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Department of Defense
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FY 2017 Secretary of Defense

Environmental Awards

Sustainability - Individual/Team

Mr. Jeffery D. Schone

Introduction

Luke Air Force Base (AFB) located 20 miles northwest of Phoenix, AZ is home to the 56th Fighter Wing, the largest fighter wing in the world, with both F-16 and F-35A Lightning II aircraft. The 56th Fighter Wing is a unit of the Air Force Education Training Command. Luke AFB is also home to the 944th Fighter Wing, an Air Force Reserve Command wing which includes the 69th Fighter Squadron. The footprint of the main base is just under 2,500 acres in size, with an additional 2,000 acres of easements. The base includes two runways and 400 buildings, encompassing over 4 million square feet of space.

Initially placed into service in 1941, Luke AFB has been the site of training for more than 17,000 pilots, making it the largest single-engine advanced training school in the United States. During World War II, Luke AFB earned the nickname, "Home of the Fighter Pilot". Installation support infrastructure includes a system of onsite wells that produce potable

water, as well as an Air Force operated off-base wastewater treatment plant. In addition to the main base, Luke also manages the Gila Bend Air Force Auxiliary Field and is the primary steward of the Barry M. Goldwater Range, a military training range spanning more than 1.1 million acres of Sonoran Desert. These comprehensive land resources are operated under some of the most stringent state and local environmental, cultural, and natural resources regulations.

Background

Mr. Jeffery Schone is an Environmental Engineer for the 56th Civil Engineering Squadron (CES) at Luke AFB. He began his career with the Air Force in 1997 as a Palace Acquire (PAQ) Intern at Joint Base Charleston, completing an intense two-year training and rotational development program. In 1998, he began one of three tenures at Luke AFB and over 17 years of service to the Department of Defense (DoD), managing and developing every facet of environmental compliance programs, pioneering pollution prevention

initiatives, and managing large scale remediation programs and construction projects for the Air Force, Navy, and Army. Mr. Schone is also a senior adjunct faculty with Park University in the College of Mathematics and Business, having taught over 30 classes for civilian, active duty and retired military and degree seeking candidates. His representative education in engineering and a Master of Business Administration along with a portfolio of certifications (Leadership in Energy & Environmental Design (LEED) AP, Certified Energy Manager, Six Sigma, ISO 14001, Project Management Professional) have provided and continue to provide exemplary sustainability leadership and accomplishments, assisting the DoD to stay mission-ready now and into the future.



Mr. Jeffery Schone

Mr. Schone is an Environmental Engineer for the 56th Civil Engineering Squadron at Luke AFB. He manages multiple environmental sustainability programs and led the sustainable stand-up of the new F-35 mission.

Mr. Schone manages and provides direct oversight of wastewater procedures from one of the few remaining Air Force operated plants, and helps to ensure compliance with stringent

Arizona Active Management Area water conservation requirements. In addition to managing a comprehensive multi-sector and small municipal separate storm sewer system permits for stormwater management, he monitors Luke AFB compliance with stringent Clean Air Act Title-V operating permit requirements in the Maricopa County non-attainment area. Mr. Schone also oversees the integrated support of Luke AFB hazardous materials, asbestos, lead, and toxic substances management, and administers the Luke AFB solid waste, recycling, and hazardous waste management programs.

Recent Awards

- 2016 Air Force Installation Support/Base Award, West Region Top Performer
- 2015 Air Force Civil Engineer, Housing and Environmental Award, Environmental Team Runner-Up
- 2015 56 CES and 56 Mission Support Group Civilian of the Year, Category II
- 2015 Park University, Faculty of the Year; Luke AFB

Summary of Accomplishments

Mr. Schone’s continual dedication to the DoD mission and integrated support of sustainability initiatives are recognizable through several accomplishments that are directly shaping the future of the Luke AFB F-35 program.

Livable Communities, Master Planning, and Green Buildings

During the accomplishment period, Mr. Schone holistically evaluated and implemented a pilot bioremediation project for all Petroleum, Oil, and Lubricant (POL) and grease trap systems to reduce oil/water separator and grease trap maintenance costs. This innovative procedure resulted in a reduction of pumping costs by 82 percent and manpower by 97 percent, with annual savings that exceeds \$125,000 in contract costs. Through active bacteria

reproduction, the bacteria digest the contaminants to effectively clean, maintain, and sustain infrastructure; produce clean water without harsh chemicals; extend equipment life expectancy; and improve influent wastewater treatment plant operation.



