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Park Facilities

The National Park Service will provide visitor and administrative facilities that are necessary, appropriate, and consistent with the conservation of park resources and values. Facilities will be harmonious with park resources, compatible with natural processes, esthetically pleasing, functional, energy- and water-efficient, cost effective, universally designed, and as welcoming as possible to all segments of the population. Park facilities and operations will demonstrate environmental leadership by incorporating sustainable practices to the maximum extent practicable in planning, design, siting, construction, and maintenance.



More people are able to enjoy their visit when park facilities are designed and constructed to meet universal design standards.

The Organic Act, which created the National Park Service in 1916, directs the Service to conserve park resources “unimpaired” for the enjoyment of future generations. The 1970 National Park System General Authorities Act, as amended in 1978, prohibits the Service from allowing any activities that would cause derogation of the values and purposes for which the parks have been established. Taken together, these two laws impose on NPS managers a strict mandate to protect park resources and values. (Throughout Management Policies, “impairment” is construed to also encompass “derogation.”) In protecting park resources and values, the Service will demonstrate environmental leadership and a commitment to the principles of sustainability in all facility developments and operations. This commitment will be made obvious to the public in the choices and decisions that are made, and through appropriate educational opportunities.

Support facilities necessary to house, transport, inform, and serve visitors and staff require proper planning, design, programming, construction, operation, and maintenance. The Service must avoid the construction of buildings, roads, and other development that will cause unacceptable impacts on park resources and values. The Service must also avoid the future operation and maintenance costs of unnecessary or ineffective facilities. Therefore, the Service will not develop, or re-develop, a facility within a park until a determination has been made that the facility is necessary and appropriate, and that it would not be practicable for the facility to be developed, or the service provided, outside the park. This policy recognizes, for example, that a gas station or a grocery store may be necessary to park use and enjoyment, but that it may not need to be located within the park.

(See Park Management 1.4; Decision-making Requirements to Avoid Impairments 1.4.7; Evaluating Impacts on Natural Resources 4.1.3; Planning 5.2; Commercial Visitor Services Planning 10.2.2)

9.1.1 Facility Planning and Design

The protection of each park’s resources and values will be the primary consideration in facility development decisions. Facilities for visitor use and park management will be consistent with each park’s authorizing legislation, and with approved general management plans, development concept plans, and associated planning documents. The planning and design of park facilities will be accomplished by interdisciplinary teams constituted to meet the resource stewardship, programmatic, and technical requirements of the project. Public input will be sought at the earliest stage of planning and design, particularly in those cases where controversy is likely.

The Park Service will meet its facility development needs in a cost-effective manner, ensuring that value is returned for every decision made. Only development projects that are shown to be an appropriate use of funds, and economically feasible, will be approved. Value-analysis and value-engineering techniques, such as functional analysis and cost evaluation, will be applied to achieve the lowest life-cycle cost, consistent with required environmental and energy performance, reliability, quality, safety, and resource protection. Construction and operational cost estimates will be continually reviewed throughout the planning and development processes to avoid excessive, unwarranted, or

unnecessary costs. Development projects will also be continually reviewed for opportunities to add value and benefits that will help achieve the NPS mission.

Designs for park facilities, regardless of their origin (NPS, contractor, concessioner, or other), will be harmonious with and integrated into the park environment. They will also be subject, throughout all phases of design and construction, to the same code compliance; the same high standards of sustainable design, “universal design,” and functionality; and the same review and approval processes. Park Service requirements for sustainable design and functionality include protection of the natural and cultural environments, resource conservation, energy conservation, pollution prevention, defensible space for fire safety, and fostering education about sustainable design and practices.

The Service will issue, and update as necessary, guiding principles for sustainable design to be applied throughout the national park system, consistent with federal regulations such as Executive Order 13123 (Greening the Government Through Efficient Energy Management) and Executive Order 13101 (Greening the Government Through Waste Prevention, Recycling and Federal Acquisition).

(See Park Planning Processes 2.3; General Management Concepts 4.1; Lightscape Management 4.10. Also see Director’s Orders #13: Environmental Leadership; and #90: Value Analysis; NPS Guiding Principles of Sustainable Design)

9.1.1.1 Life-cycle Costs

The total cost of a system, facility, or other product will be considered in its planning, design, and construction. Total cost will be computed over a product’s or system’s useful life, or other specified period of time, using economic analysis. Life-cycle costs include acquisition, shipping, initial construction or installation, operating and maintenance, environmental and energy consumption, water, wastewater, and the costs of eventual disposal or deconstruction of the system, facility, and/or product. To the extent practicable, the waste implications of materials, products, and by-products (including product “life cycle” pollution) should be considered as part of life-cycle costs. When the cost of facility deconstruction is included in the life-cycle cost analysis, deductions may be factored in for the salvage value of the recyclable materials.

(Also see Director’s Orders #13: Environmental Leadership; and #90: Value Analysis)

9.1.1.2 Integration of Facilities into the Park Environment

Facilities will be integrated into the park landscape and environs with sustainable designs and systems to minimize environmental impact. Development will not compete with or dominate park features, or interfere with natural processes, such as the seasonal migration of wildlife or hydrologic activity associated with wetlands.

If a cohesive design theme is desired, recommended, or required, the theme will reflect the purpose and character of the park, or, in a large park, of an individual developed area. Standard designs and components may be used, but they will be adapted as appropriate to the specific site and conditions as part of the design process.

The full integration of facilities into the park environment will involve:

- Sensitivity to cultural, regional, esthetic, and environmental factors (e.g., solar orientation, prevailing winds, landscaping, vulnerability to wildfire and other natural hazards) in the selection of site, construction materials, and forms;
- Innovative concepts for grouping facilities and activities, both in the design of new development and in the re-design of existing complexes, building on the architectural and landscape elements already present;
- Thorough interdisciplinary resource, user, and short- and long-term structure maintenance analysis;
- The long-term need for, and sustainable use of, water, energy, and waste disposal resources;
- Assessment of the transportation and mobility needs of park visitors, as well as concessioner and park employees within the park, and for accessing the park from gateway communities; and
- Knowledge about the values and socio-cultural interests of groups, including Native Americans, traditionally associated with the park.

(See *Environmental Leadership 1.6; Lightscape Management 4.10; Protection of Cultural Values 9.1.1.5; Visitor Centers 9.3.1.3; Siting Facilities to Avoid Natural Hazards 9.1.1.6*)

9.1.1.3 Protection of Cultural Values

When important cultural resources are present, efforts will be made to utilize existing contributing structures. New visitor or administration structures will harmonize with the area and the cultural resources in proportion, color, and texture. No attempt will be made to duplicate or mimic a historic design, nor will any modern construction be portrayed to the public as being historic. However, vernacular styles of architecture are appropriate when they provide visual compatibility with the cultural landscape. Application of the “criteria of effect” promulgated by the Advisory Council on Historic Preservation, and compliance with the Council’s regulations on “Protection of Historic Properties” (36 CFR Part 800), will precede any development. These criteria apply to all historic properties.

(See *Identification and Evaluation of Resources 5.1.3; Planning 5.2; Treatment of Cultural Resources 5.3.5. Also see Secretary of the Interior’s Standards and Guidelines for Archeology and Historic Preservation*)

9.1.1.4 Adaptive Use

The National Historic Preservation Act and Executive Order 13006 require each federal agency—prior to acquiring, constructing, or leasing buildings—to use, to the maximum extent feasible, historic properties available to it, whenever operationally appropriate and economically prudent. (16 USC 470h-2(a)(1)) The Act also requires each agency to implement alternatives for the adaptive use of historic properties it owns, if that will help ensure the properties’ preservation. Therefore, the adaptive use of historic and non-historic buildings for operations such as visitor centers, hostels, and administrative offices, will be considered first, before new construction, provided that (1) it can meet park objectives and current code requirements; (2) its use will not be an intrusion on

significant natural or cultural resources; and (3) a cost savings will be realized. Even when the cost of adaptive use is greater than new construction, it may still be justified. Use of historic buildings will comply with all laws, regulations, and policies regarding the treatment and use of cultural resources.

(See *Physical Access for Persons with Disabilities 5.3.2; Use of Historic Structures 5.3.5.4.7*)

9.1.1.5 Facility Siting

Whenever feasible and authorized by Congress, major park facilities—especially those that can be shared with other entities—should be developed outside of park boundaries. The Service will encourage the private sector to meet facility needs in gateway communities, and thus contribute to local economic development, encourage competition, increase choices for visitors, and minimize the need for in-park construction. Where possible, appropriate, and authorized, the Park Service will cooperatively establish and maintain administration/information facilities with other federal, state, or local entities.

If facilities must be located inside of park boundaries, then the preferred locations will be those that minimize impacts to park resources, and are situated to stimulate the use of alternative transportation systems, bicycle routes, and pedestrian walkways. Major facilities within park boundaries will be placed only in locations identified in an approved GMP, or in implementation planning documents, as being suitable and appropriate. Facility siting will take into account the need for protection from fires, and take maximum advantage of factors such as solar energy, wind direction and speed, natural landscaping, and other natural features.

When structures that are not historically significant are no longer functional in their present locations, and are determined to be inappropriately placed in important resource areas, they will be removed or relocated to a more appropriate area.

