markets in Financial Instruments Directive (MiFID II) is a European regulation which includes mandates regarding the transparency and unbundling of research and execution costs in equity markets. Investors (the buy-side) rely on broker-dealers (the sell-side) to provide them with both investment research and trade execution services. Traditionally, broker-dealers supply investment research reports to buy-side market participants using bundled arrangements which may be costly and opaque. Under the traditional model, the cost for research is rolled into the trade execution cost, making it virtually impossible for investors to disentangle research value from execution service value. Thus, in the bundled model, the end customer ultimately pays the price for execution and research through returns reduced by the bundled cost at transaction.

The unbundling directive under MiFID II puts the onus on broker-dealers to unbundle fees for research reports and trade execution services. This unbundling initiative gives European buy-side participants the ability to better distinguish the costs of investing and their expected benefits. By unbundling research from execution costs, investors may choose to execute trades with broker-dealers separate from those that provide research.

Under the unbundling model, investors are not beholden to any one broker-dealer for execution services simply because they receive research from that broker-dealer, and vice versa. Instead, unbundling offers investors the opportunity to use research from broker-dealers they find most informative to their investment strategies, and to use the execution services of the broker-dealers they believe offer the best trade execution—without the obligation of using any broker-dealer for both services simply because the costs of both are bundled together. Unbundling research costs from transaction costs is expected to make both services from broker-dealers more relevant and competitive, and reduce costs to investors as a result.

As investors on behalf of our beneficiaries, and as proponents of fair markets, PERA believes the unbundling model is advantageous for all investors. As of January 1, 2018, PERA has begun unbundling public equity research and transaction costs within its global equity portfolios. We have engaged with our broker-dealers and research providers on the sell-side to implement the unbundling of our costs. Our goal is to pay for equity trade execution and research fees separately to the best providers of each so that we can continue to manage costs to the greatest benefits. Although unbundling is not required in the United States, we believe unbundling will become a global standard as investors realize the transparency and cost advantages the initiative brings.

Whether by working to reduce costs for our members to save through individual retirement accounts, managing assets internally, or encouraging greater transparency, PERA’s cost stewardship is about protecting our members’ interests by focusing on high quality investments at lower costs.

Average experience in investment management among internal investment experts.

Of Total Fund managed in-house at a cost of less than 0.04% of those assets.

Estimated annual savings by managing public equity and fixed income assets internally.

18 years
63%
$55 million
Rather than manage the portfolio to any single set of risk or opportunity factors, PERA integrates financially material factors into our investment decisions. Each factor is but one of many that may be considered in the mosaic of information taken into account when investing. This includes ESG matters where they are deemed material to an investment. Materiality is dynamic and the financial relevance of any risk or opportunity may change over time and within the context of changing businesses, markets, regulation, and the overall asset mix of PERA’s portfolio. This integrative framework for stewardship has always been PERA’s approach to making investment decisions. To fortify our commitments to long-term financial sustainability, the PERA Board set forth a new objective to solidify a position on ESG matters as part of their Strategic Plan beginning in 2019. To support the Board’s strategy and to further advance PERA’s related efforts, Executive Management established the Investment Stewardship Division in 2019. That year, PERA staff implemented the Board’s first strategic measure to raise awareness about PERA’s investment stewardship, and successfully engaged thousands of stakeholders with PERA’s stewardship initiatives. We view this as the first of many steps to come as PERA’s efforts evolve and we increase our transparency to our stakeholders. In 2020, the Investment Stewardship Division is supporting the Board’s Investment Committee in the evaluation and enhancement of their Proxy Voting Policy.

As we move into the future, the Investment Stewardship Division will continue to support PERA’s investors in the areas of cost-consciousness, ESG integration, market advocacy, and holdings evaluation within the Investments department.

ENVIRONMENTAL STEWARDSHIP: INVESTING IN NATURAL RESOURCES

As standards of practice and technologies advance, we recognize there are investment risks and opportunities in all forms of resource production and utilization—including both traditional and alternative resources. PERA’s investors may consider factors of environmental stewardship in their fundamental analysis when evaluating investments in public securities, or through due diligence when evaluating private investment assets and managers. Through our long-term, high-quality investment focus, PERA has found material financial value in companies and partnerships that also integrate environmentally sustainable practices in their business models. We highlight some of our investment managers and holdings that utilize and produce renewable resources through their operations in the following sections.

REFORESTATION AND LAND CONSERVATION

In PERA’s Opportunity Fund portfolio, our investment in timberland is also an investment in reforestation and land conservation efforts. By focusing on sustainable practices that offer profitable opportunities, our timberland manager is committed to responsible natural resource management. In 2019, they released their second annual Report on Sustainability and Responsible Investing. In the report, they highlight their five key sustainability principles—climate stability, ecosystem resiliency, watershed protection, people empowerment, and community—and how they contribute to the United Nations Sustainable Development Goals (SDGs). These initiatives help protect forests, watersheds, soil quality, threatened species, biodiversity, employees, and indigenous communities. They also measure and report scopes 1, 2, and 3 carbon...
emissions, and have taken steps to offset emissions from their corporate operations. Through ongoing forest population and management, they contribute to carbon sequestration and sell carbon credits from their New Zealand forests.

GREEN REAL ESTATE

In the PERA Real Estate portfolio, we seek ways to integrate responsible investing principles into our investment decision making framework. Where environmentally friendly technologies and practices are incorporated into buildings we own, we believe they can add value to the portfolio and to the quality of life for tenants and their communities.

PERA is proud to invest in green real estate projects. One example is found in our long-term and controlling interest in a large multi-family residential property that works with the city of Dallas to implement a comprehensive program called “Go Green.” The property consists of 15 residential communities comprised of more than 6,000 units. The buildings have been upgraded with energy efficient lighting, ENERGY STAR® certified appliances, high efficiency toilets and faucets to reduce water waste, eco-friendly carpeting, and low VOC paint. The properties are also managed with environmentally responsible practices including solar-powered irrigation, drought tolerant landscaping, in-house composting, extensive recycling programs, low carbon emission warehouse operations, and use of post-consumer and re-manufactured office products. The property management team further reduces waste by reusing fixtures within the properties and partnering with local and national organizations to donate useful household items, clothing, electronics, and appliances.

Buildings in this project as well as several others within PERA’s Real Estate portfolio have earned the ENERGY STAR, have the IREM Certified Sustainable Property (CSP) certification, or are certified by the LEED® green building program. The United States Green Building Council’s Leadership in Energy and Environmental Design™ (LEED®) building program is the preeminent program for the design, construction, maintenance and operations of high-performance green buildings world-wide. The LEED® certification program verifies these buildings’ resource and cost efficiency, and encourages higher lease rates through its emphasis on healthy buildings. 5 PERA has $1 billion invested in more than 330 buildings that are LEED® certified.

