

**GLACIER NATIONAL PARK**  
**ENVIRONMENTAL MANAGEMENT PLAN**

**MAY 06**



Approved by: \_\_\_\_\_ *Michael John* Date: 5/25/2006 \_\_\_\_\_

Superintendent

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## INTRODUCTION TO THE GLACIER NATIONAL PARK ENVIRONMENTAL MANAGEMENT PLAN

This Plan describes the Environmental Management System (EMS) in place at Glacier National Park (GLAC). The Plan documents the overall EMS activities and the current EMS targets. The current version was prepared in March 07 and represents the final draft of the Environmental Management Plan (EMP). The Plan will be reviewed annually by the Environmental Management Team (EMT). Section 1 is the GLAC Environmental Commitment Statement; Section 2 describes the environmental risks faced by GLAC, the visioning process and Facilities Interaction Assessment the park underwent to prioritize environmental targets and action items, and the legal documents and other requirements that are in place to guide development and implementation of the plan; Section 3 outlines the environmental goals and objectives; Section 4 lists members of the EMT, roles and responsibilities, and describes the relationship between the EMT and GLAC's Green Team; Section 5 presents the communication strategy associated with the Plan; Section 6 outlines training procedures; and Section 8 describes how environmental targets will be monitored for success, what actions the EMT will take to correct targets not achieved, and how the EMS will be reviewed annually.

## 1. ENVIRONMENTAL COMMITMENT STATEMENT

The GLAC Environmental Commitment Statement (ECS) was prepared by the park's Environmental Management Team (EMT). The ECS is signed by the Superintendent and has the full commitment of GLAC management. The EMT reviews the ECS annually to ensure that it is current and fully expresses the park's environmental management priorities. The Superintendent reviews and approves any new version of the ECS.

### **GLACIER NATIONAL PARK**

### **ENVIRONMENTAL COMMITMENT STATEMENT**

Glacier National Park is committed to environmental leadership through development, implementation, and annual review of our Environmental Management Plan (EMP), which embraces the following:

- Sustainable and environmentally sound operational management and practices, including, but not limited to, project planning, general resource conservation, fostering innovative thinking, incorporating pollution prevention, waste reduction, greenhouse gas reduction, best management practices, and environmentally preferable purchasing in all activities.
- Active and ongoing communication with concessioners, partners, suppliers, vendors, contractors, and the visiting public to define and achieve environmental leadership and environmental management goals, targets, and objectives.
- Continual environmental improvement in all areas; Glacier's environmental management approach is intended to move beyond compliance and to encourage environmental leadership in all aspects of our environmental interactions.

signed/ \_\_\_\_\_  \_\_\_\_\_ Date: 10/25/2004

Superintendent

## 2. FACILITY ACTIVITIES & ENVIRONMENTAL IMPACTS: VISIONING THE FUTURE

The development of GLAC's EMP was preempted by a two-day workshop held in December 2003, called "Climate Friendly Parks: Moving from Knowledge to Action". The workshop was sponsored through a collaborative program of the Environmental Protection Agency and the National Park Service and aimed to help park employees and their partners understand what they can do to mitigate some of the negative environmental impacts we can expect due to climate change. What was apparent during the two-day workshop was that "climate friendly" actions were sound targets for better environmental management overall. As Director's Order 13A became effective five months later, GLAC was already well on the way to implementing many of the objectives and actions items that had been identified by park employees to address the following broad goals:

- Educate park employees and partners about climate change in a way that motivates them to make personal choices toward energy efficiency, reducing GHG emissions, and other sustainable environmental practices;
- Demonstrate successes in initiating and implementing sustainable programs at Waterton-Glacier International Peace Park and use these successes to foster cultural change in Glacier and Waterton;
- Establish a seamless transition between current and future environmental management programs, accentuating functionality as well as accountability and providing a model for other parks; and
- Model green practices to other parks, agencies, and the public.

Taking the workshop action plan as a starting point, GLAC developed first a Green Team, to begin implementing some of the action items from the plan, and then an Environmental Management Team, to move the climate change-focused plan into a more comprehensive EMP. There is a natural affinity between these two initiatives because both are centered on promoting environmental sustainability.

GLAC's choice to bring climate change impacts to the forefront in our EMP means we are considering a broader range of targets for reducing environmental impacts than is considered in most park EMPs. Climate change is strongly linked to emissions of greenhouse gases, the current atmospheric accumulation of which are due primarily to the burning of fossil fuels. GLAC has elected to target many energy efficient goals in its EMP that will bring dual environmental and economic benefits. GLAC's leadership as a Climate Friendly Park bring more visibility to the ways in which parks, and park visitors, can take steps to reduce human-caused threats to the natural environment.

### 2.1 THE CHALLENGES OF A CHANGING CLIMATE

Climate change presents significant risks and challenges to the National Parks System. Some parks face potential threats to their very future. For example, sea level has risen globally by 4-8 inches during the past 100 years. If the trend continues, large sections of the freshwater Everglades will be submerged. Other parks may lose characteristic features: the mountain glaciers that have helped to form GLAC's dramatic landscape are predicted to disappear within

30 years. And for many parks, future climate change could hamper efforts to preserve natural communities and rare, threatened, and endangered native species. Climate change also could benefit visitors to some parks, bringing longer seasons for camping and other temperate-weather pursuits, providing longer growing seasons for many plants, and improving conditions for species at the northern limits of their range.

While Earth's climate changes naturally, the rapid rate of warming over the last century is unprecedented in human history. Average global temperatures on the Earth's surface have increased about 1.4°F in the last 100 years. The 5 hottest years on record since the 1890s, in rank order, are 2005, 1998, 2002, 2003, and 2004. Because the chemical composition of the atmosphere determines its ability to hold heat, changes to this chemistry affect the temperature of the planet. The proportion of greenhouse gases (GHGs) – such as carbon dioxide, methane, and nitrous oxide – have also gone up over the last century, a trend that is strongly correlated to global warming. Many human activities, especially those related to consumption of fossil fuels, result in the emission of GHGs to the atmosphere. Therefore, any actions or choices that can result in a reduction of these emissions will put us on a more sustainable path toward stewardship of the resources we are charged to protect.

## 2.2 RISKS TO GLACIER NATIONAL PARK

Unlike many places where the effects of climate change are only gradually becoming apparent, GLAC is experiencing impacts from a warming climate right now. The most obvious changes are taking place in the park's mountain glaciers. Today, the area of the park covered by glaciers is roughly 73 percent smaller than it was in 1850; more than three-quarters of the estimated 150 glaciers that existed at that time have disappeared completely. Higher latitudes warm more quickly than lower latitudes and GLAC's average summer temperatures have increased by about 3°F since 1910. Scientists predict the park could lose all of its glaciers by 2030.

But melting glaciers are only part of the story. The recession of Grinnell Glacier, probably the most iconic glacier in the park, is a symbol of larger changes to park ecosystems. For example, the demise of glaciers means stream flows will not be fed by glacial meltwater. This will affect the timing, amount, and temperature of mountain streams. This will, in turn, affect temperature-sensitive aquatic species such as caddis fly larvae. Warming temperatures also lead to changes in soil moisture, changes in the frequency of fires, and changes in the distribution of forests and other vegetation. Together these potential changes suggest that global warming could bring widespread changes to a landscape and ecosystem that GLAC was established to protect.

## 2.3 VISIONS OF A FUTURE GLACIER NATIONAL PARK

Understanding the forcing and impacts of climate and environmental change improves park staff's ability to effectively respond to these challenges and contributes to the overall sustainability of the park. At the two-day Climate Friendly Parks workshop GLAC staff described their visions of a future, more sustainable park as having attributes such as:

- Staff parking lots are nearly empty due to high use of shuttles and carpooling
- New, technologically advanced, but highly energy efficient, "green" visitor center receives national award

- Employees use bicycles to commute between park buildings
- High visitor use of park shuttles to many park destinations
- All personal vehicles entering the park use alternative, or no, fuels
- All buildings and concession facilities are energy efficient
- Waste management is an integrated recycling system with full participation by park employees, offices, housing areas residents, visitors and partners
- Annual “Show Me” day includes information and updates on park sustainability efforts and demonstrations of eco-friendly initiatives
- GLAC is a leader in demonstrating environmentally sustainable practices that are modeled by other parks

Park staff was presented with specific information about how GLAC’s natural resources are impacted by weather and climate. In addition, greenhouse gas sources and sinks at the park were analyzed to produce GLAC’s first GHG Emissions Inventory. Then participants were asked to list all activities underway and scheduled for the future that could be targeted for reduction of GHGs and lessened impact on the environment. These activities are listed in Section 3 under 9 main headings: Building Use/Facilities Operations, Visitor Transportation, Employee Transportation, Vehicle Use/Fleet Maintenance, Hazardous Waste Management, Solid Waste Management, Procurement and Purchasing, Best Management Practices, and Education and Outreach.

