Flagstaff Area National Monuments (FLAG)
Sunset Crater Volcano, Walnut Canyon & Wupatki
Sustainability Commitment Statement

"The National Park Service preserves unimpaired natural and cultural resources and values of the national park system for the enjoyment, education, and inspiration of this and future generations. The Park Service cooperates with partners to extend the benefits of natural and cultural resource conservation and outdoor recreation throughout this country and the world".

The vision of the Flagstaff Monuments is to provide opportunities for employees, visitors and communities to learn from the past, thrive in the present and live sustainably in the future. The Flagstaff Monuments staff is committed to continual improvement in protecting and preserving natural and cultural resources through environmental education, environmental compliance, pollution prevention, stewardship and sustainability.

We will manage operations and activities in an effective and efficient manner, complying with the letter, spirit and intent of applicable statutes, regulations and policies related to continual improvement in sustainability. We will accomplish our goals through the utilization of an Environmental Management System and a monument-wide sustainability ethic. The plan will involve monument employees, community partners, volunteers, contractors and other stakeholders. Monument staff will insure that all operational decisions and activities help us achieve our goals.

Goals

- *Greenhouse gas reduction goal*: As a member of the Climate Friendly Parks program and as a part of the Flagstaff community, we are dedicated to reducing our carbon footprint. The Flagstaff Monuments have set a greenhouse gas emission reduction target of 10% by 2016, using fiscal year 2008 baseline.

- *Interacting with natural and cultural resources*: We are committed to continual researching and developing of an understanding of which natural and cultural resources are susceptible to current and future impacts of climate change. We recognize the fragility of our resources and that any human impacts such as carbon emissions could impact resources. In order to further our understanding of the effects of climate change on natural and cultural resources in the monuments, the Flagstaff Area National Monuments will complete a Climate Change Vulnerability Assessment by 2016.

- *Community, visitor and employee outreach*: We will communicate our vision, methods and performance with our community, partners, monuments staff and visitors through workshops, interpretive and outreach programs, and youth engagement. We will promote our commitment to environmental protection and preservation by educating coworkers, park visitors, partners and business associates concerning our environmental policies and

standards through trainings, workshops, informative website, newsletter, new-hire packets and other forms of communication. The Flagstaff Area National Monuments has set a goal of educating 90,000 visitors about climate change and sustainability practices by 2016.

- *Green Procurement and services:* By 2012, the Flagstaff Area National Monuments will develop and implement a Green Procurement Plan. In accordance to the Green Procurement Plan, credit card holders will make informed decisions to ensure that we practice "green" purchasing for all procurements from office products to construction materials and services. We will strive to procure only the most environmentally responsible product for a given task or project, and we will support businesses that observe and promote environmentally responsible business practices. The Flagstaff Area National Monuments will require 40% of all items to be "Green Purchases" by 2016.

- *Water conservation:* We will strive to reduce our consumption of potable water by 20% by 2016. (Using FY07 as a baseline)

- *Energy conservation:* We will strive to reduce our energy intensity (BTU/Sq. Ft) and consumption of resources such as gasoline, diesel, propane and electricity 20% by 2016. (Using FY08 as a baseline)

- *Fleet management:* we will increase the average miles per gallon in our fleet vehicles by 5% by 2016. (Using FY08 as a baseline)

- *Renewable electricity:* We will utilize renewable electricity to provide 50% of the total energy consumed in our monuments by 2016.

- *Recycling and Waste Diversion:* We will utilize reusable materials, and recycle waste whenever possible. The Flagstaff Area National Monuments will increase their waste diversion rate to 50% by 2016.

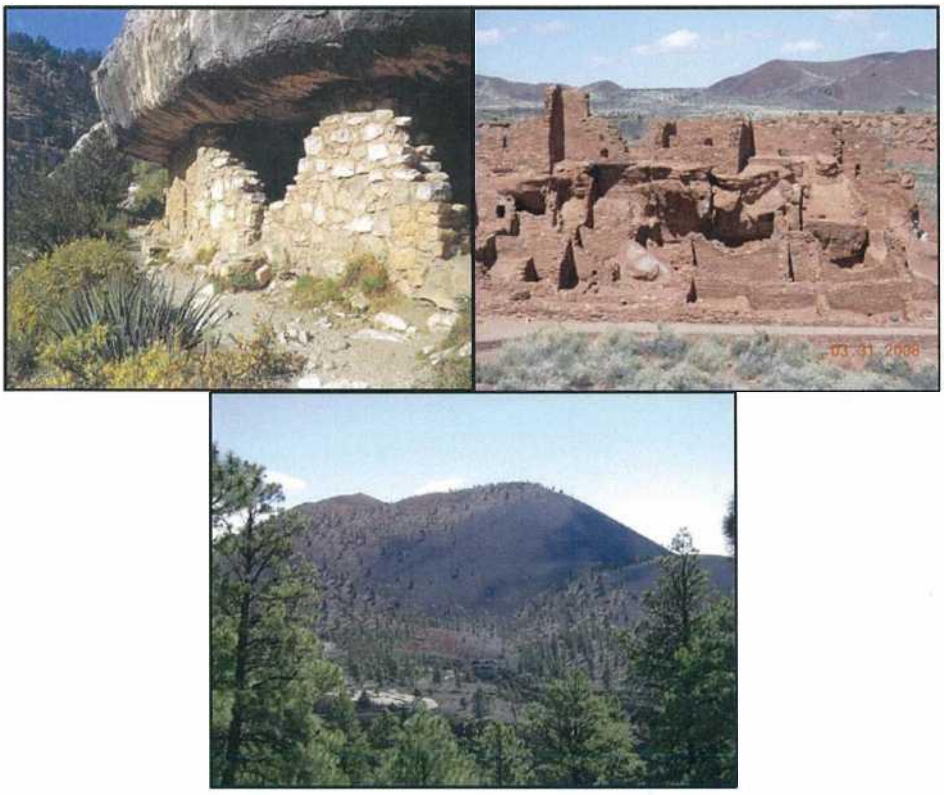
Diane Chung Diane Chung, Superintendent August 4, 2011 Date

The Flagstaff Area National Monuments

Sunset Crater Volcano, Walnut Canyon, & Wupatki National Monuments

Environmental Management System

May, 2012



Diane Chung

Diane Chung, Superintendent

5/21/12

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I. INTRODUCTION

The Challenge of Climate Change

Climate change presents significant risks and challenges to the National Park Service and to the Flagstaff Area National Monuments. Scientists cannot predict with certainty the general severity of climate change nor its impacts. Average global temperatures on the Earth's surface have increased about 1.1°F since the late 19th century, and the 10 warmest years of the 20th century all occurred in the last 15. The single leading cause of this warming is the buildup of Green House Gas (GHG) in the atmosphere—primarily carbon dioxide (CO_2), methane (CH_4), and nitrous oxide (N_2O) —which trap heat that otherwise would be released into space.

The continued addition of CO_2 and other GHGs to the atmosphere will raise the Earth's average temperature more rapidly in the next century; a global warming of 4-7°F by the year 2100 is considered likely. Rising global temperatures will further raise sea levels and affect all aspects of the water cycle, including snow cover, mountain glaciers, spring runoff, water temperature, and aquatic life. Climate change is also expected to affect human health, crop production, animal and plant habitats, and many other features of our natural and managed environments.

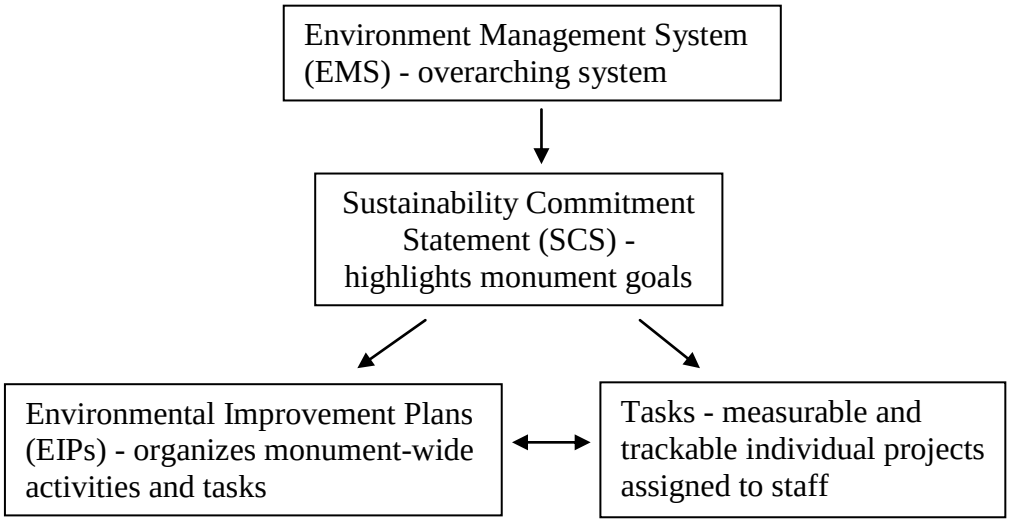
Environmental Management Systems (EMS)

The Flagstaff Area National Monuments' (FLAG) Environmental Management System (EMS) is intended to serve as a guide towards continual improvement in sustainable operations, environmental compliance and climate change response actions. The EMS was developed by the FLAG "Green Team," an appointed team to help guide sustainability projects within the monuments, at their headquarters located in Flagstaff, AZ. The EMS will provide guidance to measure, support, and organize the development and management of Environmental Improvement Plans (EIPs). By utilizing this system, FLAG will be in compliance with local, state and Federal environmental regulations and requirements, Federal Executive Orders 13423 and 13514, will meet Department of the Interior (DOI) and National Park Service (NPS) directives, plans, and strategies such as the Green Park Plan and the Climate Change Response Strategy, and will fulfill the requirements of the Climate Friendly Parks Program.

