2020 IHS Green Champion Award Winners

Change Agents Award

IHS ANTHC Containerized Biomass Boiler Module Reduces Technology Implementation Costs in Rural Alaska

The Indian Health Service (IHS) and the Alaska Native Tribal Health Consortium (ANTHC) Rural Energy Program is committed to ensuring that safe water, sanitation and heating is not only affordable, but also sustainable through renewable and alternative energy solutions for public health infrastructure to rural communities in Alaska. The involved communities struggle economically, with many residents falling well below the poverty line. Providing essential public health infrastructure is costly, mostly relying on diesel fuel that must be barged or flown into villages.

An innovation to help address part of these issues is the modular biomass boiler. Biomass heating systems use locally harvested wood resources rather than expensive, imported heating oil. The modular biomass system, unlike the traditional version, is a containerized modular unit constructed in two phases. In the first phase, the boiler module is fabricated in Anchorage, Alaska. In the second phase, the module is shipped to remote communities for onsite construction and installation. The City of Ambler is the first Alaskan community to benefit from a modular biomass boiler. Jobs are created for local woodcutters and boiler operators, and by using a comprehensive plan to maintain a sustainable harvest, locally harvested wood can promote forest health.

Biomass fuel has a better cost-stability than fossil fuels, insulating communities from the volatility of oil prices. It also reduces dependence on non-renewable fuel sources. These same forests, a natural and sustainable source of fuel, will run Ambler's modular biomass boiler, saving approximately 3,500 gallons of heating fuel oil a year, resulting in more than $22,500 in annual savings. Annual operations and maintenance estimates are approximately $6,650. Annual cordwood fuel costs represent an additional $6,250 that will be paid to local woodcutters for harvesting and delivering wood for the biomass system.

By building the modular system locally in Anchorage, ANTHC was able to successfully complete construction in the summer of 2020, while following strict COVID-19 safety protocols to minimize the risk of bringing the virus to this isolated community that is a plane flight away from a hospital. For Ambler, and for other remote Alaska communities, the modular biomass boiler means more affordable and secure public health infrastructure, economic opportunities for community members, and less dependence on imported heating oil.

Energy and Fleet Management Award

IHS Richard Wermers, P.E.

Richard (Rick) Wermers has served as the Indian Health Service (IHS) Energy Manager since FY 2015. In that time, IHS has reduced energy use intensity by 7.6% and water use intensity by 30% and has tripled the generation of onsite renewable electricity from photovoltaic solar arrays. A large part of these reductions and advancements is due to the emphasis and fostering of energy and water efficiency priorities that Mr. Wermers has imparted on the IHS Area and facility managers.

He disseminates information from HHS headquarters to the Area and facility managers on energy and water efficiency, and consistently includes efficiency topics in meetings and presentations with IHS facility staff. Rick is also responsible for reporting all energy and water use data, project data, and energy funding information from hundreds of IHS buildings to the Department. In addition, he serves as an IHS focal point in other sustainability areas such as sustainable high-performance buildings, sustainability outreach, and waste and pollution prevention.

IHS Cass Lake Hospital Solar PV System Energy Project

Matthew Ireland, Kami Wooldridge

The Indian Health Services (IHS) Cass Lake Hospital, located in Cass Lake, Minnesota, is a five-bed Critical Access Hospital. The 82,000 square foot facility was opened in 1937 and has been renovated and expanded multiple times. Due to the IHS requirement of incorporating Leadership in Energy and Environmental Design (LEED) guidelines in design and construction, the Cass Lake Hospital Solar Photovoltaic (PV) System Energy Project was planned.

The Bemidji Area Division of Facilities Management, with support from the Environmental Steering Committee, provided $150,000 of funding toward the solar project, and the local electrical utility provided $50,000 in incentives. This solar array project is the first PV project for an IHS-owned federal health care facility in the Bemidji Area. The Cass Lake Hospital proposed installation of a 40-kilowatt (kW) roof-mounted PV renewable energy system to reduce energy consumption by 52,000 kWh per year, which is 3% of the facilities total annual electricity use. Estimated first year cost savings are $3,403.

Environmental Stewardship Award

IHS William Haug, MD

Dr. William (Andy) Haug noticed the Pediatric Clinic at Indian Health Service (IHS) Phoenix Indian Medical Center (PIMC) was throwing away items that could be recycled. To help to address this issue, Dr. Haug decided to bring in containers to help collect and sort various recyclable materials including cardboard, aluminum, plastic, and paper. He graciously collects these items and takes them home once or twice a week to be appropriately recycled. This has cut

down on departmental waste and trash collection by the housekeeping services. Most of all, he is helping the PIMC Pediatrics community to recognize the importance of recycling and saving the environment.

