



SUSTAINABLE FORT LEWIS

April 2004 – April 2005 Progress Report

MESSAGE FROM THE COMMANDING GENERAL

Dear Friends of Fort Lewis:

When the initial sustainability workshop was held in February 2002, leaders at Fort Lewis made a commitment to you, our stakeholders, to change the way we do business to ensure a better tomorrow—not just for those of us inside the fence line, but also for the greater community in which we and our neighbors live, work and play.

That is why I am personally presenting this third annual report on the progress of Fort Lewis' Installation Sustainability Program, so you know that this program continues to have the full support of the Army's senior leadership.

I am very proud of what we have accomplished so far. Of particular note is that the commanders of all military activities in Washington State, as well as the Coast Guard, signed a Washington Military Sustainability Partnership Charter committing to work together to address common goals. As a combined force, we bring creativity and momentum to actions such as purchasing new technology to help reduce energy costs and new products like alternative fuels that will help to reduce vehicle emissions and dependency on petroleum-based fuel. Ultimately, our efforts reduce the costs for others in our region, making the further expansion of sustainable practices more possible for all of us.

I find what lies ahead to be even more exciting. When the Army embraced sustainability several years ago, we were focusing on the environmental aspect. But sustainability has a "triple bottom line" that must be approached holistically in order to reap the real benefits. That is why I have challenged my staff to start moving beyond the environment to incorporate the two additional components of the Army's triple bottom line—mission and community.

Our success thus far and in the future is attributed to your continued support. I believe the greatest honor I can extend to our many partners, neighbors and friends is to offer my personal commitment that Fort Lewis will continue pushing toward achieving these remarkable long-range goals.

James M. Dubik
Lieutenant General, United States Army
Commanding

VISION STATEMENT

Fort Lewis is committed to supporting a strong national defense, securing the integrity of our natural and cultural heritage, and conserving our natural resources for tomorrow's generations, while seeking choices that enhance our neighboring communities' abilities to have a productive future.



THE GOALS SET IN FEBRUARY 2002:

1. Reduce traffic congestion and air emissions by 85% by 2025
2. Reduce air pollutants from training without a reduction in training activity
3. Reduce stationary source air emissions by 85% by 2025
4. Sustain all activities on post using renewable energy sources and generate all electricity on post by 2025
5. All facilities adhere to the LEED™ Platinum standard for sustainable facilities by 2025
6. Cycle all material use to achieve ZERO net waste by 2025
7. Attain healthy, resilient Fort Lewis and regional lands that support training, ecosystem, cultural and economic values by 2025
8. Recover all listed and candidate federal species in South Puget Sound Region
9. Zero discharge of wastewaters to Puget Sound by 2025
10. Reduce Fort Lewis potable water consumption by 75% by 2025
11. Fort Lewis contributes no pollutants to groundwater and has remediated all contaminated groundwater by 2025
12. Develop an effective regional aquifer and watershed management program by 2012—COMPLETED



COMING INTO ALIGNMENT:

DEPARTMENT OF DEFENSE ADOPTS SUSTAINABILITY FOR ALL BRANCHES OF SERVICE

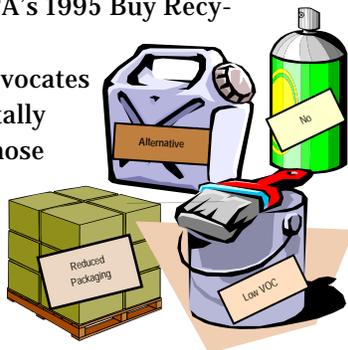
Environmental Management System Localized

In 2004, many agencies within the Department of Defense (DoD) came together in pursuit of sustainability. In some ways, Fort Lewis helped to drive the direction, while in different ways our progress was enhanced by the efforts of others.

Today, all DoD branches now have overarching sustainability strategies based on the environmental management system (EMS). The EMS provides the framework to produce goal-oriented results as each military branch pursues installation sustainability. At the local level, the EMS empowered military commanders of facilities within Washington State to establish the Washington Military Sustainability Partnership in June 2004 (see article on page 3). The WMSP helped reinforce actions already underway at the individual installation or facility level. Fort Lewis, as the first DoD installation/activity in Washington State to launch a sustainability program, worked with all the services' Regional Environmental Coordinators to sponsor the charter.