On August 4, 2011, FLAG's Superintendent, Diane Chung, signed the Sustainability Commitment Statement (SCS). The SCS highlights the Monuments' overall mission, vision and goals for reducing greenhouse gas emissions, water and energy consumption, and waste management and diversion while managing and increasing communication, visitor services, outreach and trainings. The SCS will be monitored through an annual review by the Green Team and the Management Team.

Through Environmental Improvement Plans (EIPs), the EMS will identify who within FLAG will be responsible for the management and implementation of activities and tasks related to sustainability. This document will also include a background section on the park's previous EMS and Green Team, past accomplishments, FLAG's environmental and sustainability activities, existing data on energy use, water use, solid waste generated, recycling, and other items, and will

state objectives and goals, will describe record keeping, reporting, and monitoring requirements, and staff training needs.



Flagstaff Area National Monument Boundaries

To fully develop a working EMS, it is essential that FLAG highlight the boundaries for operations. The operational boundaries of the monuments include: the functional areas of Walnut Canyon, Sunset Crater Volcano, and Wupatki National Monuments (including the park roads and all facilities at Sunset Crater that reside on Forest Service land) and the Monuments' Headquarters. Due to the fact that the Headquarters building for the three monuments is leased, certain aspects of the building management are out of our control. Also within the FLAG boundaries is the Western National Park Association (WNPA), our cooperating association that operates bookstores in each visitor center. Contractors and permittees are not included within the boundaries mainly because the Monuments have the power to guide them to abide by monument rules, regulations and policies by including this information in the contract or permit agreement. (This is something the team should agree upon. In the previous EMS, the guidance was to exclude these because they are controlled by a separate contract.)

Other areas included in the boundaries are human interaction, and environmental issues within the monuments related to natural and cultural resources, visitor transportation, visitor use, accidental chemical spills and other potential environmental impacts.

II. GOALS

The FLAG monument staff has identified goals in conjunction with local, state, and Federal environmental regulations and requirements, with the Executive Orders (E.O.) 13423 and 13514, and has developed Environmental Improvement Plans (EIPs) as a means to reach those goals. All

tasks in the EIPs are viewed as important and meaningful to the success of sustainability programs at the monuments. Energy use, greenhouse gas (GHG) emission reduction, renewable energy use, water use, green purchasing, solid waste, the use of toxic/hazardous chemicals, constructing/easing/operating/maintaining buildings, and purchasing/using/disposal of electronic equipment are all highlighted within EIPs.

In addition, the goals act as a guide to keep us within or achieving DOI and NPS compliance, directives, orders, and strategies. Specific goals contained within the E.O. and NPS orders are automatically goals of this plan. The quantitative goals of E.O. 13423 and 13514 can be summarized as follows:

Executive Order 13423

- Reduce petroleum consumption in fleet by 2% annually through 2015 using a FY 2015 baseline
- Increase alternative fuel consumption by 10% annually
- Reduce energy intensity in buildings by 30% by 2015 using a FY 2003 baseline
- At least 50% of required renewable energy comes from new renewable sources
- Reduce water consumption 16% by FY 2015 using a FY 2007 baseline
- Guiding Principles - sustainable buildings
- Expand green procurement & electronic management
- Reduce the use of chemicals and toxic materials - find alternatives

Executive Order 13514

- Greenhouse Gas (GHG) Emissions: Develop and implement a FY 2020 percentage reduction target for GHG emissions relative to a FY 2008 baseline.
- Fleet consumption of petroleum: Reduce use by 2% annually through FY 2020 relative to a FY 2005 baseline, 30% total (exempts those with <20 vehicles).
- Water Use, Potable: Reduce use by 2% annually through FY 2020 or by 26% relative to a FY 2007 baseline.
- Water Use, Non-Potable: Reduce use by 2% annually through FY 2020 or by 20% relative to a FY 2010 baseline.
- Solid Waste: Divert 50% of the waste stream from landfills through FY 2015 relative to the FY 2005 baseline.

Federal, State and Local Environmental Regulations & Requirements	
REQUIREMENT	**DESCRIPTION**
DM 515, Chapter 4	Department of Interior Use of Environmental Management Systems
Executive Order: 13423	Strengthening Federal Environmental, Energy, and Transportation Management
Executive Order: 13514	Federal Leadership in Environmental, Energy, and Economic Performance
Director's Orders #13A	Environmental Management Systems and Environmental Leadership
Clean Air Act (CAA)	Legislation related to reducing smog and air pollution.

Clean Water Act (CWA)	The Clean Water Act (CWA) is the cornerstone of surface water quality protection in the United States. The status employs a variety of regulatory and non regulatory tools to sharply reduce direct pollutant discharges into waterways, finance municipal wastewater treatment facilities, and manage polluted runoff.
Energy Policy Act (EPAcT)	Requires federal facilities to use alternative fuel vehicles based on containment area and achieve certain fuel efficiencies.
Federal Regulation, EPA, Pollution Prevention Act	Pollution Prevention (P2) EPA developed standards promulgated regulations and enforced the law with an emphasis on end-of-pipe solutions. These actions had a measureable and positive effect on environmental quality.
Federal Regulation, EPA, Hazardous Chemical Reporting: Community Right-to-Know (EPCRS): 40 CFR part 370	40 CFR part 370 establishes reporting requirements for providing the public with important information on the hazardous chemicals in their communities.
U.S. Department of interior, 515 DM 2, Audit Policy	Requires environmental compliance audit programs within each department agency.
NPS Director's Order 13B, Solid and Hazardous Waste Management	Establishes specific requirements on managing solid hazardous and non-hazardous wastes.
NPS, Intermountain Region Policy, Recordkeeping	Encourages facilities to collect information and maintain availability, and ensures long-term archiving of environmental records and information.
NPS, Intermountain Region, Environmental Compliance	Encourages all national parks to consider full compliance with all regulatory obligations and the use of compliance audits to confirm compliance status.
NPS, Intermountain Region, Pollution Prevention	Encourages all national parks to consider using the principles of pollution prevention for all changes to reduce the generation of waste.
NPS, Intermountain Region, Environmental Policy	Outlines certain environmental expectations on national parks within the Intermountain Region. These must be considered in facility environmental policy and all subsequent environmental actions.
Federal Regulation, EPS, Hazardous Waste Management: 40 CFR parts 260-265	Hazardous Waste Management. Title 40 is the section of the CFR that deals with the mission of protecting human health and the environment.
Facility Emergency Action Plan	Establishes specific requirements for the facility in responding to a variety of emergency situations.
Facility Universal Waste Management Plan	Establishes specific requirements for the facility in properly managing universal waste.
Facility Respiratory Protection Program Plan	Establishes specific requirements for the facility in protecting employees that could be exposed to hazardous atmospheres.
Facility Spill Prevention, Control and Countermeasure Plan	Establishes specific requirements for the facility in properly managing bulk storage of petroleum products.
Facility Hazardous Waste Management Plan	Establishes specific requirements for the facility in properly managing hazardous waste.

Facility Solid Waste Management Plan	Establishes specific requirements for the facility in properly managing solid waste in national parks.
Management System, EMS, Green Purchasing Policy	Establishes policy for purchasing non-hazardous materials
Federal Regulation, EPA, Certification of Pesticide Applicator (Pesticide Programs): 40 CFR part 110	This section deals with the certification of applicators of restricted use pesticides.

Regulations & Requirements courtesy of Grand Canyon National Park

FLAG has established quantitative goals in concurrence with the E.O. 13423 and 13514, federal, state and local regulations and requirements. Those goals include the reduction of energy intensity (energy consumption per square foot of building space) in buildings, increased use and adoption of renewable energies, an increased numbers of hybrid or alternative fuel vehicles in the fleet, a decrease in low miles-per-gallon vehicles, an increase in green procurement, a decrease in the use of hazardous or harmful chemicals, and integration of sustainable building designs.

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III. HISTORY OF THE FLAGSTAFF AREA NATIONAL MONUMENTS' ENVIRONMENTAL MANAGEMENT SYSTEM

Green Team: Organization for Sustainability Efforts

In 2000, the Intermountain Regional (IMR) office initiated environmental audits for every park. Each of the Flagstaff Area National Monuments (FLAG) units completed these environmental compliance audits answering questions related to: auto solvents, used paints, unknown substances, lead-acid batteries, HazWaste manifests, accumulation areas, EPA ID numbers, surface water discharges, used antifreeze, solid waste, CFCs, pesticides, recordkeeping, emergency response, boneyards, used oil, fluorescent bulbs, Ni-Cd batteries, Haz Com and others. A park audit was conducted in July 2000. Audit results were published in August 2000, and included recommended actions for areas to be improved to increase environmental compliance. Findings at SUCR totaled 84, WACA totaled 83 and WUPA totaled 58.

After the audit, Maintenance Worker, Gayle Shaff was designated the park's Hazardous Communications Coordinator. Shaff provided leadership in closing the audit findings for FLAG by implementing a park HazCom Plan. This plan included HazCom training for all employees and encouraged the utilization of Material Safety Data Sheets in all parks and divisions. The plan also focused on creating a hazardous chemical inventory list for our legacy hazardous waste and the proper storage of hazardous materials. Through Shaff's initiative, all 2000 audit findings were closed.

On May 14, 2003, all parks in the IMR received an email from the Regional Director advising them of the Compliance Improvement Management System (CIMS) initiative taking place through management by the region's Environmental Protection Officer, Dr. Michael Schene and in partnership with contractor, MES (Management and Engineering Services), owner J. Craig Erickson. The CIMS initiative responded to Executive Order 13148, "Greening the Government through Leadership in Environmental Management" which requires federal facilities to adopt an environmental management system (EMS). "CIMS" is an EMS template designed by the contractor to make it easy for parks to adhere to the requirements of the international standard, ISO 14001:1996. Because of Gayle's involvement in the baseline audit in 2000, she was asked to be the leader of the CIMS Team for FLAG. The Superintendent at the time, Sam Henderson, committed FLAG to the CIMS process (with the hope of eventual registration of our EMS with ISO 14001), and he appointed an initial CIMS Team. The team began meeting monthly in July 2003.

The early CIMS team drafted a FLAG Environmental Policy, identified aspects of operations that may be causing negative impacts, determined which aspects were significant and drafted Environmental Management Programs (EMPs) for their resolution. Co-team leaders Angela Saner and Gayle Shaff, met with William McMullen for a pre-assessment audit of our EMS and a follow up compliance audit in late January, 2004. After the pre-audit, Bill made recommendations for how we could improve our program. In addition, the team designated five focus areas for improvement: 1) Green Procurement, 2) Interpretation/Education, 3) Emergency Preparedness, 4) Reduce, Reuse, Recycle and 5) Efficiency, and drafted Environmental Improvement Plans (EIPs) for each.

Activities that began to take place on an annual basis for the CIMS team included: review of Environmental Policy, review of Aspects/Impacts/Significance, annual CIMS Awareness training for all employees, a Management Review Meeting, and a Conformance Audit. On the way to ISO14001 certification, an internal audit was conducted by Angela Saner and Gayle Shaff in April/May 2004, and a Management Review Meeting took place on May 25, 2004, where Angela Saner presented. A formal conformance audit was conducted by outside contractor, NRT, May 26-28, 2004. The auditors found no non-conformance and provided minor observations. On July 8, 2004, Superintendent Palma Wilson was informed that NRT had found FLAG's system to be in conformance with the requirements for ISO 14001:1996(E). NRT awarded certificates, and then worked with Orion Registrar, Inc. to formally register our certification.

In March and April, 2005, sub-committees were formed to assist with goals in the areas of electricity, propane, water, unleaded & diesel reduction, biodiesel use and recycling increase. In addition, EIP were evolving in the above mentioned areas as well as in the areas of efficient vehicles, reducing paper consumption, green procurement, utilizing rechargeable batteries, emergency preparedness, and interpretation.

On April 19, 2005, another Management Review Meeting was led by Angela Saner (Team Leader), and on May 12-13, 2005, NRT returned to perform another conformance audit. Two non-conformances were found and were quickly remedied, and four observations were made. This time Flag's EMS was certified by NRT/Orion to ISO14001:2004.

From 2003 to 2006, another area the EMS Team focused on was training. On August 11, 2004, FLAG worked in conjunction with the Northern Arizona University (NAU) Center for Sustainable Environments to put on a Green Procurement Workshop at NAU's duBois Center with participation from the City of Flagstaff, county, NAU, USFS, Joy Cone Company, vendors and others. FLAG partnered with the NAU Center for Sustainable Environments in May 2006 to produce, "Creating a Culture of Sustainability in Public Sector Organizations," a successful, widely attended conference focusing on Green Procurement and Pollution Prevention.

Part of the evolution of the EMS Team was in the name. Between 2005-2006, a member of the then "CIMS Team" suggested that we call ourselves "The Green Team," and that name has remained ever since. FLAG's Green Team went through a dormant period in 2006, as both the Green Team Leader and Superintendent moved on to positions in other parks.

Fiscal year 2007 began with FLAG merging with the existing Montezuma Castle/Tuzigoot group (MOCA/TUZI), and at that time, Kathy Davis filled in as FLAG Acting Superintendent. By this point, most of the founding Green Team members had moved on to other parks or had retired. In August 2007, Angela Saner returned to FLAG, and with other Facility Management and Natural Resources staff, assisted with another Environmental, Safety and Compliance Audit that was conducted by PRIZIM in August, 2007. PRIZIM presented the park with numerous findings. Most findings were closed; however, many of them require continual follow-up. Various Green Team activities continued without official team meetings such as removal of hazardous waste, purchase and installation of new recycling containers, and hybrids added to our fleet.

Superintendent Diane Chung arrived in February 2008, and appointed a new Green Team. Diane supported the team with her attendance at meetings and with funding in FY10 and FY11. Charlie Schelz, Angela Saner and Diane Chung attended GRCA's Climate Friendly Parks Workshop October14-15, 2009 in preparation for FLAG to pursue becoming a Climate Friendly Park.

Prior to FLAG's Climate Friendly Park Workshop, the following were achieved by the previous Green Team members and park staff: increased communication and improved culture regarding environmental compliance, hazardous materials communications, recycling, printing two-sided, buying "green," etc., increased from zero to four hybrids in the park's fleet, purchased energy star appliances, recycled content materials, and green seal certified products, installed low-flow toilets and waterless urinals, replaced paper towel dispensers with hand dryers, installed programmable thermostats, replaced window coverings with double diamond insulated energy efficient blinds, installed lighting sensors so that lights go on only when a room is occupied, removed two fueling stations to decrease the possibilities for spills, added spill kits to remaining fuel station and hazardous materials storage areas, increased the utilization of rechargeable batteries, installed low flow showerheads in housing, and converted the Butler and Seismograph buildings to solar.

FLAG Climate Friendly Park

On February 11, 2010, the FLAG submitted their Climate Friendly Park application to commence the monument's process of becoming a Climate Friendly Park. During the summer of 2010, the Intermountain Region sent two ASU-student interns, Michael Gladkin and Michael Vinup, to FLAG to assist with calculating the Greenhouse Gas Emissions (Carbon Footprint) for the three park units. Michael Gladkin and Michael Vinup provided summary reports and Climate Leadership In Parks (CLIP) Tools on each Monument. Also that summer, with coordination from IMR, we contracted for an Energy and Water Audit Sustainability Assessment. The audit was conducted by Facility Engineering Associates (FEA). For each park unit, FEA produced a report and an Access database containing Energy Conservation Measures (ECMs). This database also serves as a meter data collection tool.

On April 5-7 2011, FLAG hosted a workshop comprised of guest speakers and presentations from community members, Northern Arizona University (NAU) professors and National Park Service employees from WASO, IMR and FLAG. Presentations were developed with the intent of generating interest and to educate FLAG employees with topics ranging from climate change to green procurement. The second day of the workshop was designed to expand upon the

information presented the day prior, and brainstorm ideas specific to the monuments to reduce environmental impacts. On the third day, staff from IMR, an ERM contractor and some FLAG employees met and began crafting the EMS.

Green Team Details, Roles, Responsibilities & Accountability

On May 18, 2011, Superintendent Diane Chung reconstructed the Green Team by appointing new members. Those members now consist of representatives from each division and Management Team members. The Green Team was reconstructed to generate a working team to develop an Environmental Management System (EMS) in compliance with local, state and federal environmental regulations and requirements, E.O. 13423 and 13514, and all Climate Friendly Park requirements.

While all FLAG employees are not expected to be on the Green Team, they are expected to be involved with Green Team activities. Formal meetings happen twice a month while the EMS is under construction, then monthly depending on needs of the Green Team. The Green Team Leader will plan and facilitate meetings, take meeting notes and act as the recordkeeping custodian. All changes and revisions made to the EMS will be decided upon by the Green Team. Annual assessments will be made to the EMS at the end of the fiscal year. The team may choose to invite park partners to join Green Team meetings if appropriate.

Roles

The role of the Green Team is to develop, manage and oversee the EMS, as well as promote communication amongst staff. Division Chiefs attend Green Team meetings and oversee the development and implementation of the EIPs and tasks, ensure environmental regulation compliance, and help to ensure interdivisional collaboration when appropriate.

Green Team members will actively participate for a two year appointment. Annually the Green Team and Management Team will assess the EMS and provide adjustments. Division Chiefs will manage EIP tasks by assigning staff members to projects, and oversee completion. Upon the completion of tasks, Division Chiefs will keep record of completed EIP task and report finalized projects to the Green Team. The status and accomplishment EIP tasks will be updated quarterly; however EIPs, along with the EMS will be evaluated annually to increase accuracy in data collection and recordkeeping.

Responsibilities

Members of the Green Team are responsible for developing and maintaining the EMS with specific focuses on continual improvement and environmental compliance. Within the EMS, EIPs have been identified with task to be carried out at FLAG. EIPs and tasks are divided by division and managed by the Division Chiefs alongside the Green Team Leader.

Tasks were developed from the breakout session at the Climate Friendly Parks workshop, at Green Team meetings, and from overlap of the old CIMS Team EIPs. EIPS are written to increase compliance with environmental regulations and to assist in reaching goals developed in the SCS and from E.O. 13423 and 13514.

The Recordkeeping Custodian will serve as the keeper and primary person to maintain the EMS. Each Division Chief is responsible for the EIPs that deal with their division and will identify the lead person for each aspect or sustainability matrix. The Green Team Leader will report quarterly to the Management Team at squad meetings to update how tasks are being accomplished.

Accountability
Division Chiefs, if unable to attend the Green Team meetings will pre-designate a representative to update the Green Team on accomplished tasks, and present any concerns or questions. If members of the Green Team are knowingly unable to attend meetings they need to inform the Green Team Leader of their absence. For those members unable to attend the monthly meetings the Green Team Leader meet with the member to fill them in on what took place at the meeting, and any decisions that were made.

Green Team & Environmental Efforts Roles & Responsibilities

Roles	**Responsibility**
Superintendent Diane Chung *Management Team/Green Team*	General Manager of the Flagstaff Area National Monuments with overall responsibility for park operations, programs, policy, projects and partnerships.
Facility Manager Don Sharlow *Management Team/Green Team*	Manages all facilities owned or leased by the Flagstaff Area National Monuments and all maintenance and facility related programs including hazardous materials and hazardous waste, fuel systems, etc. Serves as member of the Green Team and Management Team. Manages the maintenance budget, work requests, and a wide variety of other Facility related programs.
Chief of Resources Lisa Leap *Management Team/Green Team/Safety Team*	Manages all resources within the Flagstaff Area National Monuments. Finds ways to develop awareness, education, and increase protection and reduce impacts pertaining to natural and cultural resources within the monuments. Serves as a member of the Green Team and Management Team. Serves as a Liaison between the Safety Team and the Green Team to communicate responsibilities to reduce duplicate work.

Chief Ranger Charlie Strickfaden *Management Team/Green Team/Emergency Preparedness Coordinator*	Manages law enforcement, interpretation, fee collection and visitor center staff within the Flagstaff Area National Monuments. Upholds the rules and policies of the National Park Service, and state and national law. Provides safety within the monuments. Serves as a member of the Green Team and Management Team. Serves as the Public Information Officer for any external communications regarding the EMS. Serves as the Fire Management Officer (FMO), and the Emergency Preparedness Coordinator for the Monuments.
Interpretive Park Ranger Cecilia Shields *Green Team*	Manages interpretative and education staff/ volunteers and programs for the Flagstaff Area National Monuments. Finds ways to develop and incorporate EMS education opportunities into park operation and programs. Serves as a member of the Green Team.
Budget Analyst Maggs Rasmussen *Housing Officer/Green Team*	Manages budgets for the Flagstaff Area National Monuments. Manages micro-purchasing operations and the process of recording procurement details (i.e. green purchasing data). Plays an active role with the development and management of the Green Procurement Plan. Serves as the Housing Officer. Serves as a member of the Green Team.
Biologist Charlie Schelz *IPM Coordinator/Wellness Liaison/Green Team*	Manages natural resources within the Flagstaff Area National Monuments. Provides a natural resource mindset and understanding to the Green Team. Serves as the Integrated Pest Management (IPM) Coordinator. Serves as a Liaison between the Green Team and the Wellness Committee. Serves as a member of the Green Team.
Facility Management Systems Specialist Angela Saner *Green Team Member*	Manages the FMSS program for the Flagstaff Area National Monuments. Provides administrative leadership and support for Facility Management. As previous Green Team leader, provides oversight regarding the EMS. Manages energy data. Completes Annual Energy Report. Serves as backup for annual Sustainable Practices Report, recycling tracking, reports to the EDL Site, and serves as a member of the Green Team.
Archeological Technician Nicole Arendt	Manages archeological sites in FMSS. Helps with site monitoring and updating the LCS.

Green Team Member	Serves as a member of the Green Team.
Administrative Officer Janet Phillips *Management Team/Green Team Member*	Manages and monitors administrative functions within the monuments. Serves as a member of the Green Team.
Green Team Leader Environmental Protection Assistant Tim McKinley	Serves as the Leader and Recordkeeping Custodian of the Green Team. Responsible for the overall review and editing of the EMS and all related documents. Responsible for conducting an annual review of the SCS, Aspects/Activities/Impacts, and EIPs. Responsible for conducting an annual Management Review of the EMS, and for conducting annual EMS awareness training for all employees. Follows up on the EIP tasks, runs Green Team meetings, and serves as the liaison for external audits, manages environmental documents and records (including external audit reporting), and keeps the national monuments informed in regard to the EMS through newsletters, sharepoint site, and after hour events. Completes annual Sustainable Practice Reports, tracks waste diversion, and reports to the Environmental Disposal Liability (EDL) website.
Maintenance Supervisor Maintenance Mechanic Supervisor Kelly Confer *Collateral Duty Safety Officer*	Supervises maintenance operations at the monuments. Serves as Collateral Duty Safety Officer for the Flagstaff Area National Monuments.
Maintenance Mechanic-Utilities Ky Macktima-Borhauer *Hazardous Waste Coordinator*	Serves as the Utilities Maintenance Mechanic managing water and wastewater operations. Serves as the Hazardous Waste Coordinator.
Hazardous Communicator Coordinator Don Sharlow	Serves as the contact for Hazardous Communication trainings, addresses questions, concerns or issues, and keeps staff up to date on requirements.
Respiratory Protection Coordinator **VACANT**	
SPCC Coordinator Maintenance Mechanic Supervisor & Ky Macktima-Borhauer	Serves as the point person for any SPCC training or issue. Is responsible for implementing the SPCC plan.
All Employees	Responsible for knowing components, goals, and objectives, of the park's EMS program to assist in a way that furthers the team's success.

Green Team Turnover

In an effort to reduce the negative effects of Green Team member turnover and assure the sustainability of the Green Team, a plan must be in place to prepare for this. First, the roles and responsibilities of each Green Team member are listed in a matrix found on pages 14-16. This matrix will be reviewed annually to assure that no task listed is done by just one person without a backup. This will ensure that if someone leaves another person can take on their role during the lapse until the position is filled. When Green Team members move on, the roles and responsibilities will be filled by their replacement. All Green Team members will be trained in the location of all EMS/environmental management records and documents. Prior to a Green Team member leaving, he/she will cross train other Green Team members (or ideally their replacement) on their role and responsibilities so that responsibilities will be appropriately distributed among other members of the group until the vacant position is filled.

IV. ASPECTS, ACTIVITIES, SIGNIFICANTS, PROGRAMS & PRACTICES RELATED TO SUSTAINABILITY

Interaction Assessment

The Green Team at FLAG has identified activities, products or services that interact with and may have a potential impact (beneficial or adverse) on the environment. By listing FLAG's activities, interactions and impacts, we can then review this list to determine the most significant, and then make objectives and targets to address these significant aspects. This process focuses the EMS, and identifies where positive changes can be implemented based upon dedicating efforts and resources to areas deemed most significant. This assessment is to identify general areas where environmental performance can be improved. These considerations are combined with our commitment to abide by all federal and state environmental laws, regulations and policies. A review of the aspects related to our activities, products or services (FLAG Facility Interaction Assessment) will take place annually. FLAG's Activities, Interactions and Impacts are listed below.

In order to identify activities, interactions, and impacts, FLAG completed a Facility Interaction Assessment that evaluated potential impacts associated with selected areas of Monument operations. After assessing these interactions, a scoring system was developed to determine the most important aspects for the park. This scoring system will assist in establishing priorities for increasing environmental compliance and reaching goals within the Sustainability Commitment Statement (SCS), and tasks within the EIPs.

Activity: Virtually any process, function, event or operation occurring at a park either once, periodically, or continually.

Interaction(s): A park's activities, programs, functions, or actions that can connect to, or interrelate with, natural resources or any other dimension of the environment. Interactions have the potential to result in impacts.

Impact(s): The effects of a park's interaction (or proposed interaction) upon specific natural resources or any other dimension of the environment. Impacts may be direct, indirect or cumulative, beneficial or adverse. In the context of a park-level EMS, most impacts of concern will be adverse impacts.

FLAG Facility Interaction Assessment

Facility Activity	Interaction(s)	Impact(s)
1. Building Use & Facility Operations	• Electricity, propane, water • Design • Construction • Maintenance (buildings, housing, water systems, wastewater systems, roads, trails, fences, RV trailer pads) • Mowing road shoulders • Employee safety in rodent-infested areas (hantavirus)	○ Consumptive use of electricity, propane, fuel, water and raw materials ○ Solid/universal/hazardous and wastewater wastes and associated impacts to the environment ○ Water quality and runoff ○ Inhibits viewscapes ○ Habitat disturbance ○ Aesthetics ○ Noise pollution ○ Space "footprint" issues (including cultural sites) ○ Ground disturbance ○ Air quality/pollution ○ Occupies lands that may otherwise be undeveloped ○ Human health and safety risks ○ Fragments wildlife corridors
2. Housing	• Electricity, propane, water • Chemical products • Generate solid, universal, and hazardous waste	○ Consumptive use of electricity, propane, water and raw materials ○ Air quality/Pollution ○ Solid and Hazardous waste production ○ Human health and safety risks
3. Energy Use	• Lighting • Heating • Swamp Coolers	○ Consumptive use ○ Air quality impacts ○ Water quality impacts

	• Operating appliances • Operating power tools • Operating office supplies (printers, scanners, computers, etc.) • Electronic devices • Propane torches used to melt ice on trails	○ Ground disturbance ○ Visual impacts ○ Noise impacts ○ Printer toner waste ○ Increase landfill waste
4. Custodial Operations	• Electricity, propane, water • Chemical products • Wastewater • Solid, universal, and hazardous waste	○ Consumptive use of electricity, fuel, water and raw materials ○ Air quality/Pollution ○ Solid and hazardous waste produced ○ Human health and safety risks ○ Spills of hazardous materials
5. Purchasing	• Supplies • Equipment • Materials (chemicals, paints, construction, etc.) • Services	○ Consumptive use ○ Solid waste generation ○ Air quality/Pollution ○ Purchasing of non-local products contributes to transportation pollution ○ Purchasing non-green products ○ Purchasing non-recycled products ○ Supporting companies who are not "green"
6. Fleet Management	• Gasoline consumption to operate vehicles and equipment • Equipment and vehicle washing • Vehicle maintenance • Inappropriate vehicle operation, i.e., vehicle selection, rapid	○ Air pollution ○ Water runoff pollution ○ Soil pollution ○ Raw material consumption ○ Depletion of oil and gas reserves

	acceleration, idling vehicles, etc.	
7. Solid Waste & Recycling production, handling, transportation and disposal of	• In-shipment/transport • Collection and disposal • Staff collection of unidentified waste found in the park • Landfill Diversion: Recycling	○ Air pollution ○ Soil contamination ○ Water pollution ○ Energy use ○ Landfill capacity ○ Aesthetics ○ Visual quality ○ Odor ○ Potential human exposure
8. Hazardous & Universal Waste production, handling and disposal (waste-oil, paints, thinners, chemicals, building materials, rhoplex, universal wastes)	• Generation • Shipment • Storage • Handling Disposal out-shipment • Excess, obsolete & unserviceable property stored for long periods	○ Air pollution ○ Water pollution for leaks and spills in transit ○ Soil impacts ○ Potential human exposure ○ Storage of old property/equipment creates opportunities for spills and leaks ○ Disposal costs the park operating dollars and generates solid and hazardous wastes
9. Vegetation Management	• Removal of exotic plants • Herbicide use • Plant disease management • Conifer encroachment control • Forest restoration • Integrated Pest Management (IPM)	○ Ground disturbance could impact cultural and natural resources ○ Habitat disturbance ○ Wildlife disturbance ○ Herbicide use impacts to soil, water, flora and fauna
10. Fire Management	• Prescribed Fire • Wild land fire suppression • Thinning	○ Ground disturbance from fire line construction ○ Cultural site disturbance ○ Air quality ○ Noise pollution ○ Water quality (short-term

		effects from prescribed fire, potential long-term effects from wildfires) o Flooding impacts- soil disturbance/erosion and or deposition
11. Watershed Restoration	• Road maintenance • River & spring restoration	o Water quality impacts o Noise pollution o Fuel consumption o Air quality impacts o Habitat Disturbance o Wildlife impacts
12. Fuel Use & Storage	• Vehicle and equipment operation • Heating • Operation and maintenance • Fuel stations and storage	o Consumptive use of raw materials and chemical products o Potential for leaks, spills or fire o Water, soil, and/or air pollution concerns
13. Visitor Use	• General visitation • Recreation • Interpretive and educational programs • Special use permits	o Solid waste generation o Noise disturbance o Consumptive use o Wildlife disturbance o Energy consumption o Air quality/Pollution o Visual impacts o Water quality impacts o Soil compaction and vegetation degradation
14. Resources Management	• Research permits • Field surveys of resources • Employee safety in rodent-infested areas (hantavirus) • Integrated Pest Management (IPM)	o Habitation destruction o Visual impacts o Fuel consumption o Consumption of materials o Wildlife and habitat impacts o Human health and safety risks

Scoring Criteria

Facility activities and associated environmental impacts are evaluated according to the following criteria: severity, frequency, financial, and stakeholder interest. A scoring system of 1-3 is assigned to each criterion then is added together creating a Total Score. The numerical scoring is used to provide a list to assist the Green Team in prioritizing impacts from which to identify goals, targets, and plans for improvement. The Green Team will, as a group, will reach consensus on the final numbers for each scoring criteria. Any score 11 or above will be considered a "significant" impact(s)—the most important area(s) for allocating resources. Each EIP that is related to a "significant" impact will be identified as "SIGNIFICANT," and will receive high priority. Each year, after reviewing the Facility Interaction Assessment, the Green Team will also complete the Impact Assessment and Scoring.

SEVERITY: What is the severity of the impact?

1- Low
2- Moderate
3- High

FREQUENCY: what is the overall frequency or probability of the impact(s) occurring?

1- Low frequency/less than once a year
2- High frequency/more than once a year and less than once a month
3- High frequency/monthly or more frequent

FINANCIAL: What is the overall economic effect of correcting the impact?

1- Correcting the impact is likely to be prohibitively expensive
2- Associated costs are feasible
3- Correcting the impact is likely to save the monument money with a payback

STAKEHOLDER INTEREST: How would stakeholders react to, or be affected by, the impact?

1- Neutral or disinterested
2- Mildly concerned
3- Greatly concerned

*Stakeholders are defined as any individuals or groups that have an interest in a park's operation and its environmental performance. Stakeholders may include employees, regulators, visitors, suppliers, concessioners, conservation and advocacy groups, community residents, and the media. *

Impact Assessment and Scoring

Facility Activity	**Severity 1=low 2=moderate 3=high**	**Frequency 1=low 2=moderate 3=high**	**Financial 1=low 2=moderate 3=high**	**Stakeholder 1=low 2=moderate 3=high**	**Total**

1. Building Use & Facility Operations	2	3	2	2	9
2. Housing	2	2	2	1	7
3. Energy Use	2	3	3	3	**11**
4. Custodial Operations	1	3	2	1	7
	Severity 1=low 2=moderate 3=high	**Frequency 1=low 2=moderate 3=high**	**Financial 1=low 2=moderate 3=high**	**Stakeholder 1=low 2=moderate 3=high**	**Total**
5. Purchasing	1	3	2	2	8
6. Fleet Management	2	3	1	1	7
7. Solid Waste & Recycling	2	3	2	3	10
8. Hazardous & Universal Waste	3	2	2	2	9
9. Vegetation Management	2	2	2	2	8

10. Watershed Restoration	2	2	2	2	8
	Severity 1=low 2=moderate 3=high	**Frequency 1=low 2=moderate 3=high**	**Financial 1=low 2=moderate 3=high**	**Stakeholder 1=low 2=moderate 3=high**	**Total**
11. Fire Management	2	2	2	2	8
12 Fuel Use & Storage	3	3	3	3	**12**
13. Visitor Use	2	3	2	3	10
14. Resource Management	2	2	2	2	8

*All scores of 11 or above will be considered a "significant" impact(s)—the most important area(s) for allocating resources. *

Green Procurement Goals & Plan

In order to facilitate sustainable practices, FLAG's EMS incorporates a "Green Procurement Plan" to guide how purchases are made. FLAG's Administration Division makes all purchases of items such as paper, office supplies, and sensitive items. The Facility Management Division purchase cleaning supplies, paper products, light bulbs and other items. In addition, they and other divisions occasionally make sensitive item purchases. Most permanent park staff are allowed to make micro purchases using their government credit cards. Arizona Major Acquisition Buying Office (AZMABO) performs large purchases, i.e. over $3K, while micro purchases are performed as above. Contracting is done through the AZMABO contracting office, but there are several Contracting Officer Technical Representatives (COTRs) at the monuments who are charged with writing statements of work (SOW) and managing the contractors in the field.

Within the Green Procurement Plan, FLAG will adhere to the Federal Acquisition Regulations (FAR) to purchase "green" and Energy Star products. All charge card holders have been assigned a Charge Card Log in AFS3 and have received training according to the Green Procurement Plan requirements. Each Charge Card Log has a column that indicates "Green" purchases being made with the letter "G" at the top of the column. It is the responsibility of the charge card holder to update their purchase log.
During the Green Procurement Plan training there was an emphasis on justifying purchases being made, the need for the purchase, consideration of origin and packaging, and verification that green alternatives have been investigated. This will apply to all Credit Card holding staff. COTRs and others involved in preparing SOWs will be required to include green purchasing clauses if possible. The selection of eco-friendly and local business/products will be encouraged as appropriate.

By 2012, the Flagstaff Area National Monuments will develop and implement a Green Procurement Plan. In accordance to the Green Procurement Plan, credit card holders will make informed decisions to ensure that we practice "green" purchasing for all procurements from office products to construction materials and services. We will strive to procure only the most environmentally responsible product for a given task or project, and we will support businesses that observe and promote environmentally responsible business practices. By 2016, the Flagstaff Area National Monuments will require 40% of all items to be "Green Purchases".
(Sustainability Commitment Statement Goal)

Fleet Management & Fossil Fuel Reduction

FLAG operates a fleet of 43 vehicles of which a majority of those vehicles being gasoline powered. The monument also has a few alternative fueled vehicles (currently four hybrids). These vehicles are used primarily to access job sites in the monuments, for law enforcement patrols, in park commuting, travel, and park fee collection. FLAG also uses power equipment that runs on diesel or gasoline. This includes bobcats, dump trucks, motor grader, backhoes, chainsaws, etc. Various oils and lubricants are used for the vehicles and equipment. However oil changes and major vehicle repairs are not done in park.

Currently FLAG is developing a program designed to reduce the number of low miles-per-gallon (MPG) park vehicles to high MPG vehicles like hybrids. Funding will be sought to purchase more environmentally friendly vehicles to reduce the monuments' greenhouse gas emissions. Reducing unnecessary idling will be encouraged. Even though FLAG's fleet currently has four hybrids and one Flex fuel vehicle, E-85 fuel is unavailable for purchase at this time. Monument operations will continue to be examined for ways to increase operational efficiencies, including ride share programs, coordinating activities and asking others to transport needed items rather driving back and forth to headquarters.

FLAG monuments have 13 housing units, but a significant portion of employees commute to and from work consuming a lot of fossil fuel. A few staff members take public transportation, walk, or ride bicycles to work. Attempts to reduce staff commuting miles by carpooling, biking, and

walking to work are encouraged. Information about the benefits of this will be distributed and incentives may be offered.

The other major fossil fuel users for FLAG are park visitors. FLAG received over 500,000[i] visitors for recreational visits during FY 10. Many of the visitors drive vehicles to and within the park. Actual miles driven are very difficult to quantify. Reducing miles driven by visitors in the park will be discussed under Other Visitor Services.

Fleet management: we will increase the average miles per gallon in our fleet vehicles by 5% by 2016. (Using FY08 as a baseline) *(Sustainability Commitment Statement Goal)*

[i] Statistics for visitors to the Walnut Canyon, Sunset Crater Volcano and Wupatki was found at http://www.nature.nos.gov/stats/viewReport.cfm

Energy Conservation

FLAG has 24 buildings with heating, swamp cooling or A/C systems. Some have both. The majority of the buildings run on grid electricity, with the exception of one building that is off-grid photovoltaic. All heating, cooling and appliances run either on propane or electric source. This includes refrigerators, fans, drinking fountain chillers, etc. There are lighting systems in every building, as well as some outdoor areas, however, the majority of the monuments' outdoor lighting is available, but rarely used. There are outdoor drinking fountain chillers and a few vending machines as well. Arizona Power Sources (APS) provides electricity to all of the monuments.

Energy-use audits of all major buildings and systems have been completed. Report recommendations will be implemented subject to the availability of funds. Where this cannot be accomplished with park operational funds, additional funding and other ways to make the improvements will be explored.

Solar tubes are currently being utilized in housing units at Sunset Crater Volcano to increase natural lighting. Further utilization of solar tubing will continue to be explored and increased, especially in non-historic residential facilities, and unnecessary systems eliminated. Old, high amperage appliances will be removed and replaced with approved Energy Star or energy efficient appliances, refrigerators, washers and dryers and stoves. During the winter months, oil space heating will be used as a pipe freezing preventative measure.

In efforts to reduce energy consumption, all of the monuments' lighting has been replaced with compact fluorescent lamps (CFLs). A project to convert 100% (of the Monument's lighting to use light emitting diodes (LED) is currently underway. The proper use of those systems and lights that are on timers will be emphasized to staff. Maintenance is performed on heating and cooling systems to ensure peak efficiency. An emphasis on passive design and environmentally friendly concepts will be researched and, if deemed appropriate, will be emphasized for new construction.

An emphasis on restoring and rehabilitating existing structures versus constructing new structures will be considered. The first step will be to question the necessity of a new structure. Projects will also make serious attempts to include renewable energy, rainwater catchment systems, and recycled materials, and best management practices will be used as much as possible. This section will apply to our staff, contractors, and all others working on our behalf.

> We will strive to reduce our consumption of energy resources such as gasoline, diesel, propane and electricity by 10% annually until 2016. (Using Fiscal Year 2010 as a baseline) (Sustainability Commitment Statement Goal)

Alternative Energy

Currently, FLAG is exploring ways to incorporate the use of alternative energy sources. Due to the location of the monuments, three separate stand-alone solar systems are being utilized. The increased usage of solar systems, alternative forms of wind turbines, and other forms of energy is a priority of the monuments and will continue to be explored. In conjunction with energy generated through the usage of solar panels, FLAG is researching the feasibility of purchasing "Green Energy" from the Arizona Power Systems (APS). Alternative ways to produce "clean" (zero greenhouse gas) power through solar water heaters and photovoltaic solar panels, solar tubing, will be investigated and implemented if feasible and when funding can be obtained.

> By 2016, we will utilize renewable electricity to provide for 50% of the total energy consumed in our monuments. (Sustainability Commitment Statement Goal)

Potable Water Conservation

Potable water is consumed by staff and visitors via drinking fountains and restrooms. At present, there are three habitable residences at Walnut Canyon, six Wupatki and four residences at Sunset Crater Volcano. All have showers and kitchens. All of the residences have low-flow showerheads except for Ponderosa building and at headquarters. There is a large ice machine in the maintenance shop for the staff use. At Walnut Canyon, Sunset Crater Volcano, Wupatki, all urinals are waterless. Non-potable water is not used.

Sunset Crater Volcano receives its water from Doney Water Authority (DWA) while Walnut Canyon and Wupakti's water is from a well. The majority of our toilets are not low-flow and we have a few pit or vault toilets. It is our intention to switch out all of our aerators and faucets to be low-flow while researching the feasibility of low-flow or composting toilets.

> We will strive to reduce our consumption of water by 20% annually until 2016. (Using Fiscal Year 07) *(Sustainability Commitment Statement Goal)*

Recycling & Waste Diversion

Within the Flagstaff Area National Monuments, two of the three monuments, Walnut Canyon and Sunset Crater Volcano, have garbage service, as does headquarters. Wupatki's garbage is taken to Sunset Crater Volcano National Monument. All of the trash dumpsters are 6 cubic yards, while the recycling dumpsters vary from 4 to 6 cubic yards in size. Interspersed throughout the monuments are trash and recycling receptacles.

FLAG recycles and diverts as many materials as possible; however the monuments, using FY10 data, produced a total of 88 tons of total waste. FLAG did however, recycle 39 tons, and had a diversion rate of 30.68%. Currently, FLAG is developing a solid waste and recycling plan. FLAG will follow the recycling plan and recycle and divert materials whenever possible. Efforts to reduce and reuse materials will be emphasized. In accordance with the recycling plan, recycling programs will continue to be expanded into other areas where feasible.

> We will utilize reusable materials, and recycle waste whenever possible. By 2016, the Flagstaff Area National Monuments will divert waste sent to landfills by 50%. (Sustainability Commitment Statement Goal)

Toxic/Hazardous Management:

FLAG has an Integrated Pest Management Plan (IPM) that utilizes chemicals, including pesticides that are used for a variety of activities, some of which are toxic or hazardous. All chemicals are inventoried, stored, transported, used, and disposed of in accordance with their labels and federal laws and regulations. The IPM coordinator will make every effort to utilize the least toxic and most environmentally friendly materials when controlling pests.

Batteries and light bulbs are collected and recycled with a local company. Computers, cell phones, and other electronic devices are also recycled using the approved federal process. Efforts will be made to increase the amount of recycling and the items reused and recycled.

FLAG currently has no Environmental Database Liability (EDL) sites; however, two locations of concern exist, one at Wupatki and the other at Walnut Canyon. The Maintenance Mechanic for FLAG is responsible for hazardous waste generation documentation and proper removal to the City of Flagstaff Hazardous Products Center.

Visitor Services & Partnerships

Another facet to the successful management and operations of FLAG is visitor education and resource and visitor protection, and employee safety. The monuments have a varied ranger staff, which consist of non-law enforcement visitor services rangers in the visitor centers and protection rangers who provide law enforcement.

FLAG maintenance staff regularly clean restrooms, offices, visitor-use areas and other areas within the monument boundaries including, the occasional removal of graffiti from signs,

structures and other surfaces. Various cleaning materials are used for these activities. Custodial staff also removes trash and recyclable materials from containers.

FLAG do not provide visitor transportation services. The majority of visitors arrive by personal vehicles or, on occasion, bicycle. FLAG staff will explore ways to reduce the amount of time visitors spend in their vehicles and driving within the monuments.

FLAG partners with a number of local agencies including Willowbend Environmental Education Center, Northern Arizona University (NAU), and the Sustainable Economic Development Initiative (SEDI). Monument partners will be included in all activities in this plan as appropriate.

We will communicate our vision, methods and performance with our community, partners, monument staff and visitors through workshops, interpretive and outreach programs, and youth engagement. We will promote our commitment to environmental protection and preservation by educating coworkers, park visitors, partners and business associates concerning our environmental policies and standards through trainings, workshops, informative website, newsletter, new-hire packets and other forms of communication. The Flagstaff Area National Monuments has set a goal of educating 90,000 visitors about climate change and sustainability practices by 2016. (Sustainability Commitment Statement Goal)

Interacting with Natural & Cultural Resources

Cultural Resources

FLAG has approximately 3,000 prehistoric and historic cultural resources. These resources must be protected and preserved for present and future generations. Due to age and weather, the prehistoric and historic masonry and wood structures require the most effort. Monument staff and contractors spend considerable time repairing walls and other features to keep them from deteriorating. Repointing (inserting rock and mortar) is the main activity performed by monument staff. Archeological activities consist of documenting sites and curating objects. As with all purchasing, to preserve and protect these cultural resources green procurement procedures will be followed. Transportation will be considered when planning projects to help minimize individual vehicle trips and improve efficiency.

Natural Resources

Vegetation

Park staff spends a considerable amount of time managing vegetation. The Resource division has an extensive invasive plant eradication program. The work has involved both chemical and mechanical methods. Both chemical and mechanical programs use herbicides and power equipment to accomplish the work. Herbicides are selected for their effectiveness, but also the least amount of impact on the environment. Chain saws, pole saws and trimmers are regularly used. Work crews travel to and from job sites in pickup trucks often using trailers to haul equipment.

FLAG will continue to research latest technologies and make every effort to replace gas powered equipment with energy efficient and environmentally friendly models. Herbicide use will be minimized, and mixed, transported and stored properly to avoid or minimize spillage. Cut woody materials will be made available for the public's use whenever feasible.

Historic vegetation trends are currently being monitored by both monument staff and NPS Inventory & Monitoring Program. The Vegetation Program will look for ways to incorporate climate change science in the program and adaption and mitigation strategies for responding to change. This will include writing project funding proposals and working closely with the Southern Colorado Plateau.

Currently research is underway in partnership with the Northern Arizona University to determine riparian species genotypes that are adapted to climate change and can be used to restore degraded areas.

Wildlife

Conserving the wildlife within the national parks is at the core of the NPS mission under the Organic Act of 1916. Due to the distinct elevation range and bedrock geology, each of the Flagstaff Area National Monuments has a distinct assemblage of wildlife habitats and associated native fauna.

Natural resource management programs within the monuments are focused on inventorying the fauna; monitoring protected species and focal wildlife groups; assessing habitat conditions for protected/focal species; restoring the natural role of wildfire; restoring disturbed areas within the monuments (such as abandoned roads, abandoned material quarries, and new construction sites), monitoring surface water availability; and improving boundary fencing to enhance seasonal wildlife movements. Through the park planning process, measures are identified to minimize potential impacts from within park activities, such as facility management projects, discovery hikes, and scientific studies. Extensive efforts are also made to protect habitat at the landscape and watershed scale by engaging in regional planning processes by other agencies and local governments. A series of long-term monitoring efforts and strategic scientific studies have been initiated in the last few years by the natural resources staff, the NPS Southern Colorado Plateau Inventory & Monitoring Program, and science partners with the Colorado Plateau Cooperative Ecosystem Studies Unit to document habitat changes, wildlife species range shifts, and the potential for extirpations and/or species immigration at the monuments. The intent is to develop compelling information that engages park visitors to understand the consequences of climate change for focal wildlife within the monuments.

Integrated Pest Management

The Flagstaff Area National Monuments is host to a wide variety of pests. Insects include termites, a variety of ants, flying beetles and cockroaches. Vertebrate pests include mice, rats, skunks, raccoons, squirrels and ringtail cats. These pests can carry diseases and destroy and/or damage structures, documents, supplies, and equipment. The FLAG monuments Integrated Pest Management Coordinator attempts to control these pests and limit their impacts using integrated

pest management methods. This includes monitoring, exclusion, live trapping/relocation, sanitation and, on occasion, insecticides as a last resort.

The Flagstaff Area National Monuments practices integrated pest management (IPM) which encourages minimized use of insecticides. Use of green pest management products will continue to be emphasized. In addition, insecticides are transported and stored properly to minimize spillage and waste. Transportation will be considered when planning projects to help minimize vehicle trips and improve efficiency. The IPM coordinator will make every effort to utilize the least toxic and most environmentally friendly materials when controlling pests.

We are committed to the continual researching and developing of an understanding of which natural and cultural resources are susceptible to current and future impacts of climate change. We recognize the fragility of our natural and cultural resources within the parks and that any human interaction with the environment may impact resources. In order to further our understanding of the effects of climate change on natural and cultural resources in the monuments, by 2013 the Flagstaff Area National Monuments will complete a Climate Change Vulnerability Assessment, as well as a study on the effects of Climate Change on monument cultural resources. *(Sustainability Commitment Statement Goal)*

Night Skies & Soundscapes

Flagstaff is located in Northern Arizona at 7,000 ft elevation. On October 24, 2001, the International Dark-Sky Association (IDA)[ii] certified Flagstaff as the world's first "International Dark-Sky City". There is considerable light from adjacent commercial and residential areas that affects the monuments even though there are relatively strict lighting regulations within the city. In addition, the monuments have some outdoor lighting around developed areas for security purposes. The baseline years Dark-Sky data for the monuments is WUPA in 2003, SUCR in 2004, and WACA in 2004.

FLAG will ensure that downward facing lighting is employed in all practicable locations and that lighting in general is minimized to only what is necessary. All lights are energy efficient types. Efficiency and appropriateness of exterior lighting will be reevaluated. In addition, switching the power source to solar panels will be done where feasible. At present, some baseline monitoring has been done but this needs to be evaluated for additional data needs.

While the monuments do not generate much noise there is considerable noise emanating from outside the monuments, mostly from transportation vectors such as highway, air traffic and trains. In particular Walnut Canyon National Monument has a newly developed shooting range within a mile of its southern border that will be fully operational by 2013. The monument will look at establishing standards for noise levels in natural environments and minimizing monument operational contributions and also make efforts to minimize adjacent noise sources.

[ii] Information obtained from http://www.flagstaffdarkskies.org/

Community, Visitor & Employee Outreach

FLAG preserves cultural and natural resources for current and future generations. Cultures past and present have lived sustainably using the natural landscapes for thousands of years. As such, FLAG will continue to share and expand on sustainable practices while upholding the National Park Service mission. Through interpretive programs, displays, monument websites and media, interpretive park rangers provide opportunities for staff and visitors to learn about the cultural and natural resources of the monuments while incorporating the message of sustainability. FLAG will continue to develop relationships with visitors, local organizations, affiliated tribes, governmental agencies, non-profit organizations, educational groups and the surrounding Flagstaff community through outreach programs. Currently, FLAG works closely with Willow Bend Environmental Education Center in educating local youth about the area they live in and sustainable practices with programs like Erupting Earth and Living within Your Climate.

Interpretive staff will make an effort to work sustainably themes into trainings. Interpretive staff will operate visitor centers and kiosks with interpretive and keep sustainable practices in mind. Staff will make a greater effort to turn off lights and unplug appliances not in use, recycle and be and remain environmentally friendly minded through the development of programs and interpretive media. Interpretive staff will encourage visitor and staff recycling monument wide. The green procurement process will be acknowledged and followed when purchasing all materials for daily work activities, interpretive displays and other media. Interpretive staff will partner with other divisions to share sustainable achievements with staff and visitors, as well as ensuring information is accurate and current, while generating a higher level of communication between staff and divisions.

We will communicate our vision, methods and performance with our community, partners, monument staff and visitors through workshops, interpretive and outreach programs, and youth engagement. We will promote our commitment to environmental protection and preservation by educating coworkers, park visitors, partners and business associates concerning our environmental policies and standards through trainings, workshops, newsletters, new-hire packets and other forms of communication. FLAG has set a goal of educating 90,000 visitors about climate change and sustainable practices by 2016. *(Sustainability Commitment Statement Goal)*

V. DOCUMENT CONTROL, RECORDKEEPING, MONITORING, REPORTING, TRAINING/COMMUNICATION & SCHEDULING

Record Control, Documentation & Training

In order for the EMS to work in accordance with Executive Orders (E.O.) and other environmental requirements and regulations, it is essential to have accurate data and methods in place for properly monitoring. It is vital that continuous communication is established amongst all divisions and feedback is reported back to division chiefs and the Green Team. A number of reports are required to satisfy program requirements and requests from other levels of government. Training will be necessary to provide the proper skills needed to ensure that FLAG

staff successfully complies with the program and needed activities. A variety of trainings are highlighted as tasks within the EIPs. (See Appendix N for more information)

Recordkeeping

It is essential that logs and records are maintained to help accurately capture the great work being done, and to assist in generating reports. EMS-related documents and records will be used to demonstrate compliance with applicable laws and standard operating procedures, and adoption of applicable best management practices in operational and management activities, including emergency response.

The responsibility of recordkeeping falls on every employee. Currently FLAG is revamping the recordkeeping system to incorporate changes made through the process of developing a number of new tasks in the EIPs (including audit findings, activities deemed significant, etc). Since these tasks affect all division, several spreadsheets for tracking purposes have been generated. To increase recordkeeping and accurate documentation, the monuments have established a SharePoint committee for keeping the site up to date. SharePoint training took place on March 2012, and staff is currently developing a SharePoint site that will house logs, plans, and spreadsheets. Each division will develop appropriate records and a management procedure for record management that will demonstrate that it has carried out all the elements necessary for implementation of certain aspects of the EMS. Environmental compliance records will be housed in the Green Team Leader's office within the Facility Management division.

Employees with purchasing abilities have been trained and are now following the Green Procurement Plan. A Charge Card Log for Green Procurement is stored in AFS3 and maintained by the Administrative Officer and Budget Analyst. If a purchase is made without the product being green, the purchaser will have to fill in a justification column explaining the reasoning behind the purchase. A green-commuting spreadsheet has been created to record the alternative forms of transportation used by FLAG staff. Fleet vehicles and mechanical equipment will have logbooks that will be filled out to assist in data collection on fuel use and mile/hours. Also, for tracking purposes, all fuel receipts for I-Vehicles with name, mileage/hours on them are turned in to the Facility Operations Assistant. Division chiefs will ensure that this is being done properly. Utility bills and records will continue to be kept in administration's files. However, utility spreadsheets and data are housed within Facility Management files.

All records pertaining to the EMS are being kept by the Green Team Leader. The official, living copy of FLAG's EMS will be stored electronically on the Public Drive/SharePoint and a hard copy will be filed in the EMS filing cabinet located in the Facility Management office. Also contained in the EMS filing cabinet and electronically are all documents containing information about the Green Team including: agendas, meeting minutes, Management Reviews, all environmental compliance and sustainability audits, internal and external EMS audits, EMS training records and all other EMS related materials.

Distribution of Tasks

Tasks are housed within the Environmental Improvement Plans (EIPs). The EIPs and tasks are divided by division and separated in to different categories that fall under the Division Chiefs responsibility. The tasks are then distributed out to responsible parties under the supervision of

the Division Chief. When tasks are developed and completed, Division Chiefs will inform the Green Team Leader to keep documents current and up-to-date. The Green Team Leader will be responsible for updating the documents and filing them in appropriate locations.

Monitoring
Charge card logs, vehicle/equipment logs and speaking with the responsible parties will be necessary in order to maintain accurate information and data. The Green Team Leader and Facility Manager will share responsibility for this, which will be done every four months. Results will be presented to the Green Team. Division Chiefs will be responsible for correcting any deficiencies.

Reporting & Documentation
An annual energy report is completed by the Facility Management Systems Specialist which includes annual usage of water, propane, electricity and fuel for each of the three National Monuments. The Federal Automotive Statistical Tool (FAST) report is completed annually by the Facility Operations Assistant and includes a vehicle inventory, mileage data and unleaded and diesel use data. Also, the Facility Operation Assistant is responsible for completing an annual vehicle/equipment inventory report, and manages the fleet operation (enters mileage, vehicle maintenance, maintains spreadsheets, etc).

In the past, an annual report on the monuments' Environmental Management System EMS was required, however that has not been completed for some time. Every quarter a report on the park must be completed electronically for the Washington NPS office. In addition, there is an annual electronic sustainability report required for the Department of Interior (DOI). Both of these will be completed by the Green Team Leader.

Finally, the Green Team Leader will also complete an annual written report summarizing the accomplishments of the program at the end of the fiscal year. Reports will be distributed to Region and WASO.

Documentation
Documentation will be housed by the Green Team Leader within the Facility Management divisions; however, will be accessible online through the sharedrive and SharePoint site upon its completion. Annually EIPs will be updated for the addition of goals, or revised for goals accomplished.

Training
In order for the EMS to be successful, staff members must be trained on what an EMS is; its history, how it works and what employee's roles with the system is. To generate this understanding, trainings/orientations have been planned and are underway. Each division is in the process of receiving EMS training. At this point three of four trainings have happened with the last one planned for May 12, 2012. These trainings focus on the EMS and the process that FLAG has come over the years to be where we are today. Since the EMS is a living changing document that evolve as the monuments evolve, and focuses on continual improvement, annual trainings will take place for all staff, volunteers and selected park partners.

In conjunction with EMS training, FLAG is in the process of developing a training matrix. This matrix will be a master list of all employees, the required trainings they have had, and the required trainings they need, including: HAZWOPER, HAZCOM, SPCC, and Safety, etc.) This training matrix will be housed in Appendix N of the EMS, and also electronically on the Sharepoint.

New staff and volunteers will receive training as part of their orientation when starting their assignment. Also, information regarding the EMS will be included within the new-hire packet. FLAG will make an effort to include the Flagstaff community, NAU and tribes by periodically having speakers involved with training. In addition to communication via training, sustainability will be discussed in squad meetings, division meetings, and all-staff meetings. Emails covering new developments and new information will be forwarded from the Green Team Leader to monument staff, volunteers and selected park partners.

Communication

FLAG is dedicated to achieving the goals established within the EMS and SCS. Our goals cannot be achieved without the participation of all employees, partners and contractors. One avenue identified to increase our overall success with accomplishing the tasks within the EIPs is to improve overall communication of sustainability issues to staff and partners.

By improving communication, FLAG is developing an environment that provides guidance, ownership and clarity. FLAG has improved internal communication amongst employees through all employee meetings and park wide trainings. Coupled with increasing communication, it is FLAG's goal to have all employees and supervisors involved with environmental management, familiar with and have an understanding of the SCS, and receiving consistent messages from the Management Team about the monuments environmental performance and stewardship.
A monthly newsletter has been developed to increase internal communication that highlights past and upcoming sustainability events within the monuments and greater Flagstaff area. The newsletter also focuses on the development of the EMS, what the Green Team is doing, and the process of FLAG receiving Climate Friendly Park certification. The newsletter is housed on the share drive/SharePoint and at the end of each month the link of the newsletter's location is emailed to all employees. To increase external communication with the general public and partners, the newsletter will soon be posted on the monuments' websites. In addition, FLAG has developed an "After-Hours" event where employees meet once a month to discuss different topics ranging from high elevation gardening to sustainability initiatives happening in the greater Flagstaff area. These after-hour events are designed to increase communication about sustainability, but also to encourage interdivisional interaction and community development within the workplace.

It is also important to increase communication outside the monuments. We have the opportunity to share sustainability messages and educate the thousands of visitors that visit our monuments each year. Additionally, we work within our community to show our commitment and leadership to sustainability through participation with the Coconino County Sustainable Economic Development Initiative and community events such as Earth Day and the Festival of Science.

FLAG has monthly Green Team meetings and posts agendas and minutes on the Share Drive/SharePoint for all employees to access. Also, an after hour social event that allow monument employees to talk about current local sustainability initiatives, share ideas monument employees may have, and build community amongst employees happens once a month.

VI. OPERATIONAL CONTROLS, EVALUATION & CORRECTIVE ACTIONS, & MANAGEMENT REVIEW

Operational Controls & Evaluation

Tasks within the EIPs are directly linked to the goals highlighted within the SCS. The Green Team Leader and Division Chiefs will work closely together to keep records and achievements up to date. To capture tasks that deal with tracking (energy and water consumption, green purchases, paper usages, etc.), appropriate, responsible parties will monitor and capture data being generated for annual, and other reporting purposes. In certain cases reports will be presented to the Management Team and Green Team. The EIPs are separated by division, however interdivisional collaboration is required to accomplish the goals. Each task has been developed to be time-bound, quantifiable, and attached to a responsible person/party within each division. Projects that are performed through "out of house" contract employees are expected to abide by environmental regulation and help the process of the monuments achieve the goals identified within the SCS.

In efforts to increase operational controls and evaluation, FLAG is in the process of developing a matrix highlighting all monument operations, activities deemed significant, and the controls in place, including: Standard Operating Procedures (SOP) and mechanical controls, to increasing environmental compliance. Along with the Operational Controls matrix, all "significant" activities will be incorporated into an EIP immediately following annual reviews and audits. These EIPs will be labeled significant, be time-bound and measurable, and attached to a division and a responsible person. Significant aspects will remain in the Facility Interaction Assessment and Impact Assessing and Scoring matrixes until their "significant" priority is reduced. Once findings are incorporated into these matrixes the Green Team will determine the level of significance and assess the highest priority aspects.

Corrective Action & Management Review

Each year, under the direction of the Green Team, a review of the EMS and goals in the SCS, will be undertaken. In cases where goals are not being achieved, the monuments will consider corrective action to remedy the situation. Any corrective action taken will be incorporated in the EMS for next year and documented. Annual assessment will consider compliance with environmental requirements and regulations as well as goals monument goals being achieved, and tasks being accomplished. In conjunction with the annual assessment of the EMS; the EIPs will be updated or revised annually by the Green Team. The annual updating process is to keep

records up to date, add new tasks wherever necessary, and to celebrate accomplishments being made.

Corrective actions to the EMS and Green Team will be generated by suggestions from an upcoming PRIZIM audit that will take place March 19-21, 2012, annual reviews, Green Team meetings, and employees. The PRIZIM audit will provide areas for improvement or non-compliance, and can become tasks for the coming year to work on accomplishing to become compliant.

Management Review
The EMS will be evaluated annually by the Green Team and Management Team. Since Management Team members are also Green Team members a management review and EMS annual assessment will happen simultaneously. Each Management Review will happen prior to the end of each Fiscal Year and document.

VII. CONCLUSION

FLAG has a unique opportunity to serve as model for approximately 500,000 visitors annually. The monuments also strive to be a model for the greater Flagstaff area. Monument employees are conscious of the challenges of reducing emissions. Even though the monuments have implemented mitigation throughout the years, FLAG is prepared and eager to face the challenges as evidence by the planned actions that have been developed above.

FLAG's EMS summarizes the planning and operational actions the monuments committed to undertake to address climate change. Specifically, the park realizes its ability to educate the public and serve as a valuable model for citizens. By seriously addressing GHG emissions within the monuments and sharing its successes with visitors, FLAG will help adapt to and mitigate effects of climate change far beyond the monuments' boundaries.

National Parks face an uncertain future due to the possible effects of climate change. However, by addressing climate change impacts and reducing GHG emissions, FLAG will play an active role in reducing contributions to the problem and setting an example for its visitors. In order to have a lasting EMS with the greatest effect, it is imperative all FLAG's staff play an active role and participate with a dedicated attitude. This EMS produced by FLAG monuments develops an aggressive system to help move FLAG to the forefront of Climate Friendly Parks.