RENEWABLE ENERGY

PERA has exposure to renewable energy companies through our private equity and debt investments. The underlying companies in which we invest through our private partnerships include producers and suppliers of eco-friendly energy. Many of these companies generate solar, wind, geothermal, and hydro powered electricity. Other firms work to develop low-cost green technologies. Some of these technologies are used to produce biofuels by converting municipal solid waste and biomass into green chemicals.

PERA utilizes third party research data from MSCI, Inc., to help identify ESG exposures in our public equity and fixed income portfolios. According to those data, PERA has hundreds of millions of dollars invested in utility companies that use renewable resources to generate energy, and which take advantage of financial opportunities linked to the development of renewable power production. Many of these companies commercialize renewable energy equipment and offer customers the option to purchase power from green energy sources.

PERA currently invests in public companies that recognize the demand for decreasing carbon emissions, and which seek to mitigate their carbon emissions by managing energy consumption and improving the energy efficiency of their operations. As consumer demands shift and technologies in energy production change, opportunities for company profitability evolve and present unique risks to investors. PERA will continue to manage the investment risks and opportunities across the energy sector, including traditional and alternative sources, and construct our portfolios around companies and assets that provide the most attractive long-term return to risk profile.
SOCIAL STEWARDSHIP: INVESTING IN THE LOCAL ECONOMY

PERA contributes to economic health in communities across Colorado and the United States through our investments and our role in providing retirement benefits to our members. We invest in Colorado companies and properties, and provide retirement and other benefits to thousands of retirees, many of whom live in the state. Through a partnership vehicle, PERA also invests in affordable housing which generates returns to the portfolio while enhancing the quality of life for low- and middle-income residents across the United States.

COLORADO INVESTMENTS

As stewards of Colorado’s largest public pension plan, PERA takes pride in our contributions to Colorado’s economy. We have more than $742 million in Colorado investments that meet the rigorous investment criteria for inclusion in the PERA portfolio. Our local investments include:

» Equity in public and private companies headquartered in Colorado.
» Bonds issued by the Colorado Housing and Finance Authority.
» Real estate in both direct ownership and pooled investment capital.

In addition to our direct and indirect Colorado investments, PERA has also found meaningful financial opportunities in social contributions through our participation in Colorado’s economy. PERA employs about 300 local Colorado citizens, and pays retirement benefits to more than 105,000 retired public employees and their beneficiaries living in Colorado, who also contribute to the local economy.

Investments in Colorado (As of December 31, 2019)

<table>
<thead>
<tr>
<th>Asset Class</th>
<th>Fair Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Public Equity*</td>
<td>$142,298,000</td>
</tr>
<tr>
<td>Bonds</td>
<td></td>
</tr>
<tr>
<td>Bonds and notes*</td>
<td>6,397,000</td>
</tr>
<tr>
<td>Colorado Housing Finance Authority</td>
<td>2,341,000</td>
</tr>
<tr>
<td>Total Bonds</td>
<td>8,738,000</td>
</tr>
<tr>
<td>Real Estate</td>
<td></td>
</tr>
<tr>
<td>Portfolio Investments**</td>
<td>88,545,000</td>
</tr>
<tr>
<td>Future Commitments to Colorado-based general partnerships or funds</td>
<td>72,286,000</td>
</tr>
<tr>
<td>Total Real Estate Fund</td>
<td>160,831,000</td>
</tr>
<tr>
<td>Private Equity</td>
<td></td>
</tr>
<tr>
<td>Portfolio Investments**</td>
<td>172,962,000</td>
</tr>
<tr>
<td>Future Commitments to Colorado-based general partnerships or funds</td>
<td>53,571,000</td>
</tr>
<tr>
<td>Total Private Equity</td>
<td>226,532,000</td>
</tr>
<tr>
<td>Opportunity Fund</td>
<td></td>
</tr>
<tr>
<td>Portfolio Investments**</td>
<td>119,462,000</td>
</tr>
<tr>
<td>Future Commitments to Colorado-based general partnerships or funds</td>
<td>84,943,000</td>
</tr>
<tr>
<td>Total Opportunity Fund</td>
<td>204,405,000</td>
</tr>
<tr>
<td>Total Investments in Colorado</td>
<td>$742,804,000</td>
</tr>
</tbody>
</table>
Beyond financial investments in Colorado, PERA is committed to social engagement in Colorado. We engage with all our stakeholders—from State Legislators and the PERA Board, to employers and employees, to the members we serve—on an ongoing basis about topics that impact all of us. We know that our success relies on the success of our stakeholders, and we believe we can empower success through public discourse and education.

**AFFORDABLE HOUSING**

As PERA pursues risk-adjusted returns across various market opportunities, we have found profitable investments in real estate partnership funds that take advantage of low-cost, tax-exempt bond financing programs to meet market demand for affordable housing while generating strong returns to investors.

Over the past quarter century, the management team of these partnerships has worked with more than two dozen different municipalities across 14 states to create or update more than 4,500 affordable units in 72 distinct properties. Through attractive bond financing, the fund manager is able to acquire and renovate existing rental housing properties and set aside a portion of these units for households that earn substantially less than the median household income for the area.

PERA’s investment decisions prioritize the financial sustainability of the Fund above all else. In the case of our affordable housing investments, that priority is reflected in the 14.3% net internal rate of return generated through these funds since their inception, as of December 31, 2019. PERA has enjoyed the financial benefits of participating as a cornerstone investor in a series of these funds since 1993, and we are pleased to continue our investment partnership through the current affordable housing fund offered by this manager.

**GOVERNANCE STEWARDSHIP: EXERCISING SHAREHOLDER RESPONSIBILITY TO STRENGTHEN CORPORATE PRACTICES**

Of all the aspects of sustainable stewardship, corporate governance has been PERA’s most in-depth and impactful focus. We believe companies with sound business practices will be more likely to provide sustainable financial returns to shareholders. As part of PERA’s commitment to our members’ best interests, we encourage strong corporate governance through engagement with the companies and partnerships in which we invest.

PERA has more than $742 million in Colorado investments, including:

- Equity in public and private companies headquartered in Colorado.
- Bonds issued by the Colorado Housing and Finance Authority.
- Real estate in both direct ownership and pooled investment capital.
PROXY VOTING
The ability of stock owners to have a say in the direction of their investments is a key cornerstone of our economic system, and a responsibility PERA values. One of the most significant ways for shareholders to exercise their voice is through proxy voting. We believe responsible companies with sustainable corporate governance structures will use shareholder votes to inform the decisions of their board toward alignment with shareholders.