(See *General Management Planning 2.3.1; Historic and Prehistoric Structures 5.3.5.4; Commercial Visitor Services Planning 10.2.2*)

9.1.1.6 Siting Facilities to Avoid Natural Hazards

The Service will strive to site facilities where they will not be damaged or destroyed by natural physical processes. Natural hazard areas include sites with unstable soils and geologic conditions, fault zones, thermal areas, floodplains, flash-flood zones, fire-prone vegetation, and coastal high-hazard areas. Park development that is damaged or destroyed by a destructive, hazardous, or catastrophic natural event will be thoroughly evaluated for relocation or replacement by new construction at a different location. If a decision is made to relocate or replace a severely damaged or destroyed facility, it will be placed, if practicable, in an area that is believed to be free from natural hazards. In areas where dynamic natural processes cannot be avoided, such as seashores, developed facilities should be sustainably designed (e.g., removable in advance of hazardous storms or other conditions). When it has been determined that facilities must be located in such areas, their design and siting will be based on:

- A thorough understanding of the nature of the physical processes; and
- Avoiding or mitigating (1) the risks to human life and property, and (2) the effect of the facility on natural physical processes and the ecosystem.

Requirements for development in floodplains and wetlands are contained in Executive Order 11988 (Floodplain Management); Executive Order 11990 (Protection of Wetlands); Director's Orders #77-1 and #77-10; and other NPS guidance documents.

(See Park Planning Processes 2.3; Floodplains 4.6.4; Wetlands 4.6.5; Shorelines and Barrier Islands 4.8.1.1; Geologic Hazards 4.8.1.3; Visitor Safety and Emergency Response 8.2.5; Concession Facilities 10.2.6)

9.1.1.7 Sustainable Energy Design

Any facility development, whether it be a new building, a renovation, or an adaptive re-use of an existing facility, should include improvements in energy efficiency and reduction in "greenhouse gas" emissions for both the building envelope and the mechanical systems that support the facility. Maximum energy efficiency should be achieved using solar thermal and photovoltaic applications, appropriate insulation and glazing strategies, energy-efficient lighting and appliances, and renewable energy technologies. Energy-efficient construction projects should be used as an educational opportunity for the visiting public.

9.1.2 Accessibility for Persons with Disabilities

The NPS will design, construct, and operate all buildings and facilities so they are accessible to, and usable by, persons with disabilities to the greatest extent reasonable, in compliance with all applicable laws, regulations, and standards. This means that all new and altered buildings and facilities will be in conformance with appropriate design standards. It also means that a sufficient number of existing buildings and facilities will be modified to ensure that programs can be provided in an accessible location.

Accessibility will be provided consistent with preserving park resources, visitor safety, and providing a high-quality visitor experience. In most instances, the degree of accessibility provided will be proportionately related to the degree of human-made modifications in the area surrounding the facility, and the importance of the facility to people visiting or working in the park. Accordingly, most administrative offices, some overnight visitor accommodations, some employee housing, and most interpretive and visitor service facilities will be accessible. Undeveloped areas, such as those outside the immediate influence of buildings and roads, will not normally be modified, nor will special facilities be provided for the sole purpose of providing access to all segments of the population. Accessibility to facilities in threshold areas will be determined on the basis of topography, the significance of the attraction, the number of physical modifications being made to the environment, and the modifications necessary to ensure programmatic accessibility.

Transportation systems in parks, including water transportation, will have a sufficient percentage of fully accessible vehicles or watercraft to provide effective services to persons

with disabilities. In the case of existing systems, the necessary vehicles will be provided on a replacement or retrofit basis. Until the transportation system has been made fully accessible, a separate accessible vehicle will be provided, or disabled persons will be allowed to drive their personal vehicles on otherwise-restricted roadways. In meeting the goal of accessibility, emphasis will be placed on ensuring that persons with disabilities are afforded experiences and opportunities along with other visitors, to the greatest extent reasonable. Separate facilities for people with disabilities are not a substitute for full accessibility to other park facilities, but they may be allowed where the need for specialized services is clearly demonstrated.

(See Physical Access for Persons with Disabilities 5.3.2; Accessibility for Persons with Disabilities 8.2.4; Accessibility of Commercial Services 10.2.6.2. Also see Director's Order #42: Accessibility for Visitors with Disabilities)

9.1.3 Construction

The Service will incorporate sustainable principles and practices into design, siting, construction, building materials, utility systems, recycling of all unusable materials, and waste management. Best management practices will be used for all phases of construction activity, including pre-construction, actual construction, and post-construction.

9.1.3.1 Construction Sites

Construction sites will be limited to the smallest feasible area. The selection of construction sites will consider opportunities for taking advantage of natural sources of lighting, heating, and cooling (e.g., near an existing or potential stand of deciduous trees) in order to maximize energy conservation. Ground disturbance and site management will be carefully controlled to prevent undue damage to vegetation, soils, and archeological resources, and to minimize air, water, soil, and noise pollution. Protective fencing and barricades will be provided for safety, and to preserve natural and cultural resources. Effective storm water management measures specific to the site will be implemented, and appropriate erosion and sedimentation control measures will be in place at all times. Solid, volatile, and hazardous wastes will be stockpiled, transported, and disposed of, as appropriate, and in compliance with federal, state, and local laws and regulations. All materials will be recycled whenever possible.

A review and approval of any "hot work" (e.g., welding, use of open flame, grinding) will be done to ensure fire safety at the construction site. Visual intrusions will be kept to a minimum. Construction equipment will be in satisfactory condition; i.e., it will be equipped with required safety components, and not be leaking hazardous liquids or emitting hazardous or undesirable fumes above allowable legal limits. Care will be exercised to ensure that construction equipment and all construction materials imported into the park are free of undesirable species. The cost of restoring areas impacted by construction will be considered part of the cost of construction, and funding for restoration will be included in construction budgets.

(See Air Resource Management 4.7; Water Resource Management 4.6; Soil Resource Management 4.8.2.4. Also see Denver Service Center specifications section 01570)

9.1.3.2 Re-vegetation and Landscaping

The selection of plant materials and cultivation practices will be guided by the policies for management of plant materials in section 4.4, and the need for fire-resistant vegetation for defensible space. To the maximum extent possible, plantings will consist of species that are native to the park or that are historically appropriate for the period or event commemorated. The use of exotic plant species is restricted to situations that conform to the exotic species policy in section 4.4.4. Irrigation to maintain exotic plantings will be avoided, except when it is part of an approved management program essential to achieve park objectives, and when adequate and dependable supplies of water are available. When a decision has been made to irrigate, efficient application must be made of water to protect water resources and ecosystems. Low water use practices that measure soil moisture content, and other technologies such as drip irrigation and appropriate timing of water applications, should be employed.

Prior to using soil fertilizers or other soil amendments in park natural or altered landscapes, parks must develop a prescription designed to ensure that the amendments will not unacceptably alter the physical, chemical, or biological characteristics of the soil, biological community, or surface or ground waters.

Wherever practicable, soils and plants affected by construction will be salvaged for use in site restoration. Any surplus soils and plants may be used, as appropriate, for the restoration of other degraded areas within the park. Surplus soils not used in this way should be stockpiled for future use. If additional soil and plants are needed to restore disturbed sites, they may be obtained from other sites in the park if it is determined that the use of an in-park source will not significantly affect cultural or natural resources or ecological processes. In any case, imported soils must be compatible with existing soils, free of undesired seeds and organisms, and fulfill the horticultural requirements of plants used for restoration.

(See Management of Native Plants and Animals 4.4.2; Genetic Resource Management Principles 4.4.1.2; Management of Exotic Species 4.4.4; Water Resource Management 4.6; Soil Resource Management 4.8.2.4; Cultural Landscapes 5.3.5.2; Water Supply Systems 9.1.5.1; Wastewater Treatment Systems 9.1.5.2. Also see Executive Order 13148 (Greening the Government Through Leadership in Environmental Management) section 207, "Environmentally and Economically Beneficial Landscaping")

9.1.3.3 Borrow Pits and Spoil Areas

Materials from borrow pits, quarries, and other clay, stone, gravel, or sand sources on NPS lands, including submerged lands, will be extracted and used only:

- By the NPS or its agents or contractors;
- For in-park administrative uses;
- After compliance with NEPA, including written findings that extraction and use of in-park borrow materials does not, or will not, impair park resources or values, and is the park's most reasonable alternative based on economic, environmental, or ecological considerations; and
- After compliance with other applicable federal, state, and local requirements.

Parks should use existing pits, quarries, or sources, or create new pits, quarries, or sources in the park only after developing and implementing a park-wide borrow management plan that addresses the cumulative effects of borrow site extraction, restoration, and importation. NPS guidance documents, as well as natural and cultural resources and facilities management staff, should be consulted during plan development and the review of specific proposals.

In designated wild and scenic rivers, no new sources may be established, and existing sources should be closed and reclaimed. Borrow material may be extracted in proposed or designated wilderness areas only in small quantities for trail use and in accordance with an approved wilderness management plan.

Spoil may be used for beach nourishment or another resource management activity only if the superintendent first finds that the proposed nourishment or activity will not impair park resources and values, and is consistent with park planning documents.

All existing spoil areas within park units that meet the definition of "solid waste disposal site" (36 CFR Part 6) will be brought into compliance with NPS solid waste regulations in 36 CFR 6.5. The development of new spoil areas or borrow pits, or the expansion of existing ones, will be analyzed through the NEPA and NHPA processes. In addition, superintendents will comply with NPS solid waste regulations and other specific NPS requirements.

