INDIAN HEALTH SERVICE

Sustainability Progress Report

Fiscal Years 2022 – 2023

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Final Sustainability Progress Report

Fiscal Years 2022 and 2023

U.S. Department of Health & Human Services (HHS)
Indian Health Service (IHS)
Office of Environmental Health and Engineering (OEHE)

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FIGURES

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ACRONYMS & ABBREVIATIONS

A/E	Architectural/Engineering
AI/AN	American Indian and Alaska Natives
ASHRAE	American Society of Heating, Refrigerating and Air Conditioning Engineers
Btu	British Thermal Unit
CEQ	Council on Environmental Quality
CFE	Carbon Pollution-Free Electricity
CSO	Chief Sustainability Officer
DOE	Department of Energy
EAC	Energy Attribute Certificate
ECM	Energy Conservation Measure
EISA	Energy Independence and Security Act of 2007
EJ	Environmental Justice
EO	Executive Order
EPA	Environmental Protection Agency
EPAct	Energy Policy Act of 2005
EPEAT	Electronic Product Environmental Assessment Tool
ESC	Environmental Steering Committee
ESPM	ENERGY STAR Portfolio Manager®
EUI	Energy Use Intensity
FY	Fiscal Year
GHG	Greenhouse Gas
GSA	General Services Administration
GSF	Gross Square Feet
HHS	Department of Health and Human Services
HVAC	Heating, Ventilation, and Air Conditioning
IHS	Indian Health Service
kW	Kilowatt
kWh	Kilowatt-hour
LED	Light-Emitting Diode
LEED	Leadership in Energy and Environmental Design
MACT	Mariposa, Amador, Calaveras, and Tuolumne
MWh	Megawatt Hour
NREL	National Renewable Energy Laboratory
OEHE	Office of Environmental Health and Engineering
OMB	Office of Management and Budget
PV	Photovoltaic
REC	Renewable Energy Certificate
SAB	Sustainability Advisory Board
U.S.	United States
WCM	Water Conservation Measure
WUI	Water Use Intensity
ZEV	Zero-Emissions Vehicles

MESSAGE FROM THE CHIEF SUSTAINABILITY OFFICER

JAMES LUDINGTON

Welcome!

In this update you will find the Indian Health Service 2022-2023 Sustainability Progress Report, which describes the continuing actions we have taken over the last two years to implement our pledge to minimize our carbon footprint and to become more environmentally sustainable. Various Executive Orders, environmental regulations, and policies guide how we implement sustainability strategies, but the heart of the IHS mission is to raise the physical, mental, social, and spiritual health of American Indian and Alaska Natives to the highest level. This report communicates, both externally and internally, the sustainability activities and accomplishments of Federal and Tribal staff nationwide at all organizational levels.

The report describes Indian Health Service performance across different areas of sustainability such as energy efficiency, renewable energy, water conservation, and reductions in greenhouse gas emissions. It highlights exemplary Federal and Tribal projects pursued over the last two years that showcase our sustainability efforts. The report also acknowledges IHS and Tribal staff members that have received Department of Health and Human Services Green Champion Awards for their noteworthy contributions to sustainability. Lastly, this report maintains accountability and transparency of our impact on the environment and exhibits our efforts to address Presidential Executive Orders regarding environmental sustainability.

American Indian and Alaska Native communities have great respect for the environment and its health, which is intrinsically linked to the human body and health. In conjunction with the Indian Health Service mission, it is incumbent that we understand Native American culture while protecting the environment for both present and future generations.

James Ludington, P.E.
Chief Sustainability Officer
Indian Health Service

CHAPTER ONE
SUSTAINABILITY

1

1.0 SUSTAINABILITY

The purpose of environmentally sustainable practices is to create and maintain the conditions under which humans and nature can exist in productive harmony—fulfilling social, economic, and other necessities of present and future generations. Sustainability is vital to ensuring that our communities continue to have the resources needed to protect human health and our environment indefinitely. For the Indian Health Service (IHS), sustainability means:

1) Managing our facilities and operations over the long term in a manner that reduces our impact on the environment;
2) Maintaining a safe and healthy environment for IHS staff, visitors, and patients;
3) Partnering with tribes to develop sustainable communities.

This IHS Sustainability Progress Report covers fiscal years (FY) 2022 - 2023[1] and describes IHS's continued commitment to environmental sustainability. The IHS sustainability program is guided by federal laws and regulations that set goals and determine target focus areas. IHS staff across the nation are committed to not only following federal guidelines, but also exceeding targets and goals where possible. IHS strives to design and implement efficient sustainability projects that are life cycle cost-effective and result in substantial improvements to IHS operations. Central elements of the IHS Sustainability Program from FY 2022 through FY 2023 include the implementation of energy and water conservation measures (ECMs and WCMs) and the assessment of sustainability goals through annual reporting. This report highlights key IHS energy and water projects, and features IHS personnel and projects that have been recognized for excellence in the field of sustainability.

Key practices of sustainability include:

- Reducing energy and fossil fuel usage while implementing renewable sources of energy;
- Conserving water;
- Minimizing waste;
- Purchasing environmentally preferable products and services;
- Implementing environmentally responsible building practices in the planning, construction, and operation phases; and
- Changing individual behaviors in order to protect the environment for ourselves and future generations.

The following page includes definitions for commonly used terms related to sustainability that will be used throughout this report.

[1] Note that a FY is distinct from a calendar year. Federal FYs span from October 1st of the previous calendar year to September 30th of the next. As such, this report covers October 2021 to September 2023.

Let's Talk About Sustainability Terminology!

RENEWABLE ENERGY

Electric energy produced from solar, wind, biomass, landfill gas, geothermal, municipal solid waste, new hydroelectric generation capacity achieved from increased efficiency or additions of new capacity at an existing hydroelectric project, or marine energy (as defined in 42 U.S.C. 17211).

CARBON POLLUTION-FREE ELECTRICITY (CFE)

Electrical energy produced from resources that generate no carbon emissions, including marine energy, solar, wind, hydrokinetic (including tidal, wave, current, and thermal), geothermal, hydroelectric, nuclear, and renewably sourced hydrogen, and electrical energy generation from fossil resources to the extent there is active capture and storage of carbon dioxide emissions that meets EPA requirements.

NET ZERO EMISSIONS

Reducing greenhouse gas emissions to as close to zero as possible and balancing remaining emissions with an equivalent amount of emissions removal, through natural carbon sinks, carbon capture and storage, direct air capture, or other methods.

SCOPE 1, 2, AND 3 EMISSIONS

Scope 1 means direct greenhouse gas emissions from sources that are owned or controlled by the agency.

Scope 2 means indirect greenhouse gas emissions resulting from the generation of electricity, heat, or steam purchased by an agency.

Scope 3 means greenhouse gas emissions from sources not owned or directly controlled by an agency but related to agency activities such as vendor supply chains, delivery and transportation services, and employee travel and commuting.

ENERGY ATTRIBUTE CERTIFICATE (EAC)

An instrument that conveys information (attributes) about a unit of energy, including the resource used to create it, and the emissions associated with its production and use.

RENEWABLE ENERGY CERTIFICATE (REC)

The technology and environmental (nonenergy) attributes that represent proof that 1 megawatt-hour (MWh) of electricity was generated from an eligible renewable energy resource. A REC can be sold separately from the underlying generic electricity with which it is associated. A REC is a type of EAC.

1.1 Environmental Justice & Equity

IHS recognizes that addressing environmental justice (EJ) is of critical importance to sustainability and the IHS mission. As the principal federal health care provider and health advocate for American Indian and Alaska Natives (AI/AN) people, IHS recognizes that AI/AN communities and disadvantaged, vulnerable, low-income, and marginalized peoples are disproportionately burdened by environmental hazards. The combination of environmental risks and social inequities can create cumulative, disproportionate impacts that hinder optimal health for these populations. IHS continues working to address EJ issues through education, raising awareness, and striving to provide an environment where all people enjoy the same degree of protection from environmental and health hazards.

Executive Order 14096's Definition of "Environmental Justice":

"Environmental justice" means the just treatment and meaningful involvement of all people, regardless of income, race, color, national origin, Tribal affiliation, or disability, in agency decision-making and other Federal activities that affect human health and the environment so that people:

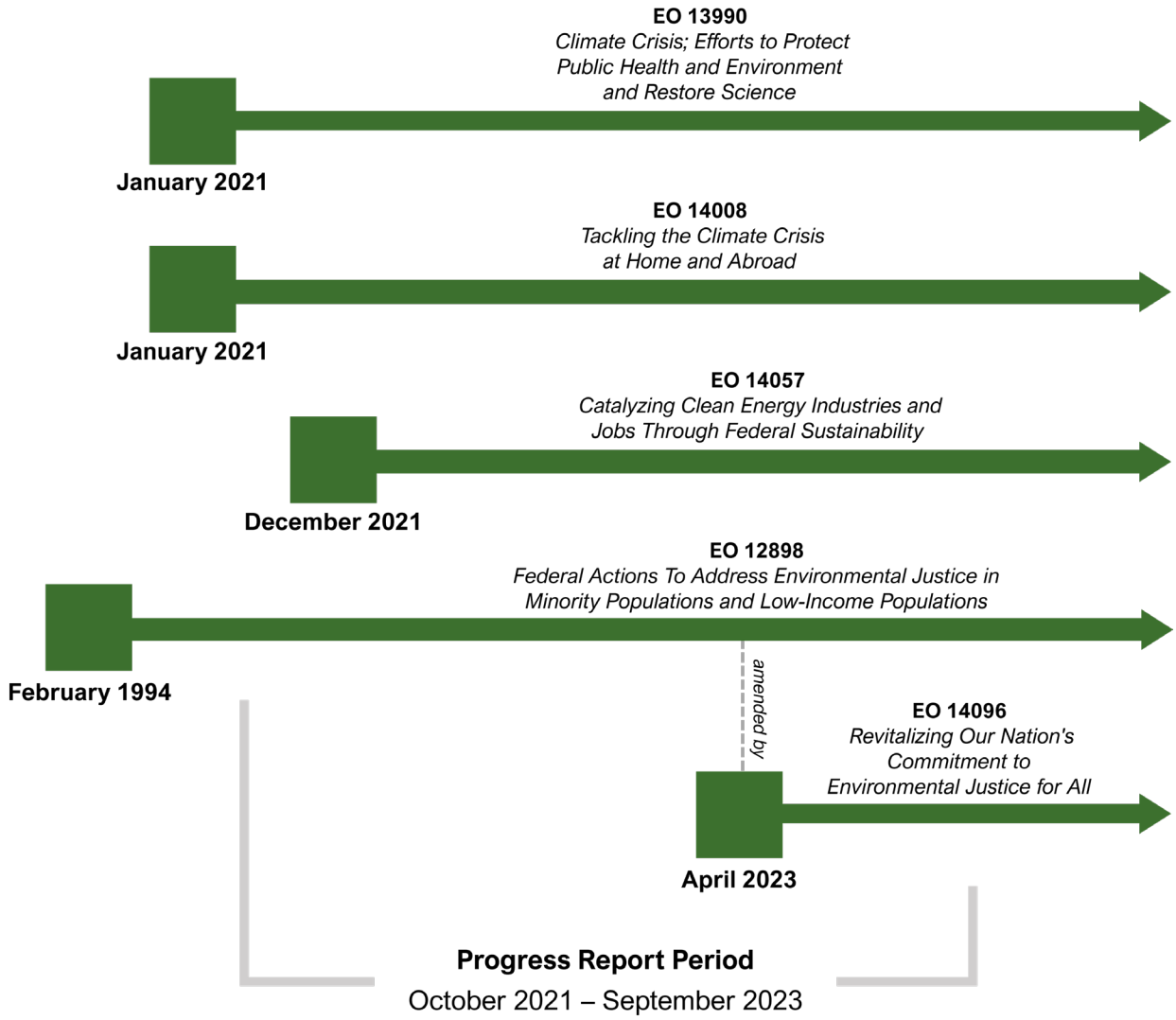
- Are fully protected from disproportionate and adverse human health and environmental effects (including risks) and hazards, including those related to climate change, the cumulative impacts of environmental and other burdens, and the legacy of racism or other structural or systemic barriers; and
- Have equitable access to a healthy, sustainable, and resilient environment in which to live, play, work, learn, grow, worship, and engage in cultural and subsistence practices.

Section 1.2 covers Executive Orders (EOs) which in part focus on improving the federal government's commitment to EJ; these EOs include EO 12898, 14008, 14057, and 14096 (EPA, 2023; The White House, 2021; The White House, 2021; The White House, 2023). Additionally, HHS established the Office of Environmental Justice in response to EO 14008. The Office's mission is to protect the health of disadvantaged communities and vulnerable populations that are disproportionately impacted by pollution and other environmental hazards that affect health (HHS, 2022).

IHS continues to lead efforts to address EJ and equity in all areas, including sustainability. IHS's Alex Gamble led a discussion at the 2022 Environmental Justice and Equity Panel during the Federal Environmental Symposium. Mr. Gamble presented a new IHS initiative: biophilic design, which supports and improves human health, well-being, and productivity by incorporating elements of nature in the indoor environment. New IHS projects will develop and implement a biophilic design framework that investigates at least three distinct design strategies related to biophilic design where possible and appropriate. This initiative aims to improve the health and well-being of AI/AN communities by implementing new biophilic design strategies at upcoming IHS facilities.

1.2 Federal Regulations on Sustainability

The implementation of sustainable practices at IHS is shaped by federal laws and regulations. The Energy Policy Act of 2005 (EPAct), the Energy Independence and Security Act of 2007 (EISA), and the Energy Act of 2020 establish government-wide federal sustainability goals and objectives. EOs provide further direction to IHS sustainability efforts. Throughout the period covered by this report, FY 2022 through 2023, there were several EOs that directed IHS sustainability activities. **Figure 1** below depicts the years that the relevant EOs were active throughout the period.



Sources: The White House, 2021c; The White House, 2021a; CEQ, 2022; The White House, 2021b

Figure 1. Active Years for Relevant Sustainability EOs

1.2.1 EO 12898 "Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations" (02/11/1994-Present)

Published in February of 1994, EO 12898 "Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations" directs federal agencies to focus on the environmental and human health effects of federal actions on minority and low-income

populations with the goal of achieving environmental protection for all communities. EO 12898 directs agencies to identify and address any disproportionately high and adverse human health or environmental effects on minority and low-income populations. EO 12898 also mandates agencies to develop a strategy for implementing environmental justice (EJ) into agency missions, programs, and activities. EO 12898 also encourages collaboration with affected communities to address environmental concerns. In addition, EO 12898 established an Interagency Working Group on EJ chaired by the United States (U.S.) Environmental Protection Agency (EPA) Administrator and comprised of the heads of 11 departments or agencies and several White House offices. EO 12898 was amended in 2023 by EO 14096 which is described in **Section 1.2.5** (EPA, 2023).

1.2.2 EO 13990 "Climate Crisis; Efforts to Protect Public Health and Environment and Restore Science" (01/20/2021-Present)

Published in January of 2021, EO 13990 "Climate Crisis; Efforts to Protect Public Health and Environment and Restore Science" established a review of previous agency actions. Agency heads were directed to review existing regulations, orders, and other policies against a series of policy goals including protecting public health and the environment, reducing greenhouse gas (GHG) emissions, and prioritizing EJ. Additionally, EO 13990 revoked the majority of EO 13834, "Efficient Federal Operations" with the exception of sections 6, 7, and 11. These sections, which are still effective, include the establishment of a federal Chief Sustainability Officer (CSO). EO 13990 additionally revoked EO 13778 "Restoring the Rule of Law, Federalism, and Economic Growth by Reviewing the 'Waters of the United States' Rule", EO 13783 "Promoting Energy Independence and Economic Growth", and EO 13807 "Establishing Discipline and Accountability in the Environmental Review and Permitting Process for Infrastructure Projects" (The White House, 2021c).

1.2.3 EO 14008 "Tackling the Climate Crisis at Home and Abroad" (01/27/2021-Present)

Released in January of 2021, EO 14008 "Tackling the Climate Crisis at Home and Abroad" promotes robust climate action to increase climate resilience, ensure national security, and guide a pathway towards low GHG emissions. The EO establishes goals to strengthen clean air and water protections, highlights EJ, holds polluters accountable, and assesses and mitigates climate-related risks in all sectors of the economy. The sustainability goals of EO 14008 are to:

- Aim to achieve a carbon pollution-free electricity (CFE) sector by 2035; and
- Ensure federal infrastructure investment reduces climate pollution and require that federal permitting decisions consider the effects of GHG emissions and climate change.

EO 14008 directs federal agencies to:

- Use all available procurement authorities to acquire clean and zero-emission vehicles for federal, state, local, and tribal government fleets;
- Create a draft climate action plan that describes steps to bolster adaptation and increase climate change resilience and, for each following year, create annual progress reports on the status of implementation efforts;
- Incorporate achieving EJ into agency missions;
- Take steps to ensure federal funding is not directly subsidizing fossil fuels; and
- Identify opportunities for federal funding to spur innovation, commercialization, and deployment of clean energy technologies and infrastructure (The White House, 2021a).

1.2.4 EO 14057 "Catalyzing Clean Energy Industries and Jobs Through Federal Sustainability" (12/08/2021-Present)

Released in December of 2021, EO 14057 "Catalyzing Clean Energy Industries and Jobs Through Federal Sustainability," mandates federal agencies to prioritize clean energy and sustainability efforts. EO 14057 directs agencies to develop comprehensive sustainability plans, promote clean energy innovation, and support workforce development in the clean energy sector. Additionally, the EO emphasizes leveraging federal procurement to drive demand for clean energy technologies and requires agencies to track and report progress on sustainability goals. EO 14057 directs federal agencies to:

- Achieve 100 percent CFE on a net annual basis by 2030, including 50 percent on a 24/7 basis;
- Reach 100 percent zero-emission vehicle acquisition by 2035, including 100 percent light-duty acquisitions by 2027;
- Achieve net-zero building emissions by 2045, including a 50 percent reduction by 2032;
- Reduce Scope 1 and 2 GHG emissions by 65 percent from 2008 levels by 2030;
- Establish agency-specific targets for energy use intensity (EUI) and potable water use intensity (WUI) reductions by 2030 with annual targets starting FY 2023;
- Reduce procurement emissions to net-zero by 2050;
- Have climate resilient infrastructure and operations;
- Develop a climate- and sustainability-focused workforce; and
- Advance EJ and equity-focused operations (The White House, 2021b).

EO 14057 also directs federal agencies to reduce the amount of waste requiring treatment and disposal. Section 207 *Reducing Waste and Pollution* focuses on advancing pollution prevention, supporting markets for recycled products, and promoting a transition to a circular economy. The goal of waste reduction under EO 14057 is to divert at least 50 percent of non-hazardous solid waste from landfills by FY 2025 and 75 percent by FY 2030 (The White House, 2021b). Non-hazardous solid waste includes food, compostable material, construction and demolition waste, and debris.

EO 14057 directs federal agencies to designate an Agency CSO who is responsible for ensuring effective implementation of EO 14057. The CSO's duties include leading agency planning, implementation, and related actions; coordinating with agency leadership; reporting to the Chair of the Council on Environmental Quality (CEQ) and Director of the Office of Management and Budget (OMB); convening regular implementation meetings; and ensuring regional facilities and personnel are integrated into the sustainability framework (The White House, 2021b).

Additionally, EO 14057 establishes a planning framework and a reporting timeline to ensure that agencies report progress annually on the implementation of sustainability efforts. Principal agencies are responsible for developing and implementing an annual Sustainability Plan to describe actions and progress towards the goals and requirements of EO 14057. IHS also develops several other planning documents, including an annual Climate Adaptation Plan and a Sustainability Strategic Plan that encompasses CFE, zero-emissions vehicles (ZEVs), and buildings goals (The White House, 2021b).

The Climate Adaptation Plan is a planning document that is designed to identify and address climate change risks that are expected to affect IHS's ability to fulfill its mission. The Climate Adaptation Plan also outlines steps to implement climate adaptation and increase resilience for agency facilities and operations. This plan is updated annually to reflect the latest climate science, ongoing progress toward existing goals and targets, and emerging strategic priorities.