Continuing on the Path to Sustainability

Another example of increasing alignment is found in the area of procurement. EPA's 1995 Buy Recycled program, also known as 'affirmative procurement' advocates the purchase of environmentally friendly materials, such as those containing recycled content or reduced harmful chemicals. In August 2004, DoD took the lead in establishing a broader Green Procurement Program (GPP) consisting of both a strategy and metrics, which the individual services



began refining to incorporate within their respective missions. So now, in addition to recycled content and bio-based aspects being considered, GPP also takes into account the following: environmentally preferable products, energy efficient products, alternative fuels and alternative fueled vehicles, and ozone-depleting substances.

On November 2-3, 2004, the award winning Green Procurement Seminar was presented to more than 180 personnel from Fort Lewis and other DoD agencies from the Puget Sound Region. This seminar was developed by the U.S. Army Center for Health Promotion and Preventive Medicine (USACHPPM), hosted by the Fort Lewis ISP Products and Materials Team, and conducted at the Stone Education Center.



Customers can see several designs of sustainable office equipment at the Sustainable Interiors Showroom, located in the Hazardous Material Control Center.

Photo credit: Mary Charbonneau

Fort Lewis Sets the Standard

With the help of local General Services Administration vendors, Fort Lewis charged ahead in seeking out green products and using green services to test and share results with our WMSP and other partners. A much anticipated change to our contracted dry cleaning service from a solvent-based method to one using carbon dioxide came to fruition in early 2004, and has received rave reviews. Also, an existing administrative area at the Logistics Center was refurbished with all sustainable furniture and flooring materials in a variety of configurations and cost options, to assist installation buyers in learning about how sustainable options meet or exceed Green Procurement requirements, while also streamlining the requisition process. The Sustainable Interiors Showroom holds regular open house hours two times a week and by appointment. Many federal, state, and other public agencies have already toured the facility, and some have even expressed interest in setting up a similar type facility to assist their own buyers.

New Projects, Partnerships, and Processes Clarified Direction and Solidified the Network

WASHINGTON STATE MILITARY LEADERS SIGN SUSTAINABILITY PARTNERSHIP CHARTER

The Washington Military Sustainability Partnership (WMSP) is the first step in the development of a new statewide association among federal and state government agencies. Modeled after the Federal Network for Sustainability (FNS), an association of federal agencies in the Western United States, this partnership will specifically focus on efforts within Washington State.

The WMSP is intended to eliminate the duplication of effort that exists when each organization attempts to achieve similar goals. A sustainability partnership offers an opportunity to transfer technology and information, as well as combine voices to effect change in policy and business practices.

The WMSP Charter was presented to the Joint Council of Colonels and the Joint Regional Flag Officer's Council in February 2004. The final signature was obtained in June 2004.

As of spring 2005, all Washington installations have developed long-term sustainability goals that will be integrated with their Environmental Management System (EMS). The next step will be to identify common goals among military departments and establish state-wide goals that support common challenges and opportunities.

Members of the WMSP include: I Corps & Fort Lewis, Washington National Guard, 70th Regional Readiness Command, US Coast Guard District-Seattle, Navy Submarine Group Nine, Navy Region Northwest, Western Region Medical Command, Corps of Engineers Northwest Division, Naval Reserve Readiness, 62nd Airlift Wing, 92nd Air Refueling Wing and 446th Airlift Wing.



A small-scale image of the WMSP Charter, signed by the leaders of 12 Army, Navy, Air Force, and Coast Guard organizations/activities within Washington State.

NEW ARMY ENVIRONMENTAL STRATEGY: SUSTAIN THE MISSION, SECURE THE FUTURE

In September 2004, the Department of the Army published a new Strategy for the Environment (the first since 1992) that officially announced the movement away from a compliance-based program to one in which sustainability is the driving force.



While full compliance with environmental laws will always be essential, compliance as a comprehensive strategy for the Army has proven to be ineffective as a long-range planning tool—as evidenced by the encroachment problem not just at Fort Lewis, but at many other Army and DoD installations.

Another drawback of the old system was its reactive, regulatory nature, which created a perception among many military commanders that taking environmental concerns into account only handicapped their ability to accomplish their mission. In a sense, the environmental community was only at the table to tell the warfighters what they couldn't do. And from the installation staffing standpoint, environmental issues were handled solely by the environmental division rather than being fully integrated from the start of installation-level strategic planning by the combined staff.