Proposed borrow pits and spoil areas outside of parks will also be evaluated to ensure that use by the Service or its contractors does not impair resources or values inside the park, and that extraction operations comply with all applicable statutes and regulations, including NEPA and NHPA.

(See Decision-making Requirements to Avoid Impairments 1.4.7; Geologic Resource Management 4.8; Non-federally Owned Minerals 8.7.3; Re-vegetation and Landscaping 9.1.3.2)

9.1.4 Maintenance

9.1.4.1 General

There is a maintenance responsibility and cost for every asset that is administered by the National Park Service. A regular, periodic inventory and condition assessment of park assets will be performed to identify deficiencies and to ensure the cost-effective maintenance of all facilities. The costs of operation and the useful life of facilities and equipment are directly related to the type and level of maintenance provided. Therefore, the Service will conduct a program of preventive and rehabilitative maintenance and preservation to (1) provide a safe, sanitary, environmentally protective, and esthetically pleasing environment for park visitors and employees; (2) protect the physical integrity of facilities; and (3) preserve or maintain facilities in their optimum sustainable condition to the greatest extent possible. Preventive and rehabilitative maintenance programs will incorporate sustainable design elements and practices to ensure that water and energy efficiency, pollution prevention, and waste prevention and reduction are standard practice.

(Also see *NPS Solid Waste Management Handbook; Executive Order 13101 (Greening the Government Through Waste Prevention, Recycling, and Federal Acquisition); Executive Order 13148 (Greening the Government Through Leadership in Environmental Management); Executive Order 13149 (Greening the Government Through Federal Fleet and Transportation Efficiency)*)

9.1.4.2 Acquisition of Environmentally Preferable and Energy Efficient-products

In carrying out its maintenance responsibilities, the Park Service will acquire environmentally preferable and energy efficient products, as required by the Solid Waste Disposal Act, federal regulations, and Executive orders, and will strive to meet and exceed any Department of the Interior affirmative acquisition goals that are established. The Service will consider a variety of attributes when purchasing products, including energy efficiency, biodegradability, toxicity, recovered material content, packaging, transport cost, and other life-cycle environmental impacts, such as disposal. The Service will actively pursue opportunities to test and demonstrate environmentally preferable and energy-efficient products, consistent with its goal of demonstrating sustainable practices that avoid or minimize environmental impacts.

(See *Environmental Leadership 1.6; Concession Operations 10.2.4. Also see Director's Order #13: Environmental Leadership*)

9.1.5 Utilities

Utilities (i.e., energy, water, and wastewater systems) will be sited outside park boundaries whenever possible. In-park utilities will be as unobtrusive as possible, and have the least possible resource impact. The Service will use municipal or other utility systems outside parks whenever economically and environmentally practicable, and it may participate, when authorized, in cost-sharing with municipalities and others in meeting new, expanded, or replacement park utility needs. The Service will use the least polluting power supply options, either through on-site generation or through power purchases, where appropriate, available, and cost-effective, or where such purchase helps meet federal or state emissions goals or alternative energy goals.

(See *Utilities and Services 10.2.6.4. Also see Director's Order #35A: Sale or Lease of Park Services, Resources or Water in Support of Activities Outside the Boundaries of National Park Areas; and Director's Order #35B: Sale of Park Services to Support Activities Within the Boundaries of National Park Areas*)

9.1.5.1 Water Supply Systems

The National Park Service will use water efficiently and sustainably. Water systems will be designed to maximally conserve water and the energy used in its treatment and distribution. Water supply and delivery systems will be designed and maintained to provide sufficient water to operate fire sprinkler systems and fire hydrants. Water efficient devices will be installed in retrofit of existing structures and in the building of new structures. New water systems, or extensions to existing systems, will be constructed only if reasonable conservation measures will not be sufficient to cover park needs. Where a new system or an expansion is justified, the system must be

properly sized, and the available or projected water supply must be sufficient for expected needs. Where feasible and appropriate, and given resource availability, groundwater sources will generally be developed, rather than surface water diversions in parks. Water supply systems, and their operators, must comply with all applicable state and federal health standards. Outdoor use of water will be limited to those applications deemed essential to park operations or to protect park values. Consistent with native plant policies, the Service will use efficient methods for outdoor irrigation. Where appropriate, rainwater should be collected for uses such as maintenance of landscape features and general cleaning.

(See *Water Resource Management 4.6; Campgrounds 9.3.2.1; Comfort Stations 9.3.3. Also see Director's Order #83: Public Health*)

9.1.5.2 Wastewater Treatment Systems

New wastewater systems, or extensions or expansions of existing systems, will be constructed only if a determination has first been made that reasonable conservation measures will not be sufficient to cover park needs. In the selection of an appropriate method of wastewater treatment, factors such as all-season reliability, regulatory and public health issues, cost-effectiveness, and minimum adverse impact on the environment will all be considered. Where composting toilets are used, there should be interpretation for visitors regarding the value of recycling organic solid waste. Wastewater will be adequately treated so that, on its return to water courses, it meets or exceeds applicable state and federal water quality standards. Water and wastewater systems, and their operators, are subject to state and federal health standards. Superintendents must ensure that operators are certified, and that operations are inspected and conducted in accordance with all laws, regulations, and policies.

(See *Water Resource Management 4.6; Campgrounds 9.3.2.1; Comfort Stations 9.3.3. Also see Director's Order #83: Public Health*)

9.1.5.3 Utility Lines

Where feasible, NPS utility lines will be placed underground, except where such placement would cause significant damage to natural or cultural resources (such as historic structures or cultural landscapes). When placed aboveground, utility lines and appurtenant structures will be located and designed so as to minimize their impact on park resources and values. Whenever possible and visually acceptable, all utilities will share a common corridor, and will be combined with transportation corridors. Cost effectiveness, reliability of service, and visual impact will be considered when deciding whether to install utility lines aboveground or underground. To minimize the impact of on-grid utility lines, consideration will be given to long-term, cost-effective, renewable-energy applications, such as the use of photovoltaic, wind, fuel cell, and/or bio-fuel technologies (either as stand-alones or as hybrid systems), particularly in remote areas.

(See *Potential Wilderness 6.2.2.1*)

9.1.5.4 Historic Utilities

Utilities that were present during the historic period will be managed as cultural resources, and will be governed by the same policies as other cultural resources. Where present needs require upgraded lines and facilities, modern utilities will conform insofar as possible to the appearance and location of the historic utilities.

(See Treatment of Cultural Resources 5.3.5)

9.1.6 Waste Management and Contaminant Issues

The National Park Service recognizes the far-reaching impacts that waste products, contaminants, and wasteful practices have, not only on national park resources, but also on biotic and abiotic resources elsewhere in the nation and around the world. The Service will therefore demonstrate environmental leadership, and serve as a model for others to follow in managing wastes and contaminants.

9.1.6.1 Waste Management

The Service will implement solid and hazardous waste management practices that integrate waste reduction, reuse, and recycling programs to minimize the generation and disposal of solid and hazardous waste at, and from, parks. For purposes of this section, solid and hazardous wastes include any materials that are so defined in the Solid Waste Disposal Act, as amended. The Service will require the use of biodegradable materials, the reuse and recycling of materials, and other appropriate measures to minimize solid waste, and to conserve natural resources to the fullest extent possible. Innovation in the use of recyclable or reusable materials is encouraged. For example, the NPS may encourage the remanufacturing of recyclable materials into acceptable sales items for willing markets, including the NPS.

The disposal in parks of solid wastes generated by non-NPS activities is, in most cases, incompatible with national park values. All disposal of solid waste on lands and waters within the boundaries of a unit of the park system, whether federally or non-federally owned, must comply with NPS regulations in 36 CFR Part 6, which implement Public Law 98-506 (16 USC 4601- 22(c)). These regulations are designed to ensure that all activities associated with the operation of solid waste disposal sites within the boundaries of national parks are conducted in a manner that will (1) prevent the deterioration of air and water quality; (2) prevent the degradation of natural and cultural resources; and (3) reduce adverse effects on visitor enjoyment. In accordance with the spirit and intent of these requirements, the NPS will, to the extent practicable, avoid the use of park lands for landfills by such means as (1) implementing waste minimization and substitution practices; (2) diverting material to recycling facilities or other appropriate locations; and (3) using storage or treatment facilities that meet or exceed DOI and all legal and regulatory standards for any generated waste that is not diverted.

The NPS will remove landfill operations and associated impacts from parks where feasible. Cooperative waste management solutions that minimize adverse impacts on park resources are also encouraged for areas where alternatives to landfilling are scarce for both parks and adjacent communities.

Open burning for solid waste disposal will not be permitted in parks, except in the very limited circumstances described in Director's Order #18: Wildland Fire Management.

Any hazardous waste that the Service generates will be disposed of separately from solid waste, in full accord with all applicable legal requirements.

