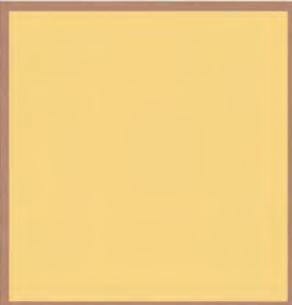


# INDIAN HEALTH SERVICE

## ENVIRONMENTAL STEWARDSHIP AND SUSTAINABILITY



### ANNUAL PROGRESS REPORT – 2011



This document is published and maintained by the Division of Environmental Health Services (DEHS), Office of Environmental Health and Engineering (OEHE), with input from other IHS organizations.

For questions or comments, please contact CAPT David McMahon at (301) 443-4076.

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## MESSAGE FROM THE IHS CHIEF SUSTAINABILITY OFFICER (CSO)

Welcome to the Indian Health Service (IHS) fiscal year (FY) 2011 report on activities and accomplishments related to stewardship of the environment and implementation of sustainable practices. This is the first-annual IHS progress report devoted to environmental protection and sustainability. Its purpose is to highlight the sustainability-related efforts of IHS staff, and recognize those who have received Department of Health and Human Services (HHS) Green Champion Awards for their contributions.

Every day, thousands of IHS staff members, tribal employees, and contractors work in support of the IHS mission, which is to raise the physical, mental, social, and spiritual health of American Indians and Alaska Natives (AI/AN) to the highest level. With more than 2,200 IHS-owned buildings spanning 161 locations in 35 states, there are inherent environmental impacts that result from our daily operations. Due to the sheer size and nature of our facilities and the services we provide, each of our employees holds an important responsibility to ensure that resources are being conserved, exposure to harmful substances is minimized, and pollution of the environment is eliminated.

To achieve long-term sustainability in the healthcare facilities we operate, our challenge is to incorporate a culture of environmental stewardship into everyday decision-making. In FY 2011, IHS staff continued to implement an Organizational Environmental Management System (EMS), which fosters communication of policies, resources, and best management practices between healthcare facilities, Area Offices, and Headquarters. Our staff continued to participate in HHS workgroups devoted to sustainability initiatives, and developed Sustainability Implementation Plans that describe IHS goals and strategies as they relate to the HHS Strategic Sustainability Performance Plan (SSPP).

We premiered a sustainability website in FY 2011 to provide internal and external audiences with comprehensive information about implementing sustainable practices in their day-to-day activities. With web pages on energy management, water conservation, green buildings, sustainable acquisitions, pollution prevention, electronics stewardship, sustainable communities, and more, the IHS sustainability website is a great medium for sharing resources and best management practices among IHS organizations. The website is updated regularly with new information, regulatory requirements, and sustainability tips.

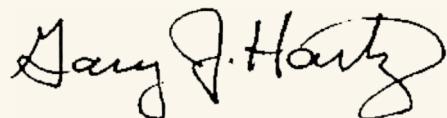
To ensure that IHS facilities are meeting their environmental regulatory requirements, we are conducting environmental compliance audits at all facilities. The audits, which began in FY 2010, provide an opportunity for the facility, Area staff, and Headquarters to document and correct any deficiencies, identify positive environmental actions, and also to exchange ideas on environmental stewardship and greening. These audits occur on a rolling schedule, and each facility should receive an audit at least once every five years.

In addition to the environmental compliance audits, numerous other surveys are performed to help ensure that resources are conserved, hazards are eliminated, and pollution is prevented. These include regular facility inspections by onsite facilities management staff and Division of Environmental Health Services

(DEHS) staff, surveys of medical facilities by outside organizations such as the Joint Commission on Accreditation of Healthcare Organizations, and internal evaluations of energy and water consumption within IHS facilities. In FY 2011, IHS staff developed a project to conduct sustainability audits, which include comprehensive energy and water audits, greenhouse gas (GHG) emissions inventories, and sustainability assessments that will lead to greater efficiency and environmental protection within IHS facilities.

We are acutely aware of the challenges before us, and are dedicated to continuing the critical work this report describes. IHS is taking important strides to conserve resources, reduce our carbon footprint, and eliminate contamination of the human and natural environments, all while continuing the critical mission of providing healthcare services to the American Indian and Alaska Native peoples we serve. Our employees should be proud of their accomplishments and contributions summarized in this report.

As always, we welcome your comments and ideas for how we can improve our efforts to protect human health and the environment.



