

# ENVIRONMENTAL AWARDS

*1st Special Operations, Civil Engineer Squadron, Hurlburt Field / Sustainability – Individual/Team*

## INTRODUCTION

Hurlburt Field is the home of HQ Special Operations Command. Special Operations Command's core tasks have been grouped into four mission areas: forward presence and engagement, information operations, precision employment and strike, and special operations forces mobility. Hurlburt's mission is to organize, train, equip, and educate troops for worldwide deployment and assignment to regional unified command. The base is located in southern Okaloosa County in the Florida Panhandle. It is home to 8,287 active duty, 8,118 family members and 2,884 civilians and contractors working and/or living on base. This region of the Florida Panhandle is known as the Emerald Coast, named for its white sandy beaches, favorable climate, and reasonable cost of living. As a result, the area is undergoing rapid population growth. This factor alone presents many opportunities for Hurlburt to move forward with aggressive solutions for sustainable practices and become a leader in environmental and energy conservation.

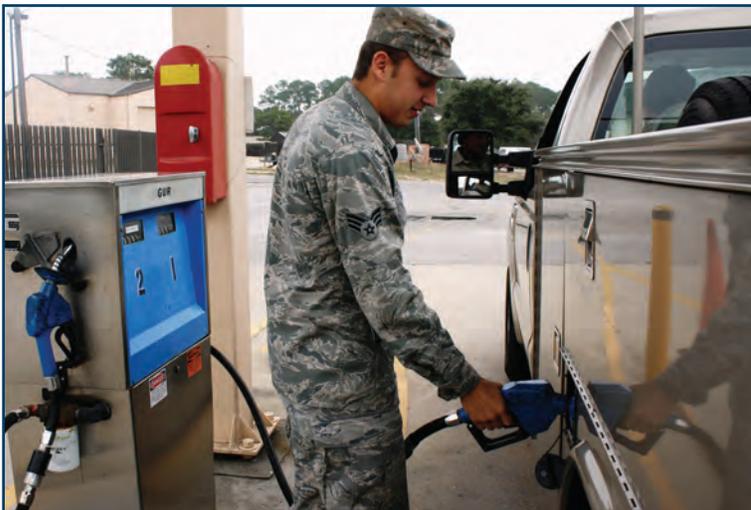
The 20 professionals of the 1st Special Operations Civil Engineer Squadron's Asset Optimization Flight have worked diligently to establish and implement a conservation plan to address Federal reduction goals in the

areas of water, energy, and hazardous waste. Significant improvements have already been achieved in the areas of materials substitution, process modification, use of alternative fuels, recycling, and green procurement. Hurlburt's two new energy managers have re-engineered the base energy governance structure, defined a strategy to optimize energy use in 750 facilities, and brought energy awareness to over 10,000 people.

Hurlburt's environmental project managers and planners are consistently challenged with a lack of buildable space with wetlands covering over 52% of its 6,643 acres. The base uses sub-area development plans based on multi-story, multi-use facilities to minimize the amount of mandated Anti-Terrorism/Force Protection buffers around the planned buildings, therefore making most efficient and profitable use of our limited land. Innovative project designs and compensatory solutions are also critical to the management of storm water treatment and the protection of wetlands where often the water table lies just below the surface.

## FY 2010 ACCOMPLISHMENTS

- Twenty-six military construction projects totaling \$170M are all in active design or construction phase and are required to meet US Green Building Council Leadership in Energy and Environmental Design (LEED) Silver standards or better. These projects include such innovative features as carbon dioxide (CO<sub>2</sub>) monitoring for fresh air control, lighting controls which dim when daylight is sufficient, and using recycled crushed concrete for porous parking lot base
- Base Recycle Center generated a profit of over \$613,000 with 5.3M pounds recycled by nine full-time employees. Hurlburt Field consistently maintained or exceeded a 40.3% solid waste diversion rate and will approach 100% with the new waste to energy plasma system. The new "Bring Your Recyclables from Home" program contributed over 10 recyclable drop offs per day by base residents



SrA Daniel Gager from the Civil Engineering Power Production Shop takes time between his generator test runs to dispense ethanol based fuel into his maintenance vehicle. These efforts have helped reduced the dependency of 100% gasoline by over 100,000 gallons per year and increased the use of flex fuel vehicles. E-85 fuels are now being regularly used base-wide.

- Alternative fuels such as biodiesel and E-85 are now being used base wide, and has reduced the need for gasoline by over 100,000 gallons per year
- Pioneered the first Department of Defense (DoD) \$7.5M plasma waste-to-energy plant to divert 2,700 tons per year from the landfill by gasifying solid waste materials to eliminate all solid waste costs, generating electrical energy for its own power and offsetting 83,000 tons per year of carbon dioxide
- Reduced overall water consumption on Hurlburt by 15.3M gallons a 11% decrease which was a result of consistent efforts to insure compliance with reduction goals whereby irrigation wells use the shallow water aquifer system containing non-potable water, xeric landscaping is base policy, and minimal watering is used for new construction project landscaping

## ACCOMPLISHMENTS

### **Livable Communities, Master Planning, and Green Buildings**

Since 2008, Hurlburt Field's General Plan has provided the basis for the funding of six sub-area development plans, which group related activities into functional cores. This smart growth concept maximizes efficiency and enhances quality of life by reducing vehicular movement around the base and making the base a more livable, walkable environment. By planning multi-story, multi-use facilities, Hurlburt minimizes the amount of anti-terrorism/force protection buffers around planned buildings, therefore making the most efficient and profitable use of our limited space.