(See Air Quality 4.7.1; River Use 8.2.2.3; Backcountry Use 8.2.2.4; Miscellaneous Management Facilities 9.4.5. Also see Director's Order #18: Wildland Fire Management; Director's Order #30A: Hazardous and Solid Waste Management)

9.1.6.2 NPS Response to Contaminants

The Service will make every reasonable effort to prevent or minimize the release of contaminants on, or that will affect, NPS lands or resources, and will take all necessary actions to control or minimize such releases when they occur. For purposes of this section, contaminants include any substance that may pose a risk to NPS resources or is regulated or governed by statutes referenced in this subsection. Prevention and minimization will include, but not be limited to, (1) the acquisition, use, and selection of non-toxic or less toxic materials; (2) implementation of safe use, storage, and disposal practices; (3) recycling of spent materials; (4) implementation of effective hazard communication programs for employees, contractors, concessioners, and visitors; (5) development and extension of appropriate emergency response programs; and (6) acting to ensure that parties responsible for contamination or threatened contamination of NPS property bear the responsibility for addressing such contamination.

Activities pertaining to contaminants, including response actions or handling, acquisition, storage, transportation, and disposal of such substances, will comply with federal, state, and local laws and regulations including, but not limited to, (1) the Solid Waste Disposal Act, including the Resource Conservation and Recovery Act of 1976 and the Hazardous and Solid Waste Amendments of 1984, as amended; (2) the Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA); (3) the Oil Pollution Act of 1990; (4) the Clean Water Act; (4) the Hazardous Materials Transportation Act; and (5) the Toxic Substances Control Act. Such activities will also comply with the NPS integrated pest management program.

The Service will identify, assess, and take response actions as promptly as possible to address releases and threatened releases of contaminants into the environment. Each park will have an oil and chemical spill response management plan for spills that result from NPS activities, or from activities that are beyond NPS control (such as commercial through-traffic on roads that pass through a park). The plans will place first priority on responder and public safety. Employees will not be permitted to respond to hazardous materials spills unless they are properly qualified and certified in accordance with Director's Order #30B: Hazardous Spill Response.

The Service will take affirmative and aggressive action to ensure that all NPS costs and damages associated with the release of contaminants are borne by those responsible for the contamination of NPS property. In addition, when lands are proposed for acquisition by the NPS, the Service will take

steps to avoid or minimize its liability for the contamination of NPS property caused by other parties. The Service will include in the pre-acquisition environmental assessment process the identification of recognizable environmental conditions, such as those associated with prior or existing commercial facilities, mining sites, and landfills. Any recognizable existing or potential environmental contamination of lands proposed for inclusion in a park will be brought to the attention of the regional director as soon as they are identified.

(See Criteria for Inclusion 1.3; Chapter 3: Land Protection; Pest Management 4.4.5; Emergency Preparedness and Emergency Operations 8.2.5.2. Also see Director's Orders #25: Land Protection; #30A: Hazardous and Solid Waste Management; #30B: Hazardous Spill Response; 30C: Damage Assessments)

9.1.7 Energy Management

The National Park Service will conduct its activities in ways that use energy wisely and economically. Park resources and values will not be degraded to provide energy for NPS purposes. The Service will adhere to all federal policies governing energy and water efficiency, renewable resources, use of alternative fuels, and federal fleet goals as established in the Energy Policy Act of 1992. The Service will also comply with applicable Executive orders, including Executive Order 13123 (Greening the Government Through Effective Energy Management), Executive Order 13031 (Federal Alternative Fueled Vehicle Leadership), and Executive Order 13149 (Greening the Government Through Federal Fleet and Transportation Efficiency).

All facilities, vehicles, and equipment will be operated and managed so as to minimize the consumption of energy, water, and non-renewable fuels. Full consideration will be given to the use of alternative fuels. Alternative transportation programs and the use of bio-based fuels will be encouraged, where appropriate. Renewable sources of energy, and new developments in energy-efficiency technology, including products from the recycling of materials and waste, will be used where appropriate and cost effective over the life cycle. However, energy efficiencies will not be pursued if they will cause adverse impacts to park resources and values.

To conserve energy, park personnel and visitors may be provided with opportunities for in-park public transportation, or trails and walks for non-motorized transport. As an environmental leader, the Service will interpret for the public the overall resource protection benefits from the efficient use of energy, and will actively educate and motivate park personnel and visitors to utilize sustainable practices in conserving energy. The Service will also pursue partnership efforts with the Department of Energy and others to further develop and meet NPS energy conservation goals.

(See Air Quality 4.7.1; Lightscape Management 4.10; Resource Issue Interpretation and Education 7.5.3; Maintenance 9.1.4; Transportation Systems 9.2; Trails and Walks 9.2.3; Sustainable Energy Design 9.1.1.7. Also see Director's Order #13: Environmental Leadership)

9.1.8 Structural Fire Protection and Suppression

Superintendents will manage structural fire activities as part of a comprehensive interdisciplinary effort to protect resources and promote the safe and appropriate public enjoyment of those resources. Fire prevention, protection, and suppression will be primary considerations in the design, construction, rehabilitation, maintenance, and operation of all facilities. Structural fires will be suppressed to prevent the loss of human life and minimize damage to property and resources. The Service's Structural Fire Protection and Suppression Program will provide, through Director's Order #58 and Reference Manual 58, additional policy, standards, operational procedures, and accountability to meet the diverse needs and complexities of individual parks. The goal is to ensure that all national park areas receive an appropriate level of fire protection, provided in a safe and cost-effective manner by qualified personnel.

Each superintendent will complete a structural fire assessment and develop a structural fire plan to meet park needs. Structural fire protection and suppression capabilities will be maintained in accordance with those plans. Prevention priorities will focus on occupied structures and cultural resources, with emphasis placed evenly on code compliance, early warning detection, suppression systems, and employee training and awareness.

Fire prevention through code-compliant new construction, upgrading of existing structures, standardized and regularly scheduled fire inspections, and properly installed and maintained detection and suppression systems will be the primary means of addressing and correcting NPS structural fire deficiencies. Where these measures are not sufficient to meet park needs, aid agreements will be entered into with non-NPS entities capable of providing requisite fire suppression. Support from neighboring fire protection organizations is encouraged, and superintendents should enter into appropriate agreements whenever possible to enhance fire-fighting capabilities. Development of a park fire brigade will be considered only when all other options have been explored and found unacceptable.

(See Fire Management 4.5; Fire Detection, Suppression, and Post-fire Rehabilitation and Protection 5.3.1.2; Water Supply Systems 9.1.5.1. Also see Director's Order #58: Structural Fire Management)

9.2 Transportation Systems

The location, type, and design of transportation systems and their components (e.g., roads, bridges, trails, and parking areas), and the use of alternative transportation systems, all strongly influence the quality of the visitor experience. These systems also affect, to a great degree, how and where park resources will be impacted. For these reasons, management decisions regarding transportation facilities require a full, interdisciplinary consideration of alternatives, and a full understanding of their consequences. Traditional practices of building wider roads and larger parking areas to accommodate more motor vehicles are not necessarily the answer. The Service must find better transportation solutions, which will preserve the natural and cultural resources in its care while providing a high-quality visitor experience.

Early NPS participation in transportation studies and planning processes is crucial to the long term strategy of working closely with other federal agencies; tribal, state and local governments; regional planning bodies; citizen groups; and others to enhance partnering and funding opportunities. The Service will participate in all transportation planning forums that may result in links to parks or impacts to park resources. Working with federal, tribal, state, and local agencies on transportation issues, the Service will seek reasonable access to parks, and connections to external transportation systems. The Service will also advocate corridor crossings for terrestrial and aquatic wildlife, and other accommodations to promote biodiversity, and to avoid or mitigate (1) harm to individual animals, (2) the fragmentation of plant and animal habitats, and (3) the disruption of natural systems.

Depending on a park's size, location, resources, and level of use, the NPS will, where appropriate, emphasize and encourage alternative transportation systems, which may include a mix of buses, trains, ferries, trams, and—preferably—non-motorized modes of access to, and moving within, parks. In general, the preferred modes of transportation will be those that contribute to maximum visitor enjoyment of, and minimum adverse impacts to, park resources and values.

Before a decision is made to design, construct, expand, or upgrade access to or within a park, non-construction alternatives—such as distributing visitors to alternative locations—must be fully explored. If non-construction alternatives will not achieve satisfactory results, then a development solution may be pursued if the project:

- Is appropriate and necessary to meet park management needs or to provide for visitor use and enjoyment;
- Is designed with extreme care and sensitivity to the landscape through which it passes;
- Will not cause unacceptable adverse impacts to natural and cultural resources, and will minimize or mitigate those that cannot be avoided;
- Will not cause use in the areas it serves to exceed the areas' visitor carrying capacity;
- Will incorporate the principles of energy conservation and sustainability;
- Will incorporate universal design principles to provide for accessibility for all people, including those with disabilities;
- Will take maximum advantage of interpretive opportunities and scenic values;
- Will not violate federal, state, or local air pollution control plans or regulations; and
- Is based on a comprehensive and multi-disciplinary approach that is fully consistent with the park's general management plan.

If a decision is made to construct, expand, or reconstruct a park transportation system, the Service will address the need for terrestrial and aquatic wildlife corridor crossings and other accommodations to avoid or mitigate harm to individual animals, the fragmentation of plant and animal habitats, and the disruption of natural systems.