Above Par Wastewater Treatment Plant Management

Mr. Schone's bioremediation advancement and oversight of the Luke AFB wastewater treatment plant provides effluent cleaner than groundwater in the area. Compounding bioremediation allowed reclassification to an A+ standard and reuse across the installation.

Mr. Schone was determined to find an alternative to traditional pump and treat for waste POL and commercial and industrial grease to reduce the Luke AFB carbon footprint and control costs. The effectiveness of enhanced treatment methods was immediate. Primary benefits included "zero waste" with wastewater treatment plant recharge, a verified 99 percent reduction in POL residues, a 90 percent reduction in grease trap retention, reduced maintenance on piping infrastructure, reduced maintenance man-hours, significant cost reduction on pumping and transport of grease and contaminated water, and improved grease build-up at lift stations.

As a final measure to complement the bacteria injection for grease traps, Mr. Schone implemented a debris-free drain trap maintenance program and eliminated the use of caustic cleaners entirely to further reduce trapped line service calls. The new removable drain strainers and baskets installed at all Luke AFB food establishments overhauled operations and reduced engineering maintenance service responses by 70 percent.

To further advance the initiative, Mr. Schone spearheaded the redesign of wastewater treatment plant sand filters and revision of operational parameters, and introduced compounding bacteria that reduced effluent parameters by 69 percent for ammonia, nitrates, and total suspended solids.

With the significant reduction of wastewater treatment plant nitrates, Mr. Schone was able to reclassify effluent to an A+ standard, which allowed reuse of water on 40 percent of Luke AFB land, expanding redistribution of non-potable water for dust control and irrigation. Groundwater irrigation use has been cut by 224,000 gallons and an additional 2.9 million gallons of water has been utilized for dust control during four major construction projects, achieving DoD SSPP irrigation and industrial water reductions of 30% from a 2012 baseline.

During the accomplishment period, Mr. Schone partnered with the Arizona State University Global Institute of Sustainability to evaluate and formally model the bioremediation process. With the notable results, the success has been shared through the F-16 working group, cross fed and adopted by Atlantic Naval Facilities and has assisted the Northwest Air National Guard with feasibility and regional implementation. Reach has expanded beyond the DoD where the results and benefits were nationally published in the *Industrial Wastewater Digest*. In 2015, Mr. Schone was invited to be one of six Innovative Leaders for the Arizona Department of

Environmental Quality (ADEQ) Pollution Prevention Week, educating over 100 local regulators, district Environmental Protection Agency Region 9 leadership, and 300 statewide pollution prevention DoD and industry partners.

In 2014, Mr. Schone initiated the *Water Use It Wisely* campaign to address groundwater resources stressed by increased population growth as Luke AFB operates within an Active Management Area. Mr. Schone's proactive planning for renovation and new construction projects, facility leak and repair evaluations, and increased utilization of A+ reuse water for irrigation and dust control helped Luke AFB achieve a 2015 groundwater withdrawal and consumption reduction of 16 percent. In 2016, Luke AFB will obtain an additional 21 percent decrease while providing 11 million gallons for direct recharge.

Compliance with Executive Order 13693

Mr. Schone's concentrated efforts allow Luke AFB to exceed Executive Order 13693, *Planning for Federal Sustainability in the Next Decade* objectives and current Strategic Sustainability Performance Plan (SSPP) goals.

These results continually demonstrate Mr. Schone's commitment and achievements that have improved mission resilience and been recognized and benchmarked by the Air Force; local DoD agencies; local, regional, and national Federal agencies; and local municipalities.

Material Management

During F-35 bed-down planning, specific hazardous material targets and reporting procedures were developed for the Environmental Impact Statement. Strictly monitored and reported, Mr. Schone has directly reduced the environmental impacts of new F-35 construction and modernization projects, ensuring a compliant Record of Decision, which is reported on a quarterly basis.

Mr. Schone's on-site attention and oversight provided timely execution for completing 14 F-35 projects during the accomplishment period, with an additional nine currently underway. His track record is flawless, with each project maintaining compliance with applicable regulatory requirements with no deficiencies. Formal validation was provided by inspection from ADEQ for eight stormwater construction general permits, seven formal regulatory inspections, and 24 dust control permit inspections. This allowed on-going projects to meet projected timelines and the successful standup of five facilities with minimal environmental impacts. Through sustainable and efficient asbestos and lead abatement design and execution, 28 tons of asbestos hazardous material was diverted from regulated landfills. Additionally, Mr. Schone's thorough engagement and planning for asbestos and lead facility assessments has mitigated \$430,000 in potential project change orders.