Hurlburt Field's Geobase system is the most widely used master planning tool which guides our creation of livable communities. The system is able to incorporate land use guidelines, hierarchical development and pedestrian and vehicular networks into real-time features rendered on the map. All members of the team work together to identify and maintain hundreds of spatial data layers that can be updated in an instant. This insures that compatible structures and functions address the natural, operational, and built environment, which is changing constantly.

In 2010, 26 military construction projects, totaling \$170M, are required to meet US Green Building Council LEED silver standards. The first project ready for

certification includes innovative features such as carbon dioxide monitoring for fresh air control, lighting sensors that monitor and turn off lights when sufficient light is available, and pervious pavements. Underground rainwater cisterns are used to significantly reduce water demand at the 11th Intel Squadron Facility and solar photovoltaics provide supplemental electricity and hot water heating. Aboveground rainwater cisterns are used for toilet flushing at the 413th Flight Test Squadron Facility. All of Hurlburt's irrigation water wells have been converted to use the non-potable shallow water aquifer system— an 11% water conservation strategy. This reduction constitutes approximately 15.3M gallons of water saved which exceeds the base's 2015 reduction goals five years early.



As the Child Development Center's construction nears completion, HVAC duct work is being installed in the mechanical room. The open ends of the duct are sealed in order to prevent dust and debris from entering the system. This is required to meet the LEED indoor air quality credit (IAQ) which requires compliance with the Sheet Metal and Air Conditioning National Contractor's Association mechanical system construction guidelines.

Other projects on the base have incorporated low impact development features to reduce or eliminate the need for storm water ponds. The MC-130 simulator facility was a first-of-its-kind on Hurlburt to install a permeable parking lot covering 75,000 square feet. The parking lot captures and treats 90% of the average rainfall within the local soil to improve the quality of storm water.

Indoor air quality control measures, which are routinely installed on construction projects at Hurlburt, include air ducts and air handlers, which are sealed with plastic and tape to eliminate any excessive absorption of foreign materials.

### **Compliance with Executive Order 13514**

Groundbreaking technologies of a \$7.5M plasma waste-to-energy plant will divert 2,700 tons per year from the landfill, offset green house gas emissions of 83,000 tons per year of carbon dioxide, and eliminate solid waste removal costs. The plasma waste-to-energy plant gasifies solid waste generating electricity. The waste stream yields clean metals that can be sold for recycling.

A new facility greenhouse gas reduction process will supplement our existing recycling practices. The process requires ozone depleting substances (ODS) used as refrigerants to be removed from all equipment before disposal and ODS refrigerants to be replaced with non-ODS substitutes. The HVAC shop now requires that all new equipment contain non-ODS refrigerants. The base has been very successful in phasing in the use of alternative fuels and reducing the base wide fleet by over 700 vehicles.

### **Material Management**

Since 2008, the base has eliminated accumulation and disposal costs of over 3,500 pounds of potential hazardous waste fuel generated at the RED HORSE squadron. The fuel was near expiration; however, the Environmental Flight recommended reuse and within 30 minutes found a user at the Hurlburt Field Golf Course. The Environmental Flight assisted the Recycle Center locate a recycler for 15,000 pounds of scrap lead from the bullet trap maintenance project eliminating hazardous waste generation and saving over \$5,000 in disposal costs.

The HAZMART Pharmacy found ways to substitute materials. These efforts resulted in savings of \$87,500, a 15% reduction in waste and expired materials. Wastewater pollution reduction initiatives eliminated 20% of the unnecessary oil-water separators on base and prohibited the use of separators in new construction. This effort saved Hurlburt maintenance and wastewater disposal costs.

Hurlburt coordinated the disposal of dangerous, unexploded ordinances (i.e. World War II projectile, dynamite, and Civil War cannon balls) found washed up on beaches at various off-base locations. They met Environmental Protection Agency Military Munitions Rule requirements and protected local community human health and the environment.

Hurlburt professionals work closely with regulatory agencies to ensure processes involving any risk to

human health and the environment are managed quickly and efficiently. During the Gulf of Mexico oil spill, Hurlburt was given a direct line to BP's top spill response contractor for personal, daily sitrep reports and moved Hurlburt Field to top of 30 day waiting list for 2nd day boom delivery-monitored spill trajectories and advised leadership accordingly. Hurlburt professionals monitored tar ball contamination, performed laboratory analysis, and protected Hurlburt shoreline and sensitive areas.

Hurlburt was first in the region to upgrade their waste disposal program to an electronic Defense Reutilization Management System, and achieved a 75% increase in hazardous waste program management efficiency.

