

CARDNO ACCELERATES PURSUIT OF INTERNAL SDGs; BUILDS GLOBAL ESG PRACTICE FOR THE PRIVATE AND PUBLIC SECTOR

Cardno is a global infrastructure, environmental, and social development company operating in more than 85 countries and powered by a talented 4,200-strong workforce. Cardno is united by a shared purpose to deliver exceptional professional services to establish or restore physical and social environments that make a difference to people's lives around the world. Cardno's diverse team of talented technical experts and professionals builds on a 75-year track record of designing, developing, and delivering sustainable projects and community advancement programs. Cardno delivers infrastructure, health sciences, environmental, and social solutions to our clients across a broad range of sectors, including defense, energy, government, manufacturing industry, international development, land management, mining and resources, property and buildings, and transportation.

Chris Kline, Global Senior Principal for Sustainability and ESG. In this role, Mr. Kline leads Cardno's corporate sustainability initiative and supports Cardno clients across a range of ESG disciplines.

EBJ: What are some highlights of the latest Cardno ESG and Sustainability reports?

Kline: At Cardno, we have been an ESG company for decades, having extensive experience in environmental science, health assessment, sustainable infrastructure design, and social- and economic-oriented international development. It is part of our DNA, evident in how we have delivered services for communities around the world. We value sustainability and live by our purpose of "Making a Difference." This purpose underpins our pursuit to shape a better world for future generations.

Our Global Sustainability Policy translates our commitment and intent to promote environmental equity and minimize the environmental impact of our business into measurable impacts. We have aligned our sustainability goals with the United Nations Sustainable Development Goals (UN SDGs), a universal call to action to end poverty, protect the planet, and improve the lives and prospects of everyone, everywhere by 2030.

Based in part on our most recent materiality assessment, we are focusing on six UN SDG benchmarks where we currently can most meaningfully effect progress:

SDG 5 – Gender Equality – Achieve gender balance across all levels of Cardno management and increase diversity and inclusion at all levels across the company.

SDG 7 – Affordable and Clean Energy – Pursue our goal of 100% of Cardno's operational electricity needs being generated from renewable resources.

SDG 8 – Decent Work and Economic Growth – Take immediate and effective measures against the risk of forced labor, modern slavery, and human trafficking.

SDG 8 – Decent Work and Economic Growth – Provide safe and secure working environments for all staff.

SDG 13 – Climate Action – Achieve science-based emissions reductions in line with a 1.5°C pathway by 2035.

SDG 16 – Peace, Justice, and Strong Institutions – Operate with zero incidents of bribery or corruption within our company.

Some of our ESG accomplishments during 2020 included:

April – Cardno's Americas Region implemented a comprehensive greenhouse gas (GHG) tracking protocol.

August – Cardno released an updated global Human Rights Policy and integrated training for all staff.

August–September – Cardno's Sustainability Task Force sponsored a virtual internal "sustainability symposium" featuring various Cardno sustainability subject matter experts presenting on key ESG issues.

October – Cardno's Americas Region achieved a TSP score of 89%, recognizing outstanding firm environmental standards and performance and a significant improvement over our previous score.

December – Cardno's Melbourne office became the fourth Cardno office to achieve ISO 14001 Environmental Management Certification.

We are very proud of the fact that Cardno's progress on sustainability is directly attributable to the efforts of Cardno's Sustainability Task Force, a diverse group of more than 30 Cardno employees representing all regions of our firm, and all our progress is not due to a "corporate initiative," but rather a deeply held common value. This outstanding group of colleagues is committed to ensuring Cardno's sustainability efforts are not only words but also deeds—not just talk, but action.

That said, it should be clear we have a whole-hearted commitment to sustainability from each of our board members and our CEO and executive team, but progress is made when good intentions move from the board to the frontline.

In addition to the Global Sustainability Policy and 2020 Global Sustainability Report, Cardno released two additional reports in the spring of 2021 that further

underscore our commitment to sustainability and illustrate how we integrate ESG services into our clients' work.

In February 2021, Cardno's International Development division released our third Communication on Progress toward the United Nations Global Compact's 10 Principles. This report affirms our commitment to the 10 Principles and provides a wealth of supporting information on our progress. In addition to data supporting our commitment to the 10 Principles, the report presents a sample of our global projects reflecting our work across all 17 of the SDGs, as well as additional examples of how we have pivoted in response to the COVID-19 pandemic. Cardno's intention during this upcoming year is to expand the UN commitment across our entire company.

A second foundational document, released in March 2021, is Cardno's Modern Slavery Act Statement, responding to the requirements of the Australia Modern Slavery Act of 2018. This document supports one of the key UN SDG goals and documents the steps we are taking to address potential modern slavery risks in the operations or supply chains of the Cardno Group and its subsidiaries. Our anti-modern slavery model is replicable and can aid other corporations and organizations in their efforts to address modern slavery risks. Cardno's approach focuses on steps and processes that are pertinent and mean-

ingful to individual business contexts and operating environments, instead of mere check-the-box compliance with regulatory requirements.

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EBJ: When did Cardno develop its ESG Services Practice? How are you differentiating your ESG services?

Kline: At Cardno, we have been an ESG company for decades, having extensive experience in environmental science, health assessment, sustainable infrastructure design, and social- and economic-oriented international development. ESG is part of our origin story. It is in our DNA, evident in how we have delivered services for communities around the world.

In November 2020, we stood up an ESG Advisory Services Practice, specifically designed to aid companies and their investors in understanding and acting on the ESG challenges and opportunities before them. This service is focused on companies just beginning their ESG journey as well as investors who are seeking to better

understand ESG risk and opportunity in their portfolios. In 2018, Morgan Stanley estimated that one in four dollars globally is following some form of sustainable investing. We believe it very likely that this figure has grown since then. There is a significant need for science-based ESG support in the global investment community that Cardno is well positioned to provide based on our experience and capabilities.

Cardno has technical depth across several ESG disciplines. I would like to highlight one area in particular: our health sciences practice, which we believe differentiates Cardno's ESG services from those of most other firms.

As most EBJ readers will know, the United Nations lists Good Health and Well-Being as an SDG and describes health as a precondition and outcome of the three pillars of sustainable development (environmental, social, and economic). However, despite substantial growth and momentum in the movement toward sustainability, health-focused sustainability performance targets today are quite narrowly focused on workplace health and safety. The COVID-19 pandemic has uniquely and definitively demonstrated that health risks within and beyond the workplace can threaten sustainability efforts, challenge resilience strategies, and worsen social and economic disparities.

To alleviate health-driven threats to sustainability, Cardno believes ESG criteria should comprehensively include material health risks to companies and investments. Further, by incorporating health in sustainability performance targets commensurate with the influence of health on our societies, economies, and institutions, greater value creation can be achieved through sustainable and socially responsible investing.

Cardno is well-positioned to help clients create this value. Our health sciences professionals have training and expertise in toxicology, industrial hygiene, epidemiology, environmental health sciences, medicine, computational modeling, and risk assessment. Our staff are skilled in the practical application of scientific concepts and methods to evaluate occupational, environmental, and community health

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risks in the context of social, cultural, and economic differences, allowing our team to offer pragmatic, real-world solutions to clients across a wide range of markets, governments, and industries around the world.

We believe that as organizations strive to operate more sustainably and grapple with complex problems such as climate change and social injustice, consideration of health equity can help organizations reduce inequities (and the associated economic burdens) and better maintain business continuity in the face of large-scale environmental and social disruptions.

EBJ: What type of clients request your ESG Services and why?

Kline: Cardno's clients run the gamut from global corporations to federal, state, and local government agencies, as well as local and regional businesses and a host of nongovernmental organizations. We observe, evaluate, and respond to ESG needs across this spectrum. Large and small businesses and government agencies at all levels are grappling with ESG issues at an ever-increasing pace.

International development organizations like the **United States Agency for International Development (USAID)**, Australia's **Department of Foreign Affairs and Trade (DFAT)**, the **Millennium Challenge Corporation (MCC)**, and others look to Cardno to support sustainable international development projects across the globe. Cardno is currently working in more than 85 countries on projects that integrate ESG into project deliverables. One example is Cardno's efforts in Timor-Leste, where we have been working for over 10 years on a range of projects in health, infrastructure, education, market development, governance, and community development. Our work is locally focused and grounded in the UN SDGs.

Cardno has worked in the energy sector for decades, and we see the global growth in renewable energy projects continuing to strengthen for the foreseeable future. In the United States, we are currently working for more than two dozen renewable energy developers on utility-scale solar projects. Our work focuses on helping developers

Technologies in Cardno's Suite of ESG solutions

Environmental Systems Modeling – To quantify potential climate change-related impacts, Cardno's environmental specialists use Cardno's Comprehensive Systems Models in combination with other specialized analytical tools as an effective simulation platform for assessing and calculating ecological risks posed by environmental stressors. Additional climate change assessment methods and tools include quantitative modeling for coastal surge, floodplain, and inundation, geomorphology, hydrology and hydraulics, habitat suitability, carbon, wildfire, relative sea level rise, and socio-economic effects. CASMclimate is a version of the Comprehensive Aquatic Systems Model (CASM) designed to assess the implications of climate change for the structure and function of aquatic food webs and ecosystems. The inputs associated with climate change can be modeled individually or in combination. CASMclimate simulates changes in daily productivity and biomass (carbon) of populations of aquatic plants and animals in user-specified aquatic food webs. It also provides additional capabilities to estimate carbon cycling and sequestration, nutrient assimilation, and changes in food web structure (biodiversity) in relation to modeled climate change scenarios.

Data Acquisition – Cardno's global Data Acquisition Program offers end-to-end, innovative digital data acquisition expertise, execution, analytics, management, and delivery to our clients. Cardno's data acquisition team includes multidisciplinary thought-leaders with deep knowledge in geographic information systems (GIS), photogrammetry, light detection and ranging (LiDAR) and laser scanning, data analytics, land survey, remote sensing, unmanned aerial systems (UAS)/remotely piloted aircraft systems (RPAS), BIM, asset management, machine learning, and program management. We seamlessly integrate data captured from satellites, aircrafts, field teams, and remotely operated vehicles (ROVs) to improve the quality and efficiency of digital data analytics and the delivery of actionable intelligence across a range of environments: water, land, air, and space. Our diverse analytics team provides geospatial support, image analysis, asset inspection, three-dimensional point clouds, photogrammetry/survey, project assessment, and other custom solutions. Cardno takes a holistic approach to the acquisition, rendering, and distribution of data and treats every project as a unique data problem, not simply a "drone" or technology problem. Put another way, we work projects from the "data up" without preconceptions.

efficiently site and permit these large power facilities throughout the country. Our team of environmental scientists, cultural resource specialists, and project managers is deeply familiar with federal, state, and local requirements and bring this expertise to our clients daily.

An area in the renewable sector that differentiates Cardno from many other firms is our understanding of vegetation management under and around solar facilities. Vegetation operations and maintenance costs can have a significant impact on the success of a utility-scale solar project. At the same time, the land conversion process where hundreds of thousands of acres of agricultural ground become power production facilities presents an opportunity to address other pressing environmental issues. One such issue is the significant

drop in pollinator plant species across the country. To help address this challenging issue, Cardno is currently teamed with two Department of Energy national laboratories and two major research universities to better understand the economic and ecological issues around integrating pollinator plantings on utility-scale solar sites. This 3-year, \$1.8 million research project is being carefully monitored by the solar industry and its stakeholders. Cardno's role is to lead the development of several tools to help solar developers make better decisions regarding site vegetation practices.

Municipal and state clients turn to Cardno for a broad array of support relating to ecological restoration and green infrastructure. Creating habitat and increasing biodiversity while developing effective stormwater and water infrastructure proj-

ects enables these clients to achieve their own ESG goals. For the past 5 years, Cardno has supported the City of Chicago Parks Department by managing approximately 1,000 acres of natural areas within the city's system. These natural areas provide Chicago residents with healthy recreation opportunities while also supporting the city's stormwater mitigation and heat island reduction efforts.

Cardno is also differentiated by our in-house Native Plant Nursery, one of the largest and oldest such nurseries in the Midwest, which supports these ecological restoration projects with native plants and seed. The nursery produces over 300 species of prairie, wetland, and aquatic plants for commercial and municipal clients. In a typical year, our nursery produces more than one million plants and over 6 tons of native seed.

EBJ: What type of climate change services did you provide before developing your ESG practice, and how do you complement ESG services in that area?

Kline: As a company grounded in environmental science and engineering, we integrate climate change into all that we do, and have been doing so for decades. Both our public and private clients see the need to respond to climate change risks, and we expect their need to address climate-related issues to continue growing in scope and urgency. Cardno's work enhances climate resiliency by increasing the adaptive capacity of communities, organizations, and agencies to threats associated with more frequent and intense storm events, wildfires, droughts, landslides, floods, and sea level rise.

Our international development specialists, environmental scientists, engineers, health scientists, natural resource economists, and other experts work together to address the complex scenarios associated with climate change impacts on infrastructure, the environment, and people. These impacts can occur in the most vulnerable environments and locations, affecting communities and ecosystems.

Natalie Muir, Cardno's General Manager for Water and Environment and vice-chair of the International Federation

of Consulting Engineers' sustainability committee, recently reflected on the value of water and the connection to climate change. Ms. Muir's reflection illustrates the type of thinking that informs Cardno scientists:

- Across society, water is valued very differently—where water is scarce, it tends to be more highly valued, conserved, and appreciated. Where water is more plentiful (or where it seems more plentiful), it is often taken for granted, wasted, and even hidden. Do our communities understand the real value of water?

- We need to shift the paradigm to ensure it is valued and managed in a manner that is sustainable, now and in the context of increasing demand and increased climate variability. Value is one thing—cost is another. The cost of treating and distributing water and collecting and treating wastewater is not insignificant. Goal 1 under the UN's SDG6 sets the target: "by 2030, achieve universal and equitable access to safe and affordable drinking water for all." This means that the necessary infrastructure needs to be provided at a cost that is affordable to the people that it serves.

- This cost is not always proportionate. Those in regional and remote communities, indigenous communities, and developing nations have less capacity to pay than their city counterparts, yet the challenges of water security are often greater and may require a higher investment to resolve.

A recent project completed by our International Development team in east Africa further illustrates one approach where we integrated economic incentives with climate science. Cardno managed the Climate Information Prize (CIP), which awarded innovators who used climate information to generate new ideas and solutions supporting vulnerable individuals, households, and communities in Kenya. Cardno led the implementation of the CIP with robust governance, financial management, monitoring, and reporting procedures. Our team forged partnerships with institutional and program networks across Kenya, the East Africa/Horn of Africa region and beyond, to promote the CIP and

build private sector investment. We also managed marketing workshops, events like award ceremonies, media campaigns, and other communication channels to heighten awareness and encourage participation from problem solvers.

We are currently working for more than two dozen renewable energy developers on utility-scale solar projects.... helping developers efficiently site and permit these large power facilities.

Another project in Cambodia is cultivating a positive future for small farmers and illustrates our expertise in market systems and economic and agriculture development. Cardno is leading the overall delivery of the Cambodian Agriculture Value Chain Program (CAVAC), which is strengthening market systems and investing in irrigation infrastructure to increase the productivity and incomes of smallholder farmers and trade competitiveness in milled rice and other crops in Cambodia. CAVAC is based on the "Making Markets Work for the Poor" principles. It strengthens market connections, promotes greater investment, and adds value along specific product value chains that link suppliers, farmers, and consumers.

EBJ: What are the biggest challenges that your clients face as they integrate sustainability into their culture and business operations? And in which ways have you helped them solve these problems?

Kline: Cardno's private sector clients know us for our health sciences, environmental, and engineering expertise. Private sector investors, whether they be individual stock owners or large private equity investors, increasingly are demanding evidence of ESG progress from the companies in whom they invest. The recent corporate board election at ExxonMobil is one very visible result of these expectations. It is now not just about the dollars,

but about the carbon and social impacts of these firms' operations. Companies who rely on Cardno for environmental support are now turning to us for ESG support.

An example illustrates this trend. For years, Cardno has supported the **Indiana Toll Road Concession Consortium** (ITRCC) with environmental and storm-water permitting support. A major investor in ITRCC is **IFM Investors**, a global pension fund manager with more than \$70b investments in assets and a keen focus on ESG performance. IFM Investors expects ITRCC to report on its GHG footprint and to create a plan for reducing this footprint over time. ITRCC turned to Cardno for support. Together, we benchmarked ITRCC's GHG footprint and set reduction benchmarks accepted by the Science Based Targets Initiative (SBTi). With the benchmark and goals established, Cardno worked with ITRCC to develop strategies for achieving these reductions including electrifying the ITRCC fleet and powering this fleet with a combination of solar and storage technologies. We bring this type of initiative and innovative ESG thinking to all of our clients.

Investors are driving many corporate ESG decisions. Foreign and domestic direct investment will inevitably improve and continue to grow during post-pandemic recovery. This recovery phase provides an opportunity to "build back better"—promoting and integrating ESG principles into ongoing and future investments—particularly in emerging markets. Even in the absence of local standards and laws, investors adopting and applying a minimum ESG threshold will be able to maximize their investment while minimizing negative impact.

Businesses that localize supply chains, offshore/outsource goods and services, and expand to emerging economies can increase revenues and lower operating costs. While lucrative, companies that invest in these markets will face different political and economic realities. Foreign investors need to be prepared for new and higher risks, including issues relating to rule of law, corruption, financial/market instability, labor standards, and human rights. Further due diligence and investigations

are necessary—not only in adoption of corporate policy, but in more proactive oversight to raise supply chain standards.

Beyond shareholders, other stakeholders (e.g., consumers, media, government) have become more socially conscious and active; application of ESG provides an avenue to maintain brand integrity and reduce domestic/international scrutiny. Incorporating ESG principles as a "value-add" maximizes investment potential while minimizing negative impact. This shared-value approach moves the needle beyond standalone corporate social responsibility or philanthropic efforts, and instead builds on sustainable and de-risked business practices. By adopting ESG principles, investment in emerging markets can move away from "offshoring" scrutiny and rebrand

as "impact investing"—promoting measurable social and environmental impact, coupled with financial returns.

EBJ: What are the key challenges when it comes to built asset resiliency?

Kline: The built asset resilience challenges our clients face are many but we believe the top three are:

Identifying the risks related to natural hazards that are not considered worthy of assessment because even though they may have highly severe consequences, they are unlikely to occur. Frequently these low-likelihood, high-severity disruptions have never been formally anticipated or incorporated into built asset management planning, preparation, protection, response, and recovery actions. Obviously,

Is ESG a Fad?: No Way Says Chris Kline, Global Senior Principal for Sustainability and ESG at Cardno

I strongly disagree that ESG is a temporary phenomenon. I believe it is a once-in-a-generation, if not multi-generational, shift in the way we think about economics, the environment and human's role influencing both. Several factors inform my view.

First, a broad, global, science-based consensus exists which recognizes that human-caused climate change presents an existential threat to life as we know it and that a broad, global, coordinated response will be necessary to address this fact. While we are obviously still struggling with exactly how to respond, it is clear that the "E" part of ESG is integral to addressing this fact.

Second, the pandemic and recent social upheavals have helped reveal fundamental inequities which exist in communities throughout the world. A consensus is developing that businesses, NGO's, and governments must collaborate in order to address these inequities in order to reduce conflict, improve harmony, and advance opportunities for the global community. Again, we don't have all of the answers to these challenges, but in my view, the "S" aspects of ESG will be foundational to effective responses.

Third is the fundamental importance of trust and credibility in the actions taken by institutions, particularly governments, multi-national corporations, and international NGOs to address the "E" and "S" challenges described above. This is where the "G" factors integrated into ESG frameworks become so important. Transparency, equity, and fairness must be integrated into our environmental and social solutions.

Finally, something I learned during my eight years as a Senate oversight committee staffer and reinforced when I served for eight years on a local public school board is "follow the money." Public and private investment on an unprecedented scale is lining up behind ESG principles. This situation, combined with the three observations described above, make me believe that ESG is not some "shiny new object" which will be quickly cast aside for the next new thing. Now more than ever, there is a need for credible, science-based professionals to provide ideas, analysis and solutions to address these challenges. The opportunities which already exist for the environmental consulting industry will only grow. I remain quite optimistic about the future.

Source: Environmental Business Journal 2021, 2020, and 2019 EBJ Snapshot Surveys

the COVID-19 pandemic has brought such “black swan” events to the forefront of every organization responsible for managing built assets, all the way up to the board and top leadership levels.

Identifying and understanding the risks associated with all the natural and human-caused disruptions that have affected built assets in the past several years. Many organizations have difficulty thinking holistically across their built asset portfolios and understanding what they need to do to assess and address these risks and take actions necessary to protect their built assets and increase resilience.

Putting the risk assessment processes and management systems in place that will gather and maintain the lessons already learned. Such lessons learned would include those gained from “tests” or drills based on scenarios as well as assessments of response actions during after-action analysis of actual disruptions of built infrastructure, supply chains, and resource allocation approaches. Organizations need to use the lessons learned and conduct testing to improve preventive and protective measure and reduce disruptive event response and recovery time.

Understanding and addressing these challenges in a systematic manner is what will help organizations increase their “resilience intelligence” and improve the resilience of their built asset portfolios and supply chains. Cardno demonstrated this approach in a 5-year project we completed for the **National Oceanic and Atmospheric Administration** (NOAA), who asked Cardno to conduct a three-phase climate change threat and vulnerability risk analysis and adaptation planning and resilience improvement project.

Cardno first developed a risk-based method to screen over 3,200 built-infrastructure mission-critical properties to identify the top 10 at highest risk from climate change-related impacts from mean sea level rise and other climate change-related severe weather events. Cardno then developed an enterprise-wide climate change asset risk analysis process, conducted site-specific asset climate change vulnerability and risk analyses, and developed facility-specific adaptation and resilience

improvement plans and projects with ROM investment cost estimates.

EBJ: What additional infrastructure trends does Cardno see as making meaningful contributions to global sustainable development?

Kline: Cardno senior leaders, including our CEO Susan Reisbord, are actively involved in the **Organization for Economic Cooperation and Development’s** (OECD’s) **Blue Dot Network** (BDN), with Ms. Reisbord serving on the BDN Executive Consultation Group. The BDN is a multilateral initiative launched by the governments of Australia, Japan, and the United States to provide an internationally recognized framework assisting in mobilizing investment to maximize the positive economic, social, environmental, governance, and development impact of infrastructure.

This voluntary, private-sector-focused, and government-supported initiative will build on existing international standards to develop a global certification framework for quality infrastructure projects. It repre-

sents an innovative solution for operationalizing international quality infrastructure standards and best practices from the OECD and beyond, assisting investors in identifying projects with positive sustainability features and thus representing lower-risk investments over the full lifecycle of an asset.

We see a range of opportunities and benefits with the BDN initiatives including improvement in designs that incorporate more sustainable thinking; materials to minimize human health and environmental impacts; automation and digitization of infrastructure processes and data; modular construction methods, distributed/micro infrastructure networks; and upskilling/training of the workforce to meet new needs.

With the increase in public and private infrastructure investment in the US and globally, we believe efforts like those of the BDN are critically important for sustainable development. ■

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