BOARD ACCOUNTABILITY
The issues we address most often concerning the alignment of shareholder interests with those of a company’s management relate to governing boards. The following are examples of these issues and our approach to addressing them through proxy voting and engagement.

» Majority Voting—Many corporations have plurality standards for their board elections, which allow board nominees with the most voting power to be elected to board seats, regardless of investor votes. In an uncontested board election, a plurality standard would allow a nominee to be seated on the Board of Directors, even if there were more investor votes against their designation than votes for their designation. PERA supports majority voting policies that require a board nominee to receive more “For” votes than “Against” votes from investors. PERA has a policy to vote for all majority voting proposals, and we actively encourage management teams to adopt these proposals.

» Declassified Boards—Classified boards elect their Board of Directors every few years, and these elections are often staggered so that only a few seats are up for election every year. PERA believes long-term shareholders should have proxy access (the ability to place alternative, independent candidates on the proxy ballot card). We are proponents of proxy access as a tool for long-term shareholders PERA’s Core Corporate Governance Shareholder Proposal Voting Record

<table>
<thead>
<tr>
<th>Total Shareholder Proposals</th>
<th>% Voted For</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2019</td>
</tr>
<tr>
<td>Majority Voting</td>
<td>14</td>
</tr>
<tr>
<td>Declassify Board</td>
<td>5</td>
</tr>
<tr>
<td>Proxy Access</td>
<td>27</td>
</tr>
<tr>
<td>Independent Board Chair</td>
<td>62</td>
</tr>
<tr>
<td>Chair/Separation of Chair</td>
<td></td>
</tr>
<tr>
<td>and CEO</td>
<td></td>
</tr>
</tbody>
</table>
to dissuade boards from perpetuating misalignment with shareholder interests. PERA has engaged management teams on this issue, and has voted for many shareholder proposals that would add proxy access to a firm’s by-laws. PERA generally supports proposals requiring at least three years of continuous ownership and 3% aggregate ownership.

» Independent Chair—An independent chair supports a board of directors in carrying out its primary duty, which is to monitor the management of the company on behalf of its shareowners. In the United States we often see the CEO of a corporation also serve as the Chair of the board. PERA believes this practice can lead to poor oversight, as it puts a CEO in the position of regulating his or her own performance. PERA also believes a board that has separate positions for CEO and Chair promotes greater management accountability and helps create a board atmosphere of independent leadership. The role of CEO and Chair should only be combined in very limited circumstances. In such circumstances, the board should provide a written statement in the proxy materials discussing why they combined the role, how it is in the shareowner’s best interest, and should appoint a lead independent director. A lead independent director is a board member that serves as the leading voice of the other independent directors and has many of the same authorities as the Chair of the board, which can help improve the oversight of a CEO that is also the Chair. PERA has voted for numerous proposals that require the separation of the CEO and Chair positions. In situations where the CEO and Chair positions are combined, PERA has directly encouraged firms to appoint a lead independent director.

In total, PERA voted against 11.3% of nominees to Boards of Directors in 2019. When considering director elections, PERA evaluates the independence and qualification of directors, the board structure, and the company performance. As policy, PERA will vote “Against” or “Withhold” on director nominees who:

» Have attended less than 75% of board meetings and committee meetings.

» Sit on an excessive number of boards.

» Fail to maintain a majority independent board.

» Show lack of board responsiveness to shareholders.

» Have poor overall performance.

» Present misaligned or excessive compensation issues.

» Present audit issues.

PERA will generally support proposals asking for:

» Enhanced disclosure on greenhouse gas emissions and climate change risk management.

» Enhanced diversity of thought on corporate boards.

» Enhanced disclosure of corporate political spending and lobbying.

### PERA’s Director Election Voting Record

<table>
<thead>
<tr>
<th>Year</th>
<th>For Votes</th>
<th>Against Votes</th>
<th>Abstain</th>
<th>Take No Action, Unvoted, or Mixed</th>
</tr>
</thead>
<tbody>
<tr>
<td>2017</td>
<td>83%</td>
<td>14%</td>
<td>3%</td>
<td>&lt;1%</td>
</tr>
<tr>
<td>2018</td>
<td>84%</td>
<td>12%</td>
<td>3%</td>
<td>&lt;1%</td>
</tr>
<tr>
<td>2019</td>
<td>84%</td>
<td>11%</td>
<td>4%</td>
<td>&lt;1%</td>
</tr>
</tbody>
</table>

For Votes
Against Votes
Abstain
Take No Action, Unvoted, or Mixed

Colorado PERA Investment Stewardship Report
SUSTAINABILITY DISCLOSURE

With increasing awareness of the risks associated with climate change and social stewardship, PERA has adopted parameters for voting proxies pertaining to disclosure of sustainability metrics. PERA will generally support proposals requesting decision-useful disclosure on how companies are planning to mitigate business-specific risks associated with climate change and related regulations. Over the past three years, PERA has voted on 69 shareholder proposals requesting increased disclosure of risks surrounding environmental sustainability.

PERA favors proposals that are well-targeted to enhance investors’ understanding of financially material environmental risks and opportunities without placing undue burden on company resources. In some cases companies may already disclose the requested information elsewhere, and duplicating that information could negatively affect shareholder value through excessive costs. In other cases, PERA believes the requested information may not be relevant to a company’s core business model.

As financial implications of environmental externalities become clearer, we anticipate stronger alignment of interests between shareholders and corporate management as it pertains to related disclosures. PERA’s Proxy Voting Policy reinforces our commitment to strong corporate governance, and the PERA Board regularly updates the Policy to maintain relevance in aligning management’s interests with those of investors. As part of the Board’s Strategic Plan, the PERA Investment Committee is evaluating the Policy throughout 2020 for potential enhancements to drive long-term shareholder value.

Whether voting on issues related to board appointments, compensation structures, financial transparency, board diversity, or increased disclosure on the impact of climate change regulations, PERA remains actively engaged. We believe we can increase accountability through our votes. More accountability means higher standards of corporate governance. And better governance can mean stronger financial sustainability.

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## PERA's Environmental Sustainability Disclosure Voting Record

<table>
<thead>
<tr>
<th></th>
<th>Total Proposals Voted</th>
<th>% Voted For</th>
</tr>
</thead>
<tbody>
<tr>
<td>Climate Change</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Greenhouse Gas Emissions</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
PERA’s advocacy philosophy is centered on three principles: fair markets, alignment, and disclosure. We believe markets that treat participants in a fair and equitable manner are beneficial to all long-term investors. We believe aligned interests of companies and investors are paramount to company success in the long run. We believe that as owners and creditors of a business, investors deserve robust and accurate information on financial and operational results.