IHS develops an annual Sustainability Strategic Plan, which consolidates CFE, ZEVs, and building-related goals. For CFE, the Sustainability Strategic Plan describes the amount of CFE that will be acquired according to IHS's current inventory of electricity supply contracts and initial strategies for implementation to achieve the EO's CFE goals. This plan sets CFE progress targets that outline IHS's goals for CFE procurement through FY 2030. The Sustainability Strategic Plan also describes IHS's current fleet of vehicles and the plan for developing a fleet of ZEVs. The plan sets targets for different classes of ZEVs (light-, medium-, and heavy-duty) as they become available for procurement. Additionally, the Sustainability Strategic Plan includes reporting and targets for building-related goals, such as working towards net-zero emissions for building portfolios. This portion of the plan helps agencies create facility-wide EUI and WUI targets based on the composition of each individual agency's building portfolio (The White House, 2021b).

ENERGY USE INTENSITY (EUI)

EUI summarizes a building's energy use as a function of its size, expressed as the amount of energy used per square foot annually.

WATER USE INTENSITY (WUI)

WUI summarizes a building's water use as a function of its size, expressed as the amount of gallons used per square foot annually.

CEQ and OMB will review the plans and, where appropriate, meet with agency staff to discuss progress to date and future plans for implementation, and to identify successful practices, challenges, and needs for technical support. **Table 1** displays the annual reporting timeline under EO 14057 for federal agencies.

Table 1. EO 14057 Summary of Planning and Reporting Timeline

Report or Data Source(s)	Deadline for Submission or Final Data
Annual Energy Management Data Report (Annual Energy Report)	January 31
Sustainability Plan	June 30
Climate Adaptation Plan	June 30
Sustainability Strategic Plan (CFE, ZEV, and Buildings)	June 30
EISA 432 Compliance Tracking System Reporting	June 30
Federal Automotive Statistical Tool Reporting	December 15
Federal Real Property Profile Management System Reporting	December 15
Federal Procurement Data System Reporting	Ongoing

Source: CEQ, 2022

1.2.5 EO 14096 "Revitalizing Our Nation's Commitment to Environmental Justice for All" (04/21/2023-Present)

Released in April of 2023, EO 14096 "Revitalizing Our Nation's Commitment to Environmental Justice for All" amended EO 12898 to direct the federal government to build upon and strengthen its commitment to deliver EJ to all communities through meaningful federal engagement with communities using the best available scientific research and high-quality data. EO 14096 mandates the creation of a White House EJ Interagency Council and the White House EJ Advisory Council to coordinate efforts and provide recommendations. EO 14096 emphasizes community engagement, data transparency, and accountability in decision-making processes. Additionally, the order seeks to promote economic opportunities, public health improvements, and resilience in disproportionately affected areas, fostering a more inclusive and sustainable approach to environmental policy (EPA, 2023).

1.3 Federal Guidelines and Resources

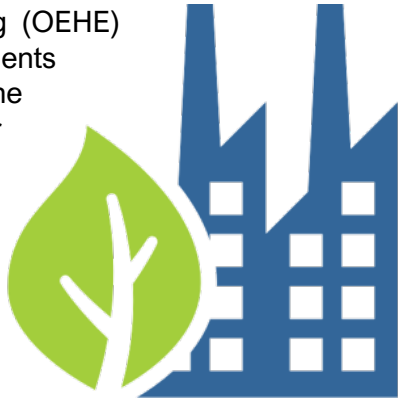
CEQ's Guiding Principles are a set of established criteria that require federal agencies to "design, mitigate, and measure the impact of their buildings" and "ensure agency portfolios remain effective and operational for the life of their facilities." The revised 2020 Guiding Principles for Sustainable Federal Buildings apply to existing buildings, new construction, and/or major

renovations. IHS works to meet these guidelines in both new construction and existing buildings. The Guiding Principles ensure federal buildings:

- Employ Integrated Design Principles;
- Optimize Energy Performance;
- Protect and Conserve Water;
- Enhance the Indoor Environment;
- Reduce the Environmental Impact of Materials; and
- Assess and Consider Building Resilience (CEQ, 2020).

IHS also follows the Guidelines for Energy Management developed by the joint EPA and Department of Energy (DOE) ENERGY STAR® program. ENERGY STAR® provides a road map for continuous improvement and best practices from the nation's leaders in energy management (DOE, No Date-a). ENERGY STAR Portfolio Manager® (ESPM) is an online tool that tracks energy and water consumption, as well as GHG emissions, and accounts for differences in operating conditions, changes in regional weather data, and other important considerations. Reporting energy and water consumption in ESPM is particularly useful for IHS, which operates a wide variety of building types across different climate zones. IHS uses ESPM to collect, compile, and report agency-aggregated data on an annual basis to calculate GHG emissions.

1.4 IHS Guidelines and Resources



The 2022 IHS Office of Environmental Health and Engineering (OEHE) Architectural/Engineering (A/E) Design Guide describes requirements for the design and construction of federally funded IHS facilities. The A/E Design Guide's sustainability chapter includes guidance for reducing environmental impacts and improving human health in both new and existing construction. The sustainability chapter proposes sustainability requirements to "ensure that IHS facilities are designed and constructed in a manner that enhances indoor environmental quality for users while reducing the production and consumption of GHG and pursue cost-effective waste minimization during the construction and renovation phase of the building" (IHS, 2022).

The A/E Design Guide establishes guidance for:

- Achieving sustainable design certifications and following the Guiding Principles for design implementation;
- Ensuring sustainable design features, activities, and certifications are part of overall federal policy to minimize adverse environmental impacts and ensure the environmental compatibility of federal facilities; and
- Designing with nature to support and improve human health, well-being, and productivity by providing and incorporating elements of nature in the indoor environment (for new construction non-residential projects, but it is encouraged to incorporate these design strategies in all projects).

Additional guidance established in the A/E Design Guide includes:

- Prohibition of the use of potable water for landscaping;
- Requirement to use EPA WaterSense-labeled[2] products or other water conserving products where available; and
- Guidance and requirements for the implementation of Building Information Modeling in the design, construction, and operation of new facilities.

The A/E Design Guide incorporates the Guiding Principles and the Leadership in Energy and Environmental Design (LEED) certification program. LEED is the U.S. Green Building Council's internationally recognized green building certification system. It provides building owners and operators with a framework for identifying and implementing practical and measurable green building design, construction, operations, and maintenance solutions. Projects earn up to 100 points (plus 10 possible bonus points) across several categories, including energy use and air quality. Based on the number of points achieved, a project then earns one of four LEED rating levels: Certified, Silver, Gold, or Platinum. A/E Design Guide LEED certification requirements for each of the levels are described in **Table 2** below (USGBC, No Date-a).

Table 2. LEED Certification Ratings

LEED Certification	Required Points
Platinum	Over 80
Gold	60 to 79
Silver	50 to 59
Certified	40 to 49

Source: USGBC, No Date-a

IHS designs new facilities and improvements for existing facilities according to the six LEED core concepts and strategies shown below in **Figure 2** while the IHS project funding categories and LEED certification goals are in **Table 3**.

[2] The EPA WaterSense program certifies water-efficient products and services that use at least 20 percent less water, save energy, and perform as well or better than regular models.

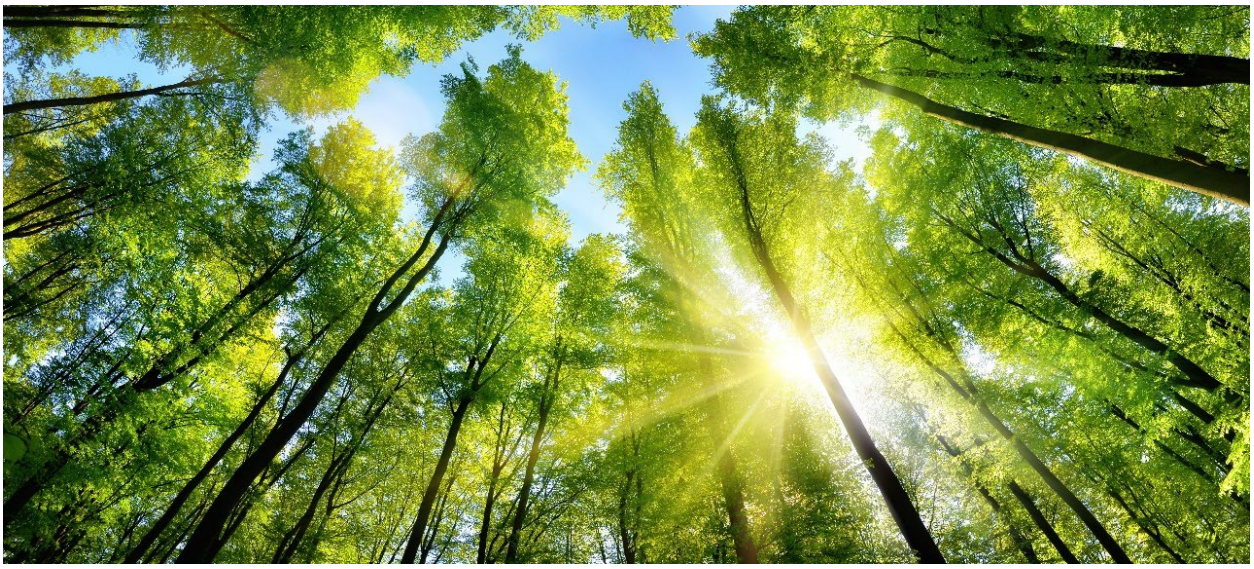
Source: USGBC, No Date-b

Figure 2. LEED Core Concepts and Strategies

Table 3. A/E Design Guide LEED Certification Requirements by Project Budget

LEED Certification	Details	Budget
Gold	LEED Platinum is desirable and encouraged when cost effective to do so. At a minimum, LEED Platinum certification shall be used as a target in order to create a buffer to ensure LEED Gold Certification is achieved.	≥ $20 million
Silver	LEED Gold is desirable and encouraged when cost effective to do so. At a minimum, LEED Gold certification shall be used as a target in order to create a buffer to ensure LEED Silver Certification is achieved.	$10 to ≤ $20 million
None	LEED certification is not required but is strongly recommended, note, however projects must meet statutory requirements regarding high-performance sustainable buildings, therefore projects must meet at minimum the Guiding Principles for Sustainable Federal Buildings	< $10 million

The OEHE Technical Handbook is another important guidance document intended to support implementation of IHS policy and to identify standards and regulations for technical services that IHS provides. The Technical Handbook also contains guidelines and requirements related to health care facilities that are important for all IHS projects.



CHAPTER TWO

IHS SUSTAINABILITY PROGRAM

2

2.0 INDIAN HEALTH SERVICE SUSTAINABILITY PROGRAM

In addition to following federal requirements, IHS strives to be forward acting on environmental efforts and lead by example in sustainability wherever practicable. The IHS Sustainability Program demonstrates the IHS commitment to continually improve the efficiency of operations and reduce impacts to the environment. Environmental concerns are considered at the earliest stage possible by IHS, contractors, and suppliers.

The IHS Sustainability Program is led by the Sustainability Advisory Board (SAB) and the Environmental Steering Committee (ESC). The SAB sets targets and goals for the program and the ESC reviews and funds projects that help IHS meet those goals and targets. The SAB and ESC contribute to the development of annual reports that support the implementation of sustainable operational policies and practices.

2.1 Indian Health Service Sustainability Plan

IHS develops an annual Sustainability Plan, a planning and reporting document that supports the development of the broader annual U.S. Department of Health and Human Services (HHS) Sustainability Plan. IHS's Sustainability Plan helps track progress, set targets, identify strategies, and manage different federal goal areas as they relate to sustainability. The Sustainability Plan identifies IHS-specific objectives so that IHS can develop initiatives, strategies, and projects to reach those objectives. The plan describes agency progress and identifies challenges in each goal area. IHS updates the objectives in the plan with the aim of meeting the federal requirements for each goal area. If necessary, IHS can adjust its strategies or approach to ensure that the best strategies are used to fulfill the federal requirements.

2.2 Sustainability Advisory Board

The SAB is the reviewing body for managing sustainability requirements and providing executive direction. The SAB consists of representatives from offices throughout IHS and is chaired by the IHS Chief Sustainability Officer, James Ludington. The Board is chartered to:

- Coordinate a multiple-office approach to support multifaceted sustainability initiatives;
- Promote environmental sustainability as a way of doing business and emphasize potential benefits of sustainable investments; and
- Ensure IHS planning incorporates practices that support sustainability needs.

The SAB assists IHS in contributing to HHS objectives by developing the Sustainability Plan and setting goals and targets to implement environmental sustainability initiatives. During quarterly meetings, members discuss updates and progress on sustainability goals, current challenges, and upcoming events and deadlines. The SAB recognizes many sustainability achievements in FY 2022 through FY 2023, including improvements in sustainable reporting, renewable energy use, and water use efficiency.

2.3 Environmental Steering Committee and Green Infrastructure Projects

The IHS ESC consists of OEHE staff across the nation who review and fund applications for environmental remediation and demolition projects. The ESC can approve funding for project proposals that would improve IHS facilities and help IHS meet federal sustainability goals. Many sustainability projects implement recommendations from energy audits such as lighting, water fixture, and heating system upgrades.

IHS receives annual appropriations of Green Infrastructure funds to address sustainability in existing health care facilities. IHS projects implemented through Green Infrastructure funds are directed to incorporate planning, design, and operations of buildings to reduce costs and minimize environmental impacts. Additionally, IHS projects use renewable energy, incorporate green infrastructure, and adhere to the most current energy efficiency codes and standards to the maximum extent practicable.

CHAPTER THREE

ENERGY MANAGEMENT & GREENHOUSE GASES

3

3.0 ENERGY MANAGEMENT & GREENHOUSE GASES

IHS consistently seeks to improve sustainability efforts through conserving energy wherever practicable. Existing IHS facilities are actively updating building systems with more efficient equipment and processes to conserve energy and reduce greenhouse gas (GHG) emissions. New facilities are designed to meet the Guiding Principles and a minimum of Silver Certification through LEED. Between FY 2022 and 2023, IHS was guided by regulations that promoted robust climate action to increase climate resilience and reduce GHG emissions, including EO 13990, 14008, and 14057 (The White House, 2021c; White House, 2021a; White House, 2021a).

The GHG emissions generated by IHS can be divided into three categories, or "Scopes", based upon the source of those emissions. Scope 1 emissions include those from IHS operations or sources that are owned or controlled directly, such as any fossil fuels burned onsite, IHS-owned vehicles, and other localized sources. Scope 2 emissions originate indirectly from IHS's purchase and use of energy, such as electricity, steam, heat, or cooling, from sources that are not owned or operated directly by IHS. An example of Scope 2 emissions includes the emissions from electricity generated off-site that is used to power an IHS building or electric vehicle.

Scope 3 emissions include all emissions generated by activities from resources not owned or controlled by IHS, but that are still indirectly affected by IHS activities (EPA, 2024). Scope 3 emissions take into consideration the full impact of an organization's activities that may not be immediately apparent. For example, if IHS purchased new medical equipment for a hospital, then the Scope 3 emissions would include both the emissions associated with the manufacture of that equipment and the eventual end-of-life treatment needed to dispose of the equipment. Some other common examples of Scope 3 emissions include employee travel and commuting, solid waste disposal, and wastewater treatment. The wide variety and scale of Scope 3 emissions can make them more complicated to accurately quantify.

EO 14057 established a goal of reducing Scope 1 and Scope 2 emissions from federal operations, as defined by the Federal GHG Accounting and Reporting Guidance. By 2030, the goal is to reduce Scope 1 and Scope 2 emissions by 65 percent when compared to a baseline of 2008 (White House, 2021b). Relative to FY 2008, IHS reported a 66 and 59 percent reduction in Scope 1 and 2 GHG emissions in FY 2022 and 2023, respectively. **Figure 3** shows IHS Scope 1 and 2 GHG emissions (represented as Metric Tons CO2 Equivalent) from FY 2012 to FY 2023 in comparison to FY 2008 (the first green bar on the left of the graph). The figure also shows that IHS exceeded the EO 14057 emissions reduction goal in both FY 2022 and 2023[3].

[3] For FY 2022 and 2023, EO 14057's GHG reduction goals for IHS were 54,678.93 metric tons (43 percent reduction) and 51,713.89 metric tons (46 percent reduction), respectively, while the FY 2008 benchmark was 96,189.60 metric tons. IHS's Scope 1 and 2 GHG emissions were 32,812.14 metric tons in FY 2022 and 39,698.60 metric tons in FY 2023, which are 66 and 59 percent reductions in comparison to FY 2008.

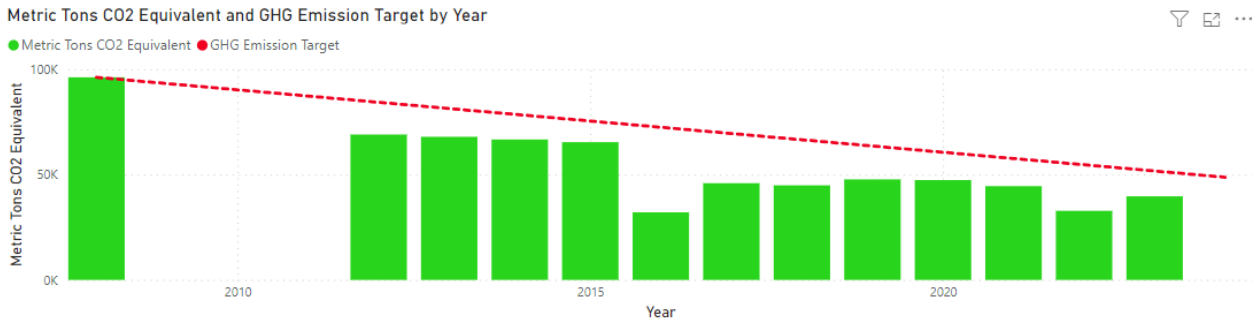


Figure 3. IHS Metric Tons of CO_2 Equivalent and GHG Emissions Target by Year

Many of the IHS energy conservation, fleet management, renewable energy, and other sustainability efforts reduce Scope 1, 2, and 3 GHG emissions, as discussed in the next several sections.

3.1 Energy Performance

IHS is responsible for reporting the energy use of its building portfolio annually. As of FY 2023, the IHS building portfolio includes 4.4 million square feet of federally operated space, including hospitals, outpatient clinics, office buildings, and other support buildings. IHS facilities are divided between twelve physical areas of the United States: Alaska, Albuquerque, Bemidji, Billings, California, Great Plains, Nashville, Navajo, Oklahoma, Phoenix, Portland, and Tucson. Each area has a unique group of Tribes that they work with on a day-to-day basis.

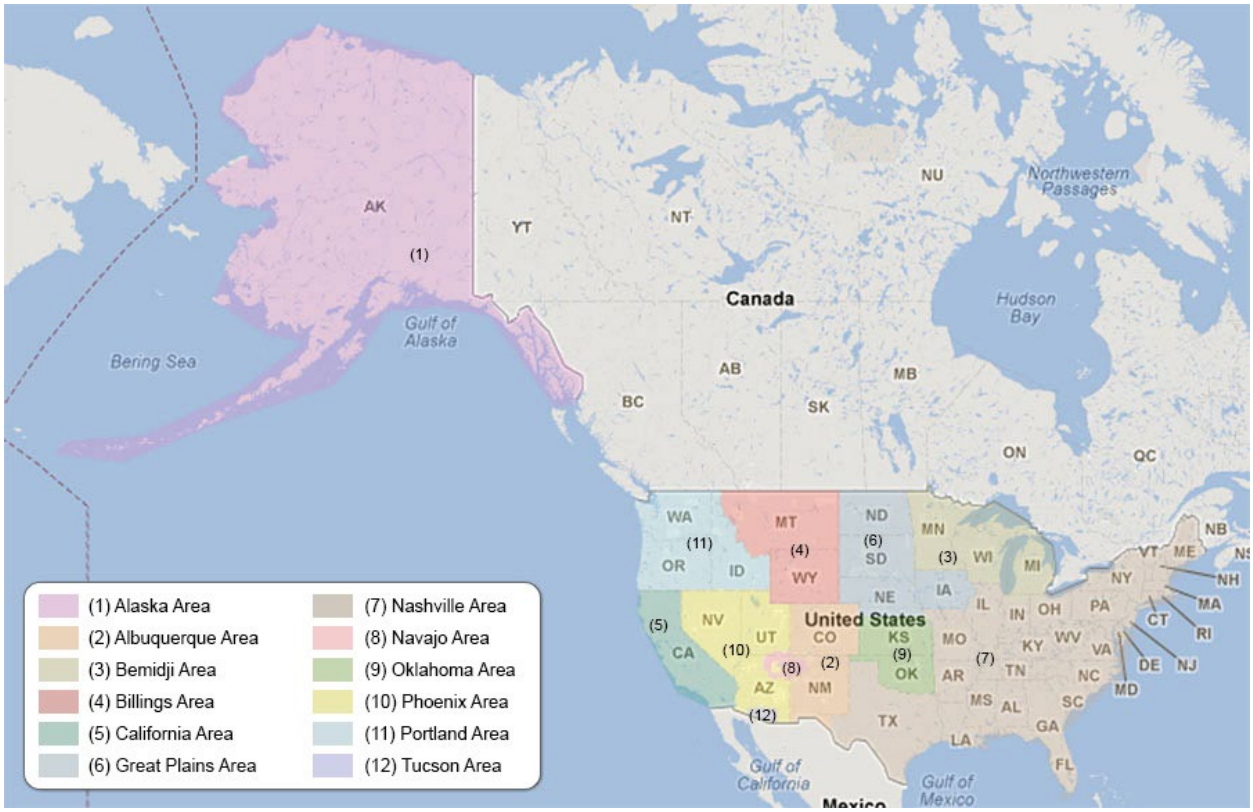


Figure 4. IHS Areas

EO 14057 directed federal agencies to increase energy efficiency across existing facilities. Agencies are directed to set agency-specific EUI targets for FY 2030, as well as annual progress targets beginning in FY 2023 (The White House, 2021b). EUI is the measure of energy use per gross square foot (GSF) and is the basis for federal energy reduction goals. IHS has placed a high priority on improving its existing facilities by replacing outdated equipment with new, more efficient equipment that reduces energy use and associated emissions, which also enables facilities to be as effective as possible in providing healthcare to meet IHS's mission.

In FY 2022 and 2023, IHS's EUI was approximately 154.0 and 152.5 thousand British thermal units (Btu) per GSF, respectively. IHS aims to meet a target EUI of 142.1 thousand Btu per GSF by FY 2030, a 7.7 percent reduction from the current baseline (IHS, 2023). **Table 4** provides a summary of IHS's annual EUI targets.

Table 4. IHS EUI Target Summary

EUI Metric	Baseline FY21	FY22	FY23	FY24	FY25	FY26	FY27	FY28	FY29	FY30
EUI (Btu/GSF)	154,010	154,010	152,525	151,041	149,556	148,072	146,587	145,103	143,618	142,134
Reduction from Baseline	0%	0%	1.0%	1.9%	2.9%	3.9%	4.8%	5.8%	6.7%	7.7%

3.2 Energy Conservation Measures

IHS has been incorporating ECMs into existing buildings to improve energy efficiency. Common ECMs being implemented at IHS facilities include lighting upgrades, photovoltaic (PV) systems, geothermal energy, daylight design, and electronic stewardship.

3.2.1 Lighting Upgrades

Lighting consumes about one sixth of the electricity used in healthcare facilities (EIA, 2018). By replacing incandescent light bulbs with energy efficient light-emitting diode (LED) bulbs, as well as improving building design to use sunlight, a significant amount of energy can be saved. LED light fixtures have a longer lifespan than incandescent light bulbs, produce the same amount of light with about one tenth the energy use, and require fewer toxic materials for production. Some lighting systems in IHS facilities include occupancy sensors and automatic dimmers.

3.2.2 Photovoltaic Systems

Also known as solar cells, PV cells convert sunlight directly into electricity. There are several generations of PV systems that differ in size and materials, striving to improve cell efficiency while keeping material cost down. Currently, a typical commercial solar PV cell has an efficiency of about 18 to 22 percent under standard test conditions (DOE, No Date-b). One potential drawback of solar energy can stem from inconsistent availability of sunlight due to weather conditions or reduced daylight hours during the winter. As a result, areas of the nation that receive more annual sunlight are better able to take advantage of PV systems. IHS has many facilities that are located in areas that have weather favorable for PV systems. To reduce dependency on electricity from public utilities, IHS is constructing new facilities with PV systems and solar water heaters that harness the sun's energy.

3.2.3 Geothermal Energy

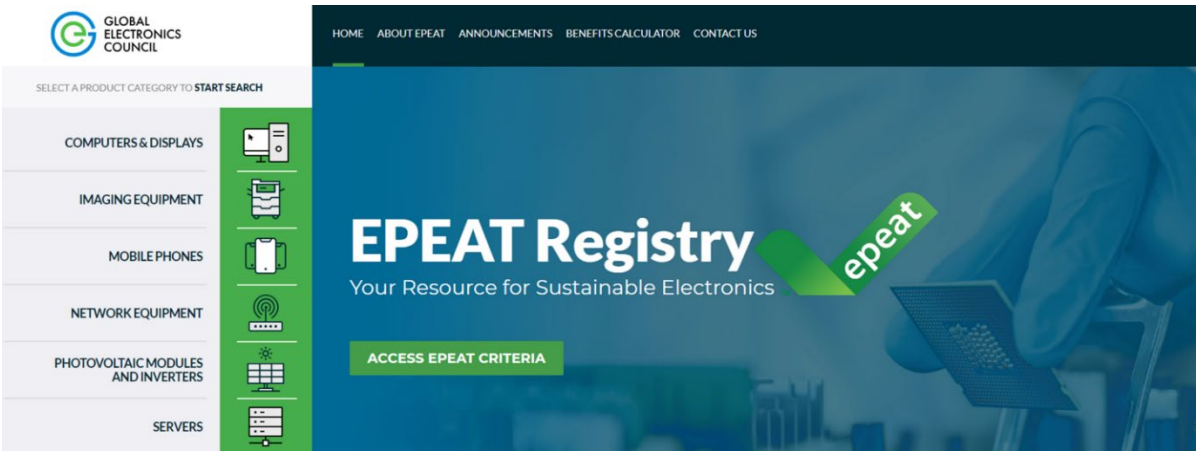
In most places around the world, the Earth maintains a temperature between 50 and 60 degrees Fahrenheit ten feet below the surface. A geothermal system uses this resource to heat and cool buildings. Geothermal systems pump fluid underground, where it gets either heated or cooled by the earth. That fluid is then circulated to a heat pump to either warm or cool the air in the building. IHS designs and implements geothermal systems where practicable to lower energy costs and reduce the amount of GHG emissions that IHS facilities produce compared to conventional electric or gas heating and cooling systems.

3.2.4 Daylighting Design

Incorporating simple design features into new construction can reduce energy consumption and increase sustainability without the use of specialized equipment. For example, windows and skylights can be strategically placed to complement the layout of the building and to allow natural daylight to illuminate rooms so that less electricity is needed to power lighting systems. Designers aim for light distribution and indirect lighting to avoid glare and overheating. Where possible, IHS is implementing the principles of daylighting design to reduce energy consumption during renovations of existing facilities and during new construction.

3.2.5 Electronic Stewardship

IHS is committed to being a responsible consumer of electronics and a leader in electronics stewardship through a long-term approach towards electronics management with a focus on sustainability. Sustainable electronics management includes purchasing environmentally sustainable electronics and disposing of outdated electronics responsibly. IHS has set a goal to ensure at least 95 percent of all acquired monitors, desktop computers, and laptops meet environmentally sustainable electronics criteria, specifically by purchasing electronics that are registered under the Electronic Product Environmental Assessment Tool (EPEAT). EPEAT is a global ecolabel that identifies environmentally preferable electronic products by using defined environmental and social responsibility performance criteria to rank products (EPA, 2022). Additionally, IHS set an end-of-life goal to ensure that 100 percent of electronics are disposed responsibly using environmentally sound methods. Lastly, IHS continues to ensure that all desktop computers, laptops, and monitors have power management features enabled.



3.3 Energy Improvement Projects

This section highlights examples of IHS sustainability projects that were underway in FY 2022 and FY 2023. The projects below focus on implementing upgrades and addressing deficiencies to reduce energy usage.

3.3.1 Phoenix Area: Peach Springs Staff Quarters

The final design for the Peach Springs Staff Quarters replacement was completed in April 2023. The project involves constructing IHS staff housing in Peach Springs, Arizona. The project design incorporates various principles of energy efficiency and sustainability. The design includes a PV solar array system that is anticipated to produce approximately 38 percent, or 7,540.58 kilowatt-hours (kWh), of the annual electrical demand for each home. Additionally, the design includes a solar hot-water heating system that would use the sun to heat 30 percent of domestic hot water. Both of these design elements, in addition to furthering sustainability efforts, would also reduce tenant utility costs. Energy and water use would be measured using advanced metering systems that allow for better usage tracking.

2020 Guiding Principles

Peach Springs Staff Quarters
Peach Springs, AZ

2020 Guiding Principles Checklist NC
Compliance: Pending Construction Metrics

Compliance:	26*
GP I. Employ Integrated Assessment	2 / 3
GP II. Optimize Energy Performance	5 / 5
GP III. Protect & Conserve Water	5 / 5
GP IV. Enhance Indoor Environmental Quality	9 / 9
GP V. Reduce the Environmental Impact of Materials	2 / 5
GP VI. Assess/Consider Climate Change	3 / 3

* Out of a possible 30 metrics

For new construction, 27 out of 30 metrics are required for compliance.

The design for the Peach Springs Staff Quarters incorporates three additional sustainability elements: high efficiency air conditioning and heating; high insulation values for the building envelope; and insulated windows that also maximize quality views of the surrounding bioregion. The design of the staff quarters follows the six Guiding Principles for Sustainable Federal Buildings, which were developed based on fundamental sustainable design practices and reflect progress in building design, construction, and operation best practices. The staff quarters' design achieved a score of 26 out of 30 following the Guiding Principles (seen right).

The design also seeks to promote resilient buildings and protect occupant health, wellness, and productivity. The floor plans for these homes are organized to support transient staff and their families in this remote community by providing gathering spaces and ample storage space. **Figure 5** shows a digital illustration of the design for the Peach Springs Staff Quarters replacement.

Figure 5. Peach Springs Staff Quarters Final Design

3.3.2 National Renewable Energy Laboratory's 2022 Residential Energy Efficiency Design Guide

The National Renewable Energy Laboratory (NREL) 2022 Residential Energy Efficiency Design Guide presents commercially viable energy efficiency packages for remote residential housing projects across IHS's areas. The guide also presents a variety of design options to help guide home builders in choosing improvements for energy performance. By presenting a set of diverse options with similar expected energy savings and life-cycle costs, final decisions can be left up to the building designers who can better determine the appropriate package given local costs, materials, and labor availability (NREL, 2022).

The design guide is intended to reduce the burden on designers and builders in determining cost-effective efficiency measures in new residential construction projects. The design guide provides a methodology for improving energy efficiency in new buildings by following the federal criteria defined in the Guiding Principles for Sustainable Federal Buildings for new construction and modernization projects. The guide focuses on criteria for optimizing energy performance and minimizing energy use; incorporating renewable electric or thermal strategies where possible; and mitigating for short- and long-term impacts associated with climate change and weather events. **Table 5** below provides a brief summary of the IHS areas, cities, heating fuels, and housing types that were analyzed in this report (NREL, 2022).

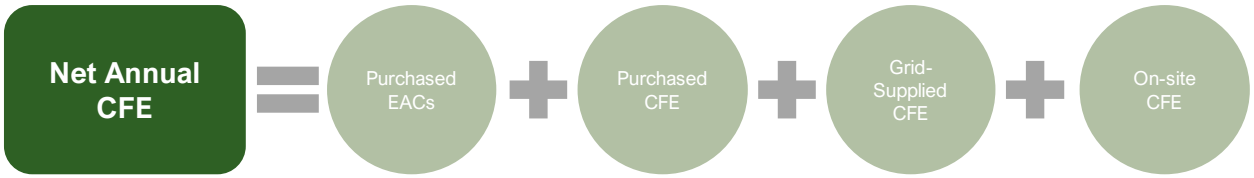
Table 5. NREL Residential Energy Efficiency Design Guide Recommendations

IHS Area	Cities Analyzed	Heating Fuel	Foundation Type
Alaska	Anchorage, AK; Utqiagvik, AK	Natural Gas, Electricity, Fuel Oil	Slab, Raised Foundation
Albuquerque	San Fidel, NM; Dulce, NM	Natural Gas, Electricity	Slab
Bemidji	Bemidji, MN	Electricity, Fuel Oil	Heated Basement
Billings	Crow Agency, MT; Ft. Washakie, WY	Natural Gas, Propane	Heated Basement
California	Ukiah, CA	Natural Gas, Propane	Slab
Great Plains	Rosebud, SD; Belcourt, ND	Electricity, Propane, Fuel Oil	Slab, Heated Basement
Nashville	Rock Hill, SC	Electricity, Natural Gas	Slab
Navajo	Window Rock, AZ	Electricity, Propane	Slab
Oklahoma	White Cloud, KS	Natural Gas, Propane	Slab
Phoenix	Parker, AZ; Peach Springs, AZ	Electricity, Propane, Natural Gas	Slab
Portland	Warm Springs, OR; Salem, OR	Electricity, Natural Gas	Slab, Vented Crawlspace
Tucson	Sells, AZ	Electricity, Propane	Slab

3.4 Carbon Pollution-Free Electricity

Renewable energy, such as solar and wind power, is sourced from resources that are not depleted by human use. CFE is defined as electrical energy produced from resources that generate no carbon emissions, including marine energy, solar, wind, hydrokinetic (including tidal, wave, current, and thermal), geothermal, hydroelectric, nuclear, renewably sourced hydrogen, and electrical energy generation from fossil resources to the extent there is active capture and storage of carbon dioxide emissions that meets EPA requirements.

EO 14057 established that the federal government will lead by example by achieving 100 percent net annual CFE use including 50 percent 24/7 CFE by FY 2030. These CFE goals are a part of EO 14057's objective to create a federal CFE sector by no later than 2035 and a net-zero emissions economy by no later than 2050. 24/7 CFE is defined as CFE electricity which is procured to match actual consumption on an hourly basis and is produced within the same regional grid where the energy is consumed (CEQ, 2022). **Figure 6** below shows the breakdown of sources within EO 14057's net annual CFE goal. This includes energy attribute certificates (EACs), which are instruments that convey information about a unit of energy, including the resource used to create it, and the emissions associated with its production and use.



Source: CEQ, 2022

Figure 6. Net Annual CFE Equation

IHS is prioritizing improving its CFE purchasing, onsite generation, and purchasing of EACs to be in step with the guidance set out by EO 14057. IHS's net annual CFE for the EO 14057 baseline year of FY 2022 was approximately 368,069 megawatt-hours (MWh) out of 845,606 MWh of total electricity usage, or approximately 43.5 percent CFE. IHS aims to meet a target net annual CFE of 53.2 percent by FY 2030, a 9.7 percent increase from FY 2022 (IHS, 2023). **Table 6** provides a summary of IHS's net annual CFE targets[4].

[4] Note that IHS's target of 53.2 percent net annual CFE usage is not in line with the 100 percent net annual CFE as laid out in EO 14057. The target total annual CFE does not include onsite CFE generation or purchased EACs, which IHS aims to utilize to meet the 100 percent net annual CFE goal.

Table 6. IHS Net Annual CFE Target Summary

CFE Metric	Baseline FY22	FY23	FY24	FY25	FY26	FY27	FY28	FY29	FY30
Total annual CFE (MWh)	368,069	375,860	384,186	399,539	415,569	429,913	444,808	466,632	489,647
Total annual electricity usage (MWh)	845,606	856,951	868,448	878,249	888,161	895,053	901,999	911,304	920,705
CFE as % of annual electricity usage	43.5%	43.9%	44.2%	45.5%	46.8%	48.0%	49.3%	51.2%	53.2%

3.4.1 Renewable Energy Certificate and Energy Attribute Certificates

Prior to EO 14057, the standard renewable energy offset for fossil fuel consumption (as set out in EPAct 2005) was the renewable energy certificate (REC). A REC is a tradable environmental commodity that represents the environmental attributes of power produced by renewable energy systems and may be purchased separately from the power itself. The owner of a REC can claim the environmental benefits associated with renewable energy generation without the need to generate renewable energy onsite, which is often unfeasible due to cost or other constraints. RECs are an accessible way for facilities (especially those that are rural or that do not have access to clean energy) to invest in renewable energy without building a separate system. The purchase of RECs in FY 2022 and FY 2023 helped IHS meet its renewable energy targets. However, IHS's RECs do not comply with EO 14057 guidelines for EACs. As legacy from the EPAct of 2005, IHS's RECs do count towards net annual CFE goals, but are subject to a maximum cap of 7.5 percent cap of the total net annual CFE (CEQ, 2022). To count towards an agency's net annual CFE under EO 14057's three requirements, purchased EACs must be sourced from generation resources that:

1) Produce CFE;
2) Were placed in service on or after October 1, 2021, either as a new resource or as new capacity at an existing resource modified to increase output; and
3) Deliver CFE to the same grid region of federal facility consumption (CEQ, 2022).

EO 14057 implements stricter use restrictions for EACs which combat the potential for inadequate or unreliable carbon emission offsetting with the use of RECs. IHS is working to shift its REC infrastructure to in-compliance EAC purchasing.

3.4.2 Purchased and Grid-Supplied Carbon Pollution-Free Electricity

Purchased CFE is electricity purchased from a qualifying CFE generation source with the associated EACs. That means the original associated energy attributes have not been separately sold, transferred, or retired. Subject to agency contracting authority, agencies can purchase CFE and the associated EAC from a utility provider (including through a green tariff), retail service provider, energy supply contractor, or through a power purchase agreement. IHS intends to

purchase CFE whenever feasible to accommodate the net annual CFE usage shares in accordance with EO 14057 (CEQ, 2022). In FY 2023, IHS purchased 7,385 MWh of CFE from qualifying generation sources while the target was only 600 MWh. In comparison to purchased CFE, grid-supplied CFE is limited to the utility itself. In FY 2022, IHS utilized 705,244 MWh of grid-supplied CFE and in FY 2023 IHS's use of grid-supplied CFE increased to 741,261 MWh, approximately 9,304 MWh beyond IHS's target.

3.4.3 Onsite Carbon Pollution-Free Electricity Generation

This section highlights examples of projects that further expand IHS's capacity to produce clean, renewable power. IHS advocates for the implementation of renewable energy technology wherever feasible and cost-effective. The implementation of these sustainability projects leads to the direct reduction of IHS's GHG emissions and increases efficiency through cost savings.

3.4.3.1 California Area: San Andreas Medical and Dental Clinics Solar Array Green Infrastructure Project

The Mariposa, Amador, Calaveras, and Tuolumne (MACT) Health Board, a tribal non-project organization, applied for IHS Green Infrastructure funding to further their goals of reducing grid electricity usage and utility costs. The MACT Health Board's San Andreas Medical and Dental Clinics use approximately 97,440 kWh of power each year, which translates to roughly $21,037 in annual electricity bills. To promote efficiency and further renewable energy generation, the MACT Health Board proposed to construct two solar panel arrays outside the clinics. The solar arrays are projected to produce 118,200 kWh of energy each year, which will exceed the annual electricity demand of the clinics as calculated by MACT's Solar Feasibility Study. The project is shown in Figure 7.

Figure 7. San Andreas Medical and Dental Clinics Solar Project

3.4.3.2 Portland Area: IHS Agreement with Yakama Power for Solar Energy Supply to Healthcare Facilities

In 2021, Yakama Power, a tribally owned and operated utility company, installed a 216-kilowatt (kW) community solar farm. The general manager from Yakama Power, Ray Wiseman, approached IHS and offered an opportunity for a solar power agreement for IHS to purchase renewable solar energy from a tribal utility. Yakama Power currently supplies power to five IHS health clinic buildings.

Discussions between IHS and Yakama Power began and were assisted by the Department of Energy (DOE), which aided in drafting the 20-year solar power agreement. This agreement took persistence, outside-the-box thinking, interagency cooperation, and local and leadership support. After the details were finalized, IHS's Portland Area stepped up to take on this contract, which was finalized in 2023.

The contract is the first in the nation agreement for a federal agency to purchase renewable solar energy directly from a tribal utility. Slated for 20 years, the agreement calls for the IHS to receive about 72.2 kW of power, nearly 30 percent of the Yakama Power solar farm's energy output. Yakama Power will provide a total of 1,810 MW of clean energy to IHS over the 20-year period. This clean energy will help the local IHS medical facility, the IHS Yakama Service Unit, make progress towards federal CFE goals. The purchased renewable solar energy will make up nearly seven percent of the IHS Yakama Service Unit's annual energy consumption. IHS hopes that this agreement can be used as an example for larger projects in IHS and for other federal agencies interested in carrying out similar projects. Members of the Portland Area Office and Yakama Power are shown in **Figure 8**.

Figure 8. IHS Staff Touring the Yakama Power Solar Farm with Yakama Nation Members

3.4.3.3 Bemidji Area: Cass Lake Hospital Geothermal Heating and Cooling System Green Infrastructure Project

The Cass Lake Hospital in Cass Lake, Minnesota, is in the process of a revitalization and expansion project. As part of this expansion, the project aims to reduce energy use by installing a geothermal heating system over two distinct phases. The hospital was noted in the FY 2018-2021 Sustainability Progress Report for Phase 1 of its geothermal heating system and 40-kW roof-mounted PV system. For these renewable energy projects, Phase 1 of the Cass Lake Hospital expansion project received a 2020 Green Champion Award.

Figure 9. Cass Lake Hospital

Phase 1 of the project involved the installation of 70 geothermal wells. Phase 2 of the project was completed in December 2022 and installed an additional 100 geothermal wells, for a total of 170 wells. The completed geothermal system is estimated to handle approximately 60 to 75 percent of the heating and cooling loads for the Cass Lake Hospital. The control capability of the system has helped the facility achieve a LEED Silver certification. This project is estimated to save approximately 699,000 kWh per year in energy usage, which will reduce building utility costs by an estimated $23,634 per year. This is an estimated 30 percent energy reduction from the existing building energy usage.

3.4.3.4 California Area: Indian Health Council Medical Center Solar Carports Green Infrastructure Project

The Indian Health Council, a tribal consortium, applied for IHS Green Infrastructure funding to install solar panels on covered carports at the main Indian Health Council clinic, which is located on the Rincon Reservation in rural San Diego County. This project will decrease dependency on grid electricity usage and decrease the amount of GHGs emitted by this facility. The expected annual generation from the proposed PV system is anticipated to be 538,788 kWh, which will account for 89 percent of the facility's current usage. At the current utility rates, the facility will be able to save approximately 72 percent, or $100,960, annually in energy costs for the Rincon Indian Health Council Medical Center. The project is currently underway; the solar panels will be mounted on the covered carports displayed in **Figure 10**.

Figure 10. Progress Photo for the Rincon Clinic Solar Carports Project

3.5 Sustainable Buildings

IHS follows all applicable regulations and guidance documents to develop its sustainable buildings program, including the OEHE Technical Handbook, the IHS A/E Design Guide, EISA 2007, EPAct 2005, EO 13990, EO 14008, EO 14057, and the Guiding Principles for Federal Sustainable Buildings. New facilities are constructed to meet the Guiding Principles and are planned to achieve a Silver or Gold certification under LEED, depending on project budget as shown in **Table 3.**

EO 14057 directs federal agencies to focus on qualifying more buildings and building space as sustainable through the implementation of net-zero emissions and emissions reduction measures. According to EO 14057, the federal government building portfolio should have net-zero emissions by 2045, with a 50 percent reduction by 2032 compared to FY 2008 levels (The White House, 2021b). IHS is continuing to achieve reductions in emissions from agency buildings, and by continuing to design efficient buildings and implement energy and water saving measures, IHS is well on its way to reaching the goal set by EO 14057.

This section describes a project that exemplifies IHS's commitment to designing and constructing sustainable buildings. The design of this project highlights that the principles of sustainability and efficiency are considered and implemented in IHS projects throughout the entire design and build process.

3.5.1 Navajo Area: Bodaway Gap Echo Cliffs Health Center Green Infrastructure Project

The final design for the Echo Cliffs Health Center, located in Bodaway Gap, Arizona, was developed and completed in 2023. The project design incorporates various principles of energy efficiency and sustainability and aims to achieve a LEED Gold certification. The design includes a new ground mounted PV array system that will be capable of generating 10 percent of the proposed building's annual energy consumption each year.

The final design for the health center achieved LEED Gold Certification with a score of 66 out of 110 points. The design for the Echo Cliffs Health Center also incorporated biophilic design by providing and incorporating elements of nature in the indoor environment. Biophilic design aims to support and improve health, well-being, and productivity. All three staircases are designed to be full of daylight and present great views of the outdoors to better facility connections between building users and nature. **Figure 11** displays a digital illustration of the final design of the Echo Cliffs Health Center.

LEED® Facts

Echo Cliffs Health Center
Bodaway Gap, AZ

LEED v4 BD+C for New Construction
Certification Awarded: Pending

Gold	66*
Innovation & Design	5 / 6
Location & Transportation	2 / 16
Sustainable Sites	10 / 10
Water Efficiency	6 / 11
Energy & Atmosphere	24 / 33
Materials & Resources	5 / 13
Indoor Environmental Quality	9 / 16
Regional Priority	4 / 4
Integrative Process (HC Adaptation)	1 / 1

Figure 11. Final design for Echo Cliffs Health Center

3.5.2 Building Recommissioning

In order to maintain the continually updating energy efficiency standards required for federal agencies, buildings must be recommissioned with new technology and equipment. Building recommissioning involves optimizing existing building systems and equipment to improve energy efficiency and overall performance. Energy conservation measures in building recommissioning include:

1) **Lighting Upgrades:** Replacing inefficient lighting fixtures with energy-efficient LEDs, installing occupancy sensors, and optimizing lighting controls (further discussed in **Section 3.2.1**).
2) **Heating, Ventilation, and Air Conditioning (HVAC) System Optimization:** Adjusting HVAC schedules, settings, and controls to match building occupancy patterns and ensure efficient operation.
3) **Building Envelope Improvements:** Enhancing insulation, sealing air leaks, and upgrading windows to reduce heating and cooling loads.
4) **Equipment Upgrades:** Retrofitting outdated equipment with energy-efficient models, such as pumps, motors, and appliances.

3.6 Fleet Management

Moving forward, IHS seeks to follow EO 14008's directive to achieve a fleet of clean and zero-emission vehicles. Additionally, EO 14057 directs federal agencies to acquire zero-emission vehicles for all new light-duty vehicle acquisitions by 2027 and for all vehicle acquisitions by 2035. Each agency with a fleet comprising at least 20 vehicles shall develop and annually update a zero-emission fleet strategy that shall include optimizing fleet size and composition; deploying zero-emission vehicle re-fueling infrastructure; and maximizing acquisition and deployment of zero-emission light-, medium-, and heavy-duty vehicles where the U.S. General Services Administration (GSA) offers one or more zero-emission vehicle options for that vehicle class (The White House, 2021b).

IHS is continuously replacing inefficient vehicles with more efficient vehicles, typically hybrid vehicles. IHS supports using E-85 Flex-Fuel[5] vehicles where the fuel is available. Currently, the IHS fleet includes 68 hybrid vehicles and one alternate energy vehicle that operates on diesel biofuel. Additionally, at least 352 vehicles in the IHS fleet are considered "fuel efficient." Best management practices include replacing inefficient vehicles with fuel efficient vehicles and minimizing the acquisition of sport utility vehicles unless absolutely necessary.

[5] E-85 is a blended fuel that is composed of up to 85% ethanol, a plant-based fuel, and gasoline. Flex-fuel vehicles are designed to run on gasoline or gasoline-ethanol blends.

CHAPTER FOUR

WATER EFFICIENCY

4

4.0 WATER EFFICIENCY

IHS is committed to furthering environmental sustainability wherever practicable through the conservation of water. To reduce water usage, existing IHS facilities are actively updating building systems with new, more efficient equipment and processes. New IHS facilities are planned to achieve certifications of either Silver or Gold under LEED, dependent on project budget as shown in **Table 3.** The LEED rating system encourages water use reduction, rainwater management and the employment of alternative, non-potable water sources for appropriate end uses.

For the purpose of federal water usage goals, water efficiency is measured in potable WUI, which is defined as the gallons of potable water used per GSF of federal building space. As of FY 2023, the IHS building portfolio includes 4.4 million square feet of federally operated space. Agencies are directed to set agency-specific WUI targets for FY 2030, as well as annual progress targets beginning in FY 2023. IHS aims to reduce the actual WUI of the IHS portfolio by three to four percent annually in order to reach the FY 2030 goal of 36 gallons per GSF.

The Guiding Principles direct new construction projects to include the:

- Design of indoor water systems to reduce potable water consumption by 20 percent compared to the baseline established by the American Society of Heating, Refrigerating, and Air Conditioning Engineers (ASHRAE) Standards;
- Installation of water meters to enhance water use management;
- Use of water efficient landscape and irrigation strategies to minimize outdoor potable water consumption;
- Use of design and construction strategies that control and clean storm water runoff from IHS sites; and
- Use of EPA's WaterSense-labeled products and programs.

4.1 Water Conservation Measures and Projects

IHS has been incorporating WCMs into existing buildings to improve water efficiency. Examples of common WCMs being implemented at IHS facilities include xeriscaping, rainwater collection, building recommissioning, and using cooling tower water discharge for irrigation. This section highlights some examples of IHS sustainability projects that have successfully incorporated WCMs to improve water efficiency. In addition to advancing IHS's water conservation goals, these projects also address other important aspects of sustainability, such as energy conservation and waste reduction.

4.1.1 Xeriscape and Landscaping Techniques

Many IHS facilities are located in arid climates and frequently experience water shortages. When this happens, potable water must not be used for irrigation. Xeriscaping is the practice of designing landscapes or gardens with techniques that can help reduce or eliminate the need for irrigation and still be aesthetically pleasing. Choosing native plant species that are compatible with the local climate minimizes maintenance and water costs. Once established, native drought-resistant plants that can thrive on natural rainfall alone and do not require irrigation during normal conditions. These plants are watered regularly until established and then are watered only if necessary, such as during the extreme conditions brought on by extended droughts. While not

necessarily considered xeriscaping, some designs feature rock formations or gravel as ground cover to further reduce maintenance. An IHS example of xeriscaping is shown below in **Figure 12.**

Figure 12. Xeriscaping at the IHS Desert Sage Youth Wellness Center

Xeriscape is based on seven water-wise landscaping principles:

1) **Planning and Design:** Allows for grouping of plants based on similar maintenance requirements, and the use of terracing on slopes
2) **Soil Improvement:** Benefits plants through the use of compost and nutrients
3) **Efficient Irrigation:** Ensures all plants are watered using drip lines
4) **Low Water-Use Plants:** Uses less water by choosing native, climate-tolerant plants
5) **Mulch:** Provides cover, prevents evaporation, and limits weed growth
6) **Practical Turf Areas:** Limits the grass lawn to areas of functional use
7) **Appropriate Maintenance:** Implements necessary upkeep, such as weed control and pruning

4.1.1.1 Navajo Area: Pueblo Pintado Health Center Green Infrastructure Project

The final design for the Pueblo Pintado Health Center, located in Pueblo Pintado, Arizona, was completed in November 2022. The project design incorporates various principles of energy efficiency and sustainability including an emphasis on water efficient landscaping. The project will

implement water-efficient landscaping by incorporating native, drought-tolerant, and low-maintenance plant species that are suitable for the arid climate. Outdoor amenities will include vegetated courtyards, spaces for gathering, and a hallowed space for the spiritual practice of healing within a traditional hogan. No irrigation system will be installed, resulting in a 100 percent reduction of outdoor water use. In addition to water efficient landscaping, the health center design achieved LEED Gold Certification. Also, the health center is projected to emit 40 percent less CO_2 equivalent than the baseline case used for comparison. The final virtual design for the health center is illustrated in **Figure 13.**

Figure 13. Final design for Pueblo Pintado Health Center main entrance

4.1.2 Rainwater Collection

To save on potable water, some IHS facilities collect precipitation to use as irrigation for landscaping. The rain is collected in cisterns and pumped to irrigation systems as needed. The collection of rainwater eliminates the use of potable water for outdoor irrigation, helping to reach and exceed water consumption savings goals. This system also improves stormwater management by collecting much of the potential rainwater runoff. Water conservation is further enhanced when this practice is combined with xeriscaping.

4.1.3 Using Cooling Tower Water for Irrigation

Some IHS facilities with chillers have cooling towers that are an essential piece of equipment to remove the heat that is created as a byproduct of cooling the building. Cooling towers remove heat by the process of evaporation. Chemical concentration build-up in the cooling tower water necessitates replacement of the water to avoid blockage and corrosion. The water removed from the cooling tower can then be treated and used for irrigation.

4.1.4 Building Recommissioning

Throughout a building's lifetime, chilled water, heating water, and domestic hot water system controls need to be revitalized to ensure highly functional operation and optimized performance. System efficiencies typically drop if leaks occur, filters get clogged, or controls do not work properly, resulting in higher water usage. Implementing a commissioning strategy for each building system can help minimize operational inefficiencies. Commissioning actions that can lead to water savings include leak detection, equipment blowdown optimization, water use measurement resetting, and overflow alarm validation. Ideally, recommissioning studies and

follow-up actions are integrated in the building operation and maintenance plan and performed by staff on a scheduled basis.

4.1.5 Installing Low-Flow Water Fixtures

Replacing aging or outdated fixtures such as faucet aerators, shower heads, toilets, urinals and spray valves with the equivalent low-flow fixtures is a simple and cost-effective measure. For example, according to EPA's WaterSense program, WaterSense-labeled bathroom sink faucets use a maximum of 1.5 gallons per minute compared to the standard flow of 2.2 gallons per minute, which reduces the water flow by approximately 30 percent without sacrificing performance.

CHAPTER FIVE

GET INVOLVED

5

5.0 GET INVOLVED

IHS engages in several outreach and communication initiatives. Key outreach initiatives include:

- Maintaining up-to-date information on the IHS Sustainability Website;
- Offering Green Tips that can be used by all members of our communities;
- Submitting nominations for the HHS Green Champion Awards Program; and
- Reminding IHS employees and the general public to be mindful of our environment.

5.1 Sustainability Website

IHS provides information on various sustainability topics on the Sustainability Website, such as:

- An overview of the IHS Sustainability Program, including goals, policies, and sustainability-related documents;
- Webpages by topic to explore further: Electronics Stewardship; Energy Management; Pollution Prevention; Sustainable Acquisitions; Sustainable Buildings, Sustainable Communities; and Water Conservation;
- Green Tips to raise awareness on various sustainability issues and provide tips that can be implemented at home or in the workplace at little or no cost;
- An archive of past Sustainability Annual Progress Reports; and
- A webpage recognizing IHS recipients of the HHS Green Champion Awards.

5.2 Sustainable Design and Facilities Award

HHS created the Green Champion Awards Program to honor Operational Division staff for their work on sustainability projects throughout HHS. The efforts of these individuals, small groups, and projects have demonstrated measurable results towards both IHS and HHS sustainability goals. As of May 2024, the FY 2024 award winners have not yet been announced.

5.2.1 Fiscal Year 2022 Awards Won by Indian Health Service Staff and Projects

IHS's Andrea Taylor won an individual Green Champion Award in FY 2022 for her work in climate resilience and health equity. Ms. Taylor identified a critical gap in the HHS Draft Federal Flood Risk Management Standard Procedures, which considers flood hazards due to climate change for HHS-owned real property. Ms. Taylor noted the need to include sewer and water line projects as part of the procedures. Addressing this gap ensures that property is fully resilient against flood damage by preventing floodwater infiltration through a sewer system. She is also leading the early adoption of the HHS draft flood procedures while they are undergoing the HHS clearance process and is currently drafting the IHS interim guidance.

Ms. Taylor recommends that IHS staff use the Free Value Approach for project planning and design. The Free Value Approach is one of three approaches that the Federal Flood Risk Management Standard Procedures recommends for considering flood hazards due to climate change. She is also working with IHS staff at the Phoenix Indian Medical Center to obtain a Base Flood Elevation for the site so IHS can plan accordingly and follow the Free Value Approach. Finally, Ms. Taylor also established a mechanism within the Tulsa District of the U.S. Army Corps of Engineers to delineate Base Flood Elevations for any federal agency or tribal project anywhere in the continental U.S. at no charge.

5.3 HHS Kids' Earth Day Poster Contest

The HHS Kids' Earth Day Poster Contest is an annual contest to celebrate Earth Day and promote environmental awareness among staff and their families. This annual contest encourages school-age relatives of HHS employees to submit poster entries to HHS's operating divisions, including IHS. The artwork submissions are judged in grade categories K-2, 3-5, 6-8, and 9-12. IHS determined winners for these categories and then forwarded those entries to HHS to determine agency-wide winners.

The 2023 HHS Kids' Earth Day Poster Contest used the theme "Invest in Our Planet." Through the contest, HHS employees and their families initiate conversations about sustainability and Earth Day, promoting awareness and climate literacy. The children also teach staff what Earth Day is all about and inspire action. One such poster by Eleanora Huang won IHS's K-2nd grade category and is featured on the cover page of this report and below in **Figure 14**. Congratulations Eleanora!

Figure 14. IHS Kid's Earth Day Contest Winner 2023 (K-2nd Grade Category) – Eleanora Huang

Tegan Carrington – 12th Grade

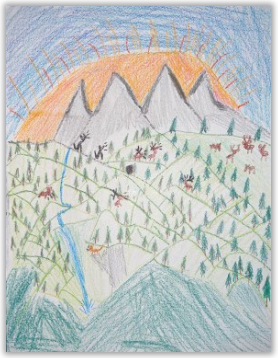
Nyssa Yavari – 3rd Grade

Adelle Lemmon – 4th Grade

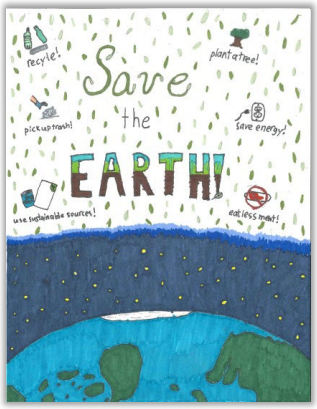
Deanjravon Taylor - 1st Grade

Kenzi Stephens – 9th Grade

Bree Lee – 5th Grade



Bryson Driving Hawk – 4th Grade



Ellie Lemmon – 6th Grade

Figure 15. 2022 IHS Submissions to the HHS Kids' Earth Day Poster Contest

The 2022 HHS Kids' Earth Day Poster Contest used the theme "Be a Green Guardian." Participants were encouraged to illustrate the connection between saving energy and the protection of our environment, species, natural resources, clean air and water, and human health. IHS submissions to the 2022 HHS Kids' Earth Day Poster Contest are shown in **Figure 15** on the following page. Thank you to all participants!

CHAPTER SIX
CONCLUSION

6

6.0 CONCLUSION

Sustainability is at the heart of the IHS Mission - to raise the physical, mental, social, and spiritual health status of the American Indian and Alaska Native people to the highest level. This Sustainability Progress Report summarizes the steps IHS has taken to conserve resources, implement sustainable practices into standard agency operations, and establish itself as a good steward of the environment. This report highlights exemplary IHS sustainability projects and the dedicated IHS personnel who work to make those projects possible. Additionally, this Sustainability Progress Report helps IHS maintain accountability and transparency for our impact on the environment and facilitates our efforts to address the President's EOs regarding environmental sustainability. IHS will continue to support a robust sustainability program and strive to meet today's needs without compromising the ability of future generations to meet their needs.

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