Good Neighbor Award

IHS Sells Wastewater Disposal Improvements

Adam Hughes, P.E., Darren Ausdemore, P.E., Michael Alshuk, P.E., Lawrence Denetso, Ross Schroeder, P.E., Cauy Washburn, Nancy Sockabasin

The Indian Health Service (his) Tucson Area Sanitation Facilities Construction (SFC) Branch serves tribal members of the Tohono O'odham Nation with projects for improving wastewater disposal facilities. One such project, completed in fiscal year 2020, is the Sells Sewer Main/Lagoon Upgrade.

This project involved the expansion of an undersized lagoon system and the installation of a larger sewer main trunk line leading into the lagoon. Additionally, repairs to 22 manholes were completed. This $4.85 million project was a joint effort between the IHS, the Tohono O'odham Utility Authority (TOUA), and the Environmental Protection Agency (EPA). Through this partnership, IHS contributed $3,261,000 in project funds and EPA contributed $1,590,432. The TOUA provided for the construction and future maintenance of all facilities installed.

IHS also provided engineering design services, plans, specifications, and oversight construction inspection. As an integral component of IHS disease prevention activities, the SFC program strives to improve the health of American Indians and Alaska Natives and their communities through essential sanitation facilities such as safe drinking water and adequate wastewater disposal. Properly functioning community wastewater systems, such as the one location in Sells, play a very important role in disease prevention by removing harmful viruses, bacteria, and parasites from the environment.

Green Hero Video Outreach Award

IHS Deborah Lai

Deborah Lai, Clinical Informatics Coordinator at the Indian Health Service (IHS) Fort Yuma Health Center, developed a video to explain how the current mainstream food system leads to unhealthy diet and climate change, and how one can increase climate sustainability by cooking and gardening together at home when possible.

The film states that when it comes to tackling climate change, the focus tends to be on 'clean energy' solutions. But the global food system, which encompasses production and post-farm process such as processing and distribution, is responsible for 25 percent of the world's greenhouse gas emissions. According to the video, science confirms that addressing our current food systems is a priority.

On the consumer's side, diets shifting from animal-based, convenient highly processed packaged foods to plant-based, whole-grain food that nourishes communities, the earth and the environment, can help climate sustainability. The film further demonstrates the downstream negative impact on climate sustainability of our current food system, empowering more to stop climate warming and start the positive transformation by cooking and gardening at home whenever possible. The message is that an improved diet will not only make us heathier, but it will also save our environment as well.

Water Use Efficiency and Management Award

IHS ANTHC Works on Chevak Heat Recovery

The City of Chevak, a remote Western Alaska community of about 1,000 people near the Bering Sea, is often at the mercy of extreme climate. Delivering basic services such as water and sewer in an environment that is frozen nearly eight months of the year demands dedication and ingenuity.

Heat and electricity are generated by diesel fuel, an expensive commodity to transport to a location with no road access. Indian Health Service (IHS) and the Alaska Native Tribal Health Consortium (ANTHC) Rural Energy Program partnered with Chevak to design and construct a heat recovery system. This system collects waste heat produced by the community's diesel-powered generators in the power plant and uses it to heat nearby facilities. Previously, the waste heat, which is a byproduct of electricity production, was released to the atmosphere.

In Chevak, the system provides heat to the water treatment plant and vacuum sewer plant. Heat recovery has proven to be a reliable method of increasing diesel power plant efficiency by 30 to 40% and reducing costs by roughly 50%. In addition, the Chevak heat recovery project reduces the negative environmental impact of burning fossil fuels by offsetting a total of approximately 12,500 gallons of fuel oil each year. That offset equals a projected savings of over $35,000 annually for the water and sewer utility. Customer water rates dropped from $165 a month to $85 a month, a substantial savings for a community where nearly 40 percent of the residents are below the federal poverty level.

The community has also gained additional benefits through on-the-job training and seasonal work and wages for residents. Chehak's heat recovery project was funded with a grant from the Alaska Energy Authority in the amount of $558,800, an Environmental Protection Agency grant for $137,627, and $100,000 from the City of Chevak. Construction of the heat recovery project was safely completed in the fall of 2020, despite restrictions due to COVID-19, a testament to the dedicated ANTHC construction managers and local crew.