Gary J. Hartz, P.E., BCEE  
Chief Sustainability Officer  
Indian Health Service

## WHAT IS SUSTAINABILITY?

Sustainability is a concept that whole-heartedly supports the IHS mission to “raise the physical, mental, social, and spiritual health of American Indians and Alaska Natives to the highest level.” According to Executive Order 13514, *Federal Leadership in Environmental, Energy, and Economic Performance*: “sustainability” and “sustainable” mean “to create and maintain conditions, under which humans and nature can exist in productive harmony, that permit fulfilling the social, economic, and other requirements of present and future generations.”

While many other specific definitions for the term “sustainability” exist, for the most part they relate to energy, water, waste, purchasing, buildings, and individual behaviors so as to protect the environment for ourselves and our children.

**Energy:** Energy supplies are precious resources that are in extremely high demand. Conventional energy sources such as petroleum and natural gas are not renewable. Therefore, supplies dwindle and prices increase. By conserving energy and using alternative fuels – particularly those that are renewable – IHS staff can help achieve energy independence and save money at the same time.

**Water:** Water – especially clean water – is another precious resource. Treating water to make it safe to drink or after it has become wastewater takes an enormous amount of energy and uses many chemicals. Protecting stormwater and reducing water consumption consequently helps reduce energy and chemical use. IHS staff can help in these efforts by ensuring the use of water-efficient devices and implementing best management practices outdoors to protect stormwater quality.

**Waste:** The best way to deal with waste is not to produce any at all. This can be done through numerous pollution prevention and source reduction activities. Many IHS locations are reducing solid

waste, reusing products, and recycling batteries, paper, plastics, fluorescent bulbs, and precious metals and aluminum cans.

**Purchasing:** If a product or service is needed, then environmentally preferable purchasing practices should be employed to acquire products or services that: conserve energy and/or water; last a long time and/or are easily recyclable; are nontoxic or less toxic; are biobased; are non-ozone depleting; and support closing the recycling loop (i.e., are made from recycled content). IHS contracting officers and those authorized to purchase products and/or services are informed of products and services that are environmentally preferable and where to purchase such products and services.

**Buildings:** In the United States, buildings account for 39 percent of total energy use, 12 percent of total water consumption, 68 percent of total electricity consumption, and 38 percent of carbon dioxide emissions. Reducing a building’s environmental footprint through proper design, construction, operation and management, maintenance, and de-construction/demolition goes a long way in helping to protect the environment. In existing facilities, IHS facility managers can use the results from energy and water audits and greenhouse gas inventories to modify building operations, management, and maintenance to become more sustainable.

**Individual Behaviors:** It ultimately comes down to changing individual behaviors in the workplace and at home to become truly sustainable. Technology can only do so much; it does need to be turned on, acted upon when an alert sounds, and so on. IHS staff can institute policies, train and educate fellow staff, provide feedback, and even use friendly competitions to change individual behaviors to become more sustainable.

## FEDERAL REQUIREMENTS: SUSTAINABILITY TARGETS

In addition to the wide range of environmental laws and regulations enforced by federal, state, local, and tribal agencies, IHS environmental sustainability initiatives are guided by two Executive Orders that significantly impact the agency's environmental stewardship activities.

On October 5, 2009, President Obama issued EO 13514, *Federal Leadership in Environmental, Energy, and Economic Performance*, which superseded and expanded upon the requirements of EO 13423, *Strengthening Federal Environmental, Energy, and Transportation Management*, signed by President Bush on January 27, 2007. These EO's lay the foundation for our stewardship goals and the activities we undertake to meet those goals.

EO 13514 places emphasis on the following objectives:

- Reducing GHG emissions by 2 percent annually through FY 2020, using FY 2008 emissions as the baseline year;
- Preparing Strategic Sustainability Performance Plans for meeting the GHG emission goals;
- Developing a comprehensive inventory of absolute GHG emission quantities;
- Improving water use efficiency by reducing potable water consumption by 26 percent through FY 2020 and increasing the use of water-saving fixtures;
- Promoting pollution prevention by decreasing the amount of materials consumed, diverting 50 percent of non-hazardous solid waste by FY 2015, and increasing the use of uncoated paper that contains 30 percent post-consumer fiber;
- Reducing the amount of toxic and hazardous materials acquired, used, and disposed of;

- Implementing integrated pest management (IPM) techniques and other appropriate landscape management practices;
- Advancing regional and local integrated planning;
- Implementing high-performance building design, construction, operation and management, maintenance, and deconstruction practices;
- Advancing sustainable acquisition to ensure that 95 percent of new contracts include requirements for environmentally preferable products and services;
- Promoting electronics stewardship through a procurement preference for electronics registered by the Electronic Product Environmental Assessment Tool (EPEAT);
- Establishing policies to enable power management, duplex printing (printing on both sides of a sheet of paper), and environmentally sound practices for the disposal of electronic equipment; and
- Managing environmental impacts through the use of EMSs at appropriate organizational levels.