**FAIR MARKET ADVOCACY**

PERA believes that fair and equitable markets are in the best interest of our members. Given PERA’s size and reputation, we can have a meaningful impact in creating markets that are designed for the benefit of investors. We advocate for all investors by engaging with regulatory bodies, supporting investor-friendly legislation, and participating in advisory groups to develop and share best practices across asset classes. In our efforts to help improve global capital markets for investors, our staff and Board members provide their expertise to various regulatory boards and capital market organizations.

Our primary fair market advocacy partnership is with the Council of Institutional Investors (CII), which is a non-profit, non-partisan association including pension funds, endowments, and foundations representing $4 trillion in assets. Ron Baker, PERA’s Executive Director, was re-elected to CII’s Board of Directors for a third year and has been elected to serve as Chair of the CII Policies Committee in 2020. PERA’s seat on the CII leadership team gives us the opportunity to not only participate in collective advocacy efforts, but to help shape the conversation on fair markets and sound business practices. By joining other institutional investors in advocating on issues that matter for long-term value creation, we are able to amplify our voice in the markets on behalf of PERA members and their beneficiaries.

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**Advisory Group Involvement**

<table>
<thead>
<tr>
<th>Advisory Group</th>
<th>Why PERA is Involved</th>
<th>Who Represents PERA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Council of Institutional Investors (CII)</td>
<td>CII provides a forum for discourse among asset owners, issuers, managers, and others who work to promote strong corporate governance and fair markets. PERA values the opportunity to join with other institutional investors and market participants in advocating on issues that can affect the ways companies conduct business and generate investment returns.</td>
<td>“I’m honored to have been elected to serve on CII’s Board of Directors and chair CII’s Policies Committee as we continue PERA’s long standing focus on investor advocacy. The work of CII is all about advancing the business and regulatory oversight necessary to drive profitability for companies and their long-term investors. Together we can influence market changes that ultimately benefit the members of pension plans like PERA.” — Ron Baker, PERA Executive Director</td>
</tr>
<tr>
<td>Board of Directors, Policies Committee</td>
<td>SASB develops standardized metrics to help investors analyze a company’s ability to operate sustainably, and to better evaluate the financial materiality of sustainable practices. PERA believes the sustainable measurement standards that SASB is setting now will have considerable impact on how the investment industry thinks about sustainability in the future.</td>
<td>“SASB’s focus on both disclosure and economic materiality aligns with PERA’s fiduciary responsibilities, making us natural partners.” — Jared Goodman, PERA Senior Equity Portfolio Manager</td>
</tr>
<tr>
<td>Sustainable Accounting Standards Board (SASB) Standards Advisory Group</td>
<td>The Burridge Center focuses on educating and preparing students of the University of Colorado to be responsible investment professionals. PERA values the opportunity to engage with Colorado students in fostering education for best practices in the investment industry.</td>
<td>“I love the idea of returning to my alma mater to introduce talented people to the investment profession. Partnering with Burridge Center gives me the chance to encourage students, and especially women, to find the same excitement and fulfillment in a finance career that I have found at PERA.” — Bessie Conty, PERA Manager of Fixed Income</td>
</tr>
</tbody>
</table>
WE BELIEVE:

» Markets that treat participants in a fair and equitable manner are beneficial to all long-term investors.

» Aligned interests of companies and investors are paramount to company success in the long run.

» As owners and creditors of a business, investors deserve robust and accurate information on financial and operational results.

ALIGNMENT ADVOCACY

PERA's advocacy for alignment of management actions with stakeholder interests also involves engaging with companies on a wide range of issues that may impact investor value. PERA aims to invest in firms with a history of strong business practices, and we monitor our partners on an ongoing basis to ensure they continue to act in the best interest of their investors. To that end, we hold meetings with corporate management, conduct thorough due diligence reviews on fund managers, analyze management track records, hold positions as board members of our investment partnerships, and seek recovery of assets through securities litigation when necessary.

SECURITIES LITIGATION

Ideally, company interests are aligned with investors’ interests through sound governance. However, the temptation for management to act in ways that benefit themselves over investors is always present. If company management is not acting in the best interests of long-term shareholders, investment returns will suffer. Academic research has estimated corporate fraud costs the United States economy between $180 and $360 billion dollars a year. This has a significant impact on shareholder value.

Deterring fraud and creating a culture of accountability through securities litigation are part of PERA’s commitment to being good stewards of Fund assets. When public companies act fraudulently, we exercise our rights through litigation to hold the company accountable and collect PERA’s share of recovered assets. These claims are in themselves assets of the Fund, and as such it is within our fiduciary duty to pursue recovery in this manner.

Pursuant to the PERA Board of Trustees’ Securities Litigation Policy, we utilize the expertise of internal and external counsel, as well as our custodial bank, to identify claims and evaluate our participation eligibility. Many cases brought in the United States as well as foreign jurisdictions are passive cases that require PERA only to file a claim for recovery. In those cases, PERA is not in a decision-making role, but will receive a pro-rata share of recovered assets.

However, there are circumstances where it is appropriate for PERA to pursue active participation in a case, which can include seeking lead plaintiff of a class or opting out of a class action to bring a separate action. To determine whether PERA should pursue active participation, PERA’s General Counsel, in conjunction with the Executive Director, examines a variety of factors, including: the viable avenues of litigation; assets lost by PERA; the strength of the legal claims; and legal requirements in the defendant’s country of incorporation.

We believe this private right of action, when combined with regulatory enforcement actions, helps deter future corporate fraud for the ultimate protection of shareholders’ interests.

INVESTMENT FUND ADVISORY

PERA participates in private market fund advisory groups to advance best practices in investment management. Participation in these advisory boards and committees is an integral part of developing oversight and financial performance. As members of these committees, PERA staff may be responsible for reviewing valuation methodologies, examining conflicts of interest, and governing the fund partnership.

This gives us the opportunity to advocate for practices that may influence profitable outcomes and improve the financial sustainability of our investments.

See the new “Advocate” video for a snapshot of how PERA advocates for stronger markets on behalf of our members at www.copera.org/stewardship.
DISCLOSURE ADVOCACY

Investors require accurate and timely information from companies in order to adequately assess and project the overall performance of their investments. Necessary disclosures can cover a broad range of topics, from material risks and how firms are managing them to investment costs and benefits. Disclosure transparency may vary by company and between private and public markets. Likewise, regulatory policies for financial reporting may vary by country, sector, or industry. Furthermore, the true financial value of intangible assets can be difficult to identify and quantify. These disclosure gaps create obstacles for investors to navigate in pursuit of reliable valuations.