(See *General Management Planning 2.3.1; Implementation Planning 2.3.3; Air Quality 4.7.1; General 9.1; Accessibility for Persons with Disabilities 9.1.2; Energy Management 9.1.7. Also see Director's Orders #87A: Park Roads and Parkways; #87B: Alternative Transportation Systems; #87C: Transportation System Funding; #87D: Non-NPS Federal Aid Roads*)

9.2.1 Road Systems

9.2.1.1 Park Roads

Park roads will be well constructed, sensitive to natural and cultural resources, reflect the highest principles of park design, and enhance the visitor experience. Park roads are generally not intended to provide fast and convenient transportation; rather, they are intended to enhance the quality of a visit, while providing for safe and efficient travel, with minimal 106 or no impacts on natural and cultural resources.

For most parks, a road system is already in place. When plans for meeting the transportation needs of these parks are updated, a determination must be made as to whether the road system should be maintained as is, reduced, expanded, re-oriented, eliminated, or supplemented by other means of travel. When roads are chronically at or near capacity, the use of alternative destination points or transportation systems, or limitations on use, will be considered as alternatives to road expansion.

Park road designs are subject to NPS Park Road Standards, which are adaptable to each park's unique character and resource limitations. Although some existing roads do not meet current engineering standards, they may be important cultural resources whose values must be preserved.

(Also see *Director's Order #87A: Park Roads and Park ways*)

9.2.1.2 Non-NPS Roads

Many parks contain roads that were not constructed by the NPS and are not under NPS jurisdiction. Most often, these roads existed before the areas became part of the national park system, and the Park Service must rely heavily on tribal, state, or local authorities to maintain the roads consistent with park management goals. These other government authorities sometimes propose to expand an existing road, or to construct a new road within a park, with significant potential for adversely affecting park resources and values. Superintendents must consider road proposals in strict accordance with section 9.2.1.2.2, and Director's Order #87D: Non-NPS Federal Aid Roads.

The Service will not permit the public or private construction of new roads for access to inholdings unless specifically authorized by law.

(See *General 8.6.4.1*)

9.2.1.2.1 Existing Commercial and Other Through-Traffic

The Service will work with appropriate governments and private organizations and individuals to minimize the impacts of traffic on park resources and values. Whenever possible, commercial traffic will be prohibited on roads within parks, except for the purpose of serving park visitors and park operations. However, in accordance with section 8.6.5 and applicable NPS regulations (36 CFR 5.6):

- Superintendents will permit commercial vehicles to use park roads when necessary for access to private lands within or adjacent to a park area to which access is otherwise not available; and
- Superintendents may issue permits for commercial vehicle traffic to pass through the park in emergencies.

When a determination is made that existing through-traffic routes have adverse impacts on park resources and values, the Service will work with the appropriate government authorities to minimize these impacts, or to have the traffic flow re-routed over an alternative route. Where feasible and practicable, roads that are no longer needed will be closed or removed, and the area restored to a natural condition.

9.2.1.2.2 Construction and Expansion Proposals.

Superintendents must take an active role in overall community and transportation planning activities to educate all parties about the NPS mandate to protect park resources. The NPS will work closely with the U.S. Department of Transportation (DOT) and state DOTs when new highways or roads, or expansions of existing road corridors, that may impact park lands are proposed. In accordance with 23 USC 138 and the Organic Act, the NPS will object to any proposal to route a state or local road through national park lands, or to increase the size of a right-of-way for an existing road, unless the NPS first determines (or concurs with a DOT determination) that:

- There is no feasible and prudent alternative;
- All possible planning has taken place to minimize and mitigate harm to the park;
- It will not be contrary to the public interest, or inconsistent with the purposes for which the park was established;
- It will not cause health and safety risks to visitors or park staff; and
- It will conform to NPS standards and practices for road design, engineering, and construction.

In making these determinations, the Service will take into account the factors listed in section 9.2.

Responsibility for future maintenance—meeting NPS standards—must be identified prior to NPS approval of a proposal.

(Also see Director's Order #87D: Non-NPS Federal Aid Roads)

9.2.2 Alternative Transportation Systems

The Service will work cooperatively with other federal agencies; tribal, state and local governments; regional planning bodies; concessioners; citizen groups, and others to design and promote alternative transportation systems for park access and circulation. In-park transportation systems should be linked to public transportation whenever feasible, through cooperation with public transportation agencies and gateway communities.

A decision to provide visitor transportation systems will be based on a finding that the system:

- Is a cost-effective alternative to the construction, operation, and maintenance of additional roads, parking areas, an support facilities;

- Will reduce traffic congestion, noise, air pollution, and adverse effects on park resources and values;
- Will enhance the visitor experience by offering new or improved interpretive or recreational opportunities; by simplifying travel within the park; or by making it easier or safer to see park features; and
- Will conserve energy and utilize alternative fueled vehicles whenever practicable.

All alternative transportation systems may be considered conceptually. However, any alternative transportation system that would require a significant investment in the construction of tracks, suspended cables, or advanced technologies will not go beyond conceptual status without approval from the Director. A compelling advantage must be shown before any mode of transportation other than rubber-tired vehicles operating on existing roads, or standard displacement boats, will be authorized.

(See Accessibility for Persons with Disabilities 9.1.2; Energy Management 9.1.7; Road Systems 9.2.1. Also see Director's Order #87B: Alternative Transportation Systems)

9.2.3 Trails and Walks

Trails and walks provide the only means of access into many areas within parks. These facilities will be planned and developed as integral parts of each park's transportation system, and incorporate principles of universal design. Trails and walks will serve as management tools to help control the distribution and intensity of use. All trails and walks will be carefully situated, designed, and managed to

- Reduce conflicts with automobiles and incompatible uses;
- Allow for a satisfying park experience;
- Allow accessibility by the greatest number of people; and
- Protect park resources.

Heavily used trails and walks in developed areas may be surfaced as necessary for visitor safety, accessibility for persons with impaired mobility, resource protection, or erosion control. Surface materials should be carefully selected, taking into account factors such as the purpose and location of a trail or walk, and the potential for erosion and other environmental impacts.

The visitor use and management aspects of trails and walks are addressed in section 8.2.2, "Recreational Activities."

(See Chapter 7: Interpretation and Education; Accessibility for Persons with Disabilities 9.1.2. Also see Director's Order #42: Accessibility for Visitors with Disabilities)

9.2.3.1 Cooperative Trail Planning

The Park Service will cooperate with other land managers, non-profit organizations, and user groups to facilitate local and regional trail access to parks. When parks abut other public lands, the Service will participate in inter-agency, multi-jurisdictional trail planning. When an effective trail system exists, and when otherwise permitted, hostels or similar low-cost overnight facilities may be provided, if they are consistent with the park's general management plan, and harmonize with the natural and/or cultural resources.

(See Hostels and Shelters 9.3.2.3)

9.2.3.2 Hiking Trails

Trail design will vary to accommodate a wide range of users, and will be appropriate to user patterns and site conditions. Wetlands will generally be avoided and, where possible, they will be spanned by a boardwalk or other means, using sustainable materials that will not disturb hydrologic or ecological processes. Backcountry trails will offer visitors a primitive outdoor experience, and will be unsurfaced and modest in character, except where a more durable surface is needed. The use of non-native materials is generally not permitted on backcountry trails.

(See Wilderness General Policy 6.4.1; Trails in Wilderness 6.3.10.2; Backcountry Use 8.2.2.4)

9.2.3.3 Equestrian Trails

Equestrian trails and related support facilities, such as feed boxes and hitch rails, may be provided when they are consistent with park objectives, and when site conditions are suitable. Horse camps should be designed with user interest in mind, and consistent with NPS policy. Photovoltaic systems should be evaluated to power any necessary water systems, and ramps for mounting the animals must be provided for persons with disabilities.

(See Grazing and Livestock Driveways 6.4.7; Grazing by Domestic and Feral Livestock 8.6.8; Accessibility of Commercial Services 10.2.6.2)

9.2.3.4 Bicycle Trails

Bicycle routes may be considered as an alternative to motor vehicle access. Bicycle travelways may be integrated with park roads when determined to be safe and feasible. Bicycle trails may be paved or stabilized for the protection of resources, and for the safety and convenience of travelers. The designation of bicycle routes, other than on park roads and in parking areas, requires a written determination that such use is consistent with the protection of a park's natural, cultural, scenic, and esthetic values, safety considerations, and management objectives, and will not disturb wildlife or other park resources.

(See General Policy 6.4.1; Backcountry Use 8.2.2.4. Also see 36 CFR 4.30)

9.2.3.5 Water Trails

Water access and use may be provided when consistent with resource protection needs. Appropriate locations and levels of use will be determined in the park's general management plan. The NPS will work with other agencies and organizations, as appropriate, to develop and provide education and interpretation for water trails that access parks; to promote understanding and enjoyment; and to protect waterways and adjacent lands.

9.2.3.6 Interpretive Trails

Interpretive trails and walks, both guided and self-guiding, may be used for purposes of visitor appreciation and understanding of park values.

9.2.3.7 National Trails

The Service will cooperate with other land managers, non-profit organizations, and user groups to facilitate the use of national scenic, historic, and recreation trails, in accordance

with the laws and policies applicable to such trails, and to the extent that trail management and use would not detract from the basic mission, and the protected resources and values, of individual parks.

(Also see Director's Order #45-1: National Scenic and Historic Trails; National Trails System Act)

9.2.3.8 Trailheads

Trailheads, and trail access points from which trail use can begin, will be carefully tied into other elements of the park development and circulation system to facilitate safe and enjoyable trail use, and efficient management.

