

Using EMS to Implement NASA Sustainability Plan



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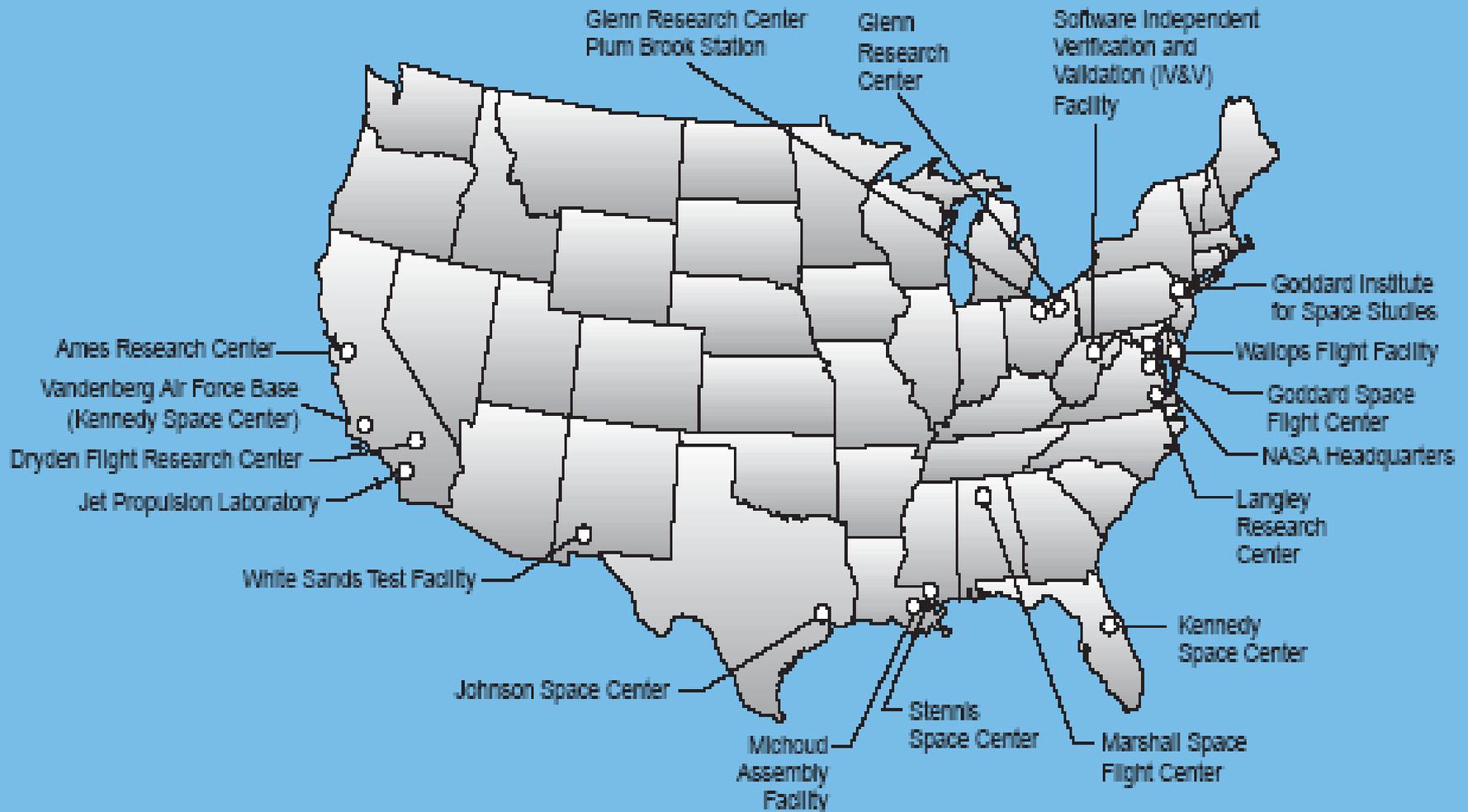
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Presentation Overview

- **Environmental Policy**
- **EMS in SSPP**
- **Sustainable Practices as Environmental Aspects**
- **Key Factors**
- **Challenges**
- **Benefits**