As PERA continues to advocate for stronger capital markets, we recognize the need for increased availability and quality of financially material disclosures. Our investors lend their expertise to accounting standards boards to develop and promote transparent and accurate disclosures regarding companies’ operations and financial positions.

We also advocate for enhanced investment fee disclosure. Through our work with the Institutional Limited Partners Association (ILPA) we pursue stronger private fund governance including greater transparency into private asset management fees. PERA’s fee transparency advocacy also extends to the public markets, where we are engaged with the United States Securities and Exchange Commission in supplication of the removal of regulations that currently impede the unbundling of equity research and transaction costs in the United States.²

Advocacy Groups in Which PERA Participated in 2019

<table>
<thead>
<tr>
<th>Organization</th>
<th>Group</th>
<th>Focus</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chartered Financial Analyst Institute (CFA)</td>
<td>Diversity and Inclusion Steering Committee</td>
<td>Inclusive Human Capital</td>
</tr>
<tr>
<td>Colorado Secure Savings Plan Board</td>
<td>Advisory Board</td>
<td>Private Sector Retirement Savings</td>
</tr>
<tr>
<td>Council of Institutional Investors (CII)</td>
<td>Board of Directors, Policies Committee</td>
<td>Advocacy Policy</td>
</tr>
<tr>
<td>Harvard Institutional Investor Forum</td>
<td>Advisory Council</td>
<td>Institutional Investment</td>
</tr>
<tr>
<td>Healthy Markets Association</td>
<td>Board of Directors</td>
<td>Market Structure Reform</td>
</tr>
<tr>
<td>Institutional Limited Partners Association (ILPA)</td>
<td>Membership</td>
<td>Private Market Partnership Practices</td>
</tr>
<tr>
<td>Institutional Real Estate, Inc. (IREI)</td>
<td>Americas Editorial Board</td>
<td>Institutional Investors</td>
</tr>
<tr>
<td>National Council of Real Estate Fiduciaries</td>
<td>Membership</td>
<td>Real Estate Performance and Standards Metrics</td>
</tr>
<tr>
<td>Pension Real Estate Association</td>
<td>Membership</td>
<td>Institutional Investor Education</td>
</tr>
<tr>
<td>Securities &amp; Exchange Commission (SEC)</td>
<td>Fixed Income Market Structure Advisory Committee</td>
<td>Fixed Income Markets</td>
</tr>
<tr>
<td>Sustainable Accounting Standards Board (SASB)</td>
<td>Standards Advisory Group</td>
<td>Sustainable Disclosure</td>
</tr>
<tr>
<td>University of Colorado Burridge Center for Finance</td>
<td>Advisory Committee</td>
<td>Professional Investor Education</td>
</tr>
</tbody>
</table>

² PERA staff sit on the advisory boards of the majority of eligible private investment funds:
  » Private Equity: 76%
  » Real Estate: 74%
  » Opportunity Fund: 84%
As PERA continues to examine the ways in which stewardship can have a financial impact, we have begun to evaluate the exposure to sustainability factors within our public asset portfolios. While we recognize there are limitations to the sustainability data currently available to investors, we also recognize the importance of assessing non-financial exposures within our portfolios on a continual basis with available tools. Our initial ESG benchmarking evaluations give us a snapshot of the sustainability exposures in our portfolios, and how those compare to exposures in our benchmarks. These snapshots can then be used to help us identify sustainability factors to which PERA’s portfolios may be exposed. We do not manage PERA’s investments solely to these factors; rather, they are an additional lens through which we can view our portfolios.

**SUSTAINABLE INVESTMENT BENCHMARKING**

PERA has engaged with MSCI, an independent data provider, to evaluate the sustainability profile of our public equity investments. MSCI conducts detailed research on over 7,000 companies and scores them based on their sustainability risks, and their effectiveness in managing those risks. By using MSCI’s research and tools we can evaluate the sustainability scores of companies held in our portfolios, weight the scores based on the size of the position of those investments in our funds, and then compare the weighted scores of our portfolios to their respective benchmarks. The ESG scores are dynamic and fluctuate through time based on company practices evaluated under MSCI’s research and scoring methodologies. In general, MSCI asserts that companies that score more highly are expected to have a greater ability to manage and mitigate company-specific risks, and to be more resilient when confronted with fluctuations in financial markets and regulatory policy. On completion of this analysis, our public market portfolio managers receive reports showing overall portfolio sustainability scores, benchmark scores, and score trends.

The reports demonstrate sub-categories of risk exposure based on sustainability factors such as carbon emissions and corporate governance risks. These comparisons help us evaluate whether our investments contribute to portfolios that are more sustainable than the broad market opportunities we are seeking to capture.

Our portfolio managers may use these benchmarking results to identify some portfolio-level ESG exposures on a relative basis. This is supplementary to our analysts’ fundamental analysis of material factors pertaining to a company’s sustainability throughout the holding period. As PERA actively manages assets with consideration to financially material factors, the composition of our portfolios may change over time, resulting in score fluctuations relative to each appropriate benchmark.

In the following exhibits, we provide some of the benchmarking results for PERA’s total Global Equity portfolio (representing $29.6 billion), along with two of our largest actively managed internal public equity portfolios, using holdings as of December 31, 2019:

- PERA Large Cap Core (representing United States large-cap equities with a market value of $6.2 billion)
- PERA All Country (representing global large-cap and mid-cap equities with a market value of $3.4 billion).
MSCI ESG QUALITY SCORES

MSCI’s analysts research companies and designate ESG Quality scores based on each company’s ability to manage medium-to-long-term ESG risks. The ratings are based on quantitative as well as subjective analyses. ESG Quality scores range from 0–10, with a higher ESG score implying stronger ESG Quality.

The chart below represents the overall ESG Quality scores of PERA’s total Global Equity, Large Cap Core, and All Country portfolios, with each compared to its respective benchmark’s ESG Quality scores. The results show these portfolios have higher ESG Quality scores relative to their respective benchmarks, based on holdings as of December 31, 2019.

As aforementioned, we do not target a specific ESG metric in selecting securities for our portfolios; rather we include these scores as input to a much broader mosaic of understanding a company’s fundamental business. As such, these scores are expected to vary on both absolute and relative bases.

$630 million invested in companies that score highly* for greenhouse gas mitigation strategies including use of cleaner sources of energy, energy consumption management and operational efficiency enhancements.