EO 13423 requires the federal government to advance its efforts of environmental stewardship and greening of the government, and places emphasis on the following objectives:

- Using EMSs to reduce the impacts of our operations on the environment;
- Considering life-cycle costs in capital investments;
- Including environmental objectives in performance evaluations of senior officials to ensure that senior management is involved in the implementation of the EO;
- Using award programs to reward superior performance and innovative ideas; and

- Using cross-functional teams to determine agency policy and implementation strategies for the EO.

## **STRATEGIC SUSTAINABILITY PERFORMANCE PLAN (SSPP)**

In FY 2010, HHS began to evaluate relationships between the sustainability mandates of EO 13514 and its mission priorities of improving national performance of leading health indicators and healthcare outcomes. Based on this evaluation, the Department developed its inaugural SSPP, which was enacted by Secretary Kathleen Sebelius later in 2010. The SSPP formulated goals intended to meet the EO mandates and maximize synergistic relationships with mission programs.

In early 2011, HHS conducted a more in-depth review of sustainability-mission relationships by comparing the specific sustainability goals of its 2010 SSPP and the new Health and Human Service objectives set for the Department in the Secretary's Strategic Plan for 2010-2015. The review revealed positive synergistic relationships between virtually all of the sustainability goals and mission objectives, and numerous opportunities for integration and leveraging resources and efforts for achievement of common objectives. The result of this Department review was a crosswalk document of HHS mission objectives and sustainability goals, and an updated SSPP for FY 2011.

While the first HHS SSPP was being developed, sustainability workgroups were established to steer the development of Department-wide objectives and implementation strategies within each of the main goal-areas of the SSPP. These workgroups, which continue to meet regularly, are made up of representatives from each of the major landholding operating divisions (OPDIVs). At least one IHS representative participates in each of the workgroups.

In FY 2011, the sustainability workgroups were tasked with preparing OPDIV-specific SSPP Implementation Plans in each of the main goal areas. IHS staff prepared the Implementation Plans that conform to the HHS SSPP and also to reflect the unique operations and characteristics of IHS. The Implementation Plans include IHS-specific goals for advancing environmental sustainability, and strategies and plans for achieving the goals from 2011 and beyond. In FY 2012, IHS will take the lessons learned from the past year and develop a more in-depth Sustainability Implementation Plan that builds upon the goals and strategies developed by IHS staff for the 2011 Implementation Plans.

## **IHS SUSTAINABILITY ADVISORY BOARD**

The IHS Sustainability Advisory Board (SAB) convened for the first time during FY 2011. Chaired by the CSO, the SAB was formed to ensure a coordinated, multi-office approach to implementing the sustainability initiatives mandated by EO 13514. Additional high-level objectives are to promote environmental sustainability as a way of doing business while emphasizing return on investment (ROI) benefits, and to ensure that IHS planning incorporates practices which support sustainability needs. The following positions are permanent members on the SAB (with current members):

- Deputy Director for Operations (Bob McSwain)
- Chief Sustainability Officer (Gary Hartz)
- Deputy Chief Sustainability Officer (CAPT Gordon Delchamps)
- Electronic Stewardship/Data Consolidation Manager (Ken Johnson)
- Energy/Water Manager (CAPT Gordon Delchamps)
- Environmental Manager (Steve Aoyama)
- Fleet Manager (Patricia Spuck)
- Green Procurement Manager (Dale Burson)

- Pollution Prevention/Waste Manager  
(CAPT Kelly Taylor)
- GHG Scope 3 Manager  
(Chris Jones and Loa Girty)
- Sustainable Green Buildings Manager  
(Joe Bermes and CAPT Steve Raynor)
- Sustainability Outreach/Communications  
Manager (Constance James)

The SAB meets quarterly at IHS Headquarters, with some members calling in from other locations. During quarterly meetings, members discuss updates from HHS sustainability workgroups, progress on IHS sustainability goals, challenges, and upcoming events and due dates.

## **THE IHS ORGANIZATIONAL EMS**

On varying levels, IHS has been implementing the core elements of an ISO 14001 EMS framework for many years. In FY 2011, the previous multi-site EMS evolved into the current Organizational EMS, which means that there is now a single IHS EMS that encompasses the operations of the entire agency.

Key elements of the IHS EMS include:

- Promulgating an environmental sustainability policy;
- Establishing sustainability objectives and targets through the IHS Sustainability Implementation Plan;
- Conducting regular environmental, GHG, and sustainability audits;
- Ensuring that all staff receive appropriate environmental training; and
- Performing an annual EMS Management Review and communicating through the SAB and the Annual Progress Report.