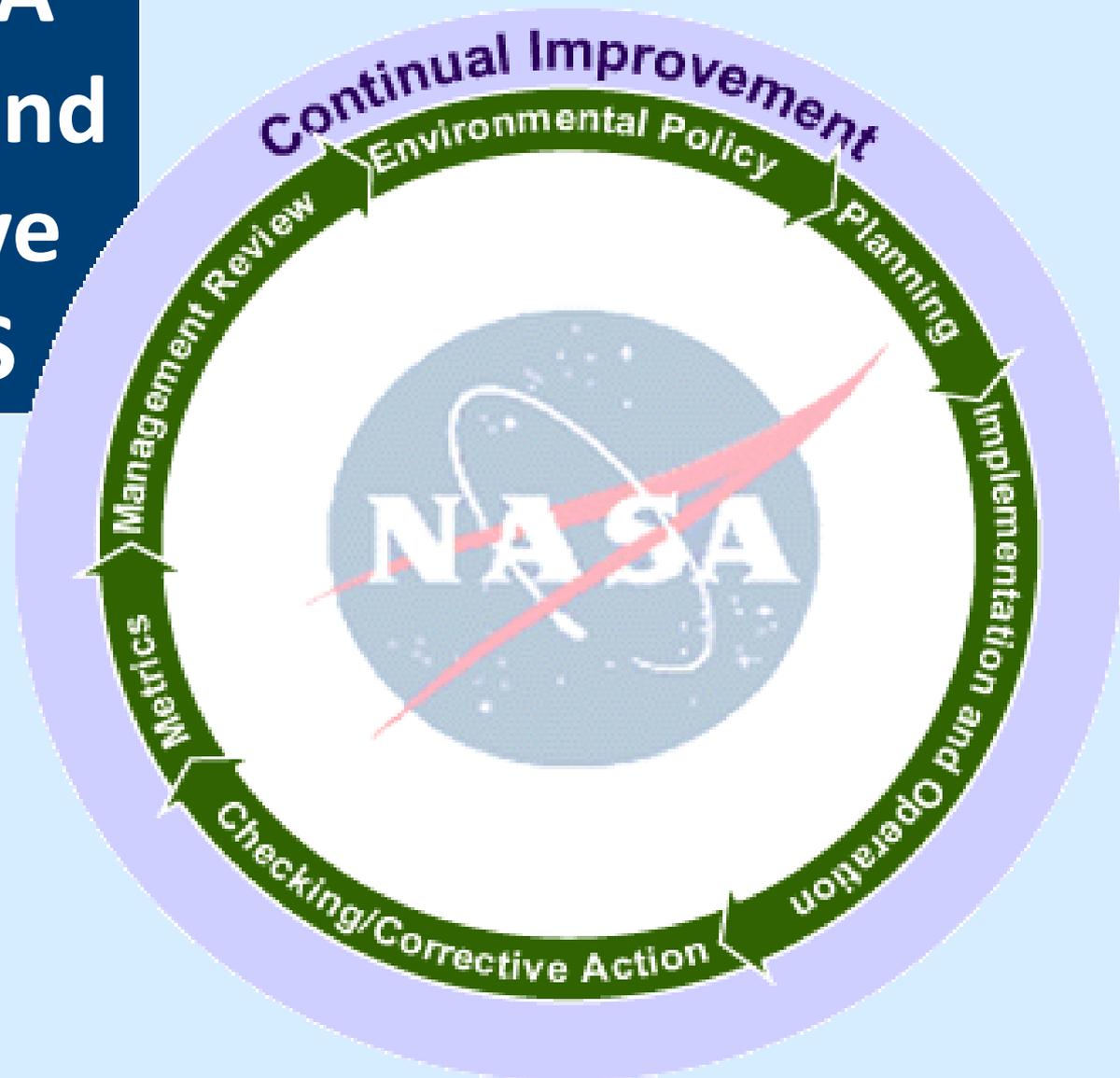


NASA Organization



Additional NASA sites: Deep Space Network (New Mexico, Spain, Australia); Western Operations Support (Palmdale, CA); other miscellaneous sites.

All NASA
Centers and
HQS have
an EMS

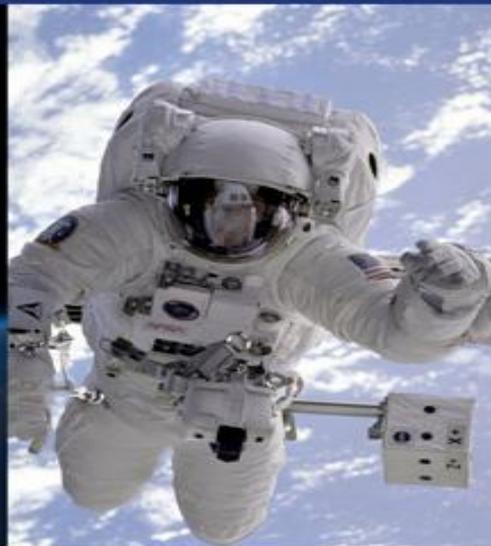


NASA Environmental Policy

- **Policy establishes requirements for:**
 - Maintaining compliance and EMS
 - Implementation of sustainable practices
- **NASA employees are responsible for:**
 - Complying with environmental regulations
 - Helping achieve objectives and targets
- **NASA organizations are responsibility for:**
 - Incorporating sustainable practices into missions and activities