During the accomplishment period, Mr. Schone continued to set the bar for the Luke AFB CAA Title-V operating permit. Each year, over 1,200 records and 380 listed permitted pieces of equipment were reviewed with zero violations issued. Under his management, the third five-year Title-V renewal was submitted, which allowed for significant reduction of 900 annual records maintained for corrosion control painting activities. Mr. Schone created a solution then invited the Maricopa County Air Pollution Control District Title-V director and Permit Engineer to visit Luke AFB. The Engineer approved the new recordkeeping, which will include an overall 80 percent reduction in recordkeeping and savings of \$27,000 for monthly filter testing. With further introductions of bio-based products, eco-friendly product substitutions, removal and replacement of cleaning processes, energy efficient design, and incorporation of Tier IV generators, annual criteria pollutants emissions from regulated operations and stationary

sources have dropped by 27 percent from Luke's 2007 baseline.

Recycling Program

Mr. Schone is improving construction and demolition diversion rates, with an overall 2,690 tons of construction and demolition debris recycled. The Luke AFB 98 percent diversion rate far exceeds the DoD goal of 58 percent. Contributions to the diversion rate also include 100 percent reuse of asphalt and crushed concrete for an extensive runway repair project and refurbishment of 19 parking areas. Mr. Schone's direct management has resulted in significant cost and resource savings of \$1.2 million in landfill tipping fees.



LEED Recycling

New and modernized construction and demolition for the F-35 stand-up has maintained a 98 percent diversion rate. Over 2,600 tons of construction and demolition debris have been recycled.

After the first F-35 aircraft maintenance unit was established, no process had been established for proper waste determination or product inventories. As a result, expired shelf-life had increased by 400 percent at a cost of over \$25,000 for disposition. Because the F-35 hazardous material has an extremely short shelf life of six months, Mr. Schone immediately engaged to redefine 149 hazardous materials ordered in excess and 92 hazardous materials that were not required. The reduced or eliminated hazardous material bench stock resulted in a 68 percent decrease in shelf-life monitoring and disposal for a savings of

\$147,000. That is just for the first of six F-35 aircraft maintenance units and will carry savings into five additional aircraft maintenance units, exceeding the DoD SSPP goal of 30% to a remarkable 68%, while standing up a new mission.



Sustainable Procurement and Waste Minimization

Over 1,300 F-35 HAZMAT authorizations were evaluated for necessity and inventory control to set the path forward for five additional AMUs. Results provide a long-term cost avoidance to allocate funding for other critical F-35 programs.

During the accomplishment period, Mr. Schone re-evaluated the indoor weapons range process that removed lead munitions from training activities. He assisted in design of a unique interior remediation where 45,000 gallons of cleaning process water residue was captured, filtered, and reduced to only 79 pounds of net waste, saving \$18,000 in disposal and treatment costs. With a certified lead-free indoor range, munition residue was re-profiled and has now been sent for recycling under the Qualified Recycling Program. Once an annual \$12,000 hazardous waste bill, Luke AFB now generates \$5,000 in revenue while achieving a 47 percent reduction in Hazardous Waste.

Compliance with Sustainable Infrastructure

Planning ahead of Environmental Impact Statement requirements, Mr. Schone partnered with F-35 Project Engineers and the Army Corp of Engineers to establish and incorporate a Luke specific environmental and sustainability clause that inserts specific LEED Silver project design criteria into project planning requirements and continues through project standup, execution, and completion. Specifications include the use of soy-based mastics and concrete stains, water based solvents, zero volatile organic compound paints, reuse in modernization projects, recycled fiber content carpeting, and deployment of water-sense plumbing devices. Sustainable procurement has increased by 74 percent since implementation. In addition, each project incorporates Low Impact Development (LID) criteria to minimize stormwater runoff by grading to permeable surfaces, bioretention, swales, infiltration trenches, and native plant landscaping. These measures have added an overall 38 percent improvement to stormwater infrastructure and reuse has decreased groundwater utilization for landscaping by 92 percent.