* Includes companies with scores of 80% or higher as evaluated by MSCI.

MSCI ESG Quality Scores† of PERA’s Portfolios vs. Benchmarks (As of December 31, 2019)

† MSCI ESG Quality scores range from 0–10.
$1.2 billion invested in the top quartile* of companies that measure and reduce carbon emission of their products throughout the value chain and implement programs with their suppliers to reduce their carbon footprint.

* MSCI quartile rankings are relative to companies in the relevant ESG rating industry that are constituents of the MSCI ACWI.

MSCI ESG RATINGS DISTRIBUTION

Portfolio level ESG Quality scores are a helpful tool for evaluating the overall sustainability profile of our investments, but we must also understand what factors are driving these scores. By examining ESG Ratings Distributions, we can come to a better understanding of drivers for our overall sustainability profile. The ratings distributions show firms categorized as laggards (low ESG Quality scores), leaders (high ESG Quality scores), or average in terms of their individual sustainability profiles. These distributions allow us to identify where we have the greatest risk and reward opportunities through firms practicing global stewardship within our portfolios.

The chart below illustrates the mix of ESG Quality leaders and laggards for PERA’s total Global Equity, Large Cap Core, and All Country portfolios. These are each compared to the ESG Ratings Distributions of their respective benchmarks. In general, the results shown below indicate a higher exposure to ESG Quality leaders in these PERA portfolios, versus their respective benchmarks.

MSCI ESG Ratings Distribution of PERA’s Portfolios vs. Benchmarks (As of December 31, 2019)
**MSCI ESG RATINGS MOMENTUM**

Sustainability encompasses a dynamic and fluid mosaic of factors for investors to continuously monitor. MSCI’s ESG Ratings Momentum demonstrates the improving or degrading sustainability profiles of the companies in which we invest. By evaluating ESG Quality movement, we can further analyze how companies are managing sustainability risks and opportunities in response to changing market and business conditions.

The following chart compares the MSCI ESG Ratings Momentum of PERA’s portfolios to the Momentum of their respective benchmarks. These results show that our Global Equity investments’ momentum ratings distribution is similar to those of its benchmark, based on holdings as of December 31, 2019. Within the total Global Equity portfolio, underlying portfolios may exhibit more exposure to companies improving their ESG Quality (such as shown in the All Country portfolio, relative to its benchmark). Conversely, underlying portfolios may exhibit greater distribution of stable, or even degrading ESG Quality performers (such as shown in the Large Cap Core portfolio, relative to its benchmark). We expect short-term volatilities to be reflected in these scores for our portfolios, and we remain committed to PERA’s long-term investment objectives.

$11.1 billion invested in stocks of companies in the MSCI World ESG Leaders Index.
MSCI CARBON RISK

MSCI also provides PERA an assessment of our portfolios’ carbon risk by measuring our investments based on their carbon intensity, which is calculated as the company’s carbon dioxide emissions (in metric tons of CO2) divided by their reported sales (in millions of dollars). As shown in the chart below, PERA’s Global Equity, Large Cap Core, and the All Country portfolios have between 36% and 66% less carbon intensity versus their respective benchmarks.

MSCI CARBON RISK

$2.1 billion invested in the top quartile* of companies with significant carbon footprints that are proactively investing in low-carbon technologies and increasing the carbon efficiency of their facilities.

* MSCI quartile rankings are relative to companies in the relevant ESG rating industry that are constituents of the MSCI ACWI.
MSCI GOVERNANCE RISK RATINGS

Evaluating the quality of corporate governance is a complex and detailed process. MSCI’s Governance Risk Ratings give us a top-down view of our portfolio companies’ performance on corporate governance. MSCI also provides supplemental insights on firms they have identified to have particular strengths or weaknesses in their corporate governance.

As shown in the chart below, PERA’s Global Equity, Large Cap Core, and All Country portfolios have about the same percentage of their market value represented by corporate governance leaders as do their respective benchmarks.

The research, ratings, and analysis provided by MSCI are valuable tools for PERA in assessing the environmental, social, and corporate sustainability profiles of our public portfolios. By comparing the sustainability scores of our investments, the distribution and momentum of sustainable quality, as well as particular ESG factors of our portfolios and their benchmarks, we can begin to identify where the greatest risks and opportunities lie within our overall investment sustainability profile.

$4.8 billion invested in the top quartile* of companies with comprehensive privacy policies and data security management systems and companies that do not have business models reliant on trafficking of personal data.

* MSCI quartile rankings are relative to companies in the relevant ESG rating industry that are constituents of the MSCI ACWI.
INDUSTRY PERSPECTIVES ON SUSTAINABLE INVESTING

In this section we take a look at the broader context of sustainable investing themes and practices, and how these may inform PERA’s investment stewardship. We discuss why sustainability matters to investors, approaches to sustainable investing that investors may take in meeting their unique objectives, and obstacles that investors encounter in effectively evaluating the financial impact of sustainable investing.

WHY SUSTAINABILITY MATTERS TO INVESTORS

As market climates evolve across changing political, social, environmental, and economic landscapes, sustainable business practices are increasingly viewed as integral to long-term success. Investors, consumers, regulatory authorities, and businesses are becoming more interested in sustainability factors and how they correspond to best practices, innovation, competitive advantages, and profitability.

SUSTAINABLE INVESTING IS A GROWING COMPONENT OF THE GLOBAL ECONOMY

Sustainability factors that could affect the success of a firm may include: carbon emissions, labor rights, natural resource utility, executive oversight, animal welfare, corporate culture, and social impact, among a host of others. The relevance of sustainable practices in business varies by firm and industry, and is also tied to various government regulations. As countries adopt or reject standards for sustainable practices, businesses may adapt to meet those regulations in order to remain competitive.

With increased awareness on sustainable technologies and practices, market participants are becoming interested in investments that promote global stewardship while providing strong returns. There is rising demand from consumers, investors, and company executives for corporate alignment with sustainable interests. The economic impact of interest in sustainable investing has been significant in the United States.

The Forum for Sustainable and Responsible Investment reported a 38% increase in assets under management in sustainability aligned investment strategies from 2016 to 2018, and a 17 fold increase during the period from 1995 to 2018. This includes $5.6 trillion in assets owned by institutional investors, like PERA, that incorporate ESG considerations to various degrees in their portfolio management. These data demonstrate that sustainable investing is not a passing fad, but rather an integral component of global markets.