2010 Strategic Sustainability PERFORMANCE PLAN



Strategic Sustainability Performance Plan (SSPP)

- **EO 13514 requires SSPP to address 10 goals**
 1. **Scope 1 & 2 Greenhouse Gas (GHG) Emissions Reduction**
 2. **Scope 3 GHG Emissions Reduction**
 3. **Develop and Maintain Agency GHG Inventory**
 4. **High-Performance Sustainable Design / Green Buildings**
 5. **Regional and Local Planning**
 6. **Water Use Efficiency and Management**
 7. **Pollution Prevention and Waste Elimination**
 8. **Sustainable Acquisition**
 9. **Electronic Stewardship and Data Centers**
 10. **Innovation for a Sustainable Society & Sustainable NASA**

Strategic Sustainability Performance Plan (SSPP)

- **SSPP reinforces requirement for NASA EMS**
 - NASA Environmental Policy requires NASA maintain EMS
 - NASA Procedural Requirements (NPR) 8553.1B requires review of sustainable practices
 - Sustainable practices determined to be significant aspects require objectives, targets and programs
 - All other goals established by EO or SSPP are captured by EMS since they are “Legal or Other Requirements”
 - EMS requires annual review of status of sustainable practices and associated goals and objectives

SSPP and EMS

- **SSPP Goals**

- Goal Description
- Agency Lead – Official / organization
- Agency Status
- Resources – Positions & Funding
- Implementation methods

- **EMS**

- Objectives & Targets
- Responsible official/ organization
- Management Review
- Identify resources – Positions & Funding
- Environmental Management Programs

Sustainable Practices as Environmental Aspects

- **Air emissions**
 - Greenhouse Gases
- **Energy and water use**
 - Reduction in energy use
 - Reduction in water use
 - Use of renewable energy
- **Fleet management**
- **Hazardous materials**
 - Reduction of toxic & hazardous chemicals
- **Solid Waste**
 - Waste prevention and recycling
- **Sustainable acquisition**
 - Green purchasing
 - Electronic Stewardship
- **Sustainable facilities**
 - High-Performance Sustainable Design / Green Buildings

Environmental Impact Categories

Consider Both Beneficial and Adverse

- **Safety & Health**
- **Natural & Cultural Resources Impacts**
- **Legal & Regulatory Implications**
- **Reputation & Stakeholder Relationship**
- **Performance**
- **Cost to NASA**
- **Schedule**



Beneficial Example – Energy Use

- **Typical NASA Center energy cost \$20 M / year**
- **Beneficial Impact Analysis**
 - **Safety & Health, Performance, Schedule – Minor**
 - **Natural & Cultural Resources Impacts – Moderate**
 - Reduces impact of greenhouse gases and natural resources due to combustion of fossil fuels
 - **Legal & Regulatory Implications – Moderate**
 - Supports conformance to EISA, EO 13514, etc.
 - **Reputation & Stake-holder Relationship – Moderate**
 - Supports White House goals, public goodwill
 - **Cost to NASA (Assume acceptable payback period) – High**
 - 1 % energy reduction saves \$200,000/ year
- **Probability – Known annual savings – High**

Key Factors for EMS & SSPP

- **Senior management support for developing and implementing both EMS and SSPP**
- **Team effort**
 - **HQS inter-organizational team developed SSPP**
 - **Center inter-organizational teams implement**
- **Communications**
 - **Monthly meetings to develop SSPP**
 - **VITS, email, and meetings used to communicate with Centers**

Continuing Challenges

- **Resources**
 - Funding
 - Staffing
- **Training**
 - Who needs training
 - Content of training
 - Scheduling
 - Training tools
- **Coordination**
 - Facilities, Energy and Transportation not part of environmental
 - Missions may not recognize potential benefits and impacts
- **Annual updates**
 - EMS and SSPP

Benefits of EMS to Implement SSPP

- Provides a process to define benefits or risks related to sustainable practices, *e.g.*, energy use
- Communicating environmental awareness of SSPP across organizations and to management
- Requires top management review at least annually of environmental issues, including status of SSPP
- Improves accountability and performance through Environmental Management Programs
- Provides tool for annual reassessment and update

Sources of Information

- **Strategic Sustainability Performance Plan (SSPP)**
 - Abridged version posted on White House/CEQ Website:
<http://www.whitehouse.gov/administration/eop/ceq/initiatives/sustainability>
- **NASA Environmental Website**
 - <http://www.nasa.gov/sustainability>
 - <http://environmental.hq.nasa.gov>
 - <http://environmental.hq.nasa.gov/ems.html>
- **Email: michael.j.green-1@nasa.gov**