The strengths of the Army's new sustainability strategy are two-fold. First, its strategic orientation proactively deals with doing more than just what the law requires today. It works to anticipate long-range challenges (whether regulated or not), and plans accordingly to put systems in place that will do more than just mitigate or minimize isolated problems. Instead, this holistic approach empowers installations like Fort Lewis to work with surrounding communities and other partners to overcome the larger issues at the root of the individual problems, and seek out ways to even turn perceived obstacles into opportunities. The landfill-to-EcoPark project described on page 9 that involves all five of Fort Lewis' ISP teams is a perfect example of what visionary results can be obtained with the right framework.

Second, the Army's sustainability strategy recognizes that protecting and enhancing the environment is not a separate task to be considered after the needs of the military mission. It is a vital component the military mission, just as providing a safe and productive community for Army families is an essential key to the recruitment and retention of quality Soldiers themselves. The motto, "Sustain the Mission, Secure the Future", conveys how—by adopting sustainability as its guiding principle—the Army is committed to balancing its "triple bottom line" of mission, community, and environment, so that our future in all three areas will be even better than the present.

TEAM REPORTS:

AIR QUALITY TEAM STRATEGIC GOALS 1, 2, 3

2004-2005 Highlights

REDUCE TRAFFIC-RELATED AIR EMISSIONS

- * Purchased five new Neighborhood Electric Vehicles (NEVs) of different makes/models than before—Tiger Truck, Dynasty IT, and the E-ride Patriot, bringing the installation total to 24 NEV's
- * Increased percentage of alternate fuel/dual fuel vehicles in the on-installation GSA fleet to 35%
- * Conducted education campaign which helped to increase CNG usage from about 25 vehicles a month to over 100 vehicles a month in March 2005
- * Opened a temporary E85 fuel station at the Logistics Center in March 2005
- * Published the first annual alternate fuel use and vehicle emission report



Col. Garey Heumphreus demonstrates fueling at the new E85 fuel station.

Photo Credit: Rena Ely

REDUCE TRAFFIC CONGESTION

- * In partnership with Pierce Transit, began developing a plan to pilot test a mass transit/shuttle system in a high-density area of the installation beginning in September 2005

REDUCE STATIONARY SOURCE AIR EMISSIONS

- * Nine boilers have been retrofitted to use #2 backup fuel oil rather than the more polluting #4 and #6 oils; another boiler is being retrofitted to use propane as a backup fuel rather than #4
- * Initiated a feasibility study for landfill methane gas reuse
- * Conducted a "potential to emit" study to identify requirements to become a synthetic minor air emission source rather than a Title V permitted source
- * Worked through existing systems/processes to establish a culture within Fort Lewis Public Works that considers both environmental and financial impacts and the lifecycle costs for all new project designs



Fort Lewis youth explore the new look and style of the Patriot at Kids' Fest 2005. The Patriot is being pilot tested as a future addition to the Public Works fleet of NEV's.

Photo Credit: Sherri Whiteman

Objectives for 2005-2006

Complete a business plan to determine a course of action for the public/private use Alternative Fueling Station

Establish and implement a web page specifically for Fort Lewis personnel to learn about ridesharing and streamline registration

Expand the mass transit/shuttle bus system to other areas of the installation

Conduct a study to identify existing roads that could be dedicated to NEV, bicycle and pedestrian use only

Continue to replace conventional fueled vehicles with alternative fueled vehicles; increase the usage of alternative fuels

Projects Completed, Ongoing Progress, and Plans for the Coming Year

ENERGY/INFRASTRUCTURE TEAM

STRATEGIC GOALS 4, 5

2004-2005 Highlights

SUSTAIN ALL ACTIVITIES THROUGH RENEWABLE OR SELF-GENERATED ENERGY

- * Completed Fort Lewis Energy Sustainability Technical Assistance Study
- * Continued exploring potential partnerships with private sector
- * Continued researching the potential for using landfill gas to generate electricity or direct fuel for heating and hot water. An EPA study is currently underway
- * Began installing solar walls on logistics warehouse as market demonstration project
- * Developed energy demand projections for 2005-2025
- * Initiated demonstration projects including Light Emitting Diode (LED) traffic signals throughout the cantonment area; radiant floor heating in the 1-25 SBCT Motor Pool; lighting controls in the deployment facilities on North Fort; and high efficiency condensing boilers in FY 04 MCA Barracks and 1st Special Forces Group dining facility

BUILD TO LEED™ STANDARDS

- * Rainwater harvesting cistern completed in major new barracks project; rainwater will be used to irrigate during the summer months beginning in 2005 and is currently being used for flushing toilets, which accounts for a significant reduction in potable water usage.
- * Developed a database and tracking system to ensure LEED standards are considered in all new construction beginning with planning and throughout completion of the project. The database, which is still currently being tested, will offer future planners a baseline for continuous improvement. It is expected to be fully functional, by Fall 2005.
- * Hosted vendor presentations/demonstrations on Green Building products, including Green Grid roofing system
- * Incorporated LEED principles into new project designs including ground source heat pumps, use of recycled materials, day lighting, lighting controls and under floor air distribution systems



FY 04 Barracks registered for LEED certification under the US Green Building rating system.

Photo Credit: Rena Ely

Objectives for 2005-2006

Reduce energy use by 5%

Complete Photovoltaic demonstration project. Two solar powered charging stations are used as a source of energy for NEV's

Complete a solar wall project that will provide free heating and ventilation at two Logistics Center warehouses

Expand the use of Direct Digital Controls in 20 additional building on Fort Lewis. DDC's allow remote access to building energy systems to monitor and regulate daily use.

TEAM REPORTS: (CONTINUED)

PRODUCTS AND MATERIALS MANAGEMENT TEAM STRATEGIC GOAL 6

2004-2005 Highlights



The Sustainable Interiors Showroom

INTRODUCE ONLY CYCLABLE MATERIALS

- * Hosted Green Procurement training for over 150 Fort Lewis credit card holders and purchasing authorities
- * Created a sustainable product demonstration zone using flooring materials, office furniture, paint, and lighting from GSA vendors in the Hazardous Materials Control Center (HMCC) administrative area at building 9669

CRADLE-TO-CRADLE HM MANAGEMENT

- * Based on the success of first year HMCC delivery service pilot project, received approval to request long-range funding for continuing the service. Service to customers has tripled over the past year.

REDUCE WASTE STREAM

- * Began the composting/bioremediation demonstration project. This project will determine the feasibility of composting and bio-remediating installation-generated waste streams such as grass clippings, wood chips, class B sewage sludge from the Waste Water Treatment Plant, fuel and oil contaminated soil, and organics such as food waste generated at troop dining facilities
- * Incorporated contract language into Fort Lewis Design Standards requiring all future construction and demolition work to increase diversion and recycling efforts IAW LEED criteria 2.2, divert 75% of waste from the landfill
- * Conducted a food waste study of installation dining facilities
- * Participated in the America Recycles 2004 campaign with an education booth, a reusable beverage container give-away/incentive, and pledge card drive
- * Expanded hours of Recycle Center and increased the number of different types of materials accepted
- * Diversion of more than 53,200 pounds of waste carpet from landfill
- * Began collecting concrete and asphalt debris/excess for future reuse as an aggregate replacement product for road maintenance
- * Completed Illegal Dumping plan and hired an Environmental Protection Assistant who will work jointly with the Solid Waste manager and the Garrison Down Range Patrol to monitor and enforce the requirements
- * Created a Battery Learning Center that demonstrates the proper usage of rechargeable and non-rechargeable batteries to military and civilian personnel

USE SAFER AND MORE ENVIRONMENTALLY FRIENDLY CHEMICALS AND PROCEDURES

- * Established CO2 dry-cleaning service at no additional cost to Soldiers. Fort Lewis is the first Army installation to adopt CO2 technology for cleaning linen items, cook white uniforms, and TA-50 gear.

Objectives for 2005-2006

Open the new community recycling center. The project is currently in design phase.

Divert 5,000 or more pairs of athletic shoes from the Fort Lewis waste stream, to be recycled under the Nike® Reuse-a-Shoe program

Set up a Process Action Team on Green Procurement with appropriate contracting personnel

Projects Completed, Ongoing Progress, and Plans for the Coming Year

SUSTAINABLE TRAINING AREAS TEAM STRATEGIC GOALS 7, 8

2004-2005 Highlights

ATTAIN FORT LEWIS AND REGIONAL LAND CONDITIONS

- * Initiated a request to the Corps of Engineers to establish a Regional Pest Plant Removal contract. The contract will assist Fort Lewis and regional partners in removal of scotch broom and other invasive species as well as noxious weeds.

PROTECT CULTURAL RESOURCES

- * Hosted a public lecture, in conjunction with Washington State Archaeology Month, on local history learned through an installation archaeology study
- * Evaluated nine archaeological sites for possible inclusion in the National Register of Historic Places. Four of the nine sites will be opened to military training because significant archaeological deposits were found to be lacking. Five of the sites are eligible for the National Register and will be protected for the benefit and enjoyment of local communities.

PRIVATE LANDS INITIATIVE

- * Revamped the strategy, arranged cost-sharing with partners, and re-submitted a proposal to establish buffer lands through the Army Compatible Use Buffer (ACUB) program

IMPLEMENT MANAGEMENT PLANS

- * Conducted a beta test of the Prairie Quality Ranking Protocol that was developed by Federal and State Natural Resources Managers
- * Removed over 800 acres of scotch broom. This opened and enhanced our training lands for the training mission as well as enhancing our natural resources
- * Completed construction of a greenhouse that will assist the Integrated Training Area Management (ITAM) program with repairing damaged training lands

RECOVER LISTED AND CANDIDATE SPECIES

- * Filled the cooperative position between the Washington State Department of Fish and Wildlife and Fort Lewis to coordinate and implement recovery efforts and plans for South Puget Sound rare species
- * Collaborating with WDFW, USFWS, other federal and state agencies, and regional land owners to achieve the recover species goal
- * Began the negotiation process for a Candidate Conservation Agreement with USFWS, WDFW, Port of Olympia, Washington Department of Natural Resources, McChord Air Force Base and the Nature Conservancy



The greenhouse will be used to propagate native prairie plants for repair of maneuver damaged training lands.

Photo Credit: Inger Gruhn

Objectives for 2005-2006

Evaluate three new archaeological sites for possible inclusion in the National Register of Historic Places

If funding is received, begin implementation of Army Compatible Use Buffer program for land acquisition and habitat rehabilitation

Implement Prairie Quality Protocol as a monitoring tool for prairie ecological conditions under performance-based land management

Complete Candidate Conservation Agreement

TEAM REPORTS: (CONTINUED)

WATER RESOURCES TEAM STRATEGIC GOALS 9, 10, 11, 12

2004-2005 Highlights

ZERO DISCHARGE OF WASTEWATER

- * Completed repair and relining of sanitary sewer lines and rehabilitated manholes in 3600-3700 blocks
- * Completed scoping and design concept for converting the North Fort wash rack to recycled water
- * Continued evaluating options for wastewater discharge and reuse options
- * Retrofitted all Fort Lewis and McChord Air Force Base dental clinics with current technology amalgam separators, to further reduce mercury in wastewater

REDUCE POTABLE WATER CONSUMPTION

- * Prepared a water conservation plan for pride areas to begin implementation in spring 2005
- * Completed a 2004 Water Study, which provides a better picture of where our water is consumed
- * Reclaimed water pipe (purple) has been incorporated into all new whole barracks renewal projects since FY 2002, allowing reuse of rainwater for facility non-potable water needs. This is also part of the infrastructure team's LEED standards.



Public Works employee, Al Long, is washing down headworks equipment using treated and recycled water at the Fort Lewis Water Treatment Facility.

Photo Credit: Mary Charbonneau

CONTRIBUTE NO POLLUTANTS & REMEDIATE CONTAMINATED GROUNDWATER

- * Completed North Fort heating oil tank inventory; main post inventory underway. Replaces 25 old tanks or underground tanks with new current standard above ground tanks.
- * Completed Phase I of thermal remediation project at the Logistics Center. Phase II is currently in progress.
- * Installed new monitoring wells to complete Lower Vashon Aquifer and Sea Level Aquifer characterization
- * Completed remedial actions at old Explosive Ordnance Site
- * Completed two amendments to the Record of Decision (ROD) for the Logistics Center
- * Completed Remedial Investigation (RI) for several Fort Lewis Agreed Order sites

INTEGRATED PLANNING FOR WATER MANAGEMENT (#12)—ACHIEVED!

- * Integrated regional water planning goals and objectives into the Fort Lewis Integrated Natural Resources Management Plan (INRMP) and the Fort Lewis Water Comprehensive Plan. Fort Lewis is an active participant on all pertinent watershed planning committees.

Objectives for 2005-2006

Begin implementation of the water conservation and storm water protection outreach plans

In support of the privatization effort and our intent to ensure sustainable success, the Water Team added sustainable evaluation criteria and project requirements to the wastewater privatization package. The key objective is to produce Class A reclaimed water and use by 2012.

Ongoing Progress and Plans for the Coming Year

INSTALLATION SUSTAINABILITY BOARD (ISB) PUSHED FORT LEWIS TO CONTINUE FORGING NEW PATHS

Following Best Management Practices—Metrics

At the June 2004 ISB meeting, Deputy Commanding General, MG James M. Collins, Jr., the ISB Chair, tasked the ISP teams to develop metrics for each of the 25-year goals. The ISP Coordination Cell helped to develop a standard graphic to demonstrate progress against each of the metrics, and modified an installation briefing template. With these tools, relevant information about each of the goals is presented more concisely and in a manner that is familiar to the diverse group of military commanders and directorate leaders that make up the ISB.

Overcoming Adversity—Mass Transit Solution

In the summer of 2004, Fort Lewis received official notification that the Army's 2nd Armored Cavalry Regiment would begin relocating from Fort Polk, Louisiana, to Fort Lewis before the end of the calendar year. With a rapid projected influx of about 5,000 Soldiers from the 2nd CR (the Armored title was dropped due to the unit's conversion to Stryker equipment) and supporting units, and limited available land on which to locate them, an already dense area of the installation would become even more crowded. Planning estimates revealed a projected shortage of several thousand parking spaces for Soldiers assigned to live and work in the area, nicknamed "The Banana Belt."

Funding and land constraints meant that constructing enough new parking areas within or adjacent to the Banana Belt was not an option. Therefore, Major General Collins challenged the ISP to research and, if possible, develop a course of action that would provide Soldiers with an alternative form of transportation to relieve the pressure of the parking demand.

In December 2004, ISP outreach team members began meeting with Soldiers and leaders in the affected units to ensure whatever system might ultimately be designed would meet their needs. Over the next several months, ISP personnel worked with other Fort Lewis staff proponents and Pierce Transit to develop a complete mass transit system plan. Most importantly, a potential funding source was identified and work begun to obtain access to that source. As of the time of this publication, the pilot project is scheduled to begin in the fall of 2005.



ECOPARK BECOMES FIRST JOINT-ISP TEAM INITIATIVE

In Fiscal Year 2005, the first truly collaborative ISP team project began taking shape. A Fort Lewis landfill that was recently closed could have simply become a maintenance burden for the installation. Instead, old landfill #5 located at the Northwest side of DuPont/Steilacoom Road near Solo Point will be turned into an EcoPark, which will benefit Fort Lewis—and surrounding communities—in a number of ways.

- * Waste streams that used to be disposed of are now being consolidated at the site and turned into products that can be used on the installation. These include concrete and asphalt debris, which is being turned into road aggregate material; as well as grounds keeping debris and food waste which are being turned into compost. In addition, the composting facility is being set up to remediate petroleum-contaminated soils from military fuel spills.
- * Heat from the composting process, along with the captured methane released from the closed landfill cells, will be captured to generate heat and power for a nearby scale house/office building.
- * Rather than covering the cap of the closed landfill with regular grass that would need mowing, native prairie grasses will instead be planted, and the seeds harvested to further prairie remediation in the entire region—not just at Fort Lewis.
- * The remaining sections of the landfill (other than on the cap) and some adjoining areas will be restored to other native habitat, including oak woodland, and wetlands. All of these habitats will support native plants and animals, including listed and candidate species, which require certain protections that often put restrictions on military training at Fort Lewis.
- * Finally, areas of the EcoPark will be available to installation residents and Soldiers for recreational uses like physical fitness training, and also to surrounding communities to learn about these and other Army sustainability initiatives at the interpretive center.