9.2.3.9 Trail Bridges

Trail bridges may be used for crossing swift waters, areas prone to flash-flooding, and other places presenting potential safety hazards. Less obtrusive alternatives to bridges, such as culverts, fords, and trail relocation, will be considered before a decision is made to build a bridge. A bridge may be the preferred alternative when necessary to prevent stream bank erosion, or to protect wetlands or fisheries. If a bridge is determined to be appropriate, it will be kept to the minimum size needed to serve trail users, and be designed to harmonize with the surrounding natural scene and be as unobtrusive as possible.

(See Water Resource Management 4.6)

9.2.4 Traffic Signs and Markings

Signs will be limited to the minimum necessary to meet information, warning, and regulatory needs; and to avoid confusion and visual intrusion. Signs should be planned to provide a pleasing, uniform appearance. Traffic signs and pavement markings on park roads will be consistent with the standards contained in the Manual on Uniform Traffic Control Devices, as supplemented by the National Park Service Sign Manual. All roadside signs and markings will conform to good traffic engineering practices. Park signs—especially those that display the NPS arrowhead symbol—are an important part of the total identity system for the NPS, and must conform to the standards contained in Director's Order #52C: Park Signage.

(See Navigation Aids 9.2.6; Signs 9.3.1.1)

9.2.5 Parking Areas

Parking areas and overlooks will be located so as not to unacceptably intrude, by sight, sound, or other impact, on park resources or values. When parking areas are deemed necessary, they will be limited to the smallest size appropriate, and be designed to harmoniously accommodate motor vehicles and other appropriate users. When large parking areas are needed, appropriate plantings and other design elements will be used to reduce negative visual and environmental impacts. When overflow parking is provided to meet peak visitation, it should be in areas that have been stabilized, or are otherwise capable of withstanding the temporary impacts of parking without harming park resources. Permanent parking areas will not normally be sized for the peak use day, but rather for the use anticipated on the average weekend day during the peak season of use.

(See Management of Native Plants and Animals 4.4.2; General 9.1; Transportation Systems 9.2)

9.2.6 Navigation Aids

Necessary aircraft and water navigation aids will be planned in collaboration with the Federal Aviation Administration and U.S. Coast Guard, respectively, and will be installed, maintained, and used in conformance with the standards established by these agencies only if there are no appropriate alternatives outside park boundaries. Exceptions to the standards may be authorized when necessary to meet specific park and public safety needs, provided the exceptions are jointly agreed to by the NPS and the agency having primary jurisdiction.

(See Overflights and Aviation Uses 8.4; Traffic Signs and Markings 9.2.4)

9.3 Visitor Facilities

While striving for excellence in visitor services, the NPS will limit visitor facility development to that which is necessary and appropriate. Facilities like gas stations and grocery stores may be necessary to park use and enjoyment, but it does not necessarily follow that these facilities must be located inside a park. The NPS will encourage the development of private-sector visitor services in gateway communities to contribute to local economic development, encourage competition, increase choices for visitors, and minimize the need for in-park facilities. When visitor facilities are found to be necessary and appropriate within a park, they will be designed, built, and maintained in accordance with accepted NPS standards for quality, and the NPS commitment to visitor satisfaction.

9.3.1 Informational and Interpretive Facilities

Informational and interpretive facilities will be provided to assist park visitors in appreciating and enjoying the park and understanding its significance, provided that the facilities can be developed without impairing the park's natural or cultural resources. The Harpers Ferry Center will be consulted on planning, design, and quality control for major interpretive facilities.

(See Chapter 7: Interpretation and Education; Accessibility for Persons with Disabilities 9.1.2)

9.3.1.1 Signs

Signs will be carefully planned and designed to fulfill their important roles of conveying an appropriate NPS and park image and providing information and orientation to visitors. Each park should have an approved park-wide sign plan based on Service-wide design criteria, and tailored to meet individual park needs. Entrance and other key signs will be distinctively designed to reflect the character of the park, while meeting Service-wide standards for consistency.

Signs will be held to the minimum number, size, and wording required to serve their intended functions, so as to minimally intrude upon the natural and historic settings. They will be placed where they do not interfere with park visitors' enjoyment and appreciation of park resources. Roadside information signs are subject to the standards established in the National Park Service Sign Manual. Interpretive signs will be guided by sign and wayside exhibit plans.

(See Signs 6.3.10.4; Traffic Signs and Markings 9.2.4; Navigation Aids 9.2.6. Also see Director's Order #52C: Park Signage)

9.3.1.2 Entrance Stations

Entrance and fee collection stations will be harmonious with the park environment, and should reflect the architectural character of the park.

9.3.1.3 Visitor Centers

When necessary to provide visitor information and interpretive services, visitor centers may be constructed at locations identified in approved plans. To minimize visual intrusions and impacts to major park features, visitor centers will generally not be located near such features. Where an in-park location would create unacceptable environmental impacts, authorization should be obtained to place a visitor center outside the park.

Visitor centers are not substitutes for personal or self-guiding on-site interpretation. They will be constructed only when it has been determined that indoor media are the most effective means of communicating major elements of the park story, and that a central public-contact point is needed.

As appropriate, a visitor center may include information services, sales of educational materials and theme-related items, audiovisual programs, museums, museum collections storage, exhibits, and other staffed or self-help programs and spaces necessary for a high-quality visitor experience. Additionally, the need for restrooms, drinking fountains, and other basic visitor requirements will be considered during the planning and design stage.

(See Park Management 1.4; Environmental Leadership 1.6; Non-personal Services 7.3.2; Location 9.1.1.2; Accessibility for Persons with Disabilities 9.1.2; Museum Collections Management Facilities 9.4.2)

9.3.1.4 Amphitheaters

Amphitheaters may be provided in campgrounds and in other locations where formal interpretive programs are desirable. Campfire circles may be provided in campgrounds to accommodate evening programs and informal social gatherings. Artificial lighting must be carefully directed and kept to a minimum, with due regard for natural night sky conditions.

(See Lightscape Management 4.10; Campgrounds 9.3.2.1)

9.3.1.5 Wayside Exhibits

Wayside exhibits may be provided along roads and heavily used walks and trails to interpret resources on site.

(See Non-personal Services 7.3.2)

9.3.1.6 Viewing Devices

Viewing devices, such as pedestal binoculars or telescopes, may be provided at appropriate locations when the superintendent determines that such devices are desirable for the meaningful interpretation or understanding of park resources. Such devices may be provided by the Service, or by others under a concession contract or commercial use authorization.

9.3.1.7 Facilities for Arts and Culture

Various cultural events (such as concerts, films, lectures, plays, craft shows, and art exhibits) are permitted when they will support a park's purposes and objectives. However, permanent facilities may be built specifically for cultural activities only when all of the following criteria are met:

- The permanent facility is required for programs of major importance in conveying the park story;
- It would be impossible or impractical to use demountable or temporary facilities;
- It would be impossible to adaptively use other park facilities;
- Neither the facility nor its operation would impair cultural or natural resources, or hinder the use of the park for its intended purposes; and
- It would not be feasible for others outside the park to provide the facility.

(See *Use of Historic Structures 5.3.5.4.7*; *Special Events 8.6.2*)

9.3.2 Overnight Accommodations and Food Services

Overnight facilities and food services will be restricted to the kinds and levels necessary and appropriate to achieve each park's purposes. In many cases, overnight accommodations and food services are not needed within a park. In general, they should be provided only when the private sector or other public agencies cannot adequately provide them in the park vicinity. However, in-park facilities or services may be justified when the distance and travel time to accommodations and services outside the park are too great to permit reasonable use, or when leaving the park to obtain incidental services would substantially detract from the quality of the visitor experience. Certain activities, such as backcountry use, may require overnight stays. Types of overnight accommodations may vary from unimproved backcountry campsites to motel- or hotel-type lodging, as appropriate. Commercial facilities run by concessioners are addressed in greater detail in chapter 10.

(See *Accessibility for Persons with Disabilities 9.1.2*; *Commercial Visitor Services Planning 10.2.2*)

9.3.2.1 Campgrounds

When campgrounds are determined to be necessary, their design will accommodate the differences between recreation-vehicle camping and tent camping, and will consider cultural landscapes, terrain, soils, vegetation, wildlife, climate, special needs of users, visual and auditory privacy, and other relevant factors.

The Park Service generally will not provide a full range of amenities and utility hookups. Portable generators may be allowed, but they may also be limited to designated areas and times. To eliminate the need for generators, electric utilities may be provided on a limited basis. Shower facilities may be provided where feasible. Modest-sized play areas for small children are permissible, as are informal areas for field sports associated with organized group camps. Wood fires in fire rings are generally permissible; however, whenever it is necessary to restrict such fires at individual campsites because of fire danger, air pollution, or other hazards, alternatives may be provided or allowed, such as facilities for the use of charcoal or other fuels, or central cook sheds. When a need exists,

sanitary dump stations will be provided in or near campgrounds that accommodate recreation vehicles.

When necessary for basic safety requirements, pathways and the exteriors of buildings and structures may be lighted. Such lighting will be energy efficient and shielded as much as possible to preserve the natural dark.

Campgrounds intended to accommodate large recreation vehicles or buses will be located only where existing roads can safely accommodate such vehicles and the resulting increased traffic load.

Campgrounds will not exceed 250 sites unless a larger number of sites has been approved by the Director.