#### 2.4 PARK INTERACTION ASSESSMENT

While the workshop described above gave GLAC an early start on articulating energy efficient, sustainable actions they would like to undertake, the following Interaction Assessment provided a thorough check for whether the workshop method addressed all of the components needed for an EMP. The Environmental Management Team (EMT) completed the Park Interaction Assessment to identify all the areas where our activities may cause environmental impacts and to prioritize those areas of highest concern where positive change can be most effectively be achieved. Such considerations are combined with our commitment to abide by all federal and state environmental laws, regulations and policies. The Park Interaction Assessment is important in determining the focus of the EMP.

The first step for assessing park interactions is to identify park activities, the interactions with the environment that occur as a result of those activities and the impacts to the environment that can and do occur. These are listed in the table below as Park Interactions and Impacts.

#### Park Interactions and Impacts

Park Activity	Interaction(s)	Impact(s)
<b>1. Building Use/Facility Operations</b> (offices, storage areas, out buildings, etc.)	Staff (and visitors) use electricity, fuel, water (e.g., restrooms) and a variety of consumable products for lighting, heating, air conditioning, operating	<ul style="list-style-type: none"> <li>➤ Consumptive use of power, water and raw materials</li> <li>➤ Pollution from carbon fuels</li> <li>➤ Disposal costs</li> </ul>

	appliances and power tools, among other things. This generates wastewater and solid, universal, and occasionally hazardous wastes.	➤ Solid and Hazardous waste production
<b>2. Building Maintenance</b> (Carpentry, electrical, flooring, roofing, painting, plumbing, etc.)	Building maintenance activities use electricity, water, fuel, raw materials and chemical products. This generates solid, universal, and hazardous wastes.	<ul style="list-style-type: none"> <li>➤ Consumptive use of raw materials, power, fuel, and water</li> <li>➤ Pollution from carbon fuels</li> <li>➤ Potential for leaks and spills</li> <li>➤ Disposal costs</li> <li>➤ Solid and Hazardous waste production</li> <li>➤ Human health and safety risks</li> </ul>
<b>3. Housing</b>	Tenants of park housing use electricity, fuel, water and assorted chemical products; and generate wastewater and solid, universal, and hazardous wastes.	<ul style="list-style-type: none"> <li>➤ Consumptive use of electricity, fuel, water and raw materials</li> <li>➤ Pollution from carbon fuels</li> <li>➤ Disposal costs</li> <li>➤ Solid and Hazardous waste production</li> </ul>
<b>4. Custodial</b>	Cleaning of park facilities uses electricity, fuel, water and a variety of chemical products; and generates wastewater, solid wastes and hazardous wastes.	<ul style="list-style-type: none"> <li>➤ Consumptive use of power, fuel, water and raw materials</li> <li>➤ Pollution from carbon fuels</li> <li>➤ Disposal costs</li> <li>➤ Hazardous waste production</li> <li>➤ Human health and safety risks</li> </ul>
<b>5. Concessioners/Permittees</b>	Park-owned facilities operated by concessions or permittees use electricity, fuel, water, and in some cases raw materials and chemical products. This generates wastewater, solid wastes and in some cases hazardous wastes.	<ul style="list-style-type: none"> <li>➤ Energy consumption</li> <li>➤ Pollution from carbon fuels</li> <li>➤ Disposal costs (borne by concessioner)</li> <li>➤ Solid and Hazardous waste production</li> <li>➤ Human health and safety risks</li> </ul>
<b>6. Visitor Transportation</b>	Vehicle use by visitors to the park generates air	➤ Pollution from carbon fuels

	emissions that impact streams, vegetation, wildlife, and potentially produce hazardous waste.	<ul style="list-style-type: none"> <li>➤ Major contribution to park greenhouse gas emissions</li> <li>➤ Hazardous waste production</li> <li>➤ Human health and safety risks</li> <li>➤ Degradation of vegetation and wildlife habitat</li> <li>➤ Risks to wildlife health</li> </ul>
<b>7. Employee Transportation</b>	Employees use personal transportation to commute to and from work. This generates air emissions that impact streams, vegetation, wildlife, and potentially produce hazardous waste.	<ul style="list-style-type: none"> <li>➤ Pollution from carbon fuels</li> <li>➤ Second major contributor to park greenhouse gas emissions</li> <li>➤ Hazardous waste production</li> <li>➤ Human health and safety risks</li> <li>➤ Degradation of vegetation and wildlife habitat</li> <li>➤ Risks to wildlife health</li> </ul>
<b>8. Vehicle Use and Fleet Maintenance</b>	Operation and maintenance of motorized vehicles & equipment uses fuel, electricity, water, chemical substances, and raw materials. These activities generate air emissions, wastewater, solid wastes, and hazardous wastes.	<ul style="list-style-type: none"> <li>➤ Energy consumptive costs</li> <li>➤ Pollution from carbon fuels</li> <li>➤ Potential for leaks and spills</li> <li>➤ Disposal costs</li> <li>➤ Hazardous waste production</li> <li>➤ Human health and safety risks</li> <li>➤ Degradation of vegetation and wildlife habitat</li> <li>➤ Risks to wildlife health</li> </ul>
<b>9. Fire Management</b> (fire effects)	Prescribed fire activities use water, fuel, chemical substances, land and raw materials. This generates smoke and reduces vegetation cover.	<ul style="list-style-type: none"> <li>➤ Energy consumptive costs</li> <li>➤ Pollution from carbon fuels</li> <li>➤ Hazardous waste production</li> <li>➤ Human health and safety risks</li> <li>➤ Degradation of vegetation and wildlife habitat</li> <li>➤ Risks to wildlife health</li> </ul>
<b>10. Roads, Trails, Parking Lots, &amp; Grounds</b>	The park operates and maintains X miles of roads, Y miles of trails, Z parking	<ul style="list-style-type: none"> <li>➤ Consumptive use of fuel, electricity, water and raw materials</li> </ul>

	areas, and grounds at M sites. Employees use and install a variety of substances and materials, mow lawns, clear vistas, and maintain drainage-control structures.	<ul style="list-style-type: none"> <li>➤ Pollution from carbon fuels</li> <li>➤ Potential for disturbance of habitat</li> <li>➤ Generation of solid and hazardous wastes</li> <li>➤ Potential for spills &amp; leaks can cause water and soil pollution</li> </ul>
<b>11. Fuel Use &amp; Storage</b> (vehicle and heating fuel)	Staff use gasoline to operate vehicles and equipment. Heating fuel is used to heat most park facilities and all year-round housing units. Operation and maintenance of fueling stations and storage tanks uses electricity, chemical substances and raw mat.	<ul style="list-style-type: none"> <li>➤ Consumptive use of raw materials and chemical products</li> <li>➤ Potential for spills, leaks, or fire</li> <li>➤ Water, soil, and/or air pollution concerns</li> </ul>
<b>12. Hazardous Waste Management</b>	Staff generate, handle, and store hazardous waste at designated accumulation sites.	<ul style="list-style-type: none"> <li>➤ Hazardous waste disposal is labor intensive and costly</li> <li>➤ Potential for leaks, spills, or fire can cause water, soil, and air pollution concerns</li> </ul>
<b>13. Solid Waste Management</b>	The park operation and visitors generate significant volumes of solid waste that are disposed of in the park and moved to offsite landfills.	<ul style="list-style-type: none"> <li>➤ Consumptive use of materials</li> <li>➤ Proper handling and disposal is labor intensive and costly</li> </ul>
<b>14. Sewage Treatment</b>	Park employees, concessioners, and visitors generate sewage. Natural processes generate storm water. Sewage must be contained and treated.	<ul style="list-style-type: none"> <li>➤ Potential for spills and leaks poses threats to human health</li> <li>➤ Sewage impacts wildlife in streams and lakes</li> <li>➤ Sewage treatment can change water temperature and clarity</li> </ul>
<b>15. Procurement and Purchasing</b>	Staff purchase and use a wide variety of products and equipment that use electricity, water, fuel, chemical substances and raw materials. This generates solid and	<ul style="list-style-type: none"> <li>➤ Consumptive use of electricity, fuel, water and raw materials</li> <li>➤ Supplies/materials/equipment constitute a major operating cost; life span and efficiency of products</li> </ul>

	hazardous wastes.	purchased has significant budgetary implications ➤ Solid waste disposal costs
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### Criteria and Weighting for Assessing Park Interactions

In assessing the park environmental interactions, a scoring system was agreed upon and used to determine the most important aspects of the limited area of analysis, and to assist in establishing our Goals, Objectives, and Targets. The following criteria are used in the assessment.

a. *Severity*: What is the severity of the impact?

- 1- Minimal severity or aesthetic impact only
- 2- Moderate impact to water, air or land quality
- 3- Substantial impact to water, air or land quality or detrimental to human health, or flora and fauna

b. *Frequency*: What is the overall frequency or probability of the impacts occurring?

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

c. *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 negligible or modest
- 3- Correcting the impact is likely to save the park money with a payback

d. *Stakeholders*: How would stakeholders react to, or be affected by, the impact?