Title-V Paperwork Reduction

An 80 percent reduction in Title-V recordkeeping paperwork was negotiated for two highly regulated aerospace paint booths. Process owners are able to demonstrate compliance through existing equipment and 12 electronic records.

Partnering for Mission and Community Sustainability

Mr. Schone was an integral in establishing the foundation of Luke's Community Partnership Program P4 (Public-Public/Private-Public) in 2014. Subsequent to Air Force approval, an evaluation began to investigate the first public-public opportunity to leverage and share resources with the City of Glendale for refuse and recycling services. In 2016, an Intergovernmental Support Agreement was finalized and the first shared service contract was awarded, cutting contract costs by \$72,000 per year. An added benefit was an 86 percent reduction in waste/recycling servicing miles, for intrinsic vehicle emission reductions. With that success, Mr. Schone formally established the West Valley Sustainability Council under Luke's P4 program. Within two months, the committee comprised 40 members representing 14 municipalities and several key organizations, including the Arizona Sustainability Cities Network, Arizona State University Global Institute of Technology, and Maricopa Association of Community Colleges. The committee is spearheading unified latex paint and e-waste recycling programs to divert 1.8 million pounds from local landfills.

Mr. Schone's intuition on emerging sustainability issues continues to set standards for e-waste that are modeled by several municipalities, including the City of Phoenix. Although Arizona allows e-waste to be treated as solid waste, Mr. Schone aggressively sought a local accountable recycler to change this practice. Mr. Schone met with eGreen IT Solutions leadership and evaluated its *e-Stewards Electronic Recycling Standards* sustainability model. Under his guidance, the e-Stewards model proved that a business could sustain the mission of accountable e-waste recycling. He assisted with the opportunity assessment and provided engagement opportunities for peers at ADEQ and partners in the Arizona Recycling Coalition. By August

2015, he prepared a model memorandum of understanding for the City of Phoenix, five municipalities, and five local school districts. During the accomplishment period, over 47,000 pounds of consumer and non-appropriated funded e-waste has been 100 percent commoditized and recycled through 15 base collection events. In January 2016, Mr. Schone proactively established the first Base Exchange electronic recycling program for non-approved vendor returns, which has resulted in a 44,000 pound direct landfill diversion to date.

Education, Outreach, and Partnering

During the accomplishment period, Mr. Schone began an annual environmental stewardship event for several schools to celebrate Earth Day. The classroom and field events incorporated recycling awareness, water conservation, and stormwater pollution prevention to create a greater understanding of the local community and the resources they manage.

Following the first successful Earth Day event, Mr. Schone has developed a third and fourth grade curriculum that specifically targets solid waste, recycling, water conservation, and stormwater. At the end of the 2016 school year, the curriculum was adopted by two local charter school networks and a local elementary school district. Approximately 8,000 students have completed the curriculum.

With strong relationship to community education partners, future graduates of the Luke AFB Airman Leadership School (ALS) will complete a sustainability curriculum, developed by Mr. Schone, ASU, and Maricopa County Community College. Upon graduation, ALS graduates will receive a community college certificate with transferrable education credits into a degree program. The curriculum will ensure our next generation wingman further lead, develop, enhance, and support DoD sustainability initiatives in water, air, waste, and energy conservation. Students complete a block

of audits and opportunity assessments, and are provided with community partnership opportunities to foster engagement and empower their organizations for change now and in the future.



Outreach

Mr. Schone participated in a hands-on demonstration of the importance of clean water. Training the next generation of sustainability leaders is critical to the support and success of environmental stewardship and garners community support for the DoD mission.

Beyond Compliance with Regulatory Excellence

During the accomplishment period, Mr. Schone guided 23 no-notice local regulatory compliance inspections for stormwater, wastewater, underground storage tanks, air quality dust inspections, asbestos inspections, and two annual comprehensive Title-V air quality inspections. Inspections have resulted in zero deficiencies or notices of violation. Mr. Schone's streamlined efficiencies in record keeping, continual in-house communications, and superior relationships with regulatory agencies allowed uninterrupted mission operation and removed any fiscal liabilities. The 2016 ADEQ Clean Water Act inspections noted best management practices and the highest accolades for management of the Luke AFB multi-sector and small municipal separate storm sewer system stormwater permits, and the ADEQ Pollution Prevention Unit has included Luke AFB as a model facility for internship rotations and new-hire compliance assessment training.