Door-to-door universal waste collection efforts enabled program personnel to service over 400 buildings for a cost of less than \$1,000 and in-house waste program cost savings measures resulted in greater than \$300,000 in contracting costs.

### **Recycling Program**

Everyone has a hand in recycling efforts at Hurlburt and the efforts have paid off with the Recycle Center boasting a \$613,000 profit for 5.3M pounds of materials during the last year and half. The "Bring Your Recyclables from Home" program was a huge success resulting in over 10 drop offs per day by base residents. The program occurs twice each year, with base residents utilizing recycling trailers placed all over base. Recycled lead acid batteries handled through the Hazardous Waste Drop-Off Facility also contributed to approximately \$10,000 in sales by the Recycle Center and eliminated over 52,000 pounds of hazardous waste. Hurlburt also developed a no-cost Styrofoam recycling effort by collaborating with businesses, county officials, and local industry. Initiatives like these pushed the base's diversion rates over 45% in 2010.

The Recycle Center at Hurlburt accepts all types of recyclables including batteries, cardboard, cellular telephones, computer hard drives, used oil, inkjet/toner and printer cartridges, wood and pallets, plastic bottles, etc. Recently the Environmental Flight worked with the Recycle Center and a local contractor to coordinate the disposal of refrigerators following removal of refrigerants from the appliances. Base residents have dropped off over 80 non-serviceable or unused appliances containing refrigerants, which were removed and subsequently certified free of ODSs before they were recycled.



TSgt spends his money wisely by purchasing biodegradable paper at the Commando store on Hurlburt Field. The supply store features a complete line of products containing recycled or biobased materials. Some of the other green products available include pens, calendars, cleaning products, mailing labels and paper towels.

### Green Procurement

The Green Procurement Program at Hurlburt incorporated green procurement specifications into all service and construction contracts. Organizational awareness of green procurement has been achieved across every unit and government purchase card (GPC) holder. Cardholders are briefed monthly on the GPP and the requirement that all card purchases meet the mandate. The Base Supply Store has established a “Green Section,” featuring only products with recycled content or bio-based materials facilitating GPC transactions and enhancing market demand.

The functional areas of the green procurement span bio-based fuels to recycled content carpet. Hurlburt-specific directives require that buyers purchase bio-based fuels, lubricants, and bedding. The green procurement dovetails with the energy policies that require the purchase of energy star appliances, lighting, and electronics. The base contracted with Shaw Corporation to install 100% recycled content carpet in all base lodging and housing facilities. This was a major success and customer feedback is very positive.

### Education, Outreach, and Partnering

Twice a year, Hurlburt partners with Okaloosa County to provide two free Household Hazardous Waste collection days whereby an average of 25 tons of hazardous materials are diverted from landfills. This partnership opened an avenue for Hurlburt employees and residents to help keep dangerous chemicals out of landfills.

During the Power Up conference held in Fort Walton Beach, a group of energy experts attended a Special Operations Command sponsored Air Force Day forum to discuss multiple issues associated with energy awareness, energy conservation and policy. This event enhanced the sustainability of the mission and included a member from HQ Air Force Materiel Command who spoke about alternative aviation fuel development.

As a member of the Fort Walton Beach Green Awareness Team Task Force, community involvement is a priority for Hurlburt Field staff. This community involvement reaches inward to the Hurlburt Field personnel and outward into the community. Earth Day activities, the Power Up conference, and the new plasma system are three examples of outreach at multiple levels. For the past 8 years, Hurlburt has supported this well-attended Earth Day event. Earth Day draws about 1,000 to 5,000 school age children. Power Up reached into the community discussing topics ranging from recycling to advanced building techniques.



Hurlburt staff explain the process of recycling to area school children during the April Earth Day event in Fort Walton Beach, Florida. Over 1000 kids visited the displays where topics on energy, sustainability, recycling and conservation of natural resources were showcased. Children were provided with hands-on opportunities to use fuel cells or solar power to operate small electronics.

The Environmental Flight has trained 3,400 people during newcomer orientation in conservation efforts, recycling, green procurement, hazardous materials management, and the use of best management practices to conserve our natural resources.

Hurlburt's environmental flight cooperates and sustains good working relationships through quarterly partnering meetings with state, local, and Federal regulatory agencies.

Innovation in the handling, treatment, and disposal of solid waste by the plasma waste-to-energy plant provided a forum for education of craftsmen, community, and military leaders. This proof of concept project has been extremely popular to demonstrate waste minimization, energy generation, and greenhouse gas reductions. The technology has the potential to support expeditionary energy needs and reduce warfighter logistical vulnerabilities throughout the Department of Defense.



At the Energy Vendor Show hosted by the Gulf Coast Energy Network, General Cichowski, AFSOC/CV, speaks with one of the solar panel vendors. The show was held at Hurlburt Field and approximately 400 people from all over the Northwest Florida region attended to view new ideas in green technologies. Hurlburt's renewable energy demonstration project was showcased at this event and a tour of the plasma waste-to-energy plant followed.