When desirable for purposes of management, tent camping may be accommodated in separate campgrounds, or in separately designated areas within campgrounds. Provision may also be made for accommodating organized groups in separate campgrounds, or in separately designated areas.

Boaters' campgrounds may be provided in parks with waters used for recreational boating. The need for campgrounds—and their sizes, locations, and numbers—will be determined by (1) the type of water body (e.g., river, lake, reservoir, salt-water); (2) the availability and resiliency of potential campsites; (3) the feasibility of providing and maintaining docking, beaching, mooring, camping, and sanitary facilities; and (4) the potential impacts on park natural and cultural resources.

(See *Soundscape Management 4.9*; *Lightscape Management 4.10*; *Recreational Fees 8.2.6.1*; *National Park Reservation Service 8.2.6.2*; *Collecting Natural Products 8.8*; *Water Supply Systems 9.1.5.1*; *Wastewater Treatment Systems 9.1.5.2*; *Concession Facilities 10.2.6*. Also see *Director's Order #47: Soundscape Preservation and Noise Management*; *Director's Order #83: Public Health*)

9.3.2.2 Backcountry Campsites

Backcountry and wilderness campsites may be permitted, but only within the acceptable limits of use determined by the park's wilderness management plan, resource management plan, or other pertinent planning document.

(See *Wilderness Use Management 6.4*; *Backcountry Use 8.2.2.4*)

9.3.2.3 Hostels and Shelters

Hostels are low-cost, supervised accommodations that encourage and facilitate the energy-efficient, non-motorized enjoyment of parks and their surrounding regions by individuals and families. Such facilities, along with hostel-like accommodations such as huts and shelters, will be considered in the planning process if overnight use is determined to be an appropriate use of the park, particularly as a means of encouraging and facilitating the use of trails and backcountry areas. The Service will cooperate with other agencies, non-profit organizations, park concessioners, and others to plan and develop hostels, where appropriate. If a decision is reached to develop a hostel accommodation, it will be managed by others under the provisions of concession policies and procedures.

Hostels will, at a minimum, contain sheltered overnight accommodations and sanitary facilities, and they will usually contain cooking, eating, and recreation spaces. Hostels may be used for other park programs, such as environmental education or interpretation. Although non-motorized access to hostels is emphasized, motorized transportation may also be available.

(See Facility Planning and Design 9.1.1; Chapter 10: Commercial Visitor Services)

9.3.3 Comfort Stations

Comfort facilities will have waste disposal systems that meet Public Health Service standards. Levels of use will determine the size and nature of the utility systems provided. Low-water-use or waterless (oil and composting) toilets will be considered in locations where there are water-supply and wastewater-disposal problems. Chemical toilets in portable enclosures may be used for temporary purposes when necessary. Pit privies, vault toilets, composting toilets, or other alternatives that meet public health standards may suffice in little-used areas in which utility services are not readily available.

(See General Policy 6.4.1; Backcountry Use 8.2.2.4; Accessibility for Persons with Disabilities 8.2.4; Water Supply Systems 9.1.5.1; Wastewater Treatment Systems 9.1.5.2; Campgrounds 9.3.2.1. Also see Director's Order #83: Public Health)

9.3.4 Other Visitor Facilities

Other visitor facilities may be provided when necessary for visitor enjoyment of the area, and when consistent with the protection of park values. Visitor facilities determined to be detrimental to park resources or values will not be permitted.

9.3.4.1 Picnic and Other Day Use Areas

Picnic areas and other day use areas to be used for specific purposes (such as play areas) may be provided on a limited basis as appropriate to meet existing visitor needs.

9.3.4.2 Facilities for Water Recreation

Boating facilities (such as access points, courtesy docks, boat ramps, floating sewage pump-out stations, navigational aids, and marinas), breakwaters, and fish cleaners may be provided as appropriate for the safe enjoyment by visitors of water-recreation resources, when (1) they are consistent with the purposes for which the park was established, and (2) there is no possibility that adequate private facilities will be developed. Facilities must be carefully sited and designed to avoid unacceptable adverse effects on aquatic and riparian habitats, and to minimize conflicts between boaters and other visitors who enjoy use of the park. A decision to develop water-based facilities must take into account not only the primary impacts (such as noise, air, and water pollution) of the development, but also the secondary impacts (including cumulative effects over time) that recreational use associated with the development may have on park resources and visitor enjoyment.

(See Park Management 1.4; Soundscape Management 4.9; Visitor Use 8.2; River Use 8.2.2.3; Fishing 8.2.2.5; Campgrounds 9.3.2.1; Water Trails 9.2.3.5. Also see Director's Order #47: Soundscape Preservation and Noise Management)

9.3.4.3 Skiing Facilities

The Park Service will not permit new downhill skiing facilities or associated structures in any unit of the national park system. Downhill skiing is an activity that requires extensive development, with resulting significant environmental impacts, and it should only be provided outside park areas. When such facilities have been provided based on previous policy, their use may continue, unless the development and use have caused, or may cause, impairment of park resources or values. Any proposal to eliminate, or change the capacity of, existing facilities will be accomplished through the Park Service planning process, and will involve public participation and an environmental assessment of impacts.

(See Decision-making Requirements to Avoid Impairments 1.4.7; Recreational Activities 8.2.2)

9.3.5 Advertising

Commercial notices or advertisements will generally not be displayed, posted, or distributed on the federally owned or federally controlled land, water, or airspace of a park. A superintendent may permit advertising only if the notice or advertisement is for goods, services, or facilities available within the park, and if such notices and advertisements are found to be desirable and necessary for the convenience and guidance of the public. Acceptable forms of advertising will be addressed, as necessary, in concession contracts and cooperating association agreements.

Billboard advertising will in no case be permitted within a park and, in general, will be discouraged on approach roads outside of parks when it would adversely affect a park's scenic values.

NPS policy does not prohibit "donor recognition," which occurs when the NPS publicly thanks an individual, corporation, or some other entity for their gift or service to the NPS.

In accordance with Part 470 of the DOI manual, the Service will not use paid advertising in any publication in connection with its programs and activities, except where special legal requirements and authority exist. If a superintendent believes paid advertising is necessary because of the significant benefits it affords in enhancing public participation, prior approval must be obtained from the WASO Office of Public Affairs.

(See Cooperating Associations 7.6.2; Concession Contracting 10.2.3. Also see Director's Order #21: Donations and Fundraising, 36 CFR 5.1)

9.4 Management Facilities

Where authorized by Congress, management facilities will be located outside park boundaries whenever the management functions being served can be adequately supported from such a location. When management facilities must be located inside the park, they will be located away from primary resources and features of the park, and sited so as to not adversely affect park resources or values, or detract from the visitor experience. Historic properties will be used to the maximum extent practicable, provided that the use will not affect their significance.

Modular, pre-cut, or prefabricated structures may be used for management facilities, including administrative offices, employee housing, and maintenance structures, when products meeting design requirements are available. Standard plans will be modified to reflect regional and park design themes, and harmonize with the natural surroundings; preserve the natural and cultural environments; provide for resource conservation; provide for energy efficiency or the use of renewable energy sources; limit chemical emissions; and foster education about sustainable design.

(See Park Management 1.4; Environmental Leadership 1.6; Use of Historic Structures 5.3.5.4.7; Accessibility for Persons with Disabilities 8.2.4; Facility Planning and Design 9.1.1; Accessibility for Persons with Disabilities 9.1.2. Also see Director's Orders #89: Space Management; and #90: Value Analysis)

9.4.1 Administrative Offices

The location of administrative offices will be determined by conditions specific to each park, including impacts on park resources, availability and adequacy of leasable space outside the park, relationship to adjacent communities, convenience to visitors, weather, energy consumption, comparative costs, commuting distance for employees, and management effectiveness.

(See Facility Planning and Design 9.1.1; Energy Management 9.1.7)

9.4.2 Museum Collections Management Facilities

Park curatorial facilities should be adapted to the needs of each park. They may share space in visitor centers or administrative office buildings, or be housed in completely separate buildings. Incorporation with maintenance facilities should be avoided because of the heightened danger of fire, chemical spills, and similar accidents. Curatorial facilities will meet each collection's special requirements for security, fire suppression, and environmental controls.

The operation of environmental control systems to meet the temperature, relative humidity, particulate, and, as necessary, pollutant control specifications for museum collections are typically more energy intensive than those for structures with staff and offices. In order to ensure energy efficiency and the correct performance of the systems to protect the resource, the thermal performance of the building envelope and the efficiency of the systems must be addressed in facility planning and design. Prior to planning a collections management facility, the park, in consultation with subject-matter specialists, must complete a value analysis that evaluates various options for addressing the collections management needs of the park, including on-site and off-site locations.

(See Museum Collections 5.3.5.5; Fire Detection, Suppression, and Post-fire Rehabilitation and Protection 5.3.1.2; Environmental Monitoring and Control 5.3.1.4. Also see Director's Order #24: NPS Museum Collections Management)

9.4.3 Employee Housing

The NPS will rely on the private sector to provide housing for NPS employees. If housing is not available in the private sector, the Service will provide only the number of housing units necessary to support the NPS mission.

Occupancy is permitted or required to provide for timely response to park protection needs, to ensure reasonable deterrence to prevent threats to resources, and to protect the health and safety of visitors and employees. Such prevention or response services will determine acceptable and appropriate locations for employee housing that is provided for the benefit of the government in meeting the NPS mission.