Growth of ESG Incorporation Reported by Institutional Investors 2005–2018*

*Source: U.S. SIF: The Forum for Sustainable and Responsible Investment
**SUSTAINABILITY MAY SIGNAL QUALITY AND LONGEVITY**

As market participants become more interested in sustainable practices, companies have opportunities to meet evolving demand in new ways. Firms that are adept at managing risks and seizing opportunities, including those presented by sustainability, may maintain competitive advantages in changing market climates.

Consider a firm that invests in manufacturing equipment to meet consumer demand. If the firm invests in new technology designed to decrease carbon emissions and increase operator safety, the firm can boost productivity while mitigating risks to the well-being of its employees and the environment. These stewardship efforts may also mitigate financial risks as sustainable technologies might be cost saving for the firm in the long run. Investing in new technology may also help the firm avoid punitive financial damages that could be assessed through legal and regulatory fines resulting from potentially negligent business operations.

Beyond managing risks, global stewardship can create new opportunities for companies to maintain competitive advantages. For example, buildings that meet requirements for sustainable certifications can maintain significantly higher occupancy rates while receiving higher rent revenues than buildings without sustainable operations. Sustainable buildings may include grand features to capture renewable energy, or smaller scale features that minimize energy use within the building. These efforts can improve the quality of building environments, attract tenants, and efficiently meet tenant demands over the long run.

Sustainable practices also encompass the core competencies of an organization. Company culture, employee engagement, executive oversight, board independence, community investment, innovative intellectual capital, and alignment with stakeholders are examples of stewardship factors that can drive long-term success. Firms that foster organizational sustainability can attract and retain high-quality talent, increase productivity, reinforce ethical and professional standards, and improve client satisfaction. In this way, the integration of sustainability efforts may signal a company’s quality and capacity for longevity.

Sustainable technologies and practices may maximize operational efficiency, improve production, attract consumers and investors, and increase revenues. Global stewardship efforts can also decrease operational costs and consumer price sensitivities. Combined, these factors may significantly boost profits. When stewardship efforts impact a firm’s financial success, they become financially meaningful to stakeholders.

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**WHY SUSTAINABILITY MATTERS TO PERA’S INVESTORS**

As an institutional investor, PERA keeps a pulse on changes in business and markets that may affect the long-term profitability of the companies in which we invest. As we seek the best risk-adjusted returns throughout our investible universe, it is imperative that we recognize and understand how changes in sustainable technologies and practices can influence long-term profitability. Our investors are experts in their field and consider regulatory frameworks, supply and demand shifts, as well as advancements in technology and ethical practices when evaluating investment risks and opportunities. We invest in companies with long-term competitive advantages which can offer financial rewards that outweigh risks.
HOW INVESTORS INTEGRATE SUSTAINABILITY INTO PORTFOLIOS

The magnitude of vernacular used to describe sustainability is almost as complex as the multitude of approaches to integrating sustainability within the investment industry. Even as ESG investing becomes more prominent within the investment industry, there is no one-size-fits-all terminology or approach. Because investment objectives vary widely among investors, investors may choose to implement any combination of options along a broad spectrum of approaches to sustainable investing. As investors seek new ways to identify and measure ESG exposures within their unique portfolios, applications for understanding and effectively integrating sustainable investing become increasingly murky.

A SIMPLISTIC VIEW OF THE ESG SCREENING SPECTRUM

In simplified terms, approaches to ESG investing may range from negative screening to positive screening. There are infinite points along the spectrum where investors may combine elements of either or both of these approaches to meet their objectives. Using negative screening approaches, investors may choose to exclude certain types of investments from their portfolios based on one or more ESG factors. On the other end of the spectrum, investors may employ positive screening approaches to include certain types of investments in their portfolios based on one or more ESG factors.

Personal Values-Based Investing

Both divestment and impact investing are personal values-based approaches to ESG investing. The aim of divestment is to withhold financing from firms that do not adhere to an investor’s personal values. Vice versa, the aim of impact investing is to supply financing to firms that adhere to an investor’s personal values. As such, the subject of divestment or impact investing may have more emotional benefits than material financial implications for individual investors. That is, investors may choose to sacrifice traditional investment theory and potential investment gains in favor of maintaining their personal ideals about the natural environment, society, or business governance.

PERA invests on behalf of more than 620,000 individuals who rely on our professional investment expertise to ensure their retirement security. As such, we do not invest to suit the personal beliefs of any individual entity.

Negative Screening

A popular example of negative screening is divestment. In the context of ESG investing, divestment refers to selling and abstaining from investments in firms or products that are deemed adverse to an overriding philosophical ideal, based on one or more ESG factors.

Positive Screening

A popular example of positive screening is impact investing. In the context of ESG investing, impact investing refers to investing in firms or products that are deemed to align with an overriding philosophical ideal, based on one or more ESG factors.
PERA VALUES FINANCIAL SUSTAINABILITY FIRST AND FOREMOST

We use divestment and impact investing as examples at either end of the spectrum to illustrate how these approaches do not suit the objectives of all investors. While many investors may tailor their portfolios to suit their personal values, PERA invests on behalf of more than 620,000 individuals who rely on our professional investment expertise to ensure their retirement security. As such, we do not invest to suit the personal beliefs of any individual entity. An investment strategy based on personal value systems may be impossible to implement in a way that reflects all our members’ individual beliefs. Furthermore, such a strategy would be imprudent in fulfilling our fiduciary responsibility due to high implementation costs and imposed limits on PERA’s ability to effectively seek the best risk-adjusted returns. Instead of investing based on personal values, PERA invests according to strong financial diligence.

PERA’s Divestment Policy

The PERA Board of Trustees explains the issue of divestment in their Statement on Divestment, which was updated in January 2019, and begins:

“The world faces many critical issues today including genocide, pollution, terrorism, human and animal rights violations, and public health crises. As individual Americans, we enjoy the political and philosophical freedom to speak out against atrocities and join in those causes which are aligned with our personal beliefs. As an organization however, PERA does not have the authority to determine social policy, foreign policy, economic policy, or any other policy beyond the operation of the retirement system. PERA serves the singular purpose of ensuring the retirement security of Colorado’s current and former public servants. Because global issues are difficult to prioritize and proper recourse falls beyond the duty of the retirement system, PERA will implement the divestment mandates passed by the Colorado General Assembly but would recommend the legislature thoughtfully consider such proposals with caution and fiduciary care.”

The Statement on Divestment provides further discussion on PERA’s fiduciary duty, divestment costs, as well as the “slippery slope” perspective of divestment and its potential limitations. PERA believes there are approaches beyond the scope of impact investing or divestment which may better help us achieve our investment objectives and long-term financial sustainability.

THE PERADVANTAGE SOCIALLY RESPONSIBLE INVESTMENT FUND

To serve members who are interested in directing their individual retirement savings to sustainable investing, PERA offers the option to invest in the PERAdvantage SRI fund. This is an investment vehicle available through our 401(k), 457 Deferred Compensation, and Defined Contribution Plans (CAPs). As a retirement tool for our members, the fund is designed for long-term performance through investment in sustainable companies that demonstrate strong environmental, social, and governance practices.

In 2019, PERA refreshed the PERAdvantage SRI Fund. We selected new asset managers with portfolios offering a greater breadth of market coverage and a stronger focus on ESG leadership. In choosing these managers, we also considered the investment costs for participants. Through PERA’s cost stewardship, we are proud to offer the PERAdvantage SRI Fund to participants at an annual cost of 0.26% of assets invested. We believe the SRI Fund offers interested members the opportunity to invest sustainably while pursuing retirement security.
OBSTACLES TO EVALUATING THE FINANCIAL IMPACT OF SUSTAINABILITY

As investors increasingly seek ways to integrate sustainability into their portfolios, the material financial impacts of sustainability can be difficult to calculate.\[^{13}\]

In part, calculating financial impact may be difficult because sustainable practices can have intangible value that may be challenging for investors to measure. International reporting mandates may or may not include compulsory non-financial disclosures pertaining to sustainable practices in business. Intangible assets can also be qualitative and subjective in nature, so objective and quantitative data demonstrating their impact on a firm may be unavailable to investors. These obstacles are amplified by traditional accounting standards that have struggled to keep pace with market participants in valuing non-financial assets.\[^{14}\]

Many investors seek decision-useful disclosures on sustainability metrics from the companies in which they invest. In instances where firms do not proactively enact or report sustainable practices, some investors may exercise ownership rights to encourage firms to do so. As responsible investors engage with firms to evaluate how corporate stewardship impacts firm quality, responsible firms should in turn react to stakeholder demand by establishing or reiterating material sustainability practices and publishing metrics on their financial impact.

This feedback loop can be an important way for investors to overcome reporting deficiencies to effectively value material sustainability. Likewise, it can be a powerful tool for quality firms to align themselves with stakeholders’ interests for long-term success.\[^{15}\]

There is still a dearth of clarity, consensus, and disclosure surrounding ESG factors and their real or potential impacts to investors. It is difficult to effectively identify and measure the impacts of sustainable investing with a persistent lack of standardized data and metrics. As more investors seek material sustainability, we expect standardized approaches and metrics will become available to help inform investment decisions.

PERA WORKS TO STANDARDIZE FINANCIALLY MATERIAL SUSTAINABILITY DISCLOSURE

PERA seeks disclosures on business practices and financial impacts that are timely, accurate, reliable, comparable and decision-useful. To that end, we are actively engaged in advocating for efficient and material disclosures. PERA has been a long-term supporter of the Sustainable Accounting Standards Board (SASB).

This board is actively developing a set of standardized metrics to help investors analyze a firm’s ability to operate in a sustainable fashion. PERA participates in SASB’s mission through working groups to discuss, evaluate, and propose sustainable accounting standards. PERA also encourages the management teams of our public investments to adopt the SASB reporting structure. We believe that independently standardized reporting metrics will go a long way in helping investors weigh the financial impacts of sustainable business practices.
ONGOING STEWARDSHIP FOR A FINANCIALLY SUSTAINABLE FUTURE

PERA believes the path of stewardship is actively created, rather than achieved. As sustainable technologies evolve, they shape the way market participants develop sound business practices, and in turn these practices inform new technologies. Evolving technologies and practices raise awareness of the impact of stewardship on the environment, society, and the economy.

With that awareness, financial and regulatory boards may continue to develop standards that integrate the intangible values of stewardship, while holding firms accountable to their role in natural resource management and social wellness. That accountability translates into transparency and publicly available information. In turn, these yield knowledgeable investors, stronger competition, healthier markets, and profitable stakeholder gains.

As conversations around global stewardship evolve, PERA continues to focus on our investment stewardship. In fulfilling our fiduciary duty to our members, we remain committed to seeking the best risk-adjusted returns in diverse asset classes for long-term financial sustainability. We continue to weigh the risks and opportunities for reward presented by global stewardship.

We remain vigilant in first-hand engagement with our investment partners to advocate for stronger practices that lead to stronger returns. In doing so, we uphold financial sustainability as our top priority in our investment stewardship. Financial sustainability of the Fund will ultimately support the retirement success of all our members.

“We don’t look one or two years down the road; we look out 15 or 20 years, and concentrate on the long-term viability of a company’s business model.”
—Jared Goodman, PERA Senior Equity Portfolio Manager
DISCLOSURES

LEED®

The United States Green Building Council’s LEED® green building program is the preeminent program for the design, construction, maintenance and operations of high-performance green buildings. Learn more at www.usgbc.org/LEED.

ENERGY STAR®

1. ENERGY STAR and the ENERGY STAR mark are registered trademarks owned by the United States Environmental Protection Agency.

2. ENERGY STAR products are third-party certified by an EPA-recognized Certification Body.

3. ENERGY STAR certified new homes are verified by independent Home Energy Raters.

4. ENERGY STAR units in certified multifamily high rise buildings are verified by a professional engineer or registered architect.

5. ENERGY STAR certified buildings and plants earn a score of 75 or higher on EPA’s 1–100 energy performance scale and are verified by a licensed Professional Engineer (PE) or Registered Architect (RA).

6. Products/Homes/Buildings that earn the ENERGY STAR prevent greenhouse gas emissions by meeting strict energy efficiency requirements set by the United States Environmental Protection Agency.

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ENDNOTES

1. PERA data are as of December 31, 2019, unless otherwise noted.

2. Costs are calculated as a weighted average of investment management fees and administration fees across all funds offered in the PERA 401(k) Plan. 2011 costs are represented as a percentage of average investments at fair value between January 1, 2011, and September 30, 2011, prior to the inception of the white label fund structure. Costs for 2019 are represented as a percentage of average investments at fair value between January 1, 2019–December 31, 2019.

3. Cost are calculated as a weighted average of investment management fees and administration fees across all funds offered in the PERA 401(k) Plan. 2011 costs are represented as a percentage of average investments at fair value between January 1, 2011, and September 30, 2011, prior to the inception of the white label fund structure. Costs for 2019 are represented as a percentage of average investments at fair value between January 1, 2019–December 31, 2019.


5. Learn more at: [https://www.usgbc.org/leed](https://www.usgbc.org/leed).


7. See for example:


9. See for example:


