



INVESTMENT STEWARDSHIP REPORT

Investing for the Future

2023

Data as of December 31, 2022, except where noted.

INVESTING FOR THE FUTURE

Each pillar of Colorado PERA's investment stewardship supports our mission to provide retirement benefits to our members while ensuring the sustainability of the fund.



PROTECT

Protect members' interests by watching costs

\$60 Million

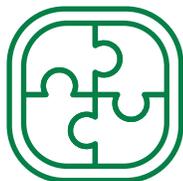
Savings due to internal investment management

0.38%

Cost to manage the Total Fund, or less than \$4 of cost for every \$1,000 managed

\$100,000

Estimated savings by producing CAP fund fact sheets internally



INTEGRATE

Integrate relevant factors into PERA's investment strategy

>600

Companies and fund managers engaged on material investment factors

~68,000

Proxy proposals voted

>300

Proposals seeking ESG disclosures voted



ADVOCATE

Advocate for robust markets

16

Advocacy councils to which PERA Investments staff contributed expertise

6

Comment letters filed with regulators in support of PERA's investment interests

>35

Legislative and regulatory offices engaged on matters that can affect PERA and our members



EVALUATE

Evaluate exposures and recognize limitations

\$76 Billion

Generated by PERA's investments over the past 30 years

8.0%

Annualized 10-year net return on PERA's investments

6.5%

Annualized 5-year net return on PERA's investments

Annual figures as of December 31, 2022, except where noted.

CONTENTS

A Message From PERA Management	1
Introduction	3
PERA's Investment Stewardship Philosophy	4
PERA's Investment Stewardship Approach	5
Building a Portfolio With Long-Term Sustainability	5
Protect	7
Lowering Aggregate Investment Management Fees	7
Reducing Fees for PERA's Capital Accumulation Plans (CAPs).....	9
Integrate	10
Integrating Relevant Factors into PERA's Investment Decisions.....	10
PERA is an Engaged Investor Focused on Financial Outcomes	12
Exposures to Various Themes.....	14
Integrating Relevant Factors into PERA's Proxy Voting Decisions.....	19
Advocate	28
Advocating for Alignment	28
Advocating for Disclosure	30
Advocating for Fair Markets	31
Evaluate	32
Benchmarking ESG Exposures.....	32
Other ESG Exposures	33
Industry Perspectives on Sustainable Investing	34
Why Sustainability Matters to Investors.....	34
How Investors Integrate Sustainability into Portfolios	36
PERA Values Financial Sustainability First and Foremost	37
Ongoing Stewardship for a Financially Sustainable Future	39
Appendix	40
Disclosures	45
LEED®	45
ENERGY STAR®	45
MSCI ESG Research LLC.....	45
Endnotes	46
Commonly Used Acronyms	47

A MESSAGE FROM PERA MANAGEMENT

Our mission is to provide retirement security for PERA members while ensuring the sustainability of the Fund. Paying benefits to members for the duration of their retirement requires us to maintain a long-term focus and fiduciary care in the management of Trust assets. This responsibility is at the core of PERA's investment stewardship and guides every investment decision we make on behalf of the membership.

In 2022, market volatility and political tension were top of mind for investors. Geopolitical turmoil, rising interest rates, and supply and demand dislocations created lower growth projections. Meanwhile, technological and regulatory developments created new risks and opportunities for companies and their investors. Such periods of uncertainty have raised questions from PERA stakeholders about how we serve as responsible stewards of plan assets. We have engaged with state lawmakers, retirees, active members, and investment partners asking about our stance on issues pertaining to market volatility, political pressures, divestment, and environmental, social, and governance (ESG) considerations. Our response is simple and true to our mission: We prioritize financial value over personal or political values in our investment decisions.

Each of PERA's investments is made with a singular objective in mind—to pursue the best risk-adjusted returns over the long-term. To meet that objective, we begin with a broad investible universe that provides diversification and access to wide geographic, sectoral, and idiosyncratic opportunities. Within each asset class, our active investments are made based on diligent analysis of the financial prospects of a company, property, or fund. We consider risks and opportunities that are financially relevant to a business and our investments, regardless of how those factors may be labeled.

Where a financially material risk or opportunity could be labeled “environmental” or “social,” we evaluate it based on its expected impacts to a specific business and PERA's investments, not vice versa. Some investors may seek to positively impact the environment or society with their investments, while others may seek to negatively impact certain companies or regions through divestment. PERA takes neither an impact nor a divestment approach in our asset management. Our sole investment concern is positively impacting our members' retirement security, and that requires an integrative approach that prioritizes financial sustainability.

Through this financially focused, integrative approach to investing we have achieved these long-term results, as of December 31, 2022¹:

- » \$76 billion generated by PERA's investments over the past 30 years
- » 7.4% annualized return since inception
- » 8.0% annualized 10-year net return
- » 6.5% annualized 5-year net return

This long-term financial performance contributed to our ability to pay approximately \$5 billion in benefits to more than 135,000 retired public servants in 2022 alone. In 2023, we remain steadfast in our commitment to invest based on financial value over personal or political values. I invite you to explore this report and resources on our website to learn more about the ways we pursue our mission through responsible investment stewardship.

Sincerely,

Amy C. McGarrity
Interim Executive Director/Chief Investment Officer



Amy C. McGarrity
*Interim Executive Director/
Chief Investment Officer*

Look for this symbol to see notable additions to the report in 2023.

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.



INTRODUCTION

Stewardship is the heart of Colorado PERA's mission.

Stewardship is the heart of PERA's mission. As stewards of pension plan assets, we manage approximately \$56 billion on behalf of more than 670,000 members.² 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 stability of the Fund for its beneficiaries.

This *Investment Stewardship Report* explores PERA's approach to seeking financial stability through investment stewardship. With increasing focus on global stewardship matters within the investment industry, we uphold PERA's view of stewardship as an integrative framework for achieving financial stability. 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 outcomes.

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.



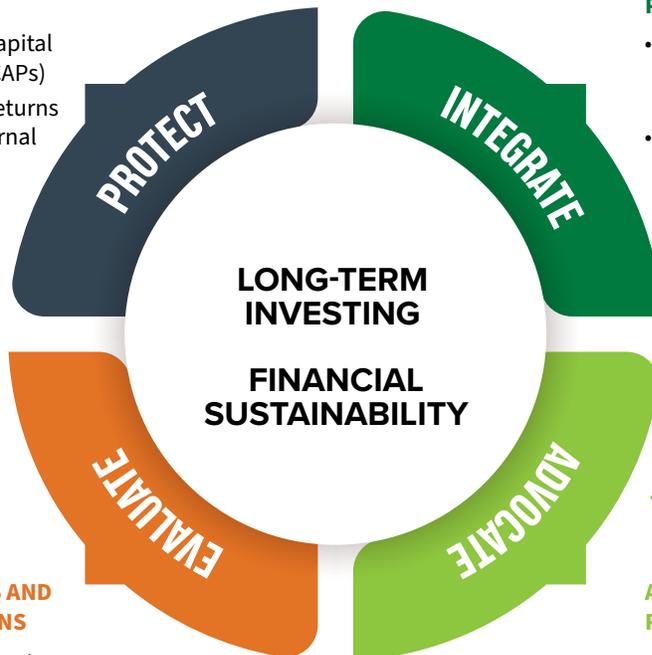
PROTECT MEMBERS' INTERESTS BY WATCHING COSTS

- Lower costs in PERA Capital Accumulation Plans (CAPs)
- Provide high-quality returns at low costs using internal management



INTEGRATE RELEVANT FACTORS INTO PERA'S INVESTMENT STRATEGY

- Invest in firms with sustainable business models for long-term profitability
- Vote proxy proposals to promote expected long-term shareholder returns



EVALUATE EXPOSURES AND RECOGNIZE LIMITATIONS

- Use independent research
- Identify and measure exposures



ADVOCATE FOR ROBUST MARKETS

- Advocate for robust capital markets
- Develop and share best practices

PERA'S INVESTMENT STEWARDSHIP APPROACH

We actively serve as good stewards of plan assets for the benefit of PERA members.

PERA's approach to pursuing financial stability is guided by four practices for sound investment stewardship:

- » We **protect** our members' interests through cost-conscious investment management.
- » We **integrate** financially relevant factors into our investment decisions.
- » We **advocate** for robust capital markets and business practices.
- » We **evaluate** various exposures within our portfolios on an ongoing basis.

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 and objectives, we discuss PERA's diverse asset allocation as the foundation for portfolio construction within the Defined Benefit (DB) Plan. We describe our ongoing cost stewardship to protect assets and discuss the opportunities to integrate numerous factors into the portfolio while prioritizing 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

Diversification is the foundation for constructing a portfolio built to last.

As PERA's *Statement of Investment Policy* states, "The function of PERA is to provide present and future retirement or survivor benefits for its members. This objective requires the prudent assumption of investment risk in seeking to maximize long-term investment returns while incorporating the fund's liability requirements."³ 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 Defined Benefit (DB) portfolio, PERA allocates assets across diverse public and private markets. We manage investments in public equity and debt instruments in both developed and emerging markets, commercial real estate properties, private equity partnerships, and alternative interests. Allocating capital to diverse asset classes allows PERA to maintain a broad investable universe, which is imperative for long-term financial success. The advantages of diversification include the ability to seize opportunities in different markets, unlock complementary performance attributes, and manage downside risk to the portfolio.

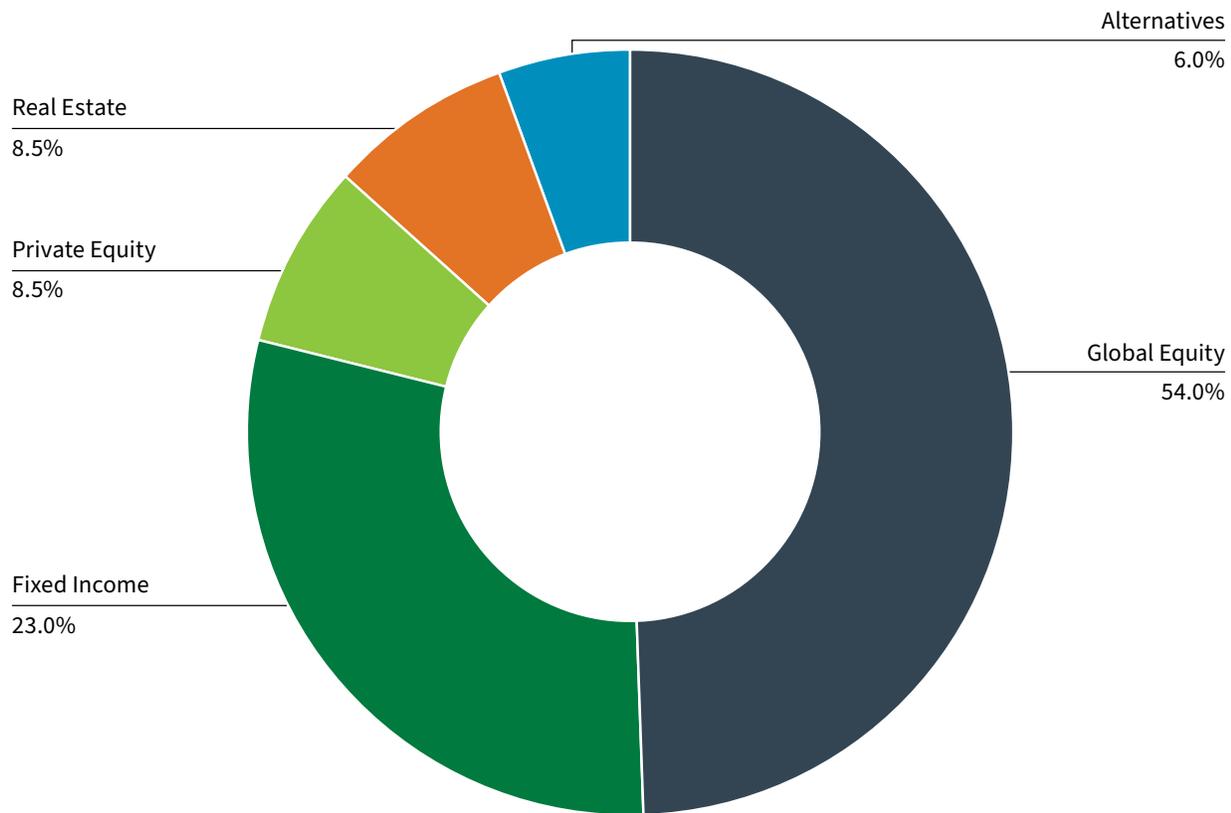
The allocation to each class in the DB portfolio is the result of periodic asset and liability studies undertaken by the PERA Board of Trustees (Board) in consultation with investment and actuarial experts to ensure the portfolio is well-diversified to withstand volatility and provide returns that enable us to pay retirement benefits to our members in perpetuity. In pursuing diverse opportunity sets over a long time horizon, PERA expects to enhance performance of the Total Fund while effectively managing financial risks. By diversifying the portfolio, each asset class becomes a building block for modeling risk and return expectations in line with PERA's mission to provide retirement security for our members over the long run.

Regardless of which asset class an opportunity falls under, PERA is committed to protecting members' interests through cost-conscious investing, integrating financially relevant considerations, advocating for healthy markets, and evaluating appropriate exposures to inform our decisions on an ongoing basis.

Long-Term Target Allocation

NEW
IN
2023

Our stewardship centers on one objective: To seek out quality investments that are expected to provide the best risk-adjusted returns to PERA's portfolio over the long-term. We start by building a portfolio of diverse assets to withstand market fluctuations. Each investment category in the portfolio is carefully selected to maximize anticipated returns while managing investment risks to the Total Fund.



Asset Class	Expected 30-Year Return*	Primary Assets	Key Attributes	Market Transparency**	Fund Management
Global Equity	8.0%	Public company stocks	Long-term growth, volatility, liquidity	Public/transparent	Internal and external
Fixed Income	3.6%	Public company, government, and securitized bonds	Liquidity, diversification, stability	Public/transparent	Internal
Private Equity	9.6%	Partnership funds in private companies	Private enterprise, diversification, illiquidity	Private/opaque	External
Real Estate	6.8%	Real properties and partnership funds	Income, downside protection, diversification	Private/opaque	Internal and external
Alternatives	7.1%	Real assets, hedge funds, and partnership funds	Diversification, special opportunity, illiquidity	Mixed	External

* Expected 30-year returns were as of Q1 2019, were provided by the Board's external consultant (Aon), and were used in the 2019 asset/liability study.

** Investors have varying degrees of transparency into the operational and financial results of public and private companies. Publicly listed companies are required to disclose information about their operational and financial results that may not be required of privately owned companies. This leads to greater informational efficiency for asset valuations in public markets than in private markets.



PROTECT

Higher quality, low-cost services create real value in the retirement funds we administer for PERA members.

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 management expertise. We advocate for cost transparency where we can, and seek the lowest possible costs to preserve risk-adjusted returns in both our Defined Benefit (DB pension) and Defined Contribution (DC individual savings) Plans.

Lowering Aggregate Investment Management Fees

As part of our cost stewardship within PERA’s DB 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 asset class, 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 \$60 million in 2022.

In 2022, PERA utilized external experts for a portion of our public equity 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 who we believe will add the greatest value on a risk-adjusted basis at a 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



See the "Protect" video for a snapshot of PERA’s investment cost stewardship at copera.org/stewardship.

WHAT DOES THIS MEAN FOR PERA MEMBERS?
Each person on PERA’s investment staff is an expert committed to serving our members’ financial longevity. We leverage that expertise to reduce the need to use outside investment managers, which saves money while adding value for our members.

shifting assets toward direct investing, which gives PERA full ownership control of underlying assets.

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 Board’s Investment Committee. PERA continues to strive toward increased transparency within our contractual limits.

“Internal management supports our ability to be agile in responding to market conditions while also saving PERA significant costs.”

—KEITH TAYMAN
PERA Director of Fixed Income



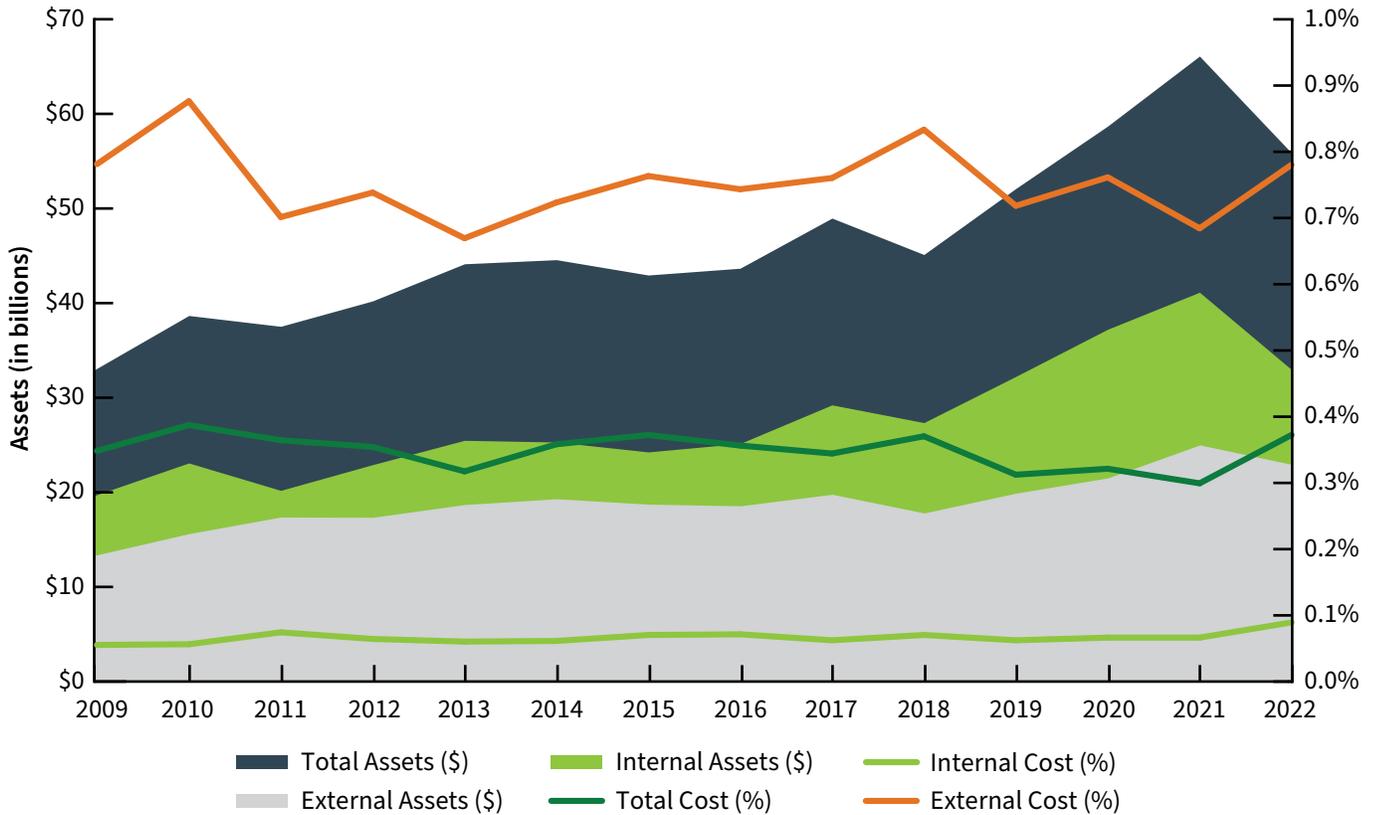


PROTECT



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.⁴ 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.

Internal Management Lowers Costs



Internal Management Adds Value to the Fund

21 years Average experience in investment management among internal investment experts.

59.0% Of Total Fund managed in-house at a cost of ~0.06% of those assets.

\$60 million Estimated annual savings due to internal investment management.

Lower Fees = More Savings



Reducing Fees for PERA's Capital Accumulation Plans (CAPs)

PERA recognizes the value of saving for retirement, and we make the process easy and cost-efficient for our members. In addition to the pension plan, all PERA members have the option to invest for their own retirement through PERA's 401(k) Plan. Members of affiliated employers also have the option to participate in PERA's 457 Deferred Compensation Plan. Additionally, some members are eligible to forgo participation in the DB Plan completely in favor of sole participation in the DC 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 DB 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, 2022, the CAPs offer 17 PERAdvantage funds and a self-directed brokerage account (SDBA) in which participants may choose to invest their individual account assets.

The PERAdvantage funds range from professionally managed target retirement date funds to funds specializing in specific asset classes and strategies. The costs to invest in each Plan includes a \$1–\$1.50 flat participation fee per month (\$12 per year for 401(k) Plan and DC Plan participants, and \$18 per year for 457 Deferred Compensation Plan participants), and plan administration asset-based fees of 0.03%.⁶ That means the participant will pay just \$0.30 for every \$1,000 of assets in their account. In addition to these low fees, each participant in the PERAdvantage funds pays a small investment management fee, which varies for each investment option.

The SDBA option allows a participant to construct and manage a portfolio with their choice of publicly traded securities and funds. There is a \$50 flat participation fee per year to participate in the SDBA, and participants must maintain a \$500 minimum balance in the PERAdvantage Funds.

Additionally, participants have access to two guaranteed income annuity choices. Information on these options can be obtained on coperaplus.org.

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 2022. 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 0.12% of assets in 2022.⁷ That's an 82.0% decrease in fees. Those smaller investment costs equal bigger nest eggs for participants and more efficient Plan management. The Board has prioritized the continuing reduction of CAPs' fees, and we will regularly evaluate additional potential cost savings that would benefit participants.

In addition to lowering costs paid by participating members, PERA works to reduce the CAPs' operating costs. As of 2020, fact sheets for each of the funds offered through the CAPs are produced internally by PERA staff, at an estimated savings of \$100,000 per year. These fact sheets are updated quarterly and published on our website and through the Plans' recordkeeper to inform participating members about each fund's strategy, portfolio composition, performance, and fees.

WHAT DOES THIS MEAN FOR PERA MEMBERS?

In addition to the pension plan, PERA offers options for members to invest their own retirement savings as they choose.

For more information about the CAPs, including fund summaries, fact sheets, and performance, please visit: coperaplus.org/defined-contribution-dc-plan-investments.

DID YOU KNOW?

Participants in the PERA CAPs have the opportunity to benefit from the skill and expertise of PERA's Fixed Income team. In 2021, a cross-departmental team began evaluating the process for unitizing the Fixed Income asset class in the DB Plan. Unitization can be likened to a mutual fund—multiple individuals invest through a fund manager, who pools the monies received to buy securities. Each investor owns units (or shares) in a pool of assets, but not the underlying assets themselves. Unitization provides a compelling opportunity for Defined Contribution Plan participants to gain access to PERA's low cost, institutional quality, internal asset management capabilities by investing alongside the DB Plan. The project was completed during the summer of 2022 and the internally managed PERA unitized product replaced one of the underlying managers in the PERAdvantage Fixed Income Fund. These fund participants benefit from PERA's internal fixed income expertise and a reduction of the investment management fee. PERA staff is evaluating additional unitization opportunities.



PROTECT



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PERA considers relevant economic and business factors in our investment decisions with a focus on long-term financial outcomes in order to pay retirement benefits to our members.

PERA invests to provide retirement income for our members. This objective requires us to factor financially relevant information into our investment and proxy voting decisions. Where environmental, social, or governance matters are expected to materially affect a firm's financial performance, we may integrate them into our decisions as pieces of the mosaic of information we consider. This integrative approach to investing has always been PERA's approach to seeking long-term financial sustainability of the Fund for the ultimate benefit of our members.

Integrating Relevant Factors into PERA's Investment Decisions

PERA is a global investor with exposure to diverse industries, properties, and geographic regions. We employ sophisticated strategies in public and private markets to meet our financial return objectives while managing risk to the portfolio. In our actively managed Global Equity portfolios, we diligently analyze a company's financial health and prospects, seeking to understand how it manages challenges to its business while pursuing profitable opportunities in the market to benefit shareholders. In our Fixed Income portfolios, we carefully select securities expected to yield attractive returns while taking into consideration other factors such as the corporate environment, regulatory circumstances, and market conditions. Likewise, in our directly owned Real Estate portfolio, we carefully assess a property's value and ability to generate income and capital appreciation. In our Private Equity and Alternatives portfolios, we diligently evaluate managers and their fund offerings to select the best opportunities to improve expected risk-adjusted returns to the portfolio.

In each portfolio strategy, PERA's investors consider a vast array of economic and business-specific elements when taking an investment action. The precise factors considered may differ between investment choices and through time as economic forces present new risks and opportunities for investors to consider. Therefore, what is financially relevant to one investment decision may not be financially relevant to another and its relevance can change over months, years, and even decades.

This is what is referred to as "dynamic materiality."⁸ The financial materiality of a particular piece of information can change as economic conditions shift. The three primary drivers of economic activity can be categorized as legislative and regulatory policy making, technological advancement and innovation, and supply and demand functions.



INTEGRATE

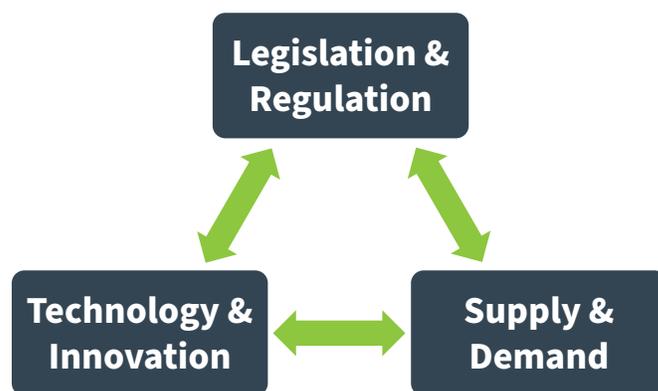


See the "Integrate" video for a snapshot of how PERA integrates material factors in our decisions at copera.org/stewardship.

WHAT DOES THIS MEAN FOR PERA MEMBERS?

We invest with one goal – to pay benefits to our members for the duration of their retirement and to their beneficiaries thereafter, as applicable.

**We don't drive markets.
We anticipate and respond to markets.**



The ways in which companies identify and respond to these three primary market drivers can set them apart among their peers. Competitive advantages are not only profitable for the firm, but can lead to stronger returns for investors. As such, PERA is interested in understanding how the companies and fund managers we invest in and with are responding to economic conditions to remain profitable over the long term.

When evaluating how companies and managers are responding to economic risks and opportunities, any number of factors may come into play. Risks can be systemic or idiosyncratic, short-term or long-term, and can vary in severity and likelihood of impact. Market participants know that risks are not without opportunities, and investors expect to be compensated for taking on risk. Therefore, it is important to understand which risks are, or are not, pertinent to a decision at a specific point in time given the full scope of factors at play in the opportunity and the investor’s unique objectives. As risk factors recombine with different economic influences through time, new opportunities are presented in the market.

As technology advances, consumer demand may change, and regulation may expand. This can create new risks and opportunities in the market for businesses to respond to. In turn, investors have new opportunity and risk sets from which to select the investments that best meet their objectives.

PERA remains focused on integrating relevant factors in our investment decisions. In so doing, we are not trying to change market risks and opportunities, nor are we trying to drive capital toward certain industries over others. We are solely committed to driving risk-adjusted returns to the PERA portfolio in order to pay retirement benefits to our members and their beneficiaries, in line with our fiduciary duty.

No single risk factor dominates an investment decision



Risks are not without opportunity, and investors are expected to be compensated for taking on risk



INTEGRATE



PERA is an Engaged Investor Focused on Financial Outcomes

PERA investment staff actively engages with management teams of public corporations and private funds in which we invest. From initial assessments and throughout the investment period, we think critically about how the firms we invest in are navigating market risks and pursuing opportunities that can lead to higher investment returns over the long run.

In our engagements, we seek to understand how companies are responding to economic conditions. We want to know how they are managing risks and opportunities to their business so we can make informed investment decisions that advance our mission to provide retirement security for our members.

In 2022, PERA staff engaged with more than 600 public companies and private fund managers in which we invest.

Topics on which PERA engaged public companies and private investment partners in 2022

Changes in the economy impact business and investment decisions. Regardless of how economic focus or labels change over time, we integrate financially relevant information into our investment decisions.

Engagement Topic	Economic Focus	Other Potential Label
Business strategy	Competitive advantages, investment theses, long-term objectives	Governance
Costs, fees, and pricing	Cost inflation, interest rates, fund fee structures, carried interest allocation	Governance
Deal pipelines	New or renewal opportunities, fund launches, debt issuance and repayment	Governance
Energy transition readiness	Changing demand, new regulation, infrastructure, nuclear technology	Environmental
Financial and operational performance	Value creation initiatives, capital allocation, strategic target timelines	Governance
Labor	Key personnel changes, succession planning and staffing, firm culture	Social

What kind of questions do PERA’s investors ask public companies in their engagements?

In our actively managed public equity portfolios, PERA is focused on understanding a company’s fundamental stock value and competitive market advantages. Each company in PERA’s public market portfolio is unique, so no two conversations between PERA’s investment staff and corporate management are the same. As companies respond to public policy, innovate new technologies and products, and work to meet changing customer demands, the types of questions we ask change through time. In 2022 PERA staff asked questions such as:

- » How are you recruiting, retaining, and retraining the labor force to stay competitive?
- » How is pricing trending relative to cost inflation?
- » Are interest rates causing demand destruction in end markets?
- » What do your customers want and how are you meeting those needs?
- » How has the industry been impacted by the “new normal” post-pandemic?

PERA's Approach to ESG

Colorado PERA takes an integrative approach in our fundamental analysis, considering aspects of business and markets that can have a financial impact on our investments over the long term. This may include factors that can be labeled under the ESG convention.

Regardless of how factors we consider can be labeled, we prioritize financial value, rather than personal values, in our investment and proxy voting decisions.

ESG IS...

- » A labeling convention to represent environmental, social, and/or governance factors
- » The most widely used acronym for describing nontraditional aspects of business and profitability
- » Adaptable to meet unique business and investment objectives
- » One way to label factors that may have financial impact on a company and its investors

ESG IS NOT...

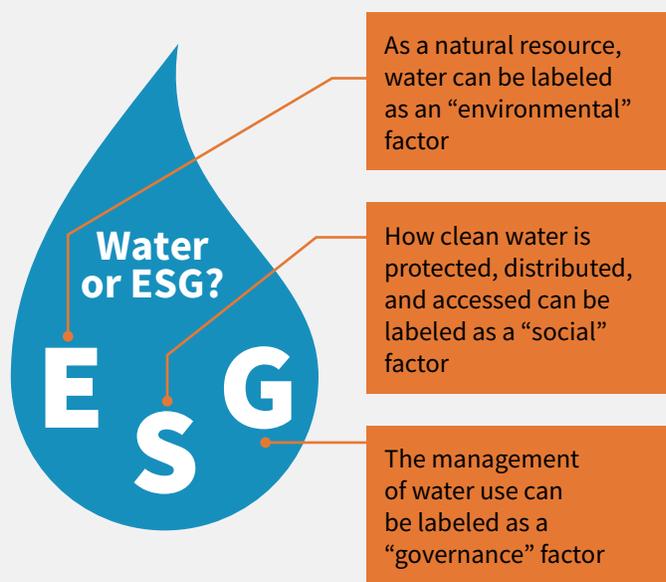
- » A type of business or company
- » A political affiliation or social movement
- » A policy
- » A business or investment strategy or objective
- » The only way to label nontraditional factors that may have financial impact on a company and its investors

When Could Water Be Labeled as a Financially Relevant E, S, or G Factor?

Consider a soft drink company. Water is a critical input to making soft drinks. To remain competitive in the beverage industry, the manufacturer would need to manage this natural resource well (environmental), avoid infringement on community rights and access to clean water (social), and be able to adapt their business strategy and operations as supply, demand, policy, and technology change through time (governance). Whether it's labeled as "H2O," "ESG," or "LMNOP," water and its management may be a financially material factor for businesses and investors to consider.

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.





INTEGRATE



Exposures to Various Themes

The integration of relevant financial factors in our investment decisions can result in exposures to various nonfinancial themes in the portfolio. Such themes are often classified as environmental, social, or governance related. PERA does not invest to meet any ESG objectives, but we recognize that both financial and nonfinancial exposures may be presented by these in the portfolio as a result of our integrative decision-making as economies and markets change.

Following are examples of these types of exposures, where they are material to the business of the underlying investment within the PERA portfolio.

\$2 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.**

Renewable Energy

PERA invests in energy companies that utilize traditional and renewable fuel sources. The COVID-19 pandemic and international conflict have demonstrated that the transition to a lower carbon economy will continue to be complex, necessitating both innovative and reliable fuel sources to meet the world's energy needs.

We have exposure to renewable energy companies through our public and 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 currently invests in public companies that recognize the demand for decreasing carbon emissions, which seek to mitigate their carbon emissions by managing energy consumption and improving the energy efficiency of their operations. Many of these companies have committed to net-zero carbon emissions by 2050, in line with the goals of the Paris Agreement.



\$1 billion

Invested in companies that are aggressively targeting reduced carbon emissions*



\$604 million

Invested in companies that are aggressively seeking to mitigate carbon emissions through cleaner sources of energy such as wind or solar.*

As consumer demands shift and technologies in energy production change, opportunities for profitability evolve and present unique risks to investors. PERA will continue to manage the investment risks and opportunities in our portfolio across the energy sector, including traditional and alternative sources, and construct our portfolios around companies and assets that provide the most attractive expected long-term return to risk profile.

Energy Efficient HVAC (Heating, Ventilation, and Air Conditioning)

Building operations represent more than a quarter of global carbon emissions.⁹ Demand has grown for more efficient HVAC systems due to an increased interest in reducing organizations' carbon footprints. However, enhancing Indoor Air Quality (IAQ) is also top of mind for companies as they work to make their buildings (e.g., offices, apartments, warehouses, etc.) healthier places for people to work and live.¹⁰ This presents challenges in working toward energy efficient buildings as IAQ improvement requires a constant injection of heated or cooled air, depending on the season.

In the PERA Global Equity portfolio, we own equity in companies that provide improved HVAC efficiency. PERA's industrial sector analysts and portfolio managers have identified several opportunities to invest in corporations that are innovating HVAC technologies. These technologies can have a significant impact on a building's energy efficiency. We expect these investments to outperform due to significant demand requirements for healthier and more efficient indoor air. As of December 31, 2022, PERA had \$94 million actively invested in these companies' stocks.



\$125 million

In directly-owned LEED®-certified properties

* Data from MSCI, Inc. for PERA public market portfolios.

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



INTEGRATE



Green Real Estate

In the PERA Real Estate portfolio, we believe energy and water-efficient features can add value to the buildings in our portfolio, as well as to the quality of life for tenants and their communities.

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 U.S. 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 worldwide. The LEED certification program verifies these buildings’ resource and cost efficiency, and encourages higher lease rates through its emphasis on healthy buildings.¹¹ PERA has more than \$1 billion invested in more than 350 buildings that are LEED certified.



\$331 million

Invested in companies with 50.0% or more water usage from alternative sources.*

Water Solutions

The United Nations reports that five of 11 regions worldwide are water-stressed, meaning they withdraw at least 25.0% of their renewable freshwater resources.¹² Such conditions necessitate innovative technologies and services to provide clean and accessible water to communities. This presents new opportunities for companies and their investors.

Through our private fund partnerships, PERA has investment interests in companies that are deploying new technologies to purify water and provide sustainable water management and delivery infrastructure. Such companies

may promote reduced use of single-plastic bottles by providing water refill stations, develop solutions for companies to enhance their water efficiency throughout the supply chain, measure and analyze water quality, reuse water and reduce water waste, detect leaks, and deliver clean water to communities.

As the earth’s climate changes and communities face prolonged droughts or extreme floods, water management is expected to be a key component of a company’s operational efficiency and competitive advantages. As companies innovate to respond to changing demand and regulations, investors will be presented with new risks and opportunities in the market. PERA’s fund managers are expected to continue seeking the most appropriate companies for inclusion in their private market portfolios. PERA’s private market investors will likewise continue seeking the funds and managers that are expected to provide the best risk-adjusted returns to the portfolio we manage for the ultimate benefit of our members.

\$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.**

Colorado Investments

As stewards of Colorado’s largest public pension plan, PERA takes pride in our contributions to Colorado’s economy. We have approximately \$949 million in Colorado investments that meet the rigorous investment criteria for inclusion in the PERA portfolio. Our local investments include:

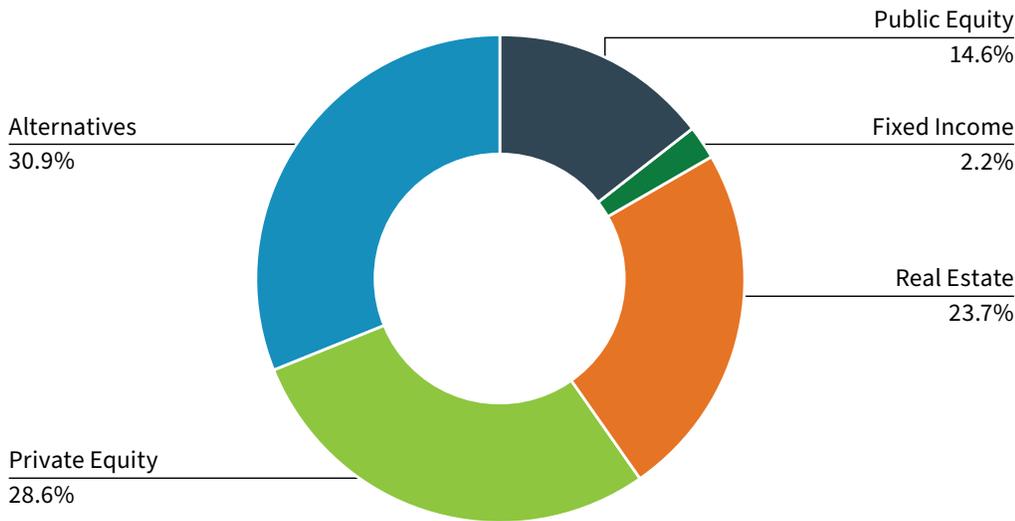
- » Equity in public and private companies headquartered in Colorado.
- » Real estate in both direct ownership and pooled investment capital.

* Data from MSCI, Inc. for PERA public market portfolios.

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



Diversification of Investments in Colorado As of December 31, 2022



Investments in Colorado As of December 31, 2022

Asset Class	Fair Value
Public Equity*	\$138,578,000
Fixed Income	21,319,000
Real Estate	
Portfolio investments**	137,182,000
Future commitments to Colorado-based general partnerships or funds	87,460,000
Total Real Estate	224,642,000
Private Equity	
Portfolio investments**	220,305,000
Future commitments to Colorado-based general partnerships or funds	50,660,000
Total Private Equity	270,965,000
Alternatives	
Portfolio investments**	140,066,000
Future commitments to Colorado-based general partnerships or funds	153,362,000
Total Alternatives	293,428,000
Total Investments in Colorado	\$948,932,000

* Companies headquartered in Colorado

** Portfolio investments domiciled in Colorado

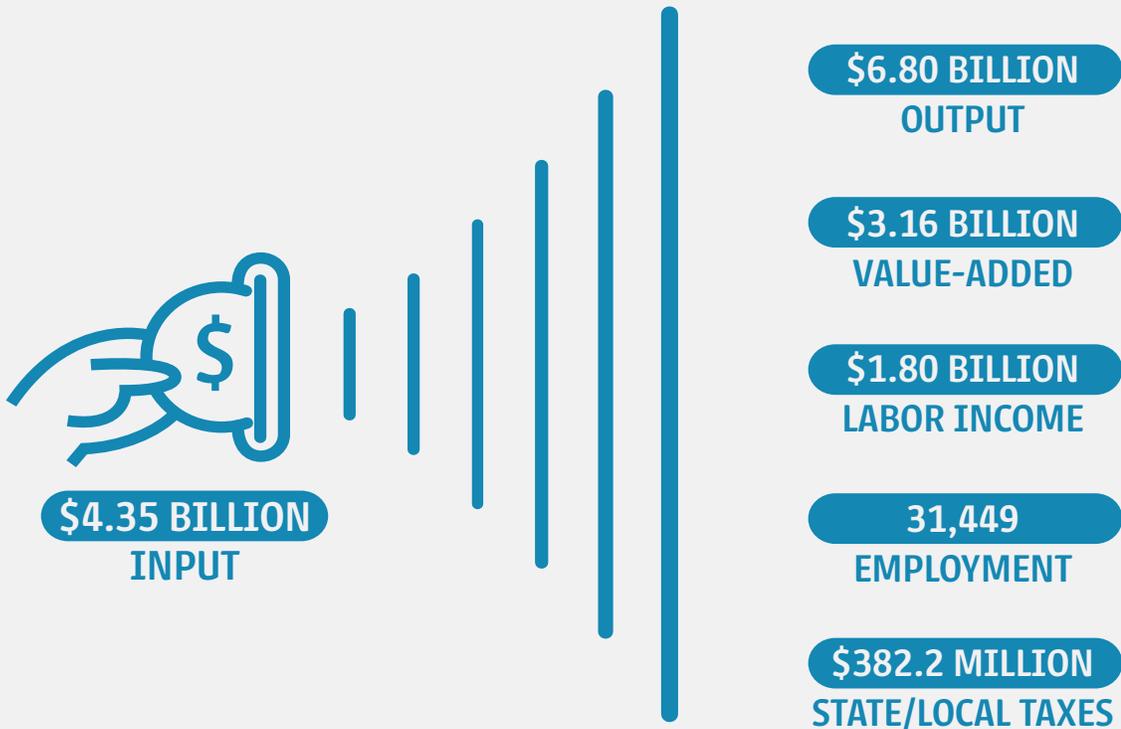
PERA has approximately **\$949 million** in Colorado investments, including:

- » Equity in public and private companies headquartered in Colorado.
- » Real estate in both direct ownership and pooled investment capital.

Positively Impacting Colorado's Economy

In addition to investing in Colorado, PERA benefit payments to retirees and benefit recipients have a positive impact on the state's economy. In 2022, over 112,000 Colorado residents received more than \$4.5 billion in distributions from PERA. These stable and valuable contributions to Coloradans resulted in the following:ⁱ

- » \$6.80 billion in output (all goods and services transactions)
- » \$3.16 billion in value-added (state gross domestic product)
- » \$1.80 billion in labor income (which measures worker impact in wages)
- » 31,449 jobs
- » \$382.2 million in state and local tax revenues



Source: Colorado PERA's Economic and Fiscal Impacts 2022, prepared by Pacey Economics, Inc.

ⁱ Data taken from Colorado PERA's 2022 *Economic and Fiscal Impact Report*, prepared by Pacey Economics, Inc. The 2022 report covers activity through 12/31/2021. The *Economic and Fiscal Impact Report* is produced every two years and the next edition will be in 2024.



INTEGRATE



What is Proxy Voting?

Proxy voting is a formal mechanism through which corporations and their shareholders communicate about a broad range of issues and practices that can affect a company's long-term sustainability and investment returns. It is one of the ways shareholders exercise engaged ownership. Voting matters can be put to ballot by the company's board or its shareholders, and cover important decisions such as approving the members of the board of directors, mergers, acquisitions, and types of disclosures made to shareholders. Shareholders can vote in person at a corporation's annual general meeting (AGM), or cast their votes electronically in advance of the AGM, which is called voting by proxy, or proxy voting.

PERA'S 2022 Proxy Voting Activity¹³

PERA voted more than 68,000 proposals filed by corporate management and shareholder proponents in 2022.

Curious how PERA voted at a particular company meeting? You can search and explore PERA's votes on copera.org, which is updated with our vote following each meeting.

6,163

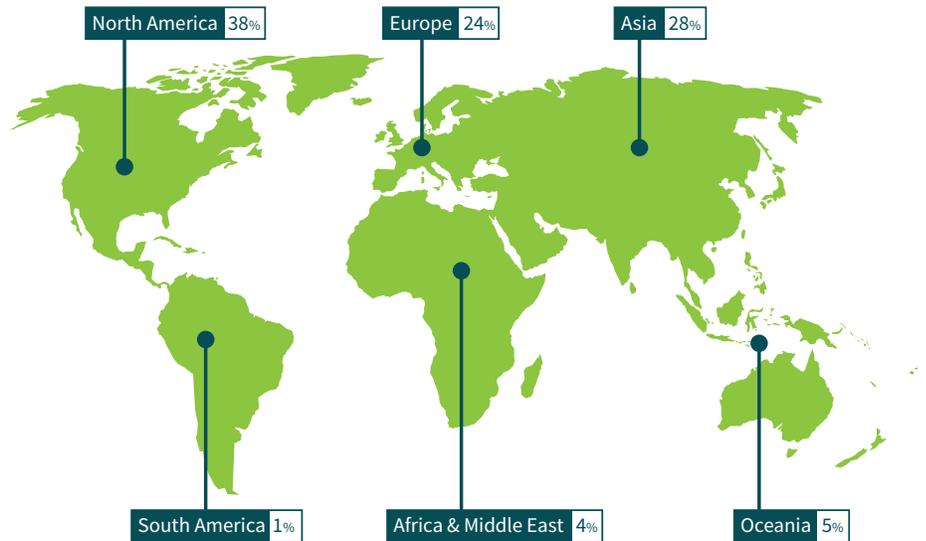
Shareholder Meetings Voted

68,013

Individual Proposals Voted

59

Global Markets Voted



Source: Glass Lewis; Colorado PERA

Integrating Relevant Factors into PERA’s Proxy Voting Decisions

Proxy Voting

The goal of PERA’s proxy voting activities is to encourage the alignment of corporate interests with long-term shareholder interests. These activities are governed by the Board through its *Proxy Voting Policy (Policy)*, which was established in 1979 and is periodically re-evaluated and updated through the Board’s Investment Committee in order to enhance applicability as markets and regulations evolve. The Policy guides staff in formulating vote decisions and acts as a public statement on why and how we make voting decisions, and can guide conversations with companies, peers, and stakeholders around PERA’s stance on a variety of issues that can affect financial value.

The Board updated its *Proxy Voting Policy* in 2021. The Policy enhancements achieve the Board’s strategic plan objective to update the voting guidelines and solidify a position on ESG issues that can affect our financial success over the long term.

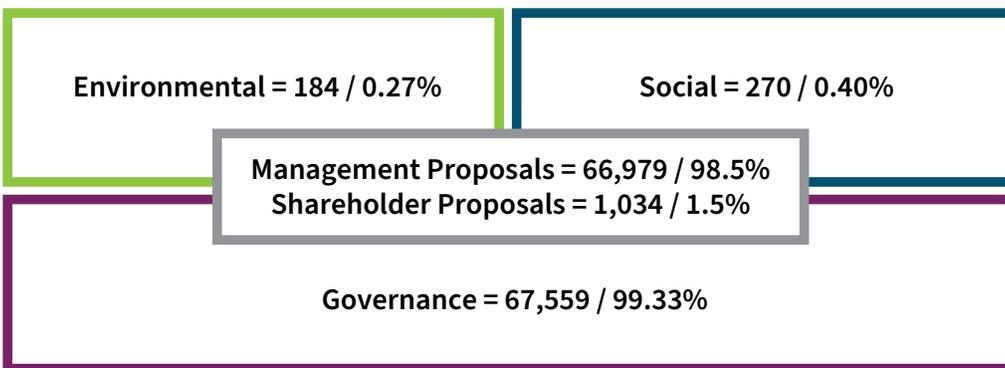
The revisions clarify the intention of the Policy, increase transparency into PERA’s proxy voting activities, and modernize the covered ballot topics. The enhanced Policy includes an expansion on existing language pertaining to disclosure of financially material environmental and social risks and opportunities. The new Philosophy Statement within the Policy states:

“...financial sustainability remains our priority in all investment and proxy voting decisions. To the extent that other sustainability factors—such as those pertaining to the natural environment or society – are financially material to a particular investment within the PERA portfolios, they are integrated into our decision framework. PERA acknowledges that financial materiality is dynamic, subjective, and may vary by investment. By focusing on materiality in our proxy voting decisions, we believe we can direct PERA’s resources toward issues that are most pertinent to the expected risk-adjusted returns of our investments, in line with our fiduciary duty.”¹⁴

When staff vote on ballot proposals within the parameters of the Board’s Policy, we may consider advice from our contracted proxy advisors, as well as our internal investment analysts and portfolio managers, to better understand the issues and how they are expected to affect our investments in the company.

PERA's 2022 Proxy Votes by Category

Over 99.3% of all proposals that come to ballot for shareholder vote are Governance related. Environmental and Social related proposals combined make up less than 0.7% of the proposal record.



WHAT DOES THIS MEAN FOR PERA MEMBERS?
PERA practices responsible share ownership by exercising our right to vote on important matters that can affect a public company’s long-term profitability and the investments we make on behalf of our members.

The primary function of PERA’s *Proxy Voting Policy* is to guide staff in executing votes that encourage long-term shareholder value generation through strong governance of the publicly traded companies in which PERA holds stock on behalf of plan beneficiaries.





INTEGRATE



Management Proposals

PERA supports proposals that uphold best practices in corporate governance, and will hold director nominees accountable by voting against those who have not demonstrated alignment with long-term shareholder interests. One of the most effective ways for long-term shareholders to influence corporate behavior through proxy signals and engagement is by voting against, or withholding votes from, director nominees who do not act in the best interest of shareholders.

PERA's votes on management-sponsored proposals are a signal to companies to act in the best interest of long-term shareholders.

Votes on Management-Sponsored Proposals

88%

Support for Director Nominees
(32,533 total proposals)

91%

Support for Auditor Ratification
(1,825 total proposals)

- The auditor's role is crucial in ensuring the integrity and transparency of the information necessary for protecting shareholder value.

84%

Support for Executive Compensation
(1,726 total proposals)

- Compensation packages should be aligned with long-term performance and business strategy, and allow for an annual say-on-pay vote.

97%

Support for Mergers and Acquisitions
(465 total proposals)

- Each proposal regarding a merger and/or acquisition is unique, with a variety of discrete factors and potential implications to be considered in evaluating each deal brought to shareholder vote.

71%

Support for Say-on-Climate
(41 total proposals)

- PERA will generally support well-targeted proposals for enhanced disclosure of how companies are assessing and managing financially material climate-related risks and opportunities.

Holding Boards Accountable to Shareholder Interests

PERA focuses on governance quality and effectiveness, which are expected to deliver sustainable long-term returns to shareholders.

- PERA holds boards accountable for appropriate oversight of material governance, social, and environmental matters by voting *Against* or *Abstain* on director nominees charged with committee oversight.

PERA voted against 3,880 director nominees in 2022 due to the following:

- PERA is *Against* executive compensation proposal and nominee has served on the compensation committee.
Against Nominee
- PERA is *Against* auditor ratification due to non-audit fees exceeding a quarter of all fees paid to the auditor.
Against Audit Committee Chair
- The board is not sufficiently independent and the nominee has served on the Nominating Committee.
Against Nominee
- The board lacks sufficient competency, diversity, or timely refreshment and the nominee serves as Nominating Committee Chair.
Against Nominee
- The nominee serves on too many boards, potentially weakening effective oversight.
Against Nominee
- The nominee has a poor record of attendance at board meetings.
Against Nominee

PERA advocates for the following core governance principles:

- » *Directors should be elected by a majority shareholder vote.*
- » *Declassified boards are considered a best practice and enhance accountability.*
- » *Proxy access gives the shareholder the ability to nominate a director.*
- » *Independent board chair promotes greater accountability.*

Shareholder Proposals

PERA supports shareholder proposals that are well-targeted, demonstrate financial materiality and expected benefit, and which do not overstep into management decisions that should be left to corporate boards.

Shareholder Proposal Voting



Environmental

	Number of Proposals	Percent Support	
● Climate Lobbying	8	50%	
● Greenhouse Gas Emissions	29	52%	
● Phase Out of Nuclear Power	11	0%	
● Other Environmental Issues	25	0%	
● Climate Change and Sustainable Strategies	70	31%	

Social

● Diversity Reporting	16	44%	
● Human Capital Management	26	73%	
● Report on Company's Compliance with International Human Rights	22	41%	
● Other Social Issues	152	16%	
● Political Spending/Lobbying	52	71%	

Governance

● Board Composition	28	21%	
● Eliminating Supermajority Vote	10	50%	
● Election or Removal of Directors	27	22%	
● Independent Board Chair/Separation of Chair and CEO	43	81%	
● Right to Call a Special Meeting	111	69%	
● Compensation Plan Structure and Other Compensation Issues	58	33%	
● Other Governance Issues	346	32%	



INTEGRATE



PERA's 2022 Proxy Votes by ESG Label

A company's management of environmental, social, and governance matters can be nuanced, complex, and interrelated. This may present overlapping considerations for shareholders when casting their votes.

E ENVIRONMENTAL

Activities or products that may affect business and the natural environment

- Energy efficiency
- Air pollution
- Water scarcity
- Carbon emissions

184 Votes

2	Formation of Environmental Committee of the Board	▲
8	Climate Lobbying	★
29	Report on Greenhouse Gas Emissions	●
46	Climate Change and Sustainability Strategies	▲
47	"Say-on-Climate"	▲
52	Other Environmental	▲

S SOCIAL

Activities or products that may affect business and society

- Equality
- Political influence
- Community
- Health and safety

270 Votes

16	Diversity Reporting	●
26	Human Capital Management	▲
52	Political Spending/Lobbying	★
176	Other Social	▲

G GOVERNANCE

Activities that may affect the success of the firm

- Board independence
- Stakeholder alignment
- Executive compensation
- Management oversight

67,559 Votes

857	Meeting Administration	▲
3,077	Changes to Company Statutes	▲
4,514	Capital Management (Debt & Equity)	▲
8,495	Compensation	●
8,940	Other Governance	▲
9,143	Audit/Financial	▲
32,533	Director Elections	★



Shareholders can vote against director nominees to hold them accountable for responding to shareholder interests:

- » Nominating committee members should be attentive to board refreshment and declassification.
- » Audit committee members should be attentive to audit integrity.
- » Compensation committee members should be attentive to long-term value alignment.



Proposals may seek to link executive compensation with company performance in areas such as greenhouse gas emissions reductions or diversity targets.



Proposals may seek transparency into whether a company's lobbying activities are aligned with stated objectives such as employee rights or climate change strategies.

Case Studies

The following case studies provide examples of proposals voted by staff through case-by-case analysis, in line with the PERA Board's Proxy Voting Policy.



EXAMPLE FROM A CONSUMER STAPLES COMPANY

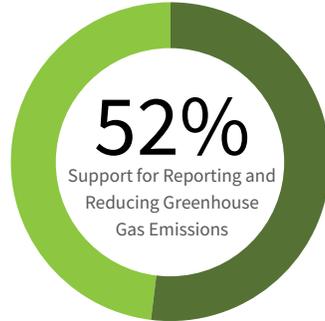
ENVIRONMENTAL PROPOSALS

EXAMPLES OF PROPOSALS PERA VOTED IN 2022

EXAMPLE OF ENVIRONMENTAL-RELATED PROPOSAL PERA VOTED—FOR

Shareholders request that the company report on its efforts to reduce the use of hydrofluorocarbon greenhouse gases in its refrigerants.

PERA will generally support disclosure of financially material climate-related risks such as those prescribed by SASB and TCFD. The company appears to be lagging peers regarding the use of hydrofluorocarbons in refrigeration. According to SASB, greenhouse gas emissions are a financially material matter to companies in the food retail industry. Enhanced disclosure of hydrofluorocarbon gas emissions could provide investors with a better understanding of the financial risks associated with the company's refrigerant emissions.



REPORTING AND REDUCING GREENHOUSE GAS (GHG) EMISSIONS

PERA will generally support well-targeted proposals seeking enhanced disclosure of material risks and opportunities related to GHG emissions.

EXAMPLE FROM A CONSUMER DISCRETIONARY COMPANY

ENVIRONMENTAL PROPOSALS

EXAMPLES OF PROPOSALS PERA VOTED IN 2022

EXAMPLE OF ENVIRONMENTAL-RELATED PROPOSAL PERA VOTED—AGAINST

Shareholders request that the company issue a report assessing its efforts to eliminate deforestation and the degradation of intact forests in its supply chains.

PERA will generally support financially material disclosures pertaining to environmental and social issues, such as those prescribed by SASB. The company maintains and discloses policies for wood purchasing, including its initiatives to source wood more responsibly and avoid suppliers with questionable practices. The company also expects its suppliers to comply with applicable laws and regulations. The company reports under the SASB Standards, including its revenues from products that are third-party certified for sustainability or ESG qualifications. In 2021, those revenues were ~\$20bn. The proponent has not demonstrated that the requested report would enhance shareholders' understanding of the company's management of supply chain risks and opportunities in the forestry products industry.



ENVIRONMENTAL-RELATED DISCLOSURES

PERA will generally support well-targeted proposals for enhanced disclosure of how companies are assessing and managing financially material climate-related risks and opportunities.



INTEGRATE



EXAMPLE FROM A COMMUNICATIONS COMPANY

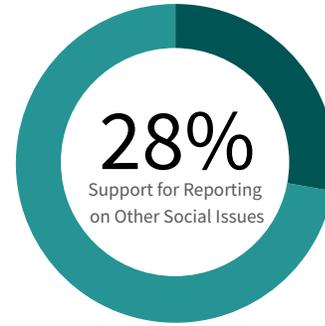
SOCIAL PROPOSALS

EXAMPLES OF PROPOSALS PERA VOTED IN 2022

EXAMPLE OF SOCIAL-RELATED PROPOSAL PERA VOTED—**FOR**

Shareholders request that the company publish an annual report on its management of data collection, security, and privacy.

PERA generally supports disclosure on the management of financially material risks and opportunities, such as those prescribed by SASB. According to SASB, data privacy is a material risk for companies in this industry. Given the company's numerous and ongoing legal challenges related to data privacy, we believe shareholders would benefit from the increased disclosure requested by this proposal.



REPORTING ON OTHER SOCIAL ISSUES

PERA will generally support well-targeted proposals that ask a company to disclose standardized metrics on ESG matters that may be financially material.

EXAMPLE FROM A HEALTH CARE COMPANY

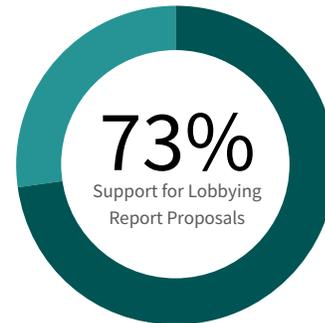
SOCIAL PROPOSALS

EXAMPLES OF PROPOSALS PERA VOTED IN 2022

EXAMPLE OF SOCIAL-RELATED PROPOSAL PERA VOTED—**AGAINST**

Shareholders request that the company contract a third-party review of, and report on, its political spending and alignment with its public policy statements.

PERA is supportive of appropriate oversight and disclosure of political spending and lobbying expenditures. In this case, we find the company has adequate disclosures regarding its political spending criteria, oversight, and contributions. We do not believe the proponent has sufficiently demonstrated the anticipated benefits of this proposal over the costs to produce the additional reporting.



LOBBYING REPORT PROPOSALS

PERA will vote for reasonably-structured and properly-targeted proposals that require board approval and disclosure of all political expenditures, such as political contributions, trade association spending policies and activities as well as lobbying activities, policies, or procedures.



EXAMPLE FROM AN INDUSTRIALS COMPANY

GOVERNANCE PROPOSALS

EXAMPLES OF PROPOSALS PERA VOTED IN 2022

EXAMPLE OF GOVERNANCE-RELATED PROPOSAL PERA VOTED—FOR

The dissident shareholder seeks replacement of one board-appointed director nominee through a contested election.

PERA supports strong corporate governance practices that are accretive to shareholder return generation. The dissident demonstrates that change is needed by highlighting concerns in the key areas of total shareholder return, board independence, executive pay versus performance, and responsiveness to shareholders.



MANAGEMENT NOMINEES IN CONTESTED DIRECTOR ELECTIONS

PERA will vote proposals dealing with proxy contests on a case-by-case basis. Proxy contests are the result of an unsatisfied or dissident shareholder, or group of shareholders, who believe the current board and management have not done a viable job of protecting and increasing shareholder value and profits.

EXAMPLE FROM A FINANCIAL SERVICES COMPANY

GOVERNANCE PROPOSALS

EXAMPLES OF PROPOSALS PERA VOTED IN 2022

EXAMPLE OF GOVERNANCE-RELATED PROPOSAL PERA VOTED—AGAINST

Shareholders request that the board be composed of no more than ten directors, with five Audit and Supervisory Committee members, and at least one male and one female director.

PERA's voting guidelines are generally supportive of management's role in identifying the most qualified candidates to nominate for board appointment. PERA is supportive of board diversity, but believes the overarching goal of the highest quality leadership should not be impeded through diversity quotas. The proposal would institute a diversity quota for the board and unnecessarily restrict the board and committee size. Furthermore, the current board size is within generally accepted parameters.



BOARD DIVERSITY TARGET PROPOSALS

PERA believes that boards should be diverse, including such considerations as background, experience, age, race, gender, ethnicity, and culture. Directors should be elected based on the best quality leadership available, and this overarching goal should not be impeded through diversity quota measures.

PERA Chooses Engagement Over Divestment

Proxy voting is a powerful tool for investors like PERA, which choose engagement over divestment in exercising responsible asset management to meet their investment objectives.

ENGAGEMENT

As the Board's *Statement on Divestment* states, PERA serves the singular purpose of ensuring the retirement security of Colorado's current and former public servants. It would be virtually impossible to invest in a way that suits each member's individual social or political beliefs.

In order to provide retirement benefits, PERA must pursue the best expected risk-adjusted returns in the market. One of the most fundamental ways to maximize returns while reducing risk is to diversify the portfolio across geographical regions, industries, and companies. One of the reasons the Board opposes divestment is that it can be a slippery slope that reduces diversification.

PERA does not make investment decisions based on any one singular factor. Securities prices are dependent upon many factors, including economic, political, environmental, industry, and company-specific risks and opportunities. Companies in our active funds are expected to be going concerns, meaning they are expected to adapt their operations to remain competitive in the market as economic factors change. For example, energy companies may have lines of business in oil and gas, as well as in innovative renewable energy sources to keep pace with changing energy needs.

The Board's *Statement on Divestment* also describes that PERA opposes divestment because it can be costly to identify and execute divestment transactions and find other appropriate investment opportunities with similar risk-return profiles. The target company would not incur those costs to divest—PERA would.

Instead of divestment, PERA chooses engagement. We engage directly in conversation with the companies in which we actively invest to understand their business opportunities and risks, and encourage profitable practices. We also exercise our legal shareholder rights to vote on important matters that can shape the company's practices and profitability.

Meeting with the company and voting on corporate ballot items enables us to engage the company's management, signal best practices in the market, and influence corporate behavior. These changes don't happen overnight. They happen over months, years, and even decades. As long-term shareholders, PERA retains our seat at the table to advocate for practices that add financial value for the ultimate benefit of our members.

DIVESTMENT

Some investors may decide to sell their holdings in companies or industries because they believe the company's business activities are misaligned with their own social or political beliefs.

Tobacco, fossil fuels, sugar, renewable energy, and guns are examples of the types of businesses that divestors may not like. They may choose to divest from certain companies based on thresholds like the percentage of revenue derived from such activities, or from any company doing any business that ties back to these activities. For example, they may extend divestment to include grocery stores that sell soft drinks or propane.

A divestor may also sell their stock because they think a company will go out of business because it is operating in an industry the divestor thinks will not survive. For example, a divestor may sell their stock in an energy company because they worry the stock will lose value as interest in renewable energy sources grows.

When an investor sells a stock, there is another investor on the other side of the transaction buying that stock. The company is not part of the transaction, and thus there is no financial impact on the company (i.e., the cash flows of buying and selling a stock do not involve the company).

When the divestor no longer owns shares, they lose the right to vote on important company matters that come to shareholders for approval. Such matters may include those that could address the divestor's concerns, such as requiring the company to report on how it is strategizing to remain competitive in the transition to a lower carbon economy.

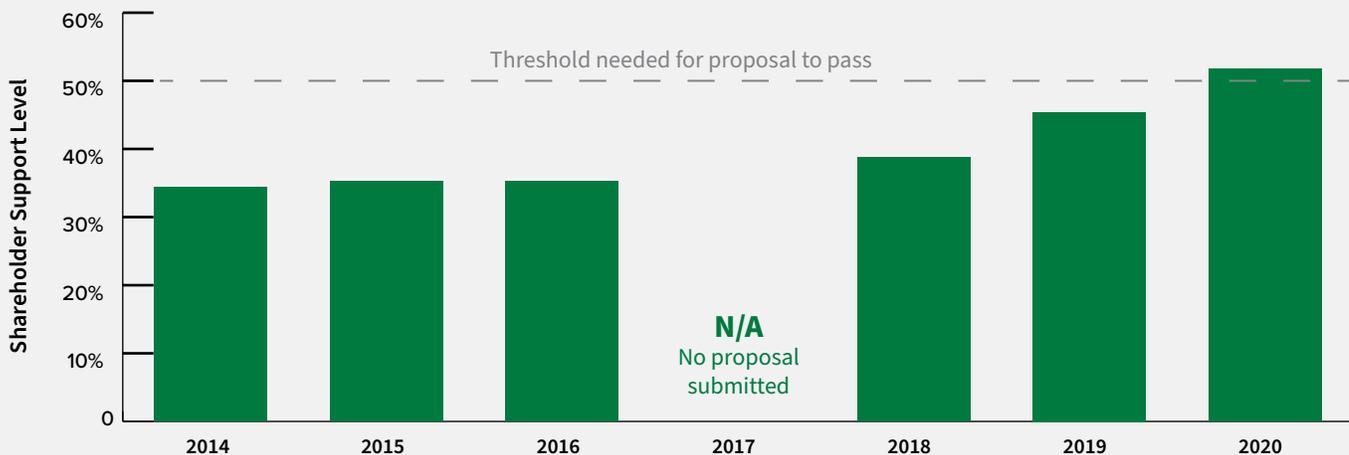
While stock changes hands in the market, the company continues to be attentive to its current shareholders. Because the divestor no longer holds shares, they don't have a seat at the table, so to speak. Their seat may even have been taken by an investor who likes all the things the divestor didn't, and who encourages the company to continue doing them.

Example of PERA's Long-Term Engagement Through Proxy Voting

Companies may make political contributions or other expenditures related to lobbying activities as individual entities or through trade associations operating on their behalf. Such spending is increasingly tied to various environmental, social, or governance related issues which may or may not be aligned with the company's stated objectives or shareholder interests. PERA will vote for reasonably structured and properly targeted proposals that require board approval and disclosure of all political expenditures, such as political contributions, trade association spending policies and activities as well as lobbying activities, policies, or procedures.

In the case below, a proposal came to ballot multiple times asking a health care company to provide an annually updated report concerning its direct and indirect lobbying activities and expenditures. Each time, PERA voted in support of the enhanced disclosure. After six years, the proposal earned majority shareholder support. As a result, the company now provides the requested information on an annual basis. By voting on corporate matters that can impact profitability and returns over the long run, PERA will continue to uphold its fiduciary duty by engaging company management, signaling best practices, and influencing corporate behavior to promote financially sustainable practices for the ultimate benefit of PERA members and their beneficiaries.

PERA Remains Engaged Through Proxy Voting



Source: Institutional Shareholder Services, Inc.; Colorado PERA



ADVOCATE

We promote fair and transparent markets by contributing our expertise to regulators and financial industry advisory boards in advocacy of best practices that serve long-term investor interests.

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.

Advocating for Alignment

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 advisory board members of our investment partnerships, and seek recovery of assets through securities litigation when necessary.

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.



ADVOCATE



See the "Advocate" video for a snapshot of how PERA advocates for stronger markets on behalf of our members at copera.org/stewardship.

i WHAT DOES THIS MEAN FOR PERA MEMBERS?

By encouraging stronger market integrity, we help safeguard the integrity of our members' retirement portfolios.

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 U.S. economy between \$180 and \$360 billion dollars a year.¹⁵ 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 Total 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 Total Fund, and as such, it is within our fiduciary duty to pursue recovery in this manner.

Pursuant to the Board's [Securities Litigation Policy](#), we utilize the expertise of internal and external counsel, as well as our custodian bank, to identify claims and evaluate our participation eligibility. Many cases brought in the U.S., 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 a 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, we examine 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.



WHAT DOES THIS MEAN FOR PERA MEMBERS?

By holding our portfolio management partners and public companies accountable, we can encourage practices that lead to reliable profitability on behalf of our members.

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.*



ADVOCATE



Advocating for Disclosure

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 and audit standards boards to develop and promote transparent and accurate disclosures regarding companies' operations and financial positions.



WHAT DOES THIS MEAN FOR PERA MEMBERS?

With more transparency in the market we can make better investment decisions on behalf of our members.

DID YOU KNOW?

In 2022, PERA engaged with the U.S. Securities and Exchange Commission (SEC) to advocate for:

- » Climate-related disclosure regulation that gives investors financially material information about physical and transition risks and opportunities affecting portfolio companies' long-term business prospects.
 - The SEC is expected to release final regulations on climate-related disclosures in 2023.
- » Amendments to corporate insider trading practices and disclosures to dissuade company management from misusing regulated trading plans for personal benefit over investor interests.
 - The SEC's amendments were finalized in December 2022.¹⁶
- » Amendments to Regulation S-K disclosure rules to require public companies that use non-GAAP financial metrics in executive compensation plans to explain their use of such metrics and to reconcile them to GAAP accounting standards.
 - PERA continues to advocate for these amendments in 2023.
- » Final regulation to require listed companies to recover erroneously granted remuneration from executives when material accounting misstatements are identified and corrected, as required by the Dodd-Frank Act.
 - The SEC finalized these rules in October 2022.¹⁷

NEW
IN
2023



Advocating for Fair Markets

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.

Advocacy Groups in Which PERA Investments Staff Participated in 2022

Organization	Group	Focus
Chartered Alternative Investment Analyst Association (CAIA)	Allocator Advisory Council	Alternative Investment Practices
Chartered Financial Analyst Institute (CFA)	Diversity and Inclusion Steering Committee	Inclusive Human Capital
Chartered Financial Analyst Society of Colorado	Board of Directors, Advocacy Committee	Investor Education
Colorado Office of Economic Development and International Trade	Venture Capital Authority Board	Access to Venture Capital
Council of Institutional Investors (CII)	Board of Directors, Policies Committee	Advocacy Policy
Financial Accounting Standards Board (FASB)	Small Business Advisory Committee	Accounting Standards
Harvard Institutional Investor Forum	Advisory Council	Institutional Investor Perspectives
Healthy Markets Association	Board of Directors	Market Structure Reform
Institutional Limited Partners Association (ILPA)	Membership	Private Market Partnership Practices
International Corporate Governance Network (ICGN)	Board of Directors, Financial Capital Committee	International Corporate Governance Policies
National Council of Real Estate Fiduciaries (NCREF)	Membership	Real Estate Performance and Standards Metrics
Public Company Accounting Oversight Board (PCAOB)	Investor Advisory Group	Audit Integrity and Regulation
Pension Real Estate Association (PREA)	Membership	Institutional Investor Education
Stanford Institutional Investors' Forum	Membership	Institutional Investor Perspectives
International Financial Reporting Standards Foundation (IFRS)	Technical Readiness Working Group	Sustainability Disclosure Standards
University of Colorado Burrigge Center for Finance	Advisory Committee	Education in Finance



EVALUATE



EVALUATE

Evaluating our portfolios through different lenses helps us see underlying exposures from diverse perspectives.

PERA Board and staff monitor the investment portfolio on an ongoing basis. Returns, performance attribution, and risk are among the common metrics investors use to track their portfolios and compare the performance of their investments against benchmarks. In addition to these traditional financial metrics for portfolio evaluation, PERA can evaluate nonfinancial indicators through various lenses to get a better sense of exposures underlying our portfolios. These can include metrics pertaining to environmental, social, or governance themes. We do not manage PERA's investments to these factors; rather, they are an additional lens through which we can view our portfolios. Such insights are often of interest to PERA's members and partners, and we present them here in response to those interests.

DID YOU KNOW?

Financial performance is PERA's investment priority. Our investment decisions are driven solely by our expectations for long-term risk-adjusted returns. As of December 31, 2022, our long-term DB portfolio performance achieved:¹⁸

- » 6.5% annualized 5-year net return
- » 8.0% annualized 10-year net return
- » 7.4% annualized net return since inception
- » \$76 billion generated by PERA's investments over the past 30 years

Benchmarking ESG Exposures

PERA has engaged with MSCI, Inc. to access index constituent data, risk management tools, sector data down to the sub-industry level, and independent ESG ratings and research that inform our portfolio evaluations. MSCI conducts detailed research on over 10,000 companies and scores them based on their ESG-related risks, and their effectiveness in managing those risks. MSCI's ESG scores are dynamic and fluctuate through time based on company practices evaluated under their 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.¹⁹



EVALUATE



See the "Evaluate" video for a snapshot of how PERA evaluates our investments on an ongoing basis copera.org/stewardship.

WHAT DOES THIS MEAN FOR PERA MEMBERS?

With growing interest in socially and environmentally friendly investing themes, members may like to see how PERA's investments perform under nonfinancial indicators.

ESG performance reports do not inform our portfolio management decisions; rather, they give us a different perspective on existing investments.

The information provided by MSCI is supplementary to our fundamental analysis of material factors pertaining to a company's financial sustainability throughout the holding period. We do not manage portfolios to target any specific ESG metric or outcome. As PERA actively manages assets with consideration to financially material factors, the composition of our portfolios may change over time, resulting in ESG score fluctuations for PERA portfolios and their benchmarks. Scoring fluctuations may also result from changes to MSCI's methodologies and practices of subject companies through time.

Other ESG Exposures

In addition to tools for portfolio benchmarking on a range of ESG scores, PERA uses MSCI tools that allow us to evaluate various ESG exposures within our public company investments on an absolute basis.

Through these assessments, we have identified the following exposures to ESG related themes within the PERA portfolio. All results represented below are aggregated for public company holdings within the PERA DB portfolio and are based on metrics provided by MSCI. MSCI develops these metrics through data they collect from corporate disclosures (e.g., regulatory disclosures, sustainability reports, proxy reports, AGM results, etc.), government databases, nongovernment organizations, and other stakeholder sources. The scores and metrics represented in this report are expected to change through time as PERA's investments change, MSCI's metrics evolve, and as companies' practices shift.

As with the benchmarking assessments, we do not use these results to drive our investment decisions because we do not have ESG targets or objectives in our portfolio management. We use these tools to provide additional perspectives on the underlying exposures in order to inform our reporting to stakeholders who may have interest in these themes, which exist within the portfolio as a byproduct of our financially focused investments.



\$8 billion

Invested in companies targeting net zero emissions



\$2 billion

Invested in companies with programs to reduce water consumption across all operations



\$13 billion

Invested in companies that have programs to facilitate workforce diversity



\$1 billion

Invested in companies that have adopted formal human rights policies aligned with the UN Declaration of Human Rights or equivalent



\$194 million

Invested in companies that score highly for having strong programs and policies on conflict and human rights, community impact, and the distribution of benefits to local communities*



\$765 million

Invested in financial companies that score highly for proactively addressing environmental risks in their financing decisions*



\$198 million

Invested in the top quartile of insurers that integrated climate change effects in their actuarial models while developing products to help customers manage climate change related risks**

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

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

\$787 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.



EVALUATE

INDUSTRY PERSPECTIVES ON SUSTAINABLE INVESTING

PERA is a sophisticated investor operating in dynamic market contexts. We are attentive to matters at the intersection of sustainability and capitalism and committed to pursuing opportunities that make good economic sense, in line with our mission and fiduciary duty.

In this section we 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

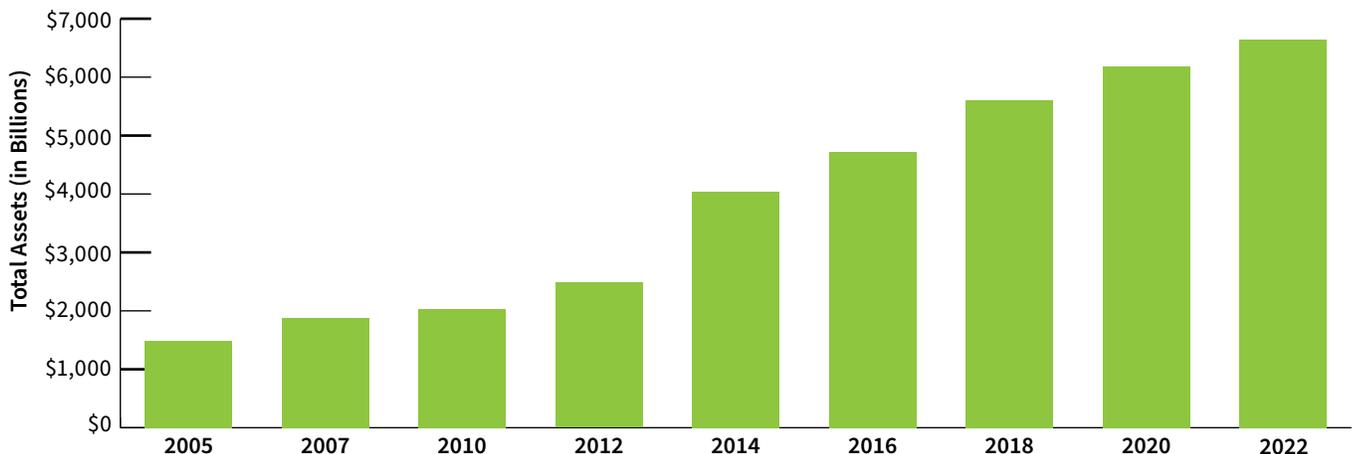
As markets evolve across changing political, social, environmental, and economic landscapes, sustainable business practices are increasingly viewed as integral to long-term success. Investors, consumers, regulatory authorities, and businesses are becoming more interested in sustainability factors and 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 to remain competitive.

With increased awareness on sustainable technologies and practices, some 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.²⁰ The economic impact of interest in sustainable investing has been significant.

ESG Incorporation Reported by Institutional Investors 2005–2022



Source: U.S. SIF: The Forum for Sustainable and Responsible Management
Note: Assets under management in 2022 represent US SIF’s new modified methodology.

The Forum for Sustainable and Responsible Investment reported a 7.5% increase in assets under management in sustainability aligned investment strategies among institutional investors from 2020 to 2022.²¹ As of 2022, institutional investors, like PERA, that incorporate ESG considerations to various degrees in their portfolio management represented approximately \$7 trillion in assets under management.²² These data demonstrate that sustainable investing is not a passing fad, but rather an integral component of global markets.

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 through changing markets.

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, stewardship efforts 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.²³ 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. Long-term oriented efforts can also decrease operational costs and consumer price sensitivities. Combined, these factors may significantly boost profits. When these efforts impact a firm's financial success, they become financially meaningful to stakeholders.

.....

“We encourage our private fund partners to develop and utilize holistic frameworks that seek to integrate financially material sustainability factors into the due diligence process and portfolio construction.”

—GARY RATLIFF
PERA Director of Alternatives

.....

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 exposures within their unique portfolios, applications for understanding and effectively integrating sustainable investing become increasingly diverse.

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 (divestment). 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 (impact investing).

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 and the targeted companies.

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 670,000 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.

DID YOU KNOW?

PERA invests based on financial value, not personal or political values. This integrative approach supports our mission to provide retirement income to over 670,000 members, retirees, and their beneficiaries.

✓ VALUE-BASED

- » Integration Approach
- » Prioritizes Financial Outcomes

✗ VALUES-BASED

- » Divestment or Impact Approach
- » Prioritizes Political, Social, or Environmental Outcomes

PERA invests on behalf of more than 670,000 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.

NEW
IN
2023

PERA's Divestment Policy

The PERA Board of Trustees explains the issue of divestment in their [Statement on Divestment](#), 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.”²⁴

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.

DID YOU KNOW?

PERA offers our members different options to direct their own retirement savings in alignment with their personal, environmental, and social values through the 401(k), 457 Deferred Compensation, and Defined Contribution Plans (CAPs). Members who elect to participate in these plans can invest in funds managed by investment experts who have identified companies as ESG leaders, or invest in individual securities of their own choosing based on their individual investment philosophies and objectives.

PERAdvantage Socially Responsible Investment Fund

The PERAdvantage SRI Fund seeks to invest in a portfolio of developed and emerging market stocks screened on ESG factors and fixed income securities across the investment grade spectrum that demonstrate ESG leadership.

Through PERA's cost stewardship, we are proud to offer the PERAdvantage SRI Fund to participants at an annual cost of 0.22%²⁵ of assets invested. We believe the SRI Fund offers interested members the opportunity to invest in environmental and social responsibility-focused companies while pursuing retirement security.

Self-Directed Brokerage Account

Members who would prefer to make their own portfolio investment decisions can do so through the Self-Directed Brokerage Account (SDBA). This option allows participating members to invest their personal retirement contributions into thousands of publicly traded securities (e.g., stocks, bonds, and exchange traded funds) and mutual funds of their choosing through an individual brokerage account. Each participant assumes responsibility for their selection of investments and may include those which align with their own personal values.

ONGOING STEWARDSHIP FOR A FINANCIALLY SUSTAINABLE FUTURE

Under fiduciary duty owed to our members, PERA remains committed to sensible investment practices that advance our members' financial security in retirement.

PERA believes the path of stewardship is actively created, rather than achieved. As PERA pursues financial sustainability of the pension fund over the long-term, we will continue to assess investment risks and opportunities across three primary market drivers: supply and demand shifts, technological innovation, and regulatory and legislative policy changes. The dynamics among and between these impetuses will continue to evolve over time, presenting new investment risks and opportunities to consider.

As social and environmental changes affect consumer preferences, companies will need to respond with competitive offerings while maintaining financial integrity and profitability. Such products and services will necessitate innovation to meet the demands of a changing world. Evolving technologies will shape the way market participants develop competitive businesses, and in turn these practices inform new technologies. These may simultaneously raise awareness of external impacts of business on the environment, society, and the economy. With that awareness, regulation and legislation may change through time, creating new opportunities and risks for companies and their investors.

Throughout the evolution of these dynamics, we remain committed to serving as good stewards of plan assets by protecting members' interests through cost-conscious investing, integrating financially relevant factors in our decisions, advocating for competitive markets, and evaluating portfolio characteristics on an ongoing basis. These guiding practices of PERA's investment stewardship are firmly rooted in our fiduciary duty to maximize risk-adjusted returns to the portfolio, which will ultimately fulfill PERA's mission to provide retirement security to our members while ensuring the financial sustainability of the fund.



“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



APPENDIX: DISCLOSURES INSPIRED BY GLOBALLY ACCEPTED REPORTING SCHEMES

The PERA Board of Trustees' (Board) *Proxy Voting Policy* includes reference to two reporting schemes that serve as examples of the types of financially material information pertaining to ESG factors that PERA would vote in favor of companies using in their disclosures to investors. These schemes are the SASB Standards and the TCFD Recommendations.

Below are disclosures about nontraditional factors pertaining to the management of PERA's portfolio, which were adapted from prescriptions of the SASB Standards and the TCFD recommendations. Although PERA is not required to report these data and these disclosures are not intended to be conformant to the criteria of these schemes, we believe they provide PERA's stakeholders with additional information about how PERA manages the portfolio. We present this information in an easy to read question and answer format and provide notes referencing the corresponding SASB Standard or TCFD recommendation that inspired the disclosures.

Disclosures inspired by SASB Standardsⁱⁱ (PERA data as of December 31, 2022)

What is the value of assets under management in the DB Plan that employ the integration of ESG issues, sustainability-themed investing, and screening? How does PERA integrate such considerations in its analysis?

As of December 31, 2022, the DB Plan held approximately \$56 billion in assets. Approximately 59.0%, or \$33 billion of those assets were managed internally by PERA staff. The remainder of the portfolio was managed by external fund managers retained by PERA. All assets are managed under the Board's *Statement of Investment Policy*.

PERA does not have any ESG-themed investment mandates, nor do we screen our investments based on specific ESG criteria when deciding whether or not to include them in the portfolio. However, PERA staff will integrate related factors into investment decisions, where financially material. Financially material ESG integration is more appropriate for meeting PERA's investment objectives than screening for criteria with the aim of impacting the environment or society. It is also better suited to our investment objectives than screening for divestment. PERA is opposed to divestment, but will implement any divestment mandates required by the Colorado General Assembly. Those legislative mandates may be based on certain ESG criteria. In order to comply with such mandates, PERA may screen the portfolio for parameters determined by enacted legislation in order to identify and exclude the appropriate securities from the portfolio. For more information on the Board's stance on divestment, please see the *Statement on Divestment*.

PERA's Global Equity portfolio is comprised of equity holdings in publicly traded companies and represents approximately \$30 billion of the Total Fund. PERA staff internally manage approximately 75.0% of these assets. Of the internally managed assets, approximately 79.5% are held in active portfolios. These portfolios are constructed using fundamental analysis to select securities for inclusion. In the internally managed active component of the Global Equity portfolio, securities are thoroughly analyzed to estimate their intrinsic value. As part of our analysis, PERA investment staff evaluate financially material factors, which may include those pertaining to ESG themes, to inform our investment theses. We do not make investment decisions based on only one factor, but consider the full mosaic of material information available at the time of our decision.

In addition to traditional financial data and research, we obtain ESG research, analysis, and ratings for public companies through contracted services provided by an independent third party, MSCI, Inc. We also contract related research, data, and analysis provided by proxy advisors, Glass Lewis and ISS. Our proxy advisory services include access to ESG data and analytics from third parties contracted by the proxy advisor. These data help inform our ESG integration where financially material, and resulting analyses are incorporated in stock recommendations made by our public equity investment staff. These data may also be incorporated in our investment and proxy voting decisions for stocks held in the Total Fund beyond the recommendation analysis, where they are expected to have an impact on a company's financials and stock performance over the long term.

PERA's Fixed Income portfolio is managed internally and represents approximately \$11 billion of the Total Fund. Bonds are selected for inclusion in the portfolio based on intrinsic and relative valuation models. We have approximately \$3 billion invested in corporate bonds. The expected risk-return characteristics of bonds are different than stocks and require different factor analysis for appropriate valuation. PERA staff utilizes research and ratings from third party providers such as Moody's S&P Global, and other third-party providers (i.e., the sell side) to analyze the credit-worthiness of companies in the corporate bond portfolio. These providers include data and analysis on environmental, social, and governance matters that factor into their credit ratings and recommendations. PERA staff may take these into account when selecting bonds for the portfolio,

where they are believed to be financially material. Additionally, we have access to ESG ratings and data through Bloomberg as well as BlackRock's Aladdin risk module, which we use to evaluate and manage the portfolio.

In addition to corporate bonds, the PERA Fixed Income portfolio is invested in asset-backed securities, mortgage-backed securities, commercial mortgage-backed securities, and government-issued securities. In aggregate these represent approximately \$8 billion of the Total Fund. Security selection in these sub-asset classes is based on relative value models, which may factor in a wide range of traditional bond characteristics. PERA staff considers a variety of macroeconomic factors that can impact the value of fixed income investments, including those that may be presented by financially material ESG considerations. These may include the physical environmental risks associated with securities backed by assets exposed to severe or catastrophic weather events, or economic impacts from social disruptions such as the COVID-19 pandemic and its effects on government-issued or asset-linked securities. In mortgage-backed assets, PERA staff may also consider regulatory developments that aim to hold government-sponsored enterprises that issue mortgage loans accountable to assessing risks associated with climate change and natural disasters, such as those in place by the Federal Housing Finance Agency (FHFA).

PERA's Real Estate portfolio represents approximately \$7 billion of the Total Fund and is invested in properties owned directly by PERA, as well as indirectly through externally managed private real estate funds. PERA has \$3 billion invested in directly owned real estate. The portfolio includes commercial office, industrial, retail, and multi-family residential buildings. As PERA staff pursue the best income-generating properties for inclusion in the direct-owned portfolio, we consider financially material information in our analysis. This may include environmental or social related risks and opportunities. Financially material environmental-related considerations may include energy and water efficient building features, or consideration of physical asset risk due to geographic location and exposure to extreme weather events. Social related considerations may include tenant affordability and amenity preferences that can materially impact the value of our investments over time. Although PERA staff do not typically make decisions about which properties to include in externally managed funds, we may engage through due diligence to understand how those funds' managers are integrating material ESG factors in their decisions and how they uphold their stated ESG policies at the fund governance level.

PERA's Private Equity portfolio represents approximately \$5 billion of the Total Fund and is invested in externally managed funds with underlying portfolios constructed by those managers. PERA does not select which private companies are included in the underlying portfolios, and therefore is generally removed from the company-level analysis fund managers perform. As a result, we do not incorporate ESG factors into investee company selection. However, PERA staff may inquire about the fund manager's ESG policies and practices as part of our due diligence in selecting the funds and managers that we believe can add value to the PERA portfolio. The focus of our due diligence is primarily on fund governance and how managers are using investment capital to effectively pursue opportunities and manage risks in private markets.

PERA's Alternatives portfolio represents approximately \$4 billion of the Total Fund and is comprised of investment opportunities that do not fall within the other asset classes. These include private credit, opportunistic, hedge fund, and real asset investments, among others. Similar to the Private Equity portfolio, the Alternatives portfolio is invested in externally managed funds with underlying portfolios constructed by the manager. PERA does not select which specific securities, companies, or real assets compose the portfolio, and we are therefore removed from that granular level of analysis that fund managers perform. As a result, we do not incorporate ESG factors into underlying constituent selection. However, PERA staff may inquire about the fund manager's ESG policies and practices as part of our due diligence process to identify the funds and managers that we expect to provide attractive returns to the portfolio. Where certain environmentally or socially conscious practices would be expected to financially impact a business, we anticipate our managers are including those in their analysis. Our focus in identifying the best managers and funds for inclusion in the portfolio is primarily on fund governance and how managers are using investment capital to pursue opportunities and manage risks in their respective strategies.

How does PERA vote proxies and engage with public companies?

The Board's *Proxy Voting Policy* guides staff in formulating vote decisions aligned with our objective to pursue the best risk-adjusted returns over the long run. Within the parameters set forth by the Board, staff may consult proxy advisors, our internal Global Equity analysts and portfolio managers, as well as other research and institutional investors when executing votes.

Through the course of our proxy voting and ongoing active investment analyses, PERA investment staff may engage with public investee companies on matters pertaining to ballot measures or other considerations that can impact a company's operations and business. When engaging with these companies in our active investment analysis, PERA staff may meet with corporate executive management and investor relations teams to delve into specific aspects of the company's business that are of interest to PERA's investment theses. Engagements resulting from the feedback mechanisms of proxy voting are generally led by PERA's Investment Stewardship staff which may coordinate with internal investors to identify areas of focus for engagement that are relevant to our investment theses or voting decisions. In such engagements, we uphold the Board's positions as described in their *Proxy Voting Policy*. The Policy undergoes periodic reviews by the Board's Investment Committee of the PERA Board and is updated at its discretion to maintain relevance to PERA's investment objectives and practicability in executing votes in an efficient manner.

What are the total assets under supervision, and the total registered and unregistered assets under management?

The PERA DB portfolio held approximately \$56 billion in assets as of December 31, 2022. PERA is an institutional investor, meaning we invest assets in trust on behalf of beneficiaries. Because we are not a traditional asset manager, PERA is not a Registered Investment Adviser under U.S. securities laws, and therefore the assets we manage internally are not registered. However, we may be required by the U.S. Securities and Exchange Commission to report public company holdings and proxy voting information under certain regulations, and we comply with such reporting mandates.

PERA utilizes external asset managers for a portion of the portfolio. The external managers we hire are registered with the appropriate regulatory agencies, and they manage approximately 41.0%, or \$23 billion, of the Total Fund.

Disclosures inspired by TCFD Recommendationsⁱⁱⁱ

What is the PERA Board's oversight of climate-related risks and opportunities?

The Board operates according to its *Governance Manual*. Per the *Governance Manual*, the Investment Committee is responsible for overseeing PERA's investment program and making related recommendations to the Board.

In 2020, the Investment Committee recommended changes to the Board's *Proxy Voting Policy*. These changes included the addition of a new Philosophy Statement articulating its position on financially material ESG matters, as follows:

Within PERA's fiduciary duty, and in accord with PERA's Statement of Investment Policy, we pursue the best risk-adjusted returns to the Portfolios in order to meet pension obligations over a long time horizon. As such, financial sustainability remains our priority in all investment and proxy voting decisions. To the extent that other sustainability factors – such as those pertaining to the natural environment or society – are financially material to a particular investment within the PERA Portfolios, they are integrated into our decision framework.

PERA acknowledges that financial materiality is dynamic, subjective, and may vary by investment. By focusing on materiality in our proxy voting decisions, we believe we can direct PERA's resources toward issues that are most pertinent to the expected risk-adjusted returns of our investments, in line with our fiduciary duty.

This statement fulfills the Board's 2019-2023 Strategic Plan measure to update its *Proxy Voting Policy* in solidifying its position on ESG matters. This measure is part of a broader objective to strengthen the resiliency and adaptability of PERA's investment portfolio.

PERA considers climate-related matters to fall under the environmental (E) category within the ESG labeling conventions. The Investment Committee also recommended changes to the *Proxy Voting Policy* to enhance its position on climate-related disclosure made by public companies to their shareholders. Effective February 1, 2021, the Board approved the recommendations of its Investment Committee to revise the *Proxy Voting Policy* accordingly.

As the Investment Committee and Board determine policies that govern PERA's investment program, they may discuss other aspects of climate-related risks to PERA and the portfolio. These discussions may include topics related to physical risks of climate as well as risks and opportunities presented by the transition to a lower carbon economy. The Board and its Investment Committee will continue to evaluate risks to the portfolio within the context of achieving long-term risk-adjusted returns to pay retirement benefits to PERA members and their beneficiaries in perpetuity under its fiduciary duty.

What is the role of PERA management in assessing and managing climate-related risks and opportunities to the portfolio?

PERA management staff are responsible for implementing the policies set forth by the Board. As it pertains to PERA's investment program, PERA's Chief Investment Officer is responsible for ensuring compliant implementation of the Board's *Statement of Investment Policy* for the Combined Investment Fund and *Proxy Voting Policy*. The investment objective set forth in the *Statement of Investment Policy* states:

The function of PERA is to provide present and future retirement or survivor benefits for its members. This objective requires the prudent assumption of investment risk in seeking to maximize long-term investment returns while incorporating the fund's liability requirements.^{iv}

To meet this objective, the Board has established acceptable parameters and return expectations for PERA staff to pursue under direction of the Chief Investment Officer. PERA's strategic asset allocation targets and permissible ranges are established and revised periodically following diligent asset and liability studies in order to effectively meet the Fund's pension obligations in perpetuity.

PERA investment staff implement the Board's policies in line with the fiduciary duty owed to PERA members and their beneficiaries. As experts in their field, PERA investment staff appropriately consider a variety of risks that present financially material considerations for the long-term viability of the portfolio. These may include financially material risks that can be categorized as pertaining to ESG, encompassing climate-related risks.

Likewise, under direction of the Chief Investment Officer, PERA investment staff implement the Board's *Proxy Voting Policy*. The proxy voting policies provide guidance to staff in executing shareholder votes aligned with PERA's investment theses and long-term risk-return objectives. Just as with other decisions made by PERA investment staff, a mosaic of risk and opportunity factors may be considered when executing votes. Proposals requesting shareholder approval of climate-related risk and opportunity disclosures are voted as outlined in the Board's *Proxy Voting Policy*, with additional guidance from PERA management to fulfill the objectives of the policies, where appropriate.

How does PERA identify and manage climate-related risks and opportunities and their impact on its investment strategy and resilience?

PERA's investment strategy and resilience center on its ability to achieve risk-adjusted returns over long time horizons in order to pay retirement benefits to our members and their beneficiaries in perpetuity. Financially material climate-related risks and opportunities are considered alongside a multitude of other risk and opportunity factors deemed material to PERA's actively managed investments at the time of decision and on an ongoing basis.

Such risks and opportunities may be identified through our engagements with portfolio companies and fund managers, through due diligence in research and analysis to inform investment decisions, or through outcomes resulting from macroeconomic or local extreme weather events that impact the investments in the PERA portfolio.

Determining the impact of climate-related risks to the Total Fund is challenging and involves many assumptions of unknown events and economic sequences. Such analyses undertaken by investors can include climate scenario assessments or risk exposure assessments over short-, medium-, and long-term horizons. PERA does not employ climate scenario assessments of the portfolio because we do not have investment strategies that are centered on achieving particular outcomes beyond financial outcomes on a risk-adjusted basis. Scenario analyses and other methods for evaluating different levels and likelihoods of climate risk are costly, and PERA's investment objectives do not support the additional costs that would be incurred to the Fund to perform them.

Does PERA use specific metrics to evaluate climate-related risks and opportunities in line with the investment strategy, or set targets to reduce those metrics to achieve any climate-related performance objectives?

PERA does not have nonfinancial objectives, and therefore does not set targets to reduce climate-related impacts, such as greenhouse gas emissions. However, PERA contracts data and research services from independent third-party providers that are expected to enhance the set of information used when making investment and proxy voting decisions. These data vendors may collect, aggregate, and analyze various nonfinancial metrics, including those related to climate change, such as greenhouse gas emissions or carbon intensity of the businesses in which PERA invests.

Through access to financial metrics used in fundamental investment analysis, PERA also may have access to such nonfinancial metrics. PERA acknowledges that its stakeholders may have interests beyond the financial performance of the portfolio, though the Board, Management, and staff are squarely focused on those performance indicators pertaining to the financial health of the Fund. Because PERA's stakeholders may have interest in metrics such as greenhouse gas emissions or carbon intensity of the companies within the portfolio, PERA staff may present such metrics in its communications with stakeholders.

- ⁱ For more information on Colorado PERA's proxy voting policies (effective February 1, 2021) please see https://www.copera.org/files/f11cfe42d/proxy_voting.pdf
- ⁱⁱ For more information on the SASB Standards please visit <https://www.sasb.org/standards/>. PERA's management of the Total Fund falls under the Asset Management and Custody Activities industry within the Sustainable Industry Classification System (SICS[®]), and this report references SASB Standards Version 2021-12.
- ⁱⁱⁱ For more information on the TCFD Recommendations please visit <https://www.fsb-tcf.org/recommendations/>.
- ^{iv} For more information on Colorado PERA's investment policies (effective January 1, 2023) please see <https://www.copera.org/files/14e327dd2/Statement+of+Investment+Policy.pdf>.

DISCLOSURES

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ENDNOTES

- 1 Data as of December 31, 2022. Inception of Policy Benchmark (2/1/2004). Note: all figures beyond one year are cumulative and annualized returns.
- 2 PERA data as of December 31, 2022, unless otherwise noted. Amounts may not add due to rounding.
- 3 <https://www.copera.org/files/14e327dd2/Statement+of+Investment+Policy.pdf>
- 4 <https://ilpa.org/reporting-template/>
- 5 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 2022 are represented as a percentage of average investments at fair value between January 1, 2021–December 31, 2022.
- 6 The 401(k) Asset-Based Fee of 0.03% is waived through 2023.
- 7 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 2022 are represented as a percentage of average investments at fair value between January 1, 2021–December 31, 2022.
- 8 Kuh, Thomas; Shepley, Andre; Bala, Greg; and Flowers, Michael. TruValue Labs and FactSet. January 17, 2020. https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3521035
- 9 <https://architecture2030.org/why-the-building-sector/>
- 10 <https://www.epa.gov/indoor-air-quality-iaq/introduction-indoor-air-quality>
- 11 <https://www.usgbc.org/leed>
- 12 <https://www.unwater.org/water-facts/scarcity/>
- 13 PERA's proxy statistics throughout this report are for proposals voted For, Against, or Abstain for corporate meetings held 1/1/22-12/31/22, based on data from Glass Lewis, and Colorado PERA, unless otherwise noted.
- 14 https://www.copera.org/files/f11cfe42d/proxy_voting.pdf
- 15 Dyck, I. J. Alexander and Morse, Adair and Zingales, Luigi; How Pervasive is Corporate Fraud? (February 22, 2013); Rotman School of Management Working Paper No. 2222608: https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2222608#:~:text=We%20estimate%20that%20on%20average%2011%25%20of%20large,value%20each%20year%2C%20equal%20to%20%24744bn%20in%202020.
- 16 <https://www.sec.gov/news/press-release/2022-22216>
- 17 <https://www.sec.gov/news/press-release/2022-19215>
- 18 Inception of Policy Benchmark (2/1/2004). Note: all figures beyond one year are cumulative and annualized returns.
- 19 Giese, Guido and Lee, Linda-Eling. "Weighing the Evidence: ESG and Equity Returns." (April 2019): <https://www.msci.com/www/research-paper/weighing-the-evidence-esg-and/01315636760>.
- 20 See for example:
 - » The Demanding World of Sustainable Investing: <http://www.morganstanley.com/ideas/sustainable-investing-asset-managers>.
 - » Doing Well By Doing Good: <https://www.nielsen.com/us/en/insights/report/2014/doing-well-by-doing-good/>.
 - » Investing for a Sustainable Future: <https://sloanreview.mit.edu/projects/investing-for-a-sustainable-future>.
- 21 <https://www.ussif.org//Files/Trends/2022/Institutional%20Investors%202022.pdf>
- 22 <https://www.ussif.org//Files/Trends/2022/Institutional%20Investors%202022.pdf>
- 23 "Kok, Nils and Devine, Avis, "Green Certification and Building Performance: Implications for Tangibles and Intangibles," (September 015), Journal of Portfolio Management.
- 24 <https://www.copera.org/files/2a25ea6a8/divestment.pdf>
- 25 The 401(k) Asset-Based fee of 0.03% is waived through 2023, reducing the cost to 0.19% for participants in the 401(k) Plan.

COMMONLY USED ACRONYMS

AGM: Annual General Meeting

CAPs: Capital Accumulation Plans (Collectively PERA's 401(k) Plan, 457 Deferred Compensation Plan, and Defined Contribution Plan)

DB: Defined Benefit

DC: Defined Contribution

ESG: Environmental, Social, and Governance

IAQ: Indoor Air Quality

ILPA: Institutional Limited Partner Association

IFRS: International Financial Reporting Standards

ISS: Institutional Shareholder Services

ISSB: International Sustainability Standards Board

LEED: Leadership in Energy and Environmental Design

MSCI: MSCI, Inc.

SASB: The Value Reporting Foundation (formerly known as Sustainability Accounting Standards Board)

SEC: U.S. Securities and Exchange Commission

TCFD: Taskforce on Climate-related Financial Disclosures



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