9.4.3.1 Accountability

A needs assessment will be prepared every two years to determine the necessary number of housing units in a park. Park superintendents are accountable to their regional directors for employee housing in their parks. Regional directors are responsible for ensuring the consistent application of Service-wide housing policy.

9.4.3.2 Eligible Residents

Park housing will be provided for persons who are essential to the management and operation of the park. These may include not only NPS employees, but also concession employees, volunteers in the parks, Student Conservation Association volunteers, researchers, essential cooperators (e.g., schoolteachers, health personnel, contractors, state or county employees), and employees of another federal agency.

9.4.3.3 Historic Structures

The use of historic structures for housing is encouraged when NPS managers determine that this use contributes to the preservation of these structures, and when feasible cost-effective alternatives have been considered.

(See Use of Historic Structures 5.3.5.4.7; Adaptive Use 9.1.1.4)

9.4.3.4 Housing Management Plans

A housing management plan will be prepared for each park, and be updated every two years (or more frequently, if necessary). The plans will include an assessment of housing needs to meet the mission of the park.

9.4.3.5 Design and Construction:

Because of location, use, and other unique factors, special design concerns must be considered for housing constructed in parks. Housing must be designed to be as much a part of the natural or cultural setting as possible, yet it must be well-built, functional, energy efficient, and cost effective. The design of park housing will minimize impacts on park resources and values, comply with the standards for quality design, and consider regional design and construction influences. Value analysis principles will be applied in all NPS housing construction projects. Design costs will be kept to a minimum by using designs from the NPS Standard Design Catalog and a cost model.

(See Facility Planning and Design 9.1.1. Also see Director's Orders #36: Housing Management, and #90: Value Analysis)

9.4.4 Maintenance Structures

Maintenance structures will be consistent in design, scale, texture, and details with other park facilities. Optimally, they will be screened or located in areas remote from public use. Wherever feasible, NPS and concessioner maintenance facilities will be adjacent and integrated in design, to facilitate operations and to reduce impacts on park resources.

9.4.5 Miscellaneous Management Facilities

When installations such as landing sites and airstrips, fire towers, weather monitors, research stations, communication towers, and pump houses are necessary, they will be located and designed to minimize their impact on resources and their intrusion on the visitor experience. Whenever possible and practicable, such installations will be located within developed park areas. Totally utilitarian facilities, such as maintenance storage yards, sewage lagoons, and solid waste disposal sites—when they absolutely must be developed inside a park—will be sited so as to avoid adverse impacts to resources and provide visual screening. Alternative energy applications and sustainable wastewater treatment facilities, such as aquaculture ponds, wetlands, and rootzone beds, may be located in more visible areas when they are important to interpretive and educational objectives.

(See Environmental Leadership 1.6; Studies and Collections 4.2; General Policy 6.3.1; Airports and Landing Sites 8.4.8; Facility Planning and Design 9.1.1; Water Supply Systems 9.1.5.1; Wastewater Treatment Systems 9.1.5.2; Waste Management 9.1.6.1; Maintenance Structures 9.4.4)

9.5 Dams and Reservoirs

Dams and reservoirs will not be constructed in parks. The National Park Service will seek to deactivate existing structures unless they contribute to the cultural, natural, or recreational resource bases of the area, or are a necessary part of a park's water supply system.

All dams will be subject to annual safety inspections. Each park with a dam or reservoir will prepare an emergency action plan. The emergency action plan will also address potential hazards posed by dams outside the park and beyond the Service's control. The National Park Service inventory of dams will be used to record all NPS and non-NPS dams and reservoirs, and any other type of stream flow control structures affecting units of the national park system, including those that are proposed or have been deactivated.

(See Water Quality 4.6.3; Floodplains 4.6.4; Wetlands 4.6.5; Watershed and Stream Processes 4.6.6; Emergency Preparedness and Emergency Operations 8.2.5.2; Water Supply Systems 9.1.5.1; Wastewater Treatment Systems 9.1.5.2. Also see Director's Order #40: Dams and Appurtenant Works)

9.6 Commemorative Works and Plaques

9.6.1 General

For the purpose of this section, the term "commemorative work" means any statue, monument, sculpture, memorial, plaque, or other structure or landscape feature, including a garden or memorial grove, designed to perpetuate in a permanent manner the memory of a person, group, event, or other significant element of history. It also includes the naming of park structures or other features—including features within the interior of buildings. Within the District of Columbia and its environs, the Commemorative Works Act prohibits the establishment of commemorative works unless specifically authorized by Act of Congress. Outside of the District of Columbia and its environs, commemorative works will not be established unless authorized by Congress or approved by the

Director (36 CFR 2.62). The consultation process required by section 106 of NHPA must be completed before the Director will make a decision to approve a commemorative work.

To be permanently commemorated in a national park is a high honor, affording a degree of recognition that implies national importance. At the same time, the excessive or inappropriate use of commemorative works—especially commemorative naming—diminishes its value as a tool for recognizing people or events that are truly noteworthy, and has the potential for diverting attention from the important resources and values which park visitors need to learn about. Therefore, the National Park Service will discourage and curtail the use and proliferation of commemorative works except when:

- Congress has specifically authorized their placement; or
- There is compelling justification for the recognition, and the commemorative work is the best way to express the association between the park and the person, group, event, or other subject being commemorated.

In general, compelling justification for a commemorative work will not be considered unless:

- The association between the park and the person, group, or event is of exceptional importance; and
- In cases where a person or event is proposed for commemoration, at least five years have elapsed since the death of the person (or the last member of a group), or at least 25 years have elapsed since the event. (Within the District of Columbia and its environs, refer to the Commemorative Works Act for more specific requirements.)

Simply having worked in a park, or having made a monetary or other type of donation to a park, does not necessarily meet the test of "compelling justification." In these and similar cases, other forms of recognition should be pursued. Donor recognition must be consistent with Director's Order #21: Donations and Fundraising.

With regard to the naming of park structures, names that meet the criteria listed above may be approved by the Director. Names that do not meet those criteria will require legislative action.

9.6.2 Interpretive Works That Commemorate

The primary function of some commemorative works—most often in the form of a plaque presented by an outside organization—is to describe, explain, or other wise attest to the significance of a park's resources. These devices are not always the most appropriate medium for their intended purpose, and their permanent installation may not be in the best long-term interests of the park. Therefore, permanent installations of this nature will not be allowed unless it can be clearly demonstrated that the work will substantially increase visitors' appreciation of the significance of park resources or values, and do so more effectively than other interpretive media.

With regard to Civil War parks, new commemorative works will not be approved, except where specifically authorized by legislation. However, consideration may be given to proposals that would commemorate groups that were not allowed to be recognized during the commemorative period.

In those parks where there is legislative authorization to erect commemorative works, superintendents will prepare a plan to control their size, location, materials, and other factors necessary to protect the overall integrity of the park. The plan may include a requirement for an endowment to cover the costs of maintaining the commemorative work.

9.6.3 Approval of Commemorative Works

Before being approved, a determination must be made, based on consultation with qualified professionals, that the proposed commemorative work will:

- Be designed and sited to avoid disturbance of natural and cultural resources and values;
- Be located in surroundings relevant to its subject;
- Be constructed of materials suitable to and compatible with the local environment;
- Meet NPS design and maintenance standards;
- Not encroach on any other pre-existing work, or be esthetically intrusive;
- Not interfere significantly with open space and existing public use;
- Not divert attention from a park's primary interpretive theme; and
- Not be affixed to the historic fabric of a structure.

The Director may order the removal or modification of commemorative works that were installed without proper authorization, or that are inconsistent with the policies in this section. Temporary forms of in-park recognition, and permanent forms that will not be constructed or installed within park boundaries, do not require the Director's approval.

The naming of geographic features is subject to approval by the U.S. Board on Geographic Names. NPS proposals for naming geographic features will follow the procedures described in Director's Order #63: Geographic Names.

(Also see Director's Order #67: Copyright and Trademarks; U.S. Board on Geographic Names "Principles, Policies, and Procedures: Domestic Geographic Names")

9.6.4 Pre-existing Commemorative Works

Many commemorative works have existed in the parks long enough to qualify as historic features. A key aspect of their historical interest is that they reflect the knowledge, attitudes, and tastes of the persons who designed and placed them. These works and their inscriptions will not be altered, relocated, obscured, or removed, even when they are deemed inaccurate or incompatible with prevailing present-day values. Any exceptions require specific approval by the Director.

9.6.5 Donated Commemorative Works

While commemorative works and other forms of in-park permanent recognition will not be used to recognize monetary contributions or other donations to a park or the Service, there may be occasions when an authorized or approved commemorative work will be offered or provided by a private donor. Names of donors will be discouraged from appearing on commemorative works. If they do appear, donor names will be conspicuously subordinate to the subjects commemorated. Donations of commemorative works should include sufficient funds to provide for their installation, and an endowment for their permanent care.

(See Non-personal Services 7.3.2; Cemeteries and Burials 8.6.10. Also see Director's Order #64: Commemorative Works and Plaques)

9.6.6 Commemorative Works in National Cemeteries

Regulations governing commemorative works associated with national cemeteries are found in 36 CFR Part 12; and Director's Order #61: National Cemeteries.