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

In the table Park Impact Assessment and Scoring we assess park activities using the criteria listed above. Each park activity receives a rank for each criterion and a summation score is listed under the Total column. Activities that received a score of 9 or higher are deemed significant and are given initial priority for the development of EMP Goals and Objectives.

### Park Impact Assessment and Scoring

Facility Activity	Severity 1=low 2=moderate 3=high	Frequency 1=low 2=moderate 3=high	Financial 1=high 2=moderate 3=low	Stakeholders 1=low 2=moderate 3=high	Total
<b>1. Building Use/Facility Operations</b>	2.5	3	2	2	9.5
<b>2. Building</b>	2	2.5	2	1.5	8

<b>Maintenance</b>					
<b>3. Housing</b>	1.5	2	1.5	2	7
<b>4. Custodial</b>	1	3	2	1	7
<b>5. Concessioners/ Permittees</b>	2	2	1.5	3	8.5
<b>6. Visitor Transportation</b>	3	3	1	3	10
<b>7. Employee Transportation</b>	2	3	2	2	9
<b>8. Vehicle Use and Fleet Maintenance</b>	2	3	2.5	2.5	10
<b>9. Fire Management</b>	1.5	2	1.5	3	8
<b>10. Roads, Trails, Parking Lots, &amp; Grounds</b>	2	2.5	2	2	8.5
<b>11. Fuel Use &amp; Storage</b>	2	2.5	2	1.5	8
<b>12. Hazardous Waste Management</b>	2.5	1.5	2	3	9
<b>13. Solid &amp; Universal Waste Management</b>	3	2	2	2	9
<b>14. Sewage Treatment</b>	1	3	2	2.5	8.5
<b>15. Procurement and Purchasing</b>	2	2.5	2	2.5	9

## 2.5 LEGAL AND OTHER REQUIREMENTS

<b>Federal Laws, Regulations and Executive Orders</b>	<b>Application</b>
National Environmental Policy Act (NEPA)	Environmental documentation, planning
Clean Air Act (CAA)	Air emissions
Clean Water Act (CWA)	Discharges, spills, dredging and filling of surface waters and wetlands
Emergency Planning and Community Right-to-Know Act (EPCRA)	Chemical spills and releases, hazardous chemical reporting
Endangered Species Act (ESA)	Endangered and threatened plant and animal species
Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA)	Management of pesticides
Occupation Safety and Health Act (OSHA)	Workplace safety, material safety data sheets
Pollution Prevention Act (PPA)	Recycling, source reduction, energy and water conservation.
Resource Conservation and Recovery Act (RCRA)	Solid and hazardous waste disposal, underground storage tanks.
Comprehensive Environmental Responses, Compensation and Liability Act (CERCLA)	
33 CFR 320-330	Wetlands
36 CFR 6.1-6.12	Solid Waste Disposal in National Parks
40 CFR 100-149	Water
40 CFR 150-189	Pesticides
40 CFR 239-299	Solid and hazardous wastes, underground storage tanks
40 CFR 300-399	EPCRA requirements, MSDS's
40 CFR 1500-1518	NEPA
50 CFR 217, 220-227, 648, 679, 697	Endangered Species
Executive Order 11514	Protection and enhancement of environmental quality as amended by Executive Order 11911
Executive Order 11988	Floodplain management
Executive Order 11990	Protection of wetlands
Executive Order 12088	Federal compliance with pollution control standards
Executive Order 12780	Federal agency recycling and the Council on Federal Recycling and Procurement Policy
Executive Order 12843	Procurement requirements and policies for federal agencies for ozone depleting substances
Executive Order 12845	Requiring agencies to purchase energy

	efficient computer equipment
Executive Order 12856	Federal compliance with Right-to-Know laws and pollution prevention requirements
Executive Order 12902	Energy efficiency and water conservation at federal facilities
Executive Order 13101	Greening the Government through waste prevention, recycling and federal acquisition
Executive Order 13112	Invasive species
Executive Order 13123	Greening the Government through efficient energy management
Executive Order 13148	Greening the Government through leadership in environmental management
Executive Order 13149	Greening the Government through federal fleet and transportation efficiency
Executive Order 12856	Federal compliance with Right-to-Know laws and pollution prevention requirements

<b>Montana State Laws</b>	<b>Application</b>
Montana Clean Air Act 17.8.01 and 17.8.1201	Construction, installation and operation of equipment of facilities that may directly or indirectly cause or contribute to air pollution.
310 permit	Required when altering a stream temporarily or permanently.
Section 401 of the Clean Water Act Permit 124 Permit 318	All Stream Work, hydroelectric Turbidity and WQ-Fish, Wildlife and Parks Turbidity- Dept. of Environmental Quality <a href="http://www.dnrc.state.mt.us">http://www.dnrc.state.mt.us</a> for permit application
Blackfeet Tribe Water Quality Permit	Required for any stream work in which streams flow onto the reservation. In particular, Cut Bank Creek and Divide Creek.
Asbestos Control 17.74.314-316	For work on asbestos that is more 3 square feet or more than 3 feet of thermal insulation.
Hazardous Materials Management, Section 105.8 h.1	Permit required to store, transport, dispense, use or handle hazardous materials.
Solid Waste Disposal (non hazardous) 17.50.501	Permit required for disposal of solid waste (non hazardous) to licensed facilities. (DEQ)
Public Water Supply 17.38.101, 102 and 105	Regulates public water supply systems (DEQ) Applies when altering, constructing, operating, or extending a public water supply.
Sewer Systems, 17.38.101 and 102	DEQ permit required for operating, constructing, altering or extending a public

	sewer system.
Ground Water 36.12.102 and 103	DNRC permit required for ground water appropriation within a compacted area.
National Pollution Discharge Permit 17.30.1301, 1341, and 1023	DEQ permit required to construct, modify or operate a disposal system or to discharge sewage or other waste, discharge stormwater and construction dewatering operations.

<b>DOI and NPS Requirements</b>	<b>Application</b>
Departmental Manual Parts 515-521	
2001 Management Policies	Policy
Director's Orders #12	Conservation Planning and Environmental Impact Analysis
Director's Orders #13A and B	Environmental Management Systems and Environmental Leadership
Director's Orders #77, Natural Resource Protection	Management of natural resources.
Director's Orders #77-1	Wetland Protection
Director's Orders #77-2	Floodplain Management
Director's Orders #77-5 Animal Capture/Eradication	Resource Management
Director's Orders #77-7 Integrated Pest Management	Exotic Plants, noxious weeds and wildlife
Director's Orders #77-8	Endangered Species
Director's Orders #87B	Alternative Transportation Systems
Director's Orders #25 Land Protection	Private lands within the park boundary
Director's Orders #30B Hazardous Spill Response Training	Hazardous spills
Director's Orders #41, Wilderness Preservation and Management	Managing proposed wilderness.
Director's Orders #47, Soundscape Preservation and Noise Management	Activities that generate noise
Director's Orders #48A Concession Management	Concession Activities
Director's Orders #50A Worker's Compensation Case Management	Personnel
Director's Orders #50B, Occupational Safety and Health Program	Personnel
Director's Orders #50C, Public Risk Management Program	Assessment of risk for public.
Director's Orders #50D, Smoking Policy	Personnel
Director's Orders #80, Facility Management	Park facilities
Director's Orders #83, Public Health	Personnel and Visitors
Hazardous Waste Management	Hazardous Waste
Pollution Prevention Plan	All construction projects
Integrated Solid Waste management Plan	Solid Waste Management

(ISWAP)	
Fuel Storage Management Handbook	Storage of fuels within park
Solid Waste Management Handbook	Management of solid waste
Environmental Audit Program Operating Guide	Park
Concession Environmental Audit Program Operating Guide	Concession program
24-Hour HazWOper (Hazardous Waste Operations and Emergency Response) Training Manual	Hazardous Waste/Safety Program
40-Hour HazWOper Training Manual	Hazardous Waste/Safety Program
Hazardous Communication Train-the-Trainer Program	Hazardous Waste/Safety Program
Responding to Hazardous Substance Releases Handbook	Hazardous Waste/Safety Program
EnviroFact Sheets	Personnel
GLAC Fleet Business Management Plan	Fleet Management
Maintenance Advisory Committee Fleet Management Guidelines	Fleet Management

### Regulatory Environmental Information Resources

Source	Data	Address/Location
Internet	Federal environmental law, regulations, guidance	<a href="http://www.epa.gov">www.epa.gov</a>
Internet	State laws and regulations	<a href="http://www.state.mt.us">www.state.mt.us</a>
Internet	NPS environmental policy and initiatives	<a href="http://www.nps.gov">www.nps.gov</a>
Internet	DOI environmental policies	<a href="http://www.doi.gov/nrl">www.doi.gov/nrl</a>
Internet	DOI environmental guidance-Office of Environmental Policy and Compliance	<a href="http://www.doi.gov/oepe">www.doi.gov/oepe</a>
Internet	DOI environmental guidance-Property Acquisition and Management (Environmental Purchasing)	<a href="http://www.doi.gov/pam">www.doi.gov/pam</a>
Internet	Regulations	<a href="http://www.gpoaccess.gov/index.html">http://www.gpoaccess.gov/index.html</a>
Environmental Protection and Compliance Specialist	All environmental compliance rules, regulations, policies	GLAC Headquarters

## Environmental Records

Document Title or Categories	Location	Version	Responsible Party
General Management Plan/EIS/ROD	HQ Library	1999	Superintendent
NEPA Documents	HQ-Central Files, Library, park website and Environmental Protection and Compliance Specialist	Ongoing	Environmental Protection and Compliance Specialist (Mary Riddle)
Cultural Documents	Central Files-HQ and Cultural Resource Specialist's Office	Ongoing	Cultural Resource Specialist (Lon Johnson)
Environmental Regulations	GPO-Access website	Current	Safety Officer (Brian Nelson)
Service Policies	NPS/Interior Policy website	Current	Director-NPS
Park Policies	HQ-Central Files	Current	Superintendent
Spill Prevention Control and Countermeasure	Safety Office	Current	Safety Officer (Brian Nelson)
Hazard Communication Plan	Safety Office	Current	Safety Officer (Brian Nelson)
Concession Contracts and Operating Plans	Concessions Office	Current	Chief of Concessions (Jan Knox)

### 3. ENVIRONMENTAL GOALS, OBJECTIVES, & TARGETS

The activities receiving a total score of 9 or more in the Park Impact Assessment and Scoring are: Building Use/Facility Operations, Visitor Transportation, Employee Transportation, Vehicle Use/Fleet Maintenance, Hazardous Waste Management, Solid Waste Management, and Procurement/Purchasing. These activities represent areas of park operations where a higher level of environmental management is needed and could be accomplished if necessary resources are available. In addition to the activities identified through the impact assessment, the park has identified two other areas that are important to address if the actions we undertake as part of the EMP are to be successful. These areas are Best Management Practices and Education/Outreach.

Taken together, the categories listed below represent where the park will establish park-wide, divisional, and individual commitments for employees and partners to reduce GHG emissions and implement sustainable operational practices at GLAC.

- Building Use/Facility Operations
- Visitor Transportation
- Employee Transportation

- Vehicle Use/Fleet Maintenance
- Hazardous Waste Management
- Solid Waste Management
- Procurement and Purchasing
- Best Management Practices
- Education and Outreach

The remainder of this section describes the goals, objectives, and targets for the GLAC Environmental Management Plan (EMP). These are also given as an Action Plan in the Appendix at the end of the document. The action items also apply to park concessioners, because concessioners account for nearly nine times the number of staff employed by the park, although their impacts are primarily seasonal. Thus, it is important for GLAC to involve them in environmental initiatives and require that they participate. The park will review concessioner contracts and incorporate energy efficiency, GHG reduction, and other sustainable and climate friendly requirements into those agreements.

### 3.1 BUILDING USE/FACILITY OPERATIONS

Energy efficiency in buildings is an important EMS goal and it received a rating 9.5 on the Park Impact Assessment and Scoring matrix. Energy use in facilities is also a major source of greenhouse gas emissions in GLAC, second only to transportation. Emissions of CO<sub>2</sub> from purchased electricity account for 7 percent of the park's GHG emissions, and CO<sub>2</sub> from fuel combustion in stationary sources accounts for 5 percent. At GLAC, stationary emissions result from the burning of natural gas, distillate fuel, and propane in park boilers and generators, wood in woodstoves and campfires, as well as the burning of various fuels at electric power facilities to produce electricity that is consumed in the park. Concessioner operations accounted for 60 percent of total GHG emissions from stationary sources. Emissions that occur as a result of park activities but occur outside of park boundaries, such as at a power generation facility, can be reduced by decreasing electricity consumption within the park (e.g., implementing energy efficiency programs, improving insulation) and/or by purchasing electricity generated using lower carbon fuels. Reducing fuel use and electricity consumption also offers monetary benefits for the park.

Energy efficiency and sustainable construction guidelines are available through LEED: Leadership in Energy and Environmental Design. LEED is a rating and guidance system for green building design and maintenance established by the U.S. Green Building Council (USGBC). Members of the USGBC represent all segments of the building industry. GLAC will commit to using LEED standards as part of its EMS.

LEED emphasizes state of the art strategies for sustainable site development, water savings, energy efficiency, materials selection and indoor environmental quality. LEED recognizes achievements and promotes expertise in green building through a comprehensive system offering project certification, professional accreditation, training and practical resources. LEED standards are currently available or under development for existing building operations as well as new construction and renovation projects.

### *IMPROVE ENERGY EFFICIENCY OF EXISTING BUILDINGS*

The construction of new buildings offers a great opportunity to design energy efficiency into a facility from the ground up. Buildings designed with energy efficiency in mind tend to be more efficient than existing buildings that are retrofitted with energy-efficient materials. Most NPS designed buildings surpass standards of the industry, which are already significantly more energy efficient than even a decade ago. These improvements include: increased quantities of insulation to minimize heat loss and improved efficiency in HVAC units so that a higher percentage of fuel consumed is transformed into heat.

The energy efficiency of existing buildings can be improved significantly through retrofits such as increased insulation, replacement of existing inefficient heating units with more efficient models, installing energy-efficient lighting, installation of automated HVAC controls, and other measures. Installation of automatic controls/thermostats for building heating systems can also achieve considerable energy savings through programmed temperature setpoint adjustments. Installation of energy efficient lighting can reduce building electric consumption by up to 30%. GLAC commitment to capital investments for energy efficiency improvements, or consideration of this factor during allocation of park controlled funds can help insure maintenance backlog projects achieve reduced electric consumption. Also, education for building occupants to be cognizant of the impact that setpoints have on energy consumption can help reduce fuel consumption.

### *COMMIT TO ENERGY EFFICIENT, SUSTAINABLE DESIGN ON NEW CONSTRUCTION AND DECONSTRUCTION PROJECTS*

The construction of new facilities and deconstruction of old represent opportunities to incorporate sustainable, energy-efficient design and construction into GLAC's building and maintenance operations. Efforts encompass sustainable design, construction, and landscape/footprint management so that park staff and contractors alike are held to the same standards for both existing and new projects.

## 3.2 VISITOR TRANSPORTATION

Transportation is a leading source of pollution and GHG emissions in the park. Collectively, vehicles traveled more than 42 million miles in the park in 2002. Highway vehicles are the source of nearly all transportation-related emissions at the park, with visitor

#### *ENERGY EFFICIENT BUILDINGS*

- a) Review previous energy audits of headquarters and out buildings to establish baseline of use
- b) Enter all buildings into FCI database and identify potential targets for building retrofits and improvements
- c) Use FCI database to prioritize building improvements
- d) When considering remodels, pursue elements of sustainable design and energy efficiency (see Best Management Practices)
- e) Perform annual park-wide audits of energy use and publish results; consider rewarding champions
- f) Reprogram Headquarters thermostats

#### *ENERGY EFFICIENT, SUSTAINABLE DESIGN ON NEW CONSTRUCTION AND DECONSTRUCTION PROJECTS*

- a) Send staff to LEED training or consider bringing a trainer to the park; commit ongoing effort to incorporate LEED standards, or equivalent, for all new construction.
- b) Establish LEED energy efficiency goal, or equivalent, on new design contracts, including concessioner, and comply with checklist (see BMPs)
- c) Establish LEED deconstruction guidelines (see BMPs)
- d) Long term plan for a Gold LEED rating for Going-to-the-Sun Road Transit Center

highway vehicle use accounting for 93 percent of transportation emissions, followed by park highway emissions of 4 percent and concessioner highway emissions of 3 percent. Non-road mobile sources such as boats, lawnmowers, and other equipment also contributed to GLAC’s GHG emissions, but to a much smaller extent.

Because visitors’ vehicles are a major source of emissions, taking steps to reduce visitor vehicle miles traveled within the park presents the greatest potential for emission reductions. The park obviously has less control in this regard than it does for its own vehicles, thus, keys to successfully establishing alternative public transportation are leading by example, education, and collaboration.

*CREATE MULTI-MODAL SHUTTLE SYSTEM AS AN ALTERNATIVE FOR VISITOR TRANSPORTATION*

The Going-to-the-Sun Road (GTSR) connects the east and west sides of the park by transecting the Continental Divide. Shuttle service on the road was started in 1992 to meet the needs of hikers. During the planned rehabilitation of the road, the park will expand shuttle services to reduce traffic during the construction and transport visitors from parking areas to popular destinations.

The necessary expansion of shuttle use on the GTSR during the rehab provides an opportunity for the park to educate visitors about the benefits of public transportation and establish a long-term alternative to the use of individual passenger vehicles in the park. Efforts to inform and educate the public and park staff through real time displays and traffic information can decrease congestion and provide alternative routes for visitors.

*PARTNER WITH SURROUNDING COMMUNITIES ON ALTERNATIVE TRANSPORTATION*

A rural public transit project would help reduce vehicle miles traveled through the park and in its surrounding communities, thereby reducing transportation-related GHG emissions in the area. Sponsored by the U.S. Department of Energy, the Clean Cities program supports public and private partnerships that deploy alternative fueled vehicles and build supporting infrastructure.

*MULTI-MODAL VISITOR SHUTTLE SYSTEM*

- a) Provide shuttle service to park visitors on both the west and east sides of the park during the rehabilitation of the GTSR
- b) Explore ways to extend the visitor shuttle beyond the rehabilitation timeline by making operations self-sustaining
- c) Create intelligent transportation systems to provide visitor information on park road congestion and alternative routes

*PARTNER WITH COMMUNITY TO EXTEND ALTERNATIVE TRANSPORTATION BEYOND PARK BOUNDARIES*

- a) Collaborate with community partners to address rural transit project
- b) Research grant opportunities and corporate sponsors for community transportation plan
- c) Find political champion in community to collaborate with on Clean Cities Designation

**3.3 EMPLOYEE TRANSPORTATION**

Despite the large share of emissions from visitor vehicles, park and concessioner vehicle use also offers opportunities for reducing emissions. By promoting alternative fuel use and reducing miles traveled by employees, the park and its concessioners will also demonstrate the park’s commitment to sustainability to visitors

*INITIATE STAFF TRANSPORTATION ALTERNATIVES FOR ON-THE-JOB TRAVEL*

Most GLAC employees travel at least 15 miles one-way to work and many commute between buildings at work. Alternative transportation can significantly reduce the vehicle miles traveled, which is economical for employees as well as being climate friendly. Targeted initiatives include a structured carpooling service, an alternatively fueled employee shuttle system, and a red bike fleet to encourage the use of bicycles by employees for short trips within the park.

- TRANSPORTATION ALTERNATIVES ON-THE-JOB*
- a) Establish carpooling information and support services
  - b) Create 'Red Bike Program' for commuting short distances

*REDUCE NUMBER OF SINGLE-PASSENGER CARS DRIVEN BY EMPLOYEES TO AND FROM WORK THROUGH ALTERNATIVE TRANSPORTATION OPTIONS FOR COMMUTING*

Most GLAC employees travel at least 15 miles one-way to work and many commute between buildings at work. Alternative transportation can significantly reduce the vehicle miles traveled, which is economical for employees as well as being climate friendly. Targeted initiatives include a structured carpooling service, an alternatively fueled employee shuttle system, and a red bike fleet to encourage the use of bicycles by employees for short trips within the park.

- TRANSPORTATION ALTERNATIVES TO AND FROM WORK*
- c) Expand carpooling database to allow for commuting carpool opportunities
  - d) Initiate alternative fuel employee shuttle for commuting to and from local communities
  - e) Identify additional uses for shuttle when not used for commuting and offer incentives for licensing drivers

### 3.4 VEHICLE USE/FLEET MAINTENANCE

*MANAGE FLEET EFFICIENCY*

In accordance with the GLAC Fleet Business Management Plan and the Maintenance Advisory Committee Fleet Management Guidelines, reductions in the size of the park fleet are recommended. These reductions will reduce fleet maintenance costs and improve the overall fuel efficiency of the fleet. Additionally, these documents recommend a transition to more fuel

efficient fleet, including requirements for maximum fuel efficiency when procuring new vehicles; selection of the appropriate vehicle for the intended use; and consideration of alternative fuel vehicles including hybrids, natural gas and propane and biodiesel. These steps can reduce the amount of fuel consumed as well as the deleterious components of fuel consumption associated with vehicle use. These plans articulate steps to improve and manage the efficiency of GLAC's vehicle fleets will help reduce vehicle miles traveled, the fuel-efficiency of fleet vehicles, and the types of fuels used. This effort includes the conversion of the park Law Enforcement fleet to GSA owned in the fall of 2006.

Additionally, park electrical generation requirements will consider the use of sustainable fuels such as solar and

- MANAGE FLEET EFFICIENCY*
- a) Incorporate alternative fuels and fuel efficiency guidelines into fleet specifications
  - b) Determine specific fleet needs of each job function
  - c) Explore funding opportunities for acquiring electric vehicles, gas-electric hybrids, 4-stroke engines, and other fuel efficient options
  - d) Write specifications for vehicle use that include alternative fuels
  - e) Develop cheat sheets for seasonal employees on fuel efficient measures

hydro-electric, where feasible. These technologies satisfy the requirement for power demands but do not consume hydrocarbon fuels, nor do they discharge GHGs.

### 3.5 HAZARDOUS WASTE MANAGEMENT

#### *ACHIEVE AND DOCUMENT FULL COMPLIANCE WITH RCRA REQUIREMENTS*

Daily operations within GLAC involve the use of hazardous materials. These products have the potential to become hazardous waste if not managed properly. The management of these wastes is addressed in GLAC's Hazardous Waste Program, with specific handling and disposal guidelines addressing all identified hazardous waste streams.

### 3.6 SOLID WASTE MANAGEMENT

Waste is a source of greenhouse gas emissions from two perspectives. First, organic waste that is disposed of in landfills produces methane, a greenhouse gas. In addition, the consumption of energy during the production of raw materials produces greenhouse gas emissions. As a result, there are three important strategies that an organization can employ to reduce greenhouse gases from materials use—reduce consumption, reuse materials, and recycle materials—all of which reduce both production of raw materials and the amount of waste sent to landfills.

The GLAC Integrated Solid Waste Management Plan (ISWAP) recommends solutions for optimizing source reduction, collection, and disposal of solid waste while complying as much as practical to Executive Order 13101 and Federal Regulations Title 36 of the Code of Federal Regulations Part 6 (36 CFR 6) and 40 CFR 244. The park's recycling effort is a component of this plan. The GLAC ISWAP recommends maximization of reuse/recycling opportunities to reduce total amount of park waste stream that is sent to landfills. The park has been working over the last two years to provide recycling service to employees, partner with concessioners, and ultimately would like to offer recycling opportunities to the public as this is the primary source of solid waste generated at the park. Use of containers by the public is a major effort that will require contract or day labor. Funding for this effort has been requested through SCC and is expected in 2007. A recycling contract with park supplied containers has been prepared and will be advertised and awarded after the purchase of these containers.

Statistics gathered in 2002 demonstrate the recycling of plastic, cardboard, plastic, and paper by GLAC reduced methane emissions by about 5.6 metric tons of carbon equivalent (MTCE) and

#### *COMPLY WITH RCRA REQUIREMENTS*

- a) Develop and Implement Hazardous Waste Management Plan.
- b) Maintain Conditionally Exempt Status.
- c) Simplify and improve Park's hazardous waste labeling and log-in process.
- d) Conduct basic hazwaste training for park staff involved in generating, handling or storing hazardous waste.
- e) Track volume of hazardous waste generated each fiscal year.
- f) Reduce source of wastes by establishing product purchasing guidelines (Green Purchasing Filter goal).

#### *REDUCE WASTE GENERATED AND DIVERT RECYCLABLES FROM LANDFILL*

- a) Increase participation and long term accountability of recycling program
- b) Coordinate recycling efforts with concessioners
- c) Create how-to guide for recycling and adequate signage for bins
- d) Seek additional funding to support contract for managing recycling efforts on west side
- e) Develop support to implement integrated waste management plan

saved 99 million British thermal units (BTU) of energy, which equates to about 17 barrels of oil or 800 gallons of gasoline.<sup>1</sup> In order to exceed past progress, GLAC will employ a park-wide waste management strategy contained within a how-to recycling guide. The handbook will serve as a directory for recyclable products, a strategic plan for park-wide recycling, and a resource for how to talk about recycling in the context of climate change. In addition, GLAC will create incentives for staff to reduce waste and educate others about the benefits of recycling and will educate and encourage visitors utilize park recycling opportunities.

### 3.7 PROCUREMENT AND PURCHASING

#### *CREATE A GREEN PURCHASING FILTER*

In order to facilitate sustainable practices, GLAC's EMS will incorporate a "Green Filter" to guide product purchases. The Green Filter will be located within GLAC's Hazardous Waste Program and will specify options and guidelines for procurement, including fuel efficiency guidelines for vehicle purchase and lease as well as construction products and office furniture and supplies. Guidelines will apply to all NPS and concessioner contracts and activities.

#### *CREATE GREEN PURCHASING FILTER*

- a) Create a concept memo for a "green filter" and provide management emphasis to this initiative
- b) Enhance awareness of existing green purchasing guidelines and incorporate them into the filter
- c) Conduct employee awareness training on green products (see Education and Outreach)

### 3.8 BEST MANAGEMENT PRACTICES

The boundaries of GLAC encompass some of the nation's most treasured natural resources. The park spans over a million acres of forests and alpine meadows, and contains 650 lakes; the 568 thousand acres of forests account for 2.4 percent of Montana's forests. Maintaining these lands, not only as a natural resource but as a vacation destination and educational center, requires broad cooperation across all the park's management units. GLAC seeks to streamline the management practices of each park function so that all staff may participate in reducing overall park greenhouse gas emissions and so that detrimental practices are eliminated.

#### *BEST MANAGEMENT PRACTICES*

- a) Create concept memo for BMPs
- b) Develop general guidelines
- c) Assess a sampling of activities
- d) Create a comment/recommendation card to inform BMPs
- e) Create a worksite survey form

The park will develop guidelines for maintenance operations and construction type activities in GLAC that would allow fulfilling the basic mission of the National Park Service in a manner that perpetuates the Climate Friendly Parks initiative. They are intended to provide park staff, contractors, and concessioners' basic considerations that minimize ground disturbance, energy consumption, including that from restoration, and the prevention of environmental degradation or unnecessary disturbance during certain activities. Examples of specific guidelines are given.

<sup>1</sup> Emission reductions, energy savings, and equivalencies estimated using recycling tonnage data from the Park (Summerfield 2003) and EPA's WASTE Reduction Model (WARM), available online at <http://yosemite.epa.gov/oar/globalwarming.nsf/WARM>. Note that these reductions reflect emissions reduced throughout the material life-cycle and are therefore not directly comparable to emissions from waste sector activities alone.

### 3.9 EDUCATION AND OUTREACH

GLAC's ECS and Action Plan will incite many new environmentally friendly, and climate friendly, activities in addition to current initiatives so there will be a wealth of progress to demonstrate to ourselves and our visitors. This section presents GLAC's plans for a comprehensive education and outreach initiative that will enable park staff to effectively communicate environmental sustainability awareness to the public.

#### *EDUCATE PARK STAFF AND CONCESSIONERS ABOUT CLIMATE CHANGE AND OTHER ENVIRONMENTAL IMPACTS TO PARK RESOURCES*

In addition to defining best management practices for the park, GLAC will develop a strategy for educating park staff about these processes. While it is probable that permanent GLAC staff will learn through individual mentoring from other colleagues on specific jobs, it is important that all park staff understand how their activities that affect the environment. In addition, every year GLAC hires over 300 seasonal employees that are required to come up the learning curve rather quickly in order to serve the park during the busy season. The park will therefore incorporate EMS and climate friendly parks issues into seasonal/new employee training and provide additional training sessions for existing staff.

#### *EDUCATE PARK STAFF AND CONCESSIONERS*

- a) Incorporate the relationship between fire and climate change into fire education
- b) Incorporate climate friendly and other EMS messages into handbook for seasonal employees
- c) Present EMS and climate friendly parks information at seasonal trainings for employees and concessioners

#### *ADVERTISE CLIMATE CHANGE IMPACTS AND SUSTAINABILITY EFFORTS THE PARK IS UNDERTAKING AND WHY*

With 1.9 million visitors annually, GLAC has a tremendous opportunity to demonstrate their environmental commitment while simultaneously educating visitors on climate change and environmental sustainability. In addition to the procedures described in Section 5, a copy of the ECS is posted at key locations throughout the park (including all visitor centers and the park headquarters building).

Telling visitors what the park is doing is a great way to start a conversation about environmental sustainability and to get people to think critically about how some of their habits might contribute to negative impacts like GHG emissions. At GLAC, melting glaciers serve as a natural sign that the climate is changing. The park draws attention to this issue through informational signs that outline the history of the shrinking glacier. Signs discussing GLAC's many climate change initiatives will send a positive message about how visitors can prevent greenhouse gases on their own.

#### *ADVERTISE CLIMATE CHANGE AND SUSTAINABILITY EFFORTS*

- a) Develop interpretive displays about climate change on east and west sides of park
- b) Create signage and interpretive materials to "show case" green construction and design projects
- c) Advertise alternative transportation measures through interpretation at visitor centers, in park newsletter and through other means to showcase sustainable actions the park is undertaking
- d) Design and use sticker to identify vehicles with fuel efficiency and alternative fuels
- e) Share energy efficient and green initiatives with neighboring agencies and nations at joint meetings

## 4. EMT DETAILS

### 4.1 ENVIRONMENTAL MANAGEMENT TEAM

#### GLAC Environmental Management Team

Stephanie Dubois, Deputy Superintendent  
Leigh Welling, Director of Research Learning Center  
Jack Potter, Chief of Science and Resources Management  
Mary Riddle, Environmental Protection Specialist  
Brian Nelson, Safety Officer  
Lisa Turecek, Assistant Chief of Facilities Management

### 4.2 ROLES AND RESPONSIBILITIES

Since the Climate Friendly Parks workshop, GLAC has made progress by forming the Environmental Management Team (EMT) as well as a Green Team to support development and implementation of the Action Plan. While the EMT has responsibilities for ensuring the EMS is carried out, the Green Team members are often the people in the field who implement the actions. Green Team membership is broader than the EMT as it embraces concessioners and other park partners as well all operational divisions in the park.

## 5. COMMUNICATIONS

Effective communication about environmental impacts information is important. How do we propose to do this? Is this section separate from education? Or does this belong in training?

One idea: The ECS on the park web site and on employee bulletin boards. This section pertains to the means in which the EMS is communicated to the staff. The main focal point will be the web site as well as orientations and trainings. We will encourage people to visit the site and to learn more about the program and the action plan. The EMT will look for other opportunities to present this information.

## 6. TRAINING

The park Safety Officer is doing Hazardous Operations training and Hazardous Materials training for all employees. He has a training matrix that identifies all the employees who are required to take the training and this is handled electronically as well as with hard copy. Training specific to environmental awareness will be incorporated into these existing training opportunities. Climate change awareness and impact assessment will be accomplished through the education and outreach goals listed under Section 3.

## ENVIRONMENTAL & SAFETY TRAINING MATRIX

**Division:** \_\_\_\_\_ **Position Title/Series/Grade:** \_\_\_\_\_ **Prepared by (Supervisor):** \_\_\_\_\_  
**Date Prepared:** \_\_\_\_\_ **Employee Name (optional):** \_\_\_\_\_  
**Reviewed by SO:** \_\_\_\_\_

✓ Training Needed	Frequency	Trainer/Responsible Party	✓ Training Needed	Frequency	Trainer/Responsible Party
<b>ENVIRONMENTAL</b>					
Clean Air Act / Air emissions		Safety Officer (SO)	HAZCOM	Annual	SO
Clean Water Act	Annual	SO	HAZWOPER	Annual	SO
Energy Conservation orientation	Annual	Green Team (GT)	JLG Trucks	Annual	SO
Fuel Storage and Delivery Sys.	Annual	Maintenance Division	Heat Stress SOP	Annual	Supervisor
Green Procurement	Annual	SO/ GT	Lead Awareness	Annual	SO
Hazardous Waste Mgt Procedures	Annual	SO	Motorboat Operator Safety	Initial	Boating Coordinator
- Hazardous Waste Manifesting	Initial	SO	Poison Ivy & Envi. hazards NEC	Annual	SO / Supervisor
Integrated Pest Management	Annual	EPMT Lead	Safety Manual	Annual	Supervisor
Recycling Program orientation	Annual	GT	- Emergency accident procedures	Annual	Supervisor/SO
Solid Waste Mgt orientation	Annual	Maintenance Division	- Equip. operation, power tools	Initial	Supervisor
SPCC Plan	Annual	SO	- Ergonomics, lift & carry	Annual	SO/Supervisor
Spill Response SOP	Annual	SO	- Fire extinguisher use	every 3 yrs	SO
Other			- Forklift	Annual	Supervisor
			- Job Hazards	Annual	Supervisors
<b>SAFETY TRAINING</b>			- Lockout / Tagout	Annual	Maintenance Division
Asbestos Awareness	Initial	SO	PPE, Eye Protection SOP	Annual	Supervisor
Accident Reporting Procedures	Annual	Supervisor	PPE, Footwear Program	Annual	Supervisor
Bloodborne Pathogen/HBV	Annual	SO	PPE, General PPE appropriate to	Annual	Supervisor
Chemicals (used for cleaning)	Annual	SO	PPE, Hearing Protection SOP	Annual	Supervisor
Chainsaw operation and safety	Initial	SO	Respiratory Protection	Annual	SO
Confined Space Entry	Annual	SO	Safety Committee awareness	Annual	Supervisor
CPR/First Aide	Every 2 yrs	SO	Slips, Trips & Falls	Annual	Supervisor
Defensive Driver	Every 3 yrs	SO	Tick Talk	Annual	SO / Supervisor
Emergency Procedures, Bldg. evac.	Annual	EMS Coordinator	Other		
Equipment op., engineering equip.	Initial	Supervisor			

Date of Original Document: 12/18/03      Revision Date: 1/15/04

## 7. DOCUMENT AND RECORD CONTROL

### *RELATED DOCUMENTATION*

Aids to environmental documentation and guidance help in identifying EMS targets. These include the Greenhouse Gas Emissions Report developed by ICF Consulting, the Best Management Practices developed by the Division of Science and Resources Management, and the park safety, health, and environmental guidelines.

As per GNP's Hazardous Waste Program, recognized hazardous waste streams have been identified and, procedures for proper disposal for each have been developed. As hazardous waste is generated, it is properly inventoried by the Safety Officer, and stored at a collection point in the Headquarters compound area following EPA's conditionally exempt generator storage requirements. The inventory sheets will be kept in the safety office along with transportation manifests, collector EPA identification numbers, and receipts. These records shall remain in the GLAC Park Safety office indefinitely.

Documentation for the Action Plan and progress will be maintained by the Green Team on their site. Referenced plans will be maintained by the Facilities Management Office except where noted.

## 8. MONITORING, MEASUREMENT, CORRECTIVE ACTION, AND MANAGEMENT REVIEW

The primary means of monitoring and measuring progress on EMP goals will be to report annually on the individual tasks established in "Appendix A: Action Plan" in the column labeled achievement. In some cases this will merely be completing a task such as establishing an employee shuttle. However, whenever possible the goals and tasks will consist of objective measurements that determine the success or failure to meet some established measurement. Once building energy audits are complete, and a baseline established, this may mean a yearly reduction of power demand to meet a specific conservation goal. We may also set other specific goals related to overall fuel consumption, shuttle ridership, average fleet mileage-per-gallon, etc. Some reporting make be summations of work, such as pounds of aluminum recycled. Each year, under the direction of the Environmental Management Team, the Green Team, and the Goal Champions, a review of the Goals and Tasks will be undertaken. In cases where goals have not been achieved, the park will consider corrective actions to remedy the situation and they will be incorporated in the Action Plan for the next year. At this time we will also will update and revise the Action Plan to incorporate new goals and objectives, drop those that have been completed, and review the overall program.



Facility Activity: Goals and Tasks	Responsible Party	Existing or New Program Area	Budget	Estimated Level of Effort (time)	Completion Date and Report Due	Achievements
b. Enter all buildings into FCI database and identify potential targets for building retrofits and improvements	Cary King	Existing	\$10,000	250 hours	ongoing	typical building approach. Database is updated every year with comprehensives done every five years. First comprehensive completed in 200
c. Use FCI database to prioritize building improvements	Management Team	New	\$10,000	250 hours	FY 2006	Reviewing and implementing Asset Portfolio procedures in order to provide baseline information to MT.
d. When considering remodels, pursue elements of sustainable design and energy efficiency (see Best Management Practices)	Management Team	New	By project probably 10% of cost	By project but likely 1% of total project effort	Ongoing as projects arise	Value Analysis /Engineering is performed on projects >\$500K.

Facility Activity: Goals and Tasks	Responsible Party	Existing or New Program Area	Budget	Estimated Level of Effort (time)	Completion Date and Report Due	Achievements
e. Perform annual park-wide audits of energy use and publish results; consider rewarding champions	Ellen Kaneen	New	\$1000	40	Annual	Administrative division has all individual records and per the AO will provide a building review. FM has provided the overall park prospective trends in energy costs/usage for the last five year
f. Reprogram Headquarter thermostats	J. Foster	Existing	-0-	15 hours	March 2006	50% complete
<b>BUILDING USE/FACILITY OPERATIONS</b>  <b>Goal II: Commit to energy efficient, sustainable design on new construction and deconstruction projects</b>	<i>Goal Champion:</i>  <b>Lisa Turecek</b>					

Facility Activity: Goals and Tasks	Responsible Party	Existing or New Program Area	Budget	Estimated Level of Effort (time)	Completion Date and Report Due	Achievements
<u>Objectives</u> a. Send staff to LEED training or consider bringing a trainer to the park; commit ongoing effort to incorporate LEED standards, or equivalent, for all new construction. b. Establish a LEED certification goal, or equivalent, on new design contracts, including concessioners, and comply with checklist (see BMPs) c. Establish LEED deconstruction guidelines (see BMPs) d. Plan for and attain a Gold LEED rating for Going-to-the-Sun Road Transit Center	Gary Danczyk	New	-0-	8 hours	July 2005	2 employees have attended
	Management Team	New	1%-2% of total project costs	-0-	ongoing	Standard is gold
	Lisa Turecek	New	2% of costs	2% of project costs	ongoing	?
	Gary Danczyk	New	\$70,000	\$200	June 2007	As of 2/06: 1. authorized a commissioning agent; 2. completed a workshop and our LEED

Facility Activity: Goals and Tasks	Responsible Party	Existing or New Program Area	Budget	Estimated Level of Effort (time)	Completion Date and Report Due	Achievements
<p><b>2. VISITOR TRANSPORTATION</b></p> <p><b><u>Goal I:</u> Create multi-modal shuttle system as an alternative for visitor transportation</b></p> <p><b><u>Objectives:</u></b></p> <p>a. Provide shuttle service to park visitors on both the west and east sides of the park during the rehabilitation of the Going-</p>	Gary Danczyk	New	\$80,0000	12,000	June 2007	<p>scorecard is currently 43 - which qualifies GLAC for Gold card</p> <p>3. Plan review awarded 2/2006</p> <p>4. Commissioning award expected in 3/2006.</p> <p>As of 2/06: 1. received developmental advisory board (DAB)approval</p>

Facility Activity: Goals and Tasks	Responsible Party	Existing or New Program Area	Budget	Estimated Level of Effort (time)	Completion Date and Report Due	Achievements
<p>to-the-Sun Road</p> <p>b. Explore ways to extend the visitor shuttle beyond the rehabilitation timeline by making operations self-sustaining</p>	Gary Danczyk	New	See above	See above	2014	<p>2. Completed transit plan with sustainable options 3. DAF sent to Director for approval.</p> <p>4. In negotiations with MDOT and Flathead county for a cooperative agreement.</p> <p>As of 2/06:</p> <p>1. Completed year 1 of 2 year baseline collection of visitor impacts information to evaluate sustaining the shuttle beyond the rehab project.</p>

Facility Activity: Goals and Tasks	Responsible Party	Existing or New Program Area	Budget	Estimated Level of Effort (time)	Completion Date and Report Due	Achievements
<p>c. Create intelligent transportation systems to provide visitor information on park road congestion and alternative routes</p> <p><b>2. VISITOR TRANSPORTATION</b></p> <p><b><u>Goal II:</u> Partner with surrounding communities to extend and connect park alternative transportation options beyond the park boundaries</b></p>	<p>Gary Danczyk</p> <p><i>Goal Champion:</i> <b>Gary Danczyk</b></p>	<p>New</p>	<p>\$1.2 million</p>	<p>2,200</p>	<p>2007</p>	<p>2. Fee demo funds will extend the shuttle beyond 2014</p> <p>As of 2/06: 1. received developmental advisory board (DAB)approval 2. completed ITS plan with sustainable options</p>

Facility Activity: Goals and Tasks	Responsible Party	Existing or New Program Area	Budget	Estimated Level of Effort (time)	Completion Date and Report Due	Achievements
<p><b><u>Objectives:</u></b></p> <p>a. Collaborate with community to address rural transit project</p> <p>b. Research grant opportunities and corporate sponsors for community transportation plan</p>	<p>Gary Danczyk</p> <p>Gary Danczyk</p>	<p>New</p> <p>New</p>	<p>\$2-3 million</p> <p>-0-</p>	<p>150 hours</p> <p>40</p>	<p>2006</p> <p>June 2007</p>	<p>As of 2/06: Coordinating with State of Montana on cooperative agreement to purchase, operate, and maintain park transit system – which sets the stage for a community system</p> <p>As of 2/06: A variety of conversations with various entities are ongoing; several options are currently under consideration</p>



Facility Activity: Goals and Tasks	Responsible Party	Existing or New Program Area	Budget	Estimated Level of Effort (time)	Completion Date and Report Due	Achievements
a. Establish carpooling information and support services	Tim Gilk/ Green Team	New	-0-	6 hours	Oct 2005	Database established; intermittent use; this remains a viable area for improvement through promotion and awareness
b. Create “Red Bike Program” for commuting short distances	Billie Thomas	New	\$9,000	hundreds	May 2004	21 bicycles are currently in on east and west sides of the park; demand and use are high; no metrics have been collected on miles traveled; a questionnaire is going out in Spring 2006 to evaluate the program





Facility Activity: Goals and Tasks	Responsible Party	Existing or New Program Area	Budget	Estimated Level of Effort (time)	Completion Date and Report Due	Achievements
b. Determine specific fleet needs of each job function	Division Chiefs	New	-0-	-200	FY 2006	fuels. LE vehicles are exempt  Fleet vehicle assessments completed in 2/2006
c. Explore funding opportunities for acquiring electric vehicles, gas-electric hybrids, 4-stroke engines, and other fuel efficient options	Roads and Fleet Supervisor – to be determined	Existing	\$200,000-300,000.	75	ongoing as replacements occur	Due to GLAC's size and budget, only boats /motors are eligible for the Equipment replacement fund. All others must come from GLAC funds. Suggestion was made that items such as snowmobiles should be rented when needed.

Facility Activity: Goals and Tasks	Responsible Party	Existing or New Program Area	Budget	Estimated Level of Effort (time)	Completion Date and Report Due	Achievements
d. Write specifications for vehicle use that include alternative fuels	Roads and Fleet Supervisor – to be determined	Existing	-0-	-0-	ongoing	As vehicles are replaced this will be accomplished in accordance with any restrictions such as LE vehicles.
e. Develop cheat sheets for seasonal employees on fuel efficient measures	Roads and Fleet Supervisor – to be determined	New	10	-0-	FY 2006	Will be assigned to new R & F foreman.
<p><b>5. HAZARDOUS WASTE MANAGEMENT</b></p> <p><b><u>Goal I: Achieve and document full compliance with RCRA requirements</u></b></p> <p><b><u>Objectives:</u></b></p>						
d. Develop and implement hazardous waste management plan	Brian Nelson	New	NA	24 hours	2006	Completed; will be reviewed and updated annually
	<i>Goal Champion:</i> <b>Brian Nelson</b>					

<b>Facility Activity: Goals and Tasks</b>	<b>Responsible Party</b>	<b>Existing or New Program Area</b>	<b>Budget</b>	<b>Estimated Level of Effort (time)</b>	<b>Completion Date and Report Due</b>	<b>Achievements</b>
e. Maintain Conditionally Exempt Status.	Brian Nelson	Existing	2,000	12 hours	Annual	Currently conditionally exempt – ongoing efforts to maintain status included hazardous waste training Completed
f. Simplify and improve Park’s hazardous waste labeling and log-in process.	Brian Nelson	Existing	NA	8 hours	2006	
g. Conduct basic hazwaste training for park staff involved in generating, handling or storing hazardous waste	Brian Nelson	Existing	NA	12 hours	Annual	Plan to include topic in seasonal orientation; scheduled a 24 hour hazardous waste training on March 21,22 & 23 of 2006 Currently tracking; will summarize volume generated at end of FY 06
h. Track volume of hazardous waste generated each fiscal year.	Brian Nelson	Existing	NA	12 hours	Annual	



<b>Facility Activity: Goals and Tasks</b>	<b>Responsible Party</b>	<b>Existing or New Program Area</b>	<b>Budget</b>	<b>Estimated Level of Effort (time)</b>	<b>Completion Date and Report Due</b>	<b>Achievements</b>
c. Coordinate recycling efforts with concessioners	Kris Meredith	New	-0-	10	May 2004	Ongoing
d. Create a how-to guide for recycling and adequate signage for bins	Jean Tabbert	New	\$40	-0-	May 2006	Need status check on this. Could already be available
d. Seek additional funding to support contract for managing recycling efforts on west side	L. Tureck	New	\$3000-15,000	120	June 2006	Awaiting IMR decision on the purchase of new containers. If approved we will move forward with contract action.
e. Develop integrated waste management plan	Management Team	Existing	10,000	100	1/2001	Completed by IMR contract – Integrated Solid Waste Management Plan – Plan developed by Camp Dresser and McKee

Facility Activity: Goals and Tasks	Responsible Party	Existing or New Program Area	Budget	Estimated Level of Effort (time)	Completion Date and Report Due	Achievements
<p><b>7. PROCUREMENT &amp; PURCHASING</b></p> <p><b><u>Goal I:</u> Create a Green Purchasing Filter</b></p> <p><b><u>Objectives:</u></b></p> <p>a. Create a concept memo for a “Green Filter” and provide management emphasis to this initiative</p> <p>b. Enhance awareness off existing green purchasing guidelines and incorporate them into the filter</p>	<p><i>Goal Champion:</i></p> <p><b>Brian Nelson</b></p> <p>Brian Nelson/Neil Brewster</p> <p>Neil Brewster</p>	<p>New</p> <p>Existing</p>	<p>NA</p> <p>NA</p>	<p>4 hours</p> <p>4 hours</p>	<p>2006</p> <p>2006</p>	<p>CX-1443-CX2000-97-008</p> <p>Green filter not developed; will create by May 1</p> <p>Plans to communicate green purchasing guidelines into weekly employee trainings</p>

Facility Activity: Goals and Tasks	Responsible Party	Existing or New Program Area	Budget	Estimated Level of Effort (time)	Completion Date and Report Due	Achievements
c. Conduct employee awareness training on green products (see Education and Outreach)	Brian Nelson	Existing	NA	12 hours	2006	Conducted 5 Hazardous Communication trainings in 2005, will add green products section and product availability in 2006 trainings
<b>8. BEST MANAGEMENT PRACTICES</b>						
<b><u>Goal I: Establish Best Management Practices</u></b>						
<b><u>Objectives:</u></b>	<i>Goal Champion:</i> <b>Jack Potter</b>					
a. Create concept memo for BMPs	Joyce Lapp	New	-0-	1 hr	June 2004	Done
b. Develop general guidelines	Joyce Lapp	New	-0-	8 hrs	June 2004	These are included in the specification package for all in-house and

Facility Activity: Goals and Tasks	Responsible Party	Existing or New Program Area	Budget	Estimated Level of Effort (time)	Completion Date and Report Due	Achievements
c. Assess a sampling of activities	Joyce Lapp	New	-0-		Sept 2005	external construction contracts/ project agreements
d. Create a comment/recommendation card to inform BMPs	Joyce Lapp	New	-0-	2 hrs	Sept 2005	Currently is recommended to all authors of construction documents
e. Create a worksite survey form	Joyce Lapp	New	-0-		Sept 2006	done
<b>9. EDUCATION AND OUTREACH</b>						
<b>Goal I: Educate park staff and concessioners about climate change and other environmental impacts to park resources</b>	<b>Goal Champion: Leigh Welling</b>					

Facility Activity: Goals and Tasks	Responsible Party	Existing or New Program Area	Budget	Estimated Level of Effort (time)	Completion Date and Report Due	Achievements
<p><b><u>Objectives:</u></b></p> <p>a. Incorporate the relationship between fire and climate change into fire education</p> <p>b. Incorporate climate friendly parks and other EMS messages into handbook for seasonal employees</p> <p>c. Present EMS and climate friendly parks information at seasonal trainings for employees and concessioners</p> <p><b>9. EDUCATION AND OUTREACH</b></p> <p><b><u>Goal II:</u> Advertise climate change impacts and sustainability efforts the park is undertaking and why</b></p>	<p>Dennis Divoky</p> <p>Leigh Welling</p> <p>Leigh Welling</p> <p><i>Goal Champion:</i> <b>Leigh Welling</b></p>	<p>New</p> <p>New</p> <p>New</p>	<p>NA</p> <p>negligible</p> <p>Negligible</p>	<p>12 hours</p> <p>10 hours</p> <p>3-6 hours annually</p>	<p>2006</p> <p>2004</p> <p>April 2004</p>	<p>Annual Interpretive and Advanced Concessions Trainings</p> <p>Done; annually reviewed</p> <p>was not requested in 2005</p>

Facility Activity: Goals and Tasks	Responsible Party	Existing or New Program Area	Budget	Estimated Level of Effort (time)	Completion Date and Report Due	Achievements
<p><b><u>Objectives:</u></b></p> <p>a) Develop interpretive displays about climate change on east and west sides of park</p> <p>b) Create signage and interpretive materials to “show case” green construction and design projects</p> <p>c) Advertise alternative transportation measures through interpretation on shuttle, at visitor centers, in park newsletter and through other means to showcase sustainable actions the park</p>	<p>Bill Hayden/ Leigh Welling</p> <p>Green Team</p> <p>Green Team</p>	<p>New</p> <p>New</p> <p>New</p>	<p>\$13,000</p> <p>?</p> <p></p>	<p>Several weeks</p> <p>?</p> <p></p>	<p>June 2006</p> <p>Summer 2007</p> <p>Summer 2006</p>	<p>As of 2/06: Funding has been secured; messaging has been developed; discussions are underway regarding layout and design</p> <p>Green team has developed logo; plans to print as stickers for summer 2006</p>

Facility Activity: Goals and Tasks	Responsible Party	Existing or New Program Area	Budget	Estimated Level of Effort (time)	Completion Date and Report Due	Achievements
<p>is undertaking</p> <p>d) Design and use stickers to identify vehicles with fuel efficiency and alternative fuels</p> <p>e) Share energy efficient and green initiatives with neighboring agencies and nations at joint meetings</p>	<p>Green Team</p> <p>Green Team</p>	<p>New</p> <p>New</p>			<p>Summer 2007</p> <p>Summer 2007</p>	