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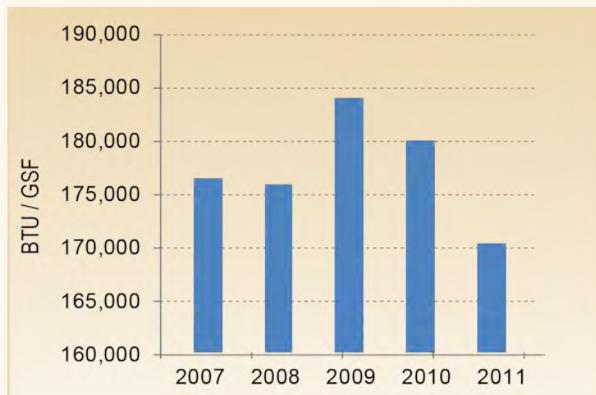
## CONSERVING ENERGY MANAGEMENT: REDUCING IHS'S CARBON FOOTPRINT

In FY 2011, IHS spent more than \$25 million for energy in approximately six million square feet of buildings that report annual energy use. IHS is fully committed to reducing the energy usage intensity (EUI) of each building within our portfolio of more than 2,200 facilities. In FY 2011, we reduced the EUI in goal-subject facilities compared with 2003 by 14.7 percent, and we are on track for a 30 percent reduction in 2015.

We are continuing to reduce our carbon footprint by implementing energy-efficient practices, more efficient combustion equipment, fuel switching, and installation of Energy Star® appliances and office equipment. We are designing new buildings that incorporate renewable energy technologies such as solar photovoltaic (PV) arrays, solar hot water heaters, and ground source (geothermal) heat pumps (GSHP).

Many IHS installations have completed cost-effective, energy-efficient projects addressing weatherization; lighting; heating, ventilation, and air conditioning (HVAC); process energy reduction, and renewable energy. Approximately \$22 million in American Recovery and Reinvestment Act (ARRA) funds were devoted to increasing the energy efficiency in our buildings. Energy management is an important area addressed by our Environmental Steering Committee.

### *Energy Usage Intensity of IHS facilities, 2007-2011*



The following sections highlight our accomplishments in carbon footprint reduction in FY 2011.

### ENERGY-EFFICIENT EQUIPMENT

- We reduced our EUI from 199,616 British Thermal Units/gross square foot (BTU/GSF) in FY 2003 (baseline year) to 170,881 BTU/GSF in FY 2011. This represents a decrease of 14.4 percent.
- The Phoenix Area replaced 55 HVAC units with energy-efficient units at the Desert Visions Youth Treatment Center, and also installed programmable thermostats. The Phoenix Area replaced seven air handling units (AHU) at the Phoenix Indian Medical Center, and a new boiler at the Fort Yuma installation.

### RENEWABLE ENERGY

- Approximately 13 percent of the energy consumed in the Oklahoma City Area was generated by renewable energy.
- Construction projects at Fort Yuma and Kayenta will include solar PV systems that generate nearly 20 kW and 95 kW, respectively.
- The Cheyenne River Health Center and Staff Quarters at Eagle Butte were under construction and both projects have incorporated GSHPs in their designs.
- The Albuquerque Indian Health Center and Santa Fe Hospital purchased 10 percent of their electrical usage from wind-generated energy sources. Two additional buildings in the Albuquerque Area also participate in the program by purchasing wind energy.
- The Tucson Area developed a project to install a 62 kW solar PV array at the Santa Rosa Health Center in Santa Rosa that will provide 100 percent of their electricity requirements.

## ENERGY POLICIES AND PRACTICES

- Pharmacy staff at the Colorado River Service Unit (CRSU) initiated a carpool to make the 45-minute commute between CRSU and the nearby town of Lake Havasu more efficient. GHG emissions, gas consumption, traffic, and road wear-and-tear have effectively been reduced by 66 percent, and the CRSU staff members received an FY 2011 HHS Green Champion Award. The CRSU Pharmacy staff noted that, with the proper initiative, this program can be easily replicated by any number of IHS locations.
- As of September 2010, IHS requires that budgets for all new construction projects include 2 percent of construction cost for the investigation, design, and construction of on-site renewable energy systems capable of providing at least 7.5 percent of the annual electrical load.
- IHS requires that installations investigate, design, and construct solar water heating systems capable of delivering 30 percent of the hot water demand. These requirements have been incorporated into the IHS A/E (Architect/Engineer) Design Guide for all future projects.
- Power IT Down Day – In FY 2011, IHS again participated in the federal government's Power IT Down Day. The IHS Chief Information Officer, Dr. Theresa Cullen, sent an email to all IHS personnel with information on how to participate. The effort resulted in increased staff education and energy savings (not quantifiable) from both the one-day event and the lessons learned.



*Construction of the new San Carlos Hospital.*

- The Albuquerque Data Center merged operations with those at the Bureau of Indian Affairs in Albuquerque. The action resulted in significant energy reductions for both agencies and will end up saving a very significant amount of money for IHS.
- IHS reduced its vehicle fleet petroleum use by 14.1 percent compared to 2005, and is on track for a 20 percent reduction by 2015. This means that IHS received a green score in the Reduction in Fleet Petroleum Use category of the 2011 Office of Management and Budget (OMB) Scorecard on Sustainability.
- For a second straight year, the Blackfeet Community Hospital has received the Environmental Protection Agency's Energy Star Certification by scoring an 82 out of a possible 100 points in the Energy Star evaluation criteria. Blackfeet Community Hospital also underwent an energy and water audit during FY 2011, and their staff members received a Health and Human Services (HHS) Green Champion Award.

## TRAININGS AND CONFERENCES

- The Alaska Native Medical Center hosted an energy auditing class put on by the National Renewable Energy Laboratory (NREL).
- Staff from area offices and installations throughout the country represented IHS at the GovEnergy Conference in August 2011.
- In addition to these accomplishments, IHS workgroup representatives developed the IHS Implementation Plan for the Energy Conservation and GHG Emissions component of the HHS SSPP during FY 2011. The Implementation Plan established goals and strategies for incorporating energy conservation practices into agency operations.



*IHS has met the Scope 1 and 2 GHG reduction target of 10.3 percent by 2020, with a 23.5 percent reduction in 2011. IHS is on track to reach our goals with a 2.1 percent decrease in Scope 3 emissions, moving toward the Scope 3 GHG reduction target of 3 percent by 2020.*

## CASE STUDY: RED LAKE HOSPITAL ENERGY REDUCTION PROJECT

► Following up on the energy conservation measures identified in a 2008 energy audit at the Red Lake Hospital, which was constructed in 1981, staff at the installation initiated a project to replace the entire hospital roof, replace all three hospital boilers, replace vestibule windows, replace three air handling units (AHUs), replace the installation's chiller, install variable frequency drives (VFDs) on three AHUs, and install a Direct Digital Control (DDC) system to replace the original pneumatic HVAC control system. The total cost of the energy projects was \$1.9 million. During 2011, energy usage was reduced by 48,000 BTU/gsf, or 23 percent per year over the 2003 baseline year. The new, low-maintenance HVAC equipment will also significantly reduce operational costs at the installation for many years.

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## WATER CONSERVATION: CONSERVING A VITAL RESOURCE

IHS staff implemented water-saving features in many IHS facilities during FY 2011. As with energy consumption, however, it is relatively difficult to reduce water consumption in IHS medical facilities due to special requirements for sanitation disinfection and patient comfort in these areas. IHS has made progress by replacing older equipment and fixtures with newer, more efficient models, educating staff and reducing or eliminating outdoor water use.

The following are some highlights of our FY 2011 progress:

- The Bemidji Area reported a 23 percent reduction in water usage intensity (WUI) compared to the FY 2007 baseline consumption year.

- IHS personnel in the Alaska Area have conducted 21 audits of water systems within the Area and found that, on average, a 50 percent reduction in total energy usage related to water systems can be achieved. The staff members received an FY 2011 HHS Green Champion Award.
- The IHS A/E Design Guide includes requirements to reduce water consumption by 20 percent and to investigate options for higher levels of efficiency.
- IHS formally established requirements to use only indigenous plants and to eliminate the use of potable water for irrigation systems in landscaping plants.

### HHS GREEN CHAMPION AWARD WINNER

#### ***HHS Green Champion Award Winner – CAPT Marc Fleetwood, San Xavier Xeriscaping Project***

In FY 2011, CAPT Marc Fleetwood was presented with an FY 2010 HHS Green Champion Award for implementing a xeriscaping project at the San Xavier Health Clinic in the Tucson Area. Xeriscaping involves the replacement of non-native landscaping plants with native, drought-resistant plants so that outdoor water use is eliminated or greatly reduced. Xeriscaping projects such as San Xavier will result in significant water savings for IHS.

*IHS workgroup representatives developed the IHS Implementation Plan for the Water Conservation component of the HHS SSPP during FY 2011. The Implementation Plan established goals and strategies for incorporating energy conservation practices into agency operations.*

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## SUSTAINABLE BUILDINGS

IHS incorporates the elements of the *Guiding Principles for Federal Leadership in High Performance and Sustainable Buildings Memorandum of Understanding (Guiding Principles)* into construction and renovation projects to the maximum extent.

The agency's A/E Design Guide requirements are aligned as closely as possible with Leadership in Energy and Environmental Design (LEED®) Certification criteria, and since 2007 have contained requirements for new construction projects to incorporate the *Guiding Principles*. In accordance with this and other IHS policies, buildings must have these critical sustainability features:

- Utilize eco-friendly and locally-produced building materials during construction;
- Reduce waste and increase recycling as much as possible during construction;
- Maximize the use of daylighting for indoor spaces;
- Use energy-efficient lighting and electronic equipment;
- Provide adequate air circulation using energy-efficient HVAC equipment; and
- Purchase or generate energy from renewable sources.

**Eagle Butte Health Center**



The following are some highlights of our FY 2011 progress:

- The Eagle Butte Health Center, in construction during FY 2011, is designed to be 29 percent more energy efficient than traditionally-designed buildings of the same size, according to the American Society of Heating, Refrigeration, and Air-Conditioning (ASHRAE) 90.1 Standard. Among other sustainability features, the Health Center includes a GSHP.
- The Eagle Butte Staff Quarters, also in construction during FY 2011, were designed to be more than 44 percent more energy efficient than traditional residential structures. The quarters, which include GSHPs, will achieve sustainability certification from the National Association of Home Builders (NAHB).
- The Kayenta Health Center, in construction during FY 2011, is designed to be 35 percent more energy efficient than buildings of the same size and purpose. The Health Center includes a 95 kW solar PV system, and will seek LEED Silver Certification when completed.
- The San Carlos Health Center, in construction during FY 2011, is designed to be 35 percent more energy efficient than buildings of the same size and purpose. Area staff will be seeking LEED Certification for the project when it is complete.

- The Fort Yuma Health Center, in construction during FY 2011, is designed to be 42 percent more energy efficient than the ASHRAE 90.1 Standard. Among other sustainability features, the Health Center includes a nearly 20 kW solar PV system. Area staff will be seeking LEED Gold Certification when construction of the Health Center is completed.
- The Elbowoods Health Center, in construction during FY 2011, is designed to be 27 percent more energy efficient per the ASHRAE 90.1 Standard. The Health Center incorporates a GSHP, and will achieve LEED Silver Certification when completed.
- The Wagner Staff Quarters, completed in October 2011, were designed to be 30 percent more energy efficient than traditional homes. Sustainability features of the quarters include air source heat pumps and efficient insulation in basement walls.
- In the Portland Area, the Yakama Administration building incorporated sustainable design performance requirements with guidance from

LEED and the sustainable *Guiding Principles*. The performance requirements include use of regional materials, indoor air quality, use of low-VOC products, and use of sustainably-harvested wood. The renovation of 20 percent of the existing Yakama Health Center incorporated reuse of materials to the extent possible. Examples of reuse include: wood decors; access controls; and hollow metal door frames.

- In FY 2011, IHS headquarters-based staff developed a project to conduct *Guiding Principles* sustainable building audits at all IHS-owned buildings. The project was kicked off during the first month of FY 2012, and is expected to be completed in mid-2013. In accordance with EO 13514, at least 15 percent of buildings within the IHS portfolio must be in compliance with the *Guiding Principles* by FY 2015, and all buildings must conform to the standards by FY 2030.



*Construction of the Nome Hospital*

*IHS workgroup representatives developed the IHS Implementation Plan for the Sustainable Buildings component of the HHS SSPP during FY 2011. The Implementation Plan established goals and strategies for incorporating energy conservation practices into agency operations.*



*Construction of the Elbowoods Health Center*

## CASE STUDY: SUSTAINABLE BUILDING IMPROVEMENTS IN THE OKLAHOMA CITY AREA

### ► *Lawton Boiler Project*

The Lawton boiler replacement project was a \$1,042,792 ARRA-funded project that replaced two 45-year-old steam boilers with four modern hydronic boilers and a small steam boiler. The new system utilized a modular design that allows energy usage to be more easily controlled, and allows for easy maintenance and repairs. The project also included additional mechanical upgrades to the Lawton hospital, such as smart metering for incoming utilities, replacement of the domestic hot water heaters, installation of a modern control system for the boilers, and new circulation pumps. The project reduced the natural gas usage at the Lawton Hospital by 33 percent in FY 2011 and has saved \$27,389 in FY 2011 energy costs compared to the prior fiscal year. The OKC Area Office expects the performance to improve as further mechanical improvements replace obsolete air handlers and expand the modernized control system.

### ► *Haskell Retro-Commissioning Project*

The Haskell retro-commissioning project cost \$174,857, and was focused on addressing problems with the performance of the HVAC system at the Haskell Indian Health Center. The project, which culminated with the replacement of four of the rooftop air handling units, emphasized using engineering methodology to determine the cause of the problems at the facility through the use of small data acquisition sensors. These sensors determined that the existing HVAC units were not functioning correctly, and further investigation showed that the existing rooftop units needed to be replaced. The rooftop units were then connected to a modernized control system, and the facility HVAC was once again performing within acceptable ranges. The project resulted in a 17 percent reduction in electricity consumption, and a natural gas reduction of 29 percent. It saved the facility \$6,713 versus the prior fiscal year. The OKC Area expects the performance gains to improve as further mechanical improvements address the problems with the duct work, dampers, and control system.

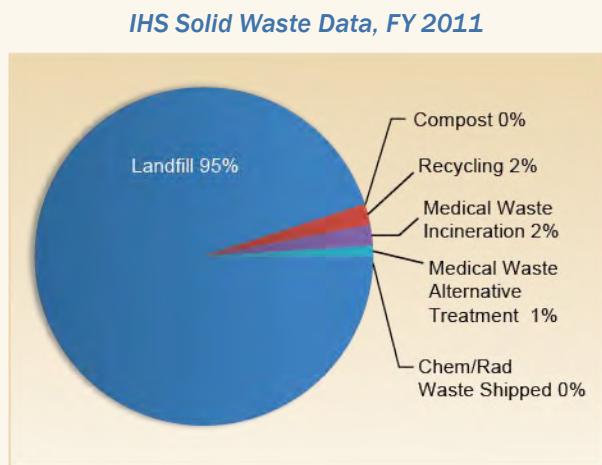
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## POLLUTION PREVENTION AND WASTE REDUCTION

IHS staff throughout the agency continued to identify areas where exposure to harmful chemicals can be eliminated, where pollution can be prevented, and where waste can be minimized.

In August 2011, IHS staff conducted a solid waste study (using FY 2010 solid waste estimations) to determine the quantities of waste being diverted from landfills and incinerators. The following graph summarizes the solid waste data collected during the data call:



The solid waste data call also found that there are waste recycling programs at the headquarters office in Rockville, at the Dallas and Seattle Service Centers, and at all 12 area offices.

The following are some highlights of our FY 2011 progress:

- At the Santa Fe Indian Hospital, the efforts of registered nurse Ms. Kia Mudge led directly to the creation of a recycling and waste reduction program at the installation. By coordinating with housekeeping, medical, nursing, and other staff within the hospital, Ms. Mudge played a key role in the installation's efforts to recycle paper, plastic, cardboard, and other materials. In doing so, Ms. Mudge and other Santa Fe staff members have reduced the overall negative impacts of hospital waste. Ms. Mudge received an FY 2011 HHS Green Champion Award for her efforts.
- IHS workgroup representatives developed the IHS Implementation Plan for the Pollution Prevention and Waste Reduction component of the HHS SSPP during FY 2011. The Implementation Plan established goals and strategies for incorporating energy conservation practices into agency operations.



## HHS GREEN CHAMPION AWARD WINNER

### ***LT Megan Arndt, Bemidji Area***

To facilitate the development and implementation of sustainability measures in the Bemidji Area, LT Arndt promoted the use of the tribal Sustainability Assessment Tool Kit, which focuses on 28 best practices in five key areas: Buildings and Lighting; Land Use; Transportation; Environmental Management; and Economic and Community Development. The 28 best practices are broken down into 168 unique actions that organizations can choose to implement.

Tribal community members at Leech Lake in the Bemidji Area became interested in partnering with IHS to increase tribal sustainability efforts. A Green Team was formed from tribal employees from multiple departments of the Leech Lake Council. LT Arndt held face-to-face meetings with potential partners in the community, and discussed a project to divert waste from landfills by setting up stations for composting organic wastes. The partners were free to choose if they wanted to be part of a project; those who agreed rolled up their sleeves and the Green Team began obtaining estimates for waste generation, tipping fees, and other details.

The Leech Lake Green Team built partnerships with the following organizations: Bug O Nay Ge Shig School K-12; LLBO Palace Casino & Restaurant; Leech Lake Tribal College; and LLBO Solid Waste Division. By choosing appropriate places for building the compost stations, funding, constructing, and then operating the stations, the Leech Lake Green Team, with support from LT Arndt, will divert an estimated 153,000 pounds of solid waste from landfills each year.

The next steps are to continue providing educational material for Leech Lake facility patrons and staff on what is appropriate to compost, as well as the benefits of composting. In addition, LT Arndt and others will continue to assist composting locations with maintaining waste manifests so that waste diversion amounts may be accurately tracked.



# SUSTAINABLE ACQUISITIONS

IHS staff purchase a wide range of green products, including: less-toxic cleaning products; energy-efficient electronics; water-efficient fixtures; recycled-content paper and plastic products; low-volatile organic compound (VOC) paints and carpeting; and bio-based materials that are easily biodegradable. All contracting officers are required to complete green procurement training, and many other staff complete varying levels of related training programs.

IHS workgroup representatives developed the IHS Implementation Plan for the Sustainable Acquisitions component of the HHS SSPP during FY 2011. The Implementation Plan established goals and strategies for incorporating energy conservation practices into agency operations.

As of the end of FY 2011, 95 percent of eligible electronic printing products throughout IHS utilize duplex printing features. In addition, 100 percent of eligible PCs, laptops, and computer monitors are programmed with power management actively implemented and in-use.



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## ENVIRONMENTAL COMPLIANCE MANAGEMENT

IHS facilities strive to comply with all applicable federal, state, tribal, and local environmental laws. The IHS Environmental Compliance Awareness Guide, published in December 2007, provides an overview of the environmental regulations most applicable to IHS facilities and operations.

In addition, IHS has developed a comprehensive environmental auditing process to identify and correct any facilities and sustainability-related deficiencies. Audit coordinators have been identified and trained in each of the 12 IHS Areas. The audits started in 2010, and all facilities are planned to be audited on a five-year rolling schedule.

By the end of FY 2011, a total of 22 audits had been completed and 35 were in process. Audits at 448 facilities had not started yet. Deficiencies and best management practices from each audit are entered into the Healthcare Facilities Data System (HFDS) for project tracking and prioritization.

The following are some accomplishments related to the IHS environmental audit process:

- A chapter on the IHS Environmental Audit Process is included in the OEHE Technical Handbook.
- Information on the Environmental Audit Process was presented to HHS headquarters and OPDIV staff in early 2011.
- Environmental Audit Coordinators meet regularly to discuss strategy, results, and any significant issues they have encountered during the audit process.
- Training modules and factsheets were developed for several environmental topic areas to provide guidance to Environmental Audit Coordinators. The first module developed was on Universal Waste regulations.

- A SharePoint site was created to support the Environmental Audit Coordinators.

The following are some additional highlights from our FY 2011 progress:

- **Environmental Steering Committee** – Utilizes staff from all levels of the organization to award environmental remediation and demolition project funding. Each year, \$3,500,000 is available for projects relating to environmental remediation and demolition. In FY 2011, a chapter was added to the OEHE Technical Handbook that allows the Environmental Steering Committee to begin including sustainability projects in the evaluation and award of project funding beginning in FY 2012.
- **Sustainability Data** – A team has been developed at IHS headquarters to focus on sustainability-related data within the agency. After identifying more than 200 sustainability-related data parameters, the team went through each one and determined: whether the data is currently available, where it can be found, and how the data should be managed within the IHS EMS. A gap analysis was conducted to figure out the data parameters that are not currently available. Feasibility studies will be conducted and action plans will be developed for all required data that is not currently available.

## CASE STUDY: IHS ENVIRONMENTAL AUDIT INTERNAL RESOURCE TEAM (IRT)

After two years of design and pilot testing, the IHS Environmental Audit Internal Resource Team (IRT) began implementing the agency-wide environmental audit process in FY 2010. This process provides each IHS installation manager with a snap-shot view of regulatory compliance in 20 environmental topics, ranging from hazardous waste to air emissions to historic and cultural resources.

Environmental Audit Coordinators (EACs) have been designated in each of the agency's 12 areas. During the audit process, the EAC and installation Representative identify the following:

- Environmental deficiencies (e.g., an out-of-compliance aboveground storage tank);
- Specific corrective actions to be taken to correct these deficiencies;
- Environmental best practices that are occurring at the installation; and
- Further compliance-related investigations that are required.

The audit process has been designed to integrate with the IHS Organizational Environmental Management System (EMS) that is currently being implemented. The IHS IRT received an FY 2010 HHS Green Champion Award for their efforts to develop and implement the auditing program.

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## INDIAN HEALTH SERVICE HEADQUARTERS

801 Thompson Avenue  
